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Knowledge Theory in Ibn Rushd Literature and reflection thereof on its Educational philosophy

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Abstract

This study aims to examine Ibn Rushd perceptions in terms of Knowledge and reflection thereof on his educational philosophy. This study reached at a conclusion that Ibn Rushd partaking had its important role in framing the Knowledge theory and maintain it away from deviations and in the same time originated much jurisprudences starting from Aristotle theory who considered that self perish with the body's yard, while Ibn Rushd considered it as non physical self and image of body in the same time. On the other hand, Ibn Rushd disagreed with Knowledge theory adopted in Mysticism; who believes that human cannot reach Knowledge depending on mental means alone, but in turn Knowledge is gift from Allah achieved through strife, psychological readiness and purifying the heart.

Ibn Rushd Knowledge theory is based on knowledge tools (feeling, mind and heart) integration. Serial order thereof based on promotion from feeling to the mind. Any personal cognizance is moral cognizance in Physical such as feeling or fantasy, while total cognizance is meaning cognizance physical.

Based on Ibn Rushd Theory on Knowledge this study examined his educational philosophy which proved that it is in line with education's modern vision and acquiring knowledge; i.e. Thomas Aquinas, Jean Beige, Bruner and other pioneers of Epistemology theory in Education.

Keywords: Ibn Rushd, Knowledge theory, Philosophy, The mind, logic and Education

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Introduction

Abu Al Waleed Mohammad Bin Ahmad Bin Mohammad Bin Ahmad Bin Rushd (Averroes) (1198 – 1126); Muslim scientist who was born in Qurtobah; philosopher, doctor, Jurist, judge, astronomer & physicist (Al-Hawaly, 2011). He rose in a reputable family in Al Andalus (Ibn Bashkawall, 1955) and he is considered one of the most important Islamic Philosophers (Alg'afari & Al- Askary, 2000). He defended philosophy, correct the works of many precedent scientists and philosophers; i.e. Ibn Sina and Al Farabi and contributed to interpreting Plato and Aristotle tale theories (Fakhry, 2001). Ibn Rushd contributed in bringing the middle ages in Europe to an end (Günther, 2012).

Well known composer George Sarton says in his book Introduction to science history: "Ibn Rushd was one of the most important Islamic Philosophers. He had its influence on European philosophers more than Aristotle. Ibn Rushd is the free thinking establisher as he opened before Europe scientists' research and debate floodgates and in the same time brings it out of restrictions to mind and thinking” (Muraad, 1988).

It is said that the great merit of Ibn Rushd is introducing Aristotle thoughts and principles to Europe and western civilization (Palmer, Bresler & Cooper, 2001).

Priest Thomas Aquinas was the most interested persons in Ibn Rushd writings and books, The catholic Encyclopedia computed the citations carried out are Priest Thomas Aquinas from Ibn Rushd sources and explanations which were translated into Latin language which were common in above priest era. The catholic Encyclopedia mentioned that Priest Aquinas extracted from Ibn Rushd sources five hundred times. The question here means what does this mean? It means "the strong cognitive power of Ibn Rushd over Priest Aquinas thinking and writings (Farhan, 2012).

The western researchers and academics assure that Thomas Aquinas offered many explanations on Aristotle books including Explanation on Self book, explanation on Nicomachean Ethics and Mata-physics (Farhan, 2012). Thomas Aquinas followed Ibn Rushd steps in reconciliation between religion and mind. This also was done in terms of Knowledge Theory. But he disagreed with him in two matters; mental intuition and self-knowledge of things after death (Qasem, 1969).

Although the great merit of Ibn Rushd on philosophy and his pioneer role in framing Knowledge theory in most professional way, but he faced severe denial for his role from Western philosophers including Thomas Aquinas who went further and twisted Ibn Rushd statements and thoughts.

There were some Philosophers; i.e. Rennan, who defended Ibn Rushd and said "It was possible to say that Priest Thomas Aquinas was one of Ibn Rushd students and he owed everything to Arab interpreter Ibn Rushd" (Qasem, 1969; Antwan, 1993).

Knowledge Theory from the Muslims scholars’ point of views:

Knowledge theory from Muslims Scholars point of view such as Ibn Sina, Al Farabi, Ibn Bajah & Ibn Tufail is linked closely to their theory on universe; which is flux theory which offers interpretation on how majority is found in the earth starting from existing one (Alg'afari & Al- Askary, 2000). Even though Ibn Rushd dissented this theory but it worked to direct Islamic Philosophy, critically, towards Sufism (Qasem, 1969), Ibn Rushd Agrees with Aristotle as to denying such idea.

Muslims Philosophers derived their vision as to self, active Intellect, Physical Intellect (Hulani) and acquired Intellect, from Flux theory which was the source of Intellect unity, or total Intellect theory, which demonstrated that all humans participate in one Intellect (Muraad, 1988).
Ibn Rushd criticizing Muslims Philosophers:

Ibn Rushd criticism as to "emanation" or overflow Theory was the best expression of its distinction and originality in the Philosophical thought (Qasem, 1969), and further his criticism as to (images grantor) or active Intellect came to address such criticism. He sets out Epistemology on Human basis and further he attributed the major role of Knowledge to the mind and its cognition's self abilities. In his philosophy the active Intellect has only unified role of prudence in human being and organized by the human self.

Whereas overflow theory is unable to offer interpretation as to how the various existing individuals are coming from one existing individual, so for such reason, it cannot interpret Knowledge phenomena. The reality that meanings which addressed by Muslims Philosophers as mental statuses of things does descend from heaven, but it ascends from earth. This means that human Knowledge is rooted to sensual matters, but this Knowledge is not possible except by human self activity (Muraad, 1988).

Ibn Rushd named such activity as Intellect by act or active Intellect as Aristotle did. Ibn Rushd sees that there is not material difference between physical Intellect and Intellect by act. Also both minds are two shapes or two professions of single self; sound minded self. The latest is independent; in other words is not physical.

Therefore, Ibn Rushd is in breach as to Al Farabi, Ibn Sina and Ibn Tufail thoughts which acknowledge that the mental statuses do not ascend from the bottom but it descend from above, as it flow in human self from the active Intellect which is the last heaven minds or paradox which is the active Intellect which controls the latest planets; i.e. Moon planet, which provides human self with eternal meanings which flow from Allah in sequent manner. This opinion is adopted by Modern Platonic followers from Muslims philosophers who think that human self merges or links to active Intellect where it acquires the Knowledge (Qasem, 1969).

Ibn Rushd paid his attention to the existent; i.e. once outside world is discovered then the active personal self is discovered as well, an idea which violates Ibn Sina and Al Farabi. This active existence performs its active role in freeing reasonable meanings from sensual data and offering thereof to the mind. The Mind works to free the physical statuses to make it actual credible (Qasem, 1969).

Ibn Rushd criticized the scholars who adopts the apparent issues and thus impose human to abide thereto and thus avoid any interpretation and in the same time refuse to exploit any effort from their side to interpret thereof. Such group evidences are limited by Archangel Gabriel is the only way to prove Allah existence, while the mind has nothing to do in that regard (Muraad, 1988).

As Ibn Rushd criticized the apparent issues followers he also criticized the Mystics interpretation; as Mystics stated that there are hidden facts which the mind is not able to neither discuss nor search for. They believe that they can know Allah the Mighty, via type of Mystic intuition summarized by the fact that once human being controlled his lust and reached to the stage that he is able to control his physical and secular wishes, he may be able to communicate with Allah and wins Paradise. Then his self shall be full of faith which grants him the strength to deal with known norms and nature (Abd Al-mohiemen, 2000). In that regard Ibn Rushd states "While Mystics do not adopt theoretical methods; i.e. composed from introductions and measures, but they say that knowing Allah and other thing merge with self once stripping the latest from sensuality symptoms, and be close to Allah (Abd Al-mohiemen, 2000.27).

On the other hand he did not disclaim Mystics method in full, but he approved on such method for some people rather than public. His criticism as to Mystics method was based on the mind, consideration and vision absence: he said "This method, if we accept its existence, it is not for public as they are people. If this method is what meant by People then sight method is void, but its existence
in people is vanity. Holly Qur'an is calls to see and consider and special concern as to sight methods (Ibn Rushd, 1998).

Ibn Rushd the great interpreter:

Khalif Abu Yacoub, Vousif Ibn Abdel Mu'men asked Ibn Tufail to nominate a person to perform hard mission; summarizing Aristotle books and explanations (Baffioni, 2004). He selected Ibn Rushd "Ibn Tufail said" If you have strength to do so do it. I hope that you perform thereof, as I am well aware of your mental capacity, and your trend to Industry" (Ibn Rushd, 1998).

Ibn Rushd paid high care as to Aristotle works represented by explaining and summarizing thereof (Al-Marakeshi, 1949). He presented various types of explanations as to Aristotle works then he presented what is known by Summary which is brief explanation. He used in his explanations by introducing Aristotle script in full then starting his interpretation thereto. Ibn Rushd did not commit to display Aristotle script as he used his name in the summaries without presenting Aristotle script. Sometimes he may conclude additions as to Aristotle scripts and add his own phrases and words.

Ibn Rushd was attracted by Aristotle thoughts, from this point his views and ideas were in harmony with Aristotle thoughts at high degree. Although Ibn Rushd displayed his great admiration towards Aristotle but he succeeded to set out his authentic Philosophy. He amended Aristotle idea on the self and its mental strength in comprehensive manner. Dr. Mahmoud Qasem (Abd Al-mohiemen, 2000) considers such amendment to be of positive trend towards Peripatetic philosophy, as if the self is no physical self and image of the hull in the same time, then it offers us the mental meaning of Knowledge in better way than it is mere a body image and merged materially therewith; as Aristotle said.

Aristotle defined the Self to be the first perfection for organic body full of life and strength; and cannot be separated there from. Both form one thing, while Ibn Sina defined the Self as separated from the body and provide the body with flow of latest minds and the merge incidentally therewith. Qurtoba Philosopher (Ibn Rushd) could offer skilled accommodation between both contradicting ideas by deleting from the first definition Flow thought and incidental merger with the body, and added to the second definition self independence idea. Accordingly, Self from Ibn Rushd point of view is complete self which does not merge with the body either materially or incidentally.

By the forgoing definition Ibn Rushd could surpass his teacher in assuring the human self unity, by considering its both main strengths; Physical Intellect and active Intellect as one self (Qasem, 1969).

Ibn Rushd added to Aristotle's Knowledge theory the communicating idea with active Intellect or communicating Physical Intellect with active Intellect theory (Qasem, 1969) , by sating "Physical Intellect and active Intellect are in fact one thing; Human Self. They are two trends to one Ego which is Self. If the self is connected with body then it has two functions: the first function is represented by Extracting meanings and stripping thereof (active Intellect) and the second function readiness to accept such meanings (Physical Intellect). Self is Sane Ego that can, while connecting to the body, to strip there from and all information came to it via such mean in order that the Self may recognize its Ego. Self Recognition of its Ego is the aim which is set out for Knowledge (Muraad, 1988).

Knowledge theory from Ibn Rushd point of view:

Through is studies to Aristotle thoughts on Self and Intellect, its criticism as to preceding Muslims Philosophers' who care of Knowledge and method of acquiring thereof, Ibn Rushd could present authentic theory in Knowledge based on comparison between perceived existence and reasonable one, as well as promotion from the first to the second. Also his theory emphasizes on the
fact that religious rules urged to know Allah the Mighty and all creatures and considering thereof by mind; i.e. mental measurement, as Knowledge is promoted from perceived things to reasonable things.

Ibn Rushd theory is set out on mental methodology which considers Knowledge way is based on sense, mind and promotion from the first to the second. As if he admitted perceived things as a Knowledge source but he exceeded thereof to reasonable things (Muraad, 1988).

Ibn Rushd considers that Knowledge is possible via senses and via mind as well, but he classified the mental epistemology to be of high level. Ibn Rushd believed that mind has the ability to acquire science via its cognition of abstract totality, but also may be promoted to communicate with world of spirits and minds which is the last perfection of the human (Muraad, 1988).

The most important feature of Ibn Rushd theory is freedom route and allow wildly human to employ its mental abilities to gain science and Knowledge which its most noble classes is to KNOW ALLAH THE MIGHTY.

**Ibn Rushd Philosophy of Education:**

Based on our understanding as to epistemology theory as described by Ibn Rushd, we can scrutinize the rationalizing principles in education. The first principle states about learning and acquire the knowledge which could be achieved through seeing, foresight and realization of mind, in the same time it did not deny the heart refinement and isolation from anything that may keep mind busy as well as self struggling to be additional factor that assist some parties to acquire knowledge; in other words Education process is framed by thinking and morals (Ghasem, 1964).

So learning and Knowledge acquirement strategies used by Ibn Rushd are variable. *i’tibār* (reflection), *faḥṣ* (examination), *istinbāṭ* (deduction and discovery), *naẓarburhānī* (demonstrative study), *qiyās ‘aqlī* (intellectual reasoning), *tamthīl* (comparison and analogy) as well as *ta’wil* (allegorical interpretation), in addition to *aqāwiljadalīya* (dialectical reasoning), *aqāwilburhānīya* (demonstrative reasoning) and *aqāwilkhīṭābiya* (rhetorical reasoning) (Günther, 2012).

Even though freedom is the route which Ibn Rushd used in his Philosophical thinking, we are sure that such route and methodology is reflected on education principles thereto as it explains that the teaching, learning method and purport shall be compatible with human mind abilities. As a result, there would be teaching defined methods for beneficial elite, rather than methods directed to public. This principle is considered, in our current era, as one of the most important educational principles which takes into account the individual differences (Averroes, 1961).

Ibn Rushd focused on the Islamic Religion as training on good acts, however, paying interest to real sciences which generate happiness to people; in other words Practical applied sciences. The foregoing refers to Ibn Rushd concentration on training; both practical and theoretical with priority as to the second type; the (practical knowledge) (Averroes, 1977:31).

Whereas Ibn Rushd theory is established on mental methodology which considers knowledge acquirement is based on sensation, mind and promotion from the first one to the second one (Angherabi, 2016) , then acquiring the knowledge starts from perceived things and senses as knowledge tools then promote to the mind which the most efficient tool to produce knowledge and learning. This could be noticed in its idea; Recognizing the "I am" is not possible except from recognizing others; i.e. starting from recognizing the physical environment (existing things).

This offers us evidence that Ibn Rushd ideas in learning process are similar to the Knowledge theory in learning which is established by educational psychological scientists; i.e. Jean Beige, Bruner in the 20th century. Ibn Rushd also advises the teachers to use all learning methods and subjects that suit students' mental abilities as well as the learning environment. This trend is called nowadays the (holistic way) in learning (Günther, 2012).
Ibn Rushd focuses on Knowledge accumulation cause, as nobody can acquire all his needs of sight tools and Inference curricula by himself without seeking his antecedents help. So we have to benefit of our antecedents efforts; accept what is right and verifying faulty ones; through free, criticized and non-imitating thinking (Ismaeel, 2014). This principle is one of the scientific research methods and in the same time is one of the most important learning meaningful principles which are referred to by Scholar Ozabel and constructional theory in cognitive Psychology.

We come to know that thoughts and principles which are adopted by Ibn Rushd in terms of education are progressive Ideas which upraise the mind, religion and morals and classify Ibn Rushd to be as present nowadays in theories and sciences that interpret, clarify knowledge acquirement mechanisms and access to the beneficial modern sciences.

Conclusion:

Freedom track practiced by Ibn Rushd towards Aristotle Philosophy offered him the chance to set out a consistent theory on Human knowledge. Such theory combines between soul and body. The body is for Aristotle while soul is for Qurtobah Philosopher (Qasem, 1969).

In spite of the amendment carried out by Ibn Rushd on self concept adopted by Aristotle, but it remains close to Aristotle real knowledge's doctrine, in breach as to the doctrine of Ibn Sina, Al Farabi & other Muslims philosophers; Muslims followers of modern Plato principles who stated that knowledge is type of overflow or brightness in oneself.

Ibn Rushd Knowledge theory represents Arab-Muslims world methodology via employing science morals and values represented by objectivity and deriving accuracy. Also Ibn Rushd was the best example for critic mental in his works, writings and explanations as to Aristotle. The Aristotle Text was started by; said (means Aristotle said) then the texts continues to offer interpretations and explanations the text initial then the remaining text mixing its interpretation and Aristotle statements in the text.

Knowledge theory of Ibn Rushd defines its educational philosophy which is based on mind and thinking of all types to reach knowledge and science which are beneficial and pleasant to the human being. This method is actual mental method which is framed by morals and believes in Allah the Merciful. Also its philosophy calls for the necessity to consider the learner abilities, individualize and diversify education methods to accommodate individual differences.

Educational principles adopted by Ibn Rushd harmonize with the current Knowledge theory as to senses and mind role in acquiring knowledge and its roles serial order. His ideas are too close to Constructivism theory as to knowledge accumulation and developing thereof through human mental activity.

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The Effect of Layered Curriculum on Reflective Thinking and on Self-Directed Learning Readiness of Prospective Teachers

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Abstract

Teachers are important role models for pupils. They should be reflective practitioners and self-directed learners. Teacher training process should promote being a reflective thinker and a self-directed learner. Curriculum should be designed in accordance with constructivism. The aim of this research is to investigate effects of layered curriculum on pre-service teachers’ reflective thinking level and on self-directed learning readiness. In this study sequential mixed method design is used. A pretest-posttest control group design (quantitative phase) and a semi-structured interview (qualitative phase) are used. Layered curriculum is determined to have positive effects on participants’ reflective thinking level and self-directed learning. According to findings of this research, layered curriculum can be an alternative way to improve pre-service teachers’ readiness for self-directed learning and reflective thinking levels.

Keywords: Layered curriculum, reflective thinking, self-directed learning, teacher training.

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Introduction

Educating individuals as lifelong learners questioning, using the knowledge and having problem-solving skills are associated with the quality of adopted and applied curriculum. Constructivist learning approach focuses on how any student learns rather than what the student should learn. Educating individuals who are reflective thinkers and self-directed learners in that process are among the main goals.

Reflective thinking is one of the focal points of pragmatic philosophy that Dewey is a pioneer. For Dewey, reflective thinking is “effective, consistent and careful thinking any thought or information and information structure supporting to reach aimed results” (Dewey 1991:6). Current experiences are reorganized or constructed in the process of reflective thinking. Thus, experiences having meaning effects on realization of subsequent experiences. That process begins with the identification of the situation continues cyclically by listing what can be done about the situation, making future plans for the implementation and explaining what has been done (Başol and Evin Gencel 2013; Dewey 1933; Tripp 2003). Moon (2004) draws attention to the mentioned cycling as well by stating that individuals realizing reflecting to learn and continues to learn after reflecting.

It can be said that research studies done by Schön and Mezirow increased the interest in reflective thinking as well as Dewey did (Kember et al., 2008). Schön (1983; 1987) emphasizes thinking on what has been really done in that process and the need for revising the work done by drawing attention to the importance of gaining experience in reflective thinking. He identified two types of reflection as reflection in action and reflection on action. Reflection in action means the reflection process occurring during the execution of the action while reflection on action means behaviors after finishing the action and reflection process on thoughts. Killion and Todnem (1991) put forward the concept of reflection for action by expanding Schön’s studies. Reflection for action is explained in that individuals think unexpected experiences gained from actions as a new way for new situations. For Mezirow (1991), reflection includes criticizing the assumptions about problem solving or content. The author states that one of the barriers in front of the reflective thinking is the perception of habits or behaviours not requiring thinking as reflective behaviour. Reflective thinking is a process where appropriate thoughts are produced, chosen and where inappropriate ones are picked out (Gelter, 2003).

Having the idea that the use of the concept of reflections in too wide and various forms causes misunderstanding, Kember and et al. (2000) put forward classifications of steps, including habit, understanding, reflection and critical reflection and applied in literature widely based on Mezirow’s views. In that classification, habits include actions done after repetitions; understanding includes understanding cognitive domains, especially conceptualization and any current situation. Reflection is explained as questioning and internalization of knowledge and experiences, inferring and constituting a new perspective. The top level of reflection is deemed as critical reflection and explained as awareness of why individual perceives, thinks, feels and behaves in a clear way. Mezirow called that stage as “main reflection” (Kember et al., 2000; Kember et al., 2008). Accepted as one of the most important factors in the adoption of in-depth learning approach (Xie, Ke, and Sharma 2008) reflective thinking are stressed to be effective for prospective teachers to gain occupational skills. For this reason, developing reflective thinking is reported as one of the main objectives in teacher education (Ayers 2001; Loughran 2002; Willard-Holt and Bottomley 2000).

Reflective thinking offers individuals opportunity to rethink previous strategies, questioning and choose the rightest path when faced problems. In this regard it is associated with self-directed learning. Especially critical reflection constitutes one of the important bases of self-directed learning. Self-directed learning is stated as a process that individuals can select suitable strategies and methods to realize learning aims. Learning responsibility is undertaken by student in that process where personal characteristics are effective for learning (Candy 1991; Hollis 1991). Autonomy is one of the most significant concept of self-directed learning. Self-directed learners try to realize learning in an
appropriate path for their personal characteristic by identifying the right resources at flexible times and follow their learning process by making self-evaluation (Siminica and Traistaru 2013).

Self-directed learning is controlling and directing the process consciously and constantly to understand any situation-concept, solve problems, having or strengthening any skill (Long 1994: 14). Prior knowledge and positive or negative experiences of students are effective in that process. It is clear that when these properties are taken into consideration, self-directed learning is associated with lifelong learning process (Lee et al., 2014). In order to ensure self-directed learning, flexible learning environment must be provided to individuals, and individuals must be ready for the process. Considering teacher education, teachers having a high level of readiness for self-directed learning have properties to determine goals and choose effective activities to use during teaching and learning process. Also, it is stated that teachers whose readiness for self-directed learning is high level have the skills to maintain their motivation, to realize their own shortcomings and to solve problems effectively (Hwang and Gorrell 2001; Owen 2002).

When it is considered that teachers are important role models for students, it is crucial that at first, teachers should have the habit of reflective thinking and their readiness for self-directed learning should be high. In this context, it is of great importance that they should be provided with a flexible learning environment where they have learning responsibility. With aim to become active by being responsible for their own learning, thus ensuring permanent learning layered curriculum comes forefront (Başbay 2008). Kathie Nunley created the innovative teaching method entitled ‘layered curriculum’ after observing the different learning styles, understanding levels and multiple intelligences of her students. The layered curriculum takes individual differences of learners into account. Task options regulated towards higher level thinking skills are introduced to learners. There are steps (C, B and A) from basic knowledge and skills towards high level thinking skills in a similar way as progressively in Bloom’s taxonomy. Learners choose the most suitable ones or the ones they want from the task list prepared for each step. Accordingly, the learners who have different learning levels, interests and expectations are provided with different ways during learning-teaching process (Başbay, 2005; 2008; Nunley 2003; 2004).

That learners are provided with options during the learning-teaching process is effective in an increase in their motivation and academic achievement. For the success of this process, it is important that students should take an active role and be given the chance to set a path which they follow in their own pace and features (Chapman and King 2005; Sullo 2007; Stenhoff et al., 2008). Layered curriculum raises students’ responsibility for their learning by making the students active and realizes learning appropriate to the learning styles by allowing the activation of different ways of thinking (Gömleksiz and Biçer 2012).

Layer B requires application and analyzing skills. Students choose one of the such tasks, each of them are 15 points, preparing, discovering, trying, researching, comparing, distinguishing, reasoning, making interference. Layer A aims students to get an evaluation and synthesis skills and involves high level thinking skills. Students choose one of the such tasks, each of them are 15 points, criticizing, determining, guessing, identifying privileges, deciding, developing foresight, composing, designing, creative and unique products. In layered curriculum, the process ought to be organized carefully. In this process; product files, rubrics, and oral presentations about the chosen topic are used (Başbay 2005; Demirel et al., 2006; Nunley 2003; 2004; Pohl 2000).

Phases and features of layered curriculum are: First, units divide into C, B and A layers. Goals and objectives of the lesson for the two week period are decided and distributed to students. According to renewed Bloom’s taxonomy, Layer C includes comprehension and recalling. Students review and construct their basic skills in this level, which includes explanations, listing, identifying, classifying, memorizing, repetition, gap filling, summarizing, discussing, reviewing, interpreting skills. Tasks that suitable for data collection on the topic have different points in terms of time and difficulty. It is expected at this level that students score 65-70 points by choosing desired tasks, students have to accomplish those tasks in order to go on to the next level.
When we consider the processes such as taking responsibility, choosing appropriate tasks, and defending the duties, we can associate it with reflective thinking and autonomous learning skills. It is important that teachers should accept these thinking types, being a model and preparing suitable activities in order to develop mentioned skills. Thus, there should be activities that develop reflective thinking and autonomous learning skills in in-service teaching. Hereby, the aim of this research is to investigate effects of layered curriculum on pre-service teachers’ reflective thinking level and self-directed learning readiness. And we try to give answers to questions below;

Is there any significant differences between the experiment group, whom layered curriculum is carried out, and control group, whom traditional teaching is carried out, at the backgrounds of the students about reflective thinking and autonomous learning in testing and evaluation course?

What is the level of predictive power of reflective thinking in the autonomous learning background?

What are the opinions of the students in experiment group about the layered learning?

Method

Research Method: In this study sequential mixed method design was used. A pretest-posttest control group design (quantitative phase) and a semi-structured interview (qualitative phase) were used. This research was mainly conducted through quantitative method and having obtained the quantitative results, qualitative interviews have been carried out. Quantitative phase was planned in a paired pretest-posttest control group design. In circumstances when there is no chance to determine the participants randomly, experimental and control groups are chosen from the available groups. In a paired pre-test, post-test control group design, groups are randomly designated as experimental and control groups (Buyukozturk et al., 2013). Having completed the experimental actions, qualitative data were gathered from interviews conducted with 10 participants chosen randomly.

Participants: Participants of the research consist of 81 (46 female, 35 male) prospective teachers who took the course “Measurement and Evaluation in Education” at Canakkale Onsekiz Mart University in the spring semester of 2013-2014 academic year. 43 prospective teachers participated in the experimental group and 38 prospective teachers were involved in the control group. In the data analysis process, taking the course attendance into consideration, data obtained from 74 prospective teachers in total, 39 participants in the experimental group and 35 for the control group, were taken into account.

Data Collection Tools: Research data were obtained through “Reflective Thinking Level Measuring Scale” and “Scale of Readiness for Self-Directed Learning”.

Reflective Thinking Scale (RTS): Developed by Kember and his colleagues (2000), this scale was adapted to Turkish language by Basol and Evin Gencel (2013). Consisting of 16 items and 5 point Likert scale, it includes four sub-dimensions which are “habitual action”, “understanding”, “reflection” and “critical reflection”. Cronbach Alpha reliability coefficient of the scale had been determined between the range of .62 and .76; and in the current research, reliability was found to range between .67 and .79.

Self-Directed Learning Readiness Scale (SDLRS): Developed by Fisher and his colleagues (2001). The scale was adapted to Turkish by Sahin and Erden (2009). Consisting of 40 items, 5 point Likert scale it includes three sub-dimensions which are self direction, learning will and self-control. Cronbach Alpha reliability coefficient of the scale had been determined between the range of .79 and .87; and in the current research, reliability was found to range between .81 and .89.
Semi-structured Interview Form:

In order to obtain the participants’ views about experimental actions, three questions were asked. Upon getting permission of the participants, interviews were recorded. Each interview lasted 15 or 20 minutes. Having written the voice-recorded data, participants were asked for confirmation.

Process:

In the three credits theoretical course Measurement and Evaluation in Education, experimental implementation lasted for ten weeks. Initially, the course objectives were structured pursuant to the Bloom's taxonomy and they were grouped for C, B and A levels. Thus, task option tables were constituted in accordance with remembering and understanding for level C; applying and analyzing for level B; evaluating and creating for level A. Scoring Rubrics formed through tasks and activity tables determined in compliance with individual differences were photocopied in final form after receiving expert opinion. Experimental group students were informed about the instruction schedule. Implementation steps of the schedule, tasks’ quiddity and their score values in C, B and A levels were explained.

In level C, there exist tasks such as reading activities, answering end-of-chapter questions, watching and talking about video recordings related to the subject, note-taking, listening to the guest teachers and asking them questions in the classroom, literature review and preparing brochures relevant to the subject, preparing power-point presentations, preparing affiche, table, illustrative cards, writing blurbs, writing briefly about central tendency and variance measures, displaying graphics, constituting tables which show different influential, weak aspects in common. In level B, there exist tasks such as summarizing books inerentially, calculating, writing test item, interviewing with teachers or experts, creating concept map, preparing puzzles, analyzing test items, composing self-dictionaries made up of measurement concepts, developing tests, commenting on the fractions of the pedagogic films relevant to subjects and evaluating them. Level A, there are tasks listed as creating original song, prose, poem, criticizing given cases, shooting advertisement films, writing for columns professionally, conceiving discussion activity related to test types, preparing informative film and journal about alternative measurement for prospective teachers, writing research report investigating at least 1 primary and 2 subsidiary and 3 internet sources. Students were informed about what needs to be done in order to proceed to higher level task. This phase lasted for three lesson hours. In the pre-test phase, data gathering tools were applied to students of experimental and control groups in one lesson hour time. For the experimental group, BOP was applied. As for the the control group, lessons were maintained through expression, discussion, question and answer. Data collection tools were reapplied to both groups and post test phase were completed.

Data Analysis

To analyze quantitative data, SPSS 17.00 statistics program was used. Descriptive statistics were specified. To identify differences between experimental and control groups, covariance analysis (ANCOVA) was used. Simple linear regression analysis was carried out to determine how reflective thinking predicts readiness for self-directed learning. Impact size were identified for the analysis carried out.

Throughout the analysis of the qualitative data, inductive content analyses were carried out by two researchers, separately. To ensure the coding reliability, the formula “Reliability=Agreement/ (Agreement + Disagreement) x 100” recommended by Miles and Huberman (1994) was used and the matching percentage was determined as 82%. In this respect, internal reliability was proven, for the external reliability, researchers keep interview records. To verify the internal reliability, participants were asked to confirm their views which were put in writing. As for the external reliability, it was endeavored to explain the research process in detail.
Findings

With the purpose of finding whether there is a difference in the way of reflective thinking level between the experiment group and control group, primarily scale of reflective thinking level, pretest and posttest descriptive statistics are presented in the Table 1.

Table 1. Groups’ RTS points descriptive statistics.

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Highest Points</th>
<th>Groups</th>
<th>Pre Test</th>
<th>Post Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>n</td>
<td>X̄</td>
<td>s</td>
</tr>
<tr>
<td>Habitual</td>
<td>20</td>
<td>Experiment</td>
<td>39</td>
<td>12.18</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Control</td>
<td>35</td>
<td>12.00</td>
</tr>
<tr>
<td>Comprehension</td>
<td>20</td>
<td>Experiment</td>
<td>39</td>
<td>8.97</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Control</td>
<td>35</td>
<td>10.82</td>
</tr>
<tr>
<td>Reflection</td>
<td>20</td>
<td>Experiment</td>
<td>39</td>
<td>9.28</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Control</td>
<td>35</td>
<td>10.54</td>
</tr>
<tr>
<td>Critical Reflection</td>
<td>20</td>
<td>Experiment</td>
<td>39</td>
<td>9.51</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Control</td>
<td>35</td>
<td>8.77</td>
</tr>
<tr>
<td>RTS</td>
<td>80</td>
<td>Experiment</td>
<td>39</td>
<td>38.86</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Control</td>
<td>35</td>
<td>40.04</td>
</tr>
</tbody>
</table>

As it is seen in the Table 1, Experiment group’s RTS pretest mean score ($\overline{X}=38.86$; $s=4.59$) increased in the post test ($\overline{X}=46.92$; $s=5.06$). Control group’s RTS mean score ($\overline{X}=40.04$; $s=3.84$) remain nearly same in the post test ($\overline{X}=40.69$; $s=4.00$). When the mean scores gathered from the sub-dimensions are viewed, it is seen that experiment group’s average points increased in all sub-dimensions. The lowest increase seen in the dimension of habitual action. It is observed that the pretest and posttest mean scores of control group are quite close to each other. With the purpose of identifying the effect of experimental process of the students’ reflective thinking levels, corrected posttest mean scores, ANCOVA results and impact factor are presented in the Table 2.

Table 2. ANCOVA results of groups according to corrected RTS post test points

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Experiment Group Corrected Mean</th>
<th>Control Group Corrected Mean</th>
<th>F</th>
<th>p</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Habitual</td>
<td>12.27</td>
<td>12.15</td>
<td>.31</td>
<td>.51</td>
<td>.006</td>
</tr>
<tr>
<td>Comprehension</td>
<td>11.39</td>
<td>10.04</td>
<td>23.49</td>
<td>.00*</td>
<td>.26</td>
</tr>
<tr>
<td>Reflection</td>
<td>12.07</td>
<td>10.11</td>
<td>42.36</td>
<td>.00*</td>
<td>.38</td>
</tr>
<tr>
<td>Critical Reflection</td>
<td>12.97</td>
<td>8.96</td>
<td>90.11</td>
<td>.00*</td>
<td>.69</td>
</tr>
<tr>
<td>RTS</td>
<td>48.53</td>
<td>40.49</td>
<td>41.85</td>
<td>.00*</td>
<td>.38</td>
</tr>
</tbody>
</table>

When the corrected posttest mean score is viewed, it can be stated that except the habitual action subscale, all subscales and points gathered through the scale are higher on behalf of experiment group and these differences are significant according to covariance analyzes. Examining the effect sizes, it is stated throughout the scale $\eta^2=.38$, in the comprehension subscale $\eta^2=.26$, in reflection subscale $\eta^2=.38$, in critical reflection subscale $\eta^2=.69$. According to the results it can be said that instruction design match with layered curriculum is effective in the levels of comprehension, reflection, critical reflection subscales and generally reflective thinking level. Descriptive statistics primarily related to pretest and posttest of SDLRS are presented in the Table 3 in order to determine whether there is a difference at the readiness level of autonomous learning between the experiment group and control group.
Table 3. Descriptive statistics of the groups in SDLRS

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Highest Point</th>
<th>Groups</th>
<th>Pre Test</th>
<th>Post Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>n</td>
<td>Ĵ</td>
<td>s</td>
</tr>
<tr>
<td>Self Direction</td>
<td>65</td>
<td>Experiment</td>
<td>39</td>
<td>51.46</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Control</td>
<td>35</td>
<td>51.08</td>
</tr>
<tr>
<td>Willingness to Learning</td>
<td>80</td>
<td>Experiment</td>
<td>39</td>
<td>59.38</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Control</td>
<td>35</td>
<td>57.45</td>
</tr>
<tr>
<td>Self Control Skills</td>
<td>55</td>
<td>Experiment</td>
<td>39</td>
<td>38.48</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Control</td>
<td>35</td>
<td>37.97</td>
</tr>
<tr>
<td>SDLRS</td>
<td>200</td>
<td>Experiment</td>
<td>39</td>
<td>149.13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Control</td>
<td>35</td>
<td>146.11</td>
</tr>
</tbody>
</table>

In the table 3, it is seen that experiment group’s SDLRS pretest mean score (Ĵ =149.13; s=9.04) increase in the post test (Ĵ =163.46; s=8.03). SDLRS pretest (Ĵ =146.11; s=11.35) and posttest (Ĵ =146.69; s=11.61) mean scores of control group are similar to teach other. When the points gathered from the subscales are examined, it is observed that experiment group’s mean score is increased in all subscales and control group’s pretest and post test results are quite similar to each other.

With the purpose of identifying the effect of experimental process of the students’ autonomous learning levels, corrected posttest arithmetic averages, ANCOVA results and impact factor are presented in the Table 4.

Table 4. SDLRS ANCOVA Results of groups according to corrected post test points

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Experiment Group Corrected Average</th>
<th>Control Group Corrected Average</th>
<th>F</th>
<th>p</th>
<th>η²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self Directing</td>
<td>57.40</td>
<td>51.55</td>
<td>64.69</td>
<td>.00*</td>
<td>.58</td>
</tr>
<tr>
<td>Willingness to Learning</td>
<td>66.01</td>
<td>58.41</td>
<td>56.07</td>
<td>.00*</td>
<td>.45</td>
</tr>
<tr>
<td>Self Control Skills</td>
<td>48.26</td>
<td>38.52</td>
<td>82.25</td>
<td>.00*</td>
<td>.61</td>
</tr>
<tr>
<td>SDLRS</td>
<td>161.89</td>
<td>148.33</td>
<td>68.13</td>
<td>.00*</td>
<td>.59</td>
</tr>
</tbody>
</table>

When corrected posttest means of groups are examined in the Table 4 it is stated that all subscales and points gathered through the scale are higher on behalf of experiment group and these differences are statistically significant according to covariance analyzes. Examining the effect sizes, it is found out throughout the scale η²=.59, in the self-directing subscale η²=.58, in willingness to learning subscale η²=.45, in self-control skills subscale η²=.61. According to analyze results it can be said that instruction design match with layered curriculum is effective in the levels of comprehension, reflection, critical reflection subscales and generally reflective thinking level.

To identify the level of predictive power of RTS points on the SDLRS points, simple linear regression analyzes were carried out and results are presented in Table 5.
Table 5. Regression model of relationship between RTS Points and SDLRS Points

<table>
<thead>
<tr>
<th>Model</th>
<th>Dependent Variable</th>
<th>B</th>
<th>Se</th>
<th>β</th>
<th>T</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stable</td>
<td>Self Directed Learning</td>
<td>99.328</td>
<td>11.349</td>
<td>8.75</td>
<td>.00</td>
<td></td>
</tr>
<tr>
<td>Reflective Thinking</td>
<td></td>
<td>1.25</td>
<td>.25</td>
<td>.51</td>
<td>5.02</td>
<td>.00</td>
</tr>
</tbody>
</table>

\[R=.51 ; R^2=.26 ; F_{(1,72)}=25.24 ; p<.05\]

It is seen in the Table 5 that points of reflective thinking level predict 26% of variance of readiness for self-directed learning. According to R variance analyzes relationship between two variables is significant \(F_{(1,72)}=25.24, p<.05\). Beta value (β=.51) shows a positively relationship. In other words it can be concluded that reflective thinking is a significant predictive of self-directed learning. According to regression analyzes results equation of regression that predict the self-directed learning is; \(SDLRS = 1.25x RTS + 99.328\).

As a result of the interviews that are conducted in order to find out the opinions of experiment group students about the layered curriculum; teaching, learner, learning, environment, and activities themes are determined and they are presented with sub-themes in Table 6.

Table 6. The opinions of participants about layered curriculum

<table>
<thead>
<tr>
<th>Main Theme</th>
<th>Sub-Themes</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learner</td>
<td>Individual choice</td>
<td>S2: “… it is good to have a chance of choosing suitable things form…”</td>
</tr>
<tr>
<td></td>
<td>user</td>
<td>S5: “… I use my choice with activities that I think I can do…”</td>
</tr>
<tr>
<td></td>
<td>Creative</td>
<td>S6: “… I understand that how I am a creative person…”</td>
</tr>
<tr>
<td></td>
<td>Growing</td>
<td>S8: “… as time progress we can produce more creative products…”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S10: “… we feel that we progress much better with every activity…”</td>
</tr>
<tr>
<td>Learning</td>
<td>Permanent</td>
<td>S4: “… we don’t need to waste time for repetition because what we do makes it catchy…”</td>
</tr>
<tr>
<td></td>
<td>Significant</td>
<td>S9: “… at last I understand that when I use these activities my students will have permanent learning just like me…”</td>
</tr>
<tr>
<td></td>
<td>High Level</td>
<td>S10: “… I can say that permanent learning is occurred because we began from what we know already…”</td>
</tr>
<tr>
<td></td>
<td>Easy</td>
<td>S1: “… each of the layers underlie the others…”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S7: “… if we didn’t take the lessons in that way, we would just listen without thinking on it; however, this activity required reasoning…”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S6: “… without reading again and again and repetition I learnt the course of assessment and evaluation, such hard subject…”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S3: “… all of the activities such as to provide easy learning…”</td>
</tr>
<tr>
<td>Environment and Activities</td>
<td>Amusing</td>
<td>S2: “… I don’t have such an amusing lesson during my college life…”</td>
</tr>
<tr>
<td></td>
<td>Hard</td>
<td>S8: “… really funny outputs come to light such as songs, poets, visuals… we laugh a lot and once I thought that kind of learning can occur only in primary schools…”</td>
</tr>
<tr>
<td></td>
<td>Social</td>
<td>S5: “… I study with my classmates and we improve our friendship…”</td>
</tr>
<tr>
<td></td>
<td>Various</td>
<td>S4: “… our social sharing increase in the classroom…”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S10: “… however it is hard to execute the activities that we have not done before. We had to be creative and it was not easy…”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S1: “… it was not easy to prepare visual and it was hard to bring source to classroom…”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S7: “… one of the best parts is to have different options. Various materials are used. I can’t imagine such an enjoyable measurement and evaluation course…”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S3: “… there were lots of creative, different activities and I will use them in the future…”</td>
</tr>
</tbody>
</table>
Discussion

The results of the research show that layered curriculum effects pre-service teachers’ levels of reflective thinking and self directed learning positively, moreover their views about the layered curriculum are also positive.

Reflective thinking has an effect on gaining pedagogical skills of pre-service teachers. Thus, it is important to study and make activities in order to improve these skills in pre service training. It was found in this research study that the layered curriculum is effective in terms of improving pre-service teachers’ comprehension, reflection, critical reflection, and general reflective thinking levels. It is stated that the highest level of reflection is the critical reflecting. Critical reflecting is awareness of reasons of feelings and behavior patterns (Kember et al., 2000). Concordantly, the significant increasing of especially critical reflecting points, accepted as the highest level, in the experiment group is an important finding.

When the literature is analyzed, it is seen that usually the effect of layered teaching on academic success has been searched (Lasovage 2006; Maurer 2009), layered curriculum increases not only the quality of learning process but also personal qualities of students (Burbank, Bates and Ramirez 2012). Swanson and Kayler 2008) emphasize that layered curriculum develop reflective thinking level of students and teachers as well. As it is seen, there is not any direct experimental research about the effect of layered teaching program on the reflective thinking level. Consequently this research study could contribute significantly into the literature.

It is determined in this research study that layered learning program has positive effect on sub-themes of self directing, self controlling skills, and learning willingness and generally preparedness of self directed learning. Nunley (2003; 2006) emphasizes that in layered teaching program control is in the hands of students. Providing options to students and giving them the opportunity of learning at will is important in terms of self direction and auto control. In respect to this it can be said results of the research are coherent with these statements. Morgan (2011) puts emphasize on learner initiative for preparedness of self directed learning. In layered learning initiative is on the learners, hence they can choose the suitable activity for themselves or they can decide whether is it time for sharing their learning outcomes with the others or not. From this point, positive affection of layered teaching program on preparedness of self directed learning is coherent with literature.

It is vitally underlined that in order to develop self-directed learning the chance of choosing educational duties systematically and actively in accordance with their interests should be given (Morrison and Premkumar 2014). It is stated that learning instruments such as active note taking, forming mind maps, creative writing, and flowcharts increase readiness for self-directed learning (Villareal, 2013; Mulig-Cruz, Barquilla, Tabudlong and Magallanes, 2015). In respect to this it can be said that the results of the research verify the knowledge in the literature. Readiness for self-directed learning is explained with such components; joining into control of learning process, decision making, joining individual and group activities, and critical and reflective thinking (Canipe & Brockett, 2003). As it is seen, readiness for self-directed learning is dealt with in relation to reflective thinking. Hence, in this research study it is stated that reflective thinking predicts self-directed learning significantly.

When the qualitative data of the research were examined, pre-service teachers were found to have a general positive attitude on layered teaching program. Pre-service teachers considered that students’ choice of appropriate activities according to their individual preferences, revealing their creative sides and developing at each phase in layered teaching program were significant. They emphasized that they carried out permanent, meaningful, high level of learning in an easy way. Although, they generally find the activities and environment as social and amusing, they claim that while carrying out some activities they have difficulties. Participants state that they want to use layered teaching program in their career. Lasovage (2006) states that layered teaching program effects students’ attitudes to course positively, increases learners’ interests and attendance to lesson, and Başbay (2005) states that participants had a great time during layered curriculum.
Besides affecting positively the students’ reflective thinking, readiness for self-directed learning positively in the experiment group, layered teaching program brings out positive feelings as well. As a result of this research study it was found out that layered teaching program can be used in order to bring up individuals who can think reflectively and learn self-directly, which is one of the main objectives of constructivist approach. Considering the teachers who have a high level of readiness for learning and reflective thinking are successful in managing teaching and learning process, using knowledge sources effectively, maintaining motivation, having effective problem solving skills, and being a model for students, it is thought that layered teaching program would be beneficial in pre-service teachers’ education.

Conclusion and Implications

It is not possible that teachers who have been educated by traditional system can successfully raise a generation as lifelong learners with high level of thinking skills. Thus, their various skills should be improved through alternative ways in teacher education. Teachers who have a high level of readiness for self-directed learning always question themselves about their methods and strategies and how to develop themselves in order to leave a positive impression on students. In this sense, applying activities which can develop these skills in pre-service education could be useful not only for gaining new knowledge but also for improving their professional development (Rodgers, 2002; Evin Gencel, 2015).

It is seen in the current research study layered curriculum can be an alternative way to improve pre-service teachers’ readiness for self-directed learning and reflective thinking levels. Therefore, program developers and teacher training policy makers could take these findings into consideration. In service trainings can be arranged for teachers about the layered teaching program and guidebooks can be published in order to ensure easiness in application process. Researchers can conduct new research studies which are integrated with layered teaching program like different learners styles, theories of layered learning, multiple intelligences, flipped learning, and blended learning. Moreover this program can be utilized in other courses and results can be compared.

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Adventures in Advising: Strategies, Solutions, and Situations to Student Problems in the Criminology and Criminal Justice Field

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Abstract

Teaching and research are often the most focused upon aspects of working within academia in criminology and criminal justice (Sitren & Applegate, 2012; Jonson & Moon, 2014; Pratt, 2014), but an overlooked and underappreciated part of an undergraduate’s overall higher education success is academic advising (Light, 2001). There has been scant research on advising within criminology and criminal justice, and this paper seeks to fill this gap by detailing reflections on the advising process within a successful and growing criminology and criminal justice program. Strategies for advising overall will be presented as will particular situations and student needs. Lastly, a case study of how advising works for a criminology and criminal justice department from a large, public institution located in the Southeastern United States will be discussed and demonstrate how the strategies, situations, and student needs apply.

Keywords: undergraduate advising, higher education, criminal justice, criminology, internships

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Introduction

The field of criminology and criminal justice has grown as a discipline exponentially since the 1960s, transforming from an offshoot of sociology into an established academic specialization that more and more students are seeking out (Clear, 2001; Pratt, 2014; Krimmel & Tartaro, 1999). Some of this interest is propelled by the increase in sensationalized crime dramas, true life studies in forensics and investigation, and prime time murder mysteries that highlight the lives of criminal justice professionals in a “sexy” fashion (Harris, 1993), but what started as a primarily law enforcement and corrections driven discipline (Krimmel & Tartaro, 1999) has shifted into a degree that can encompass many different career paths from investigating cybercrimes as an intelligence analyst to working to protect wildlife and forests as a fish and game warden (O*Net Online, 2016).

While popular culture often informs student interests and desires within the criminal justice field, it often takes a lot of guidance to make sure students are on the right track with their academic careers and that they possess realistic expectations of what their degree can do for them. This area is where undergraduate academic advising becomes very important as it is often the front line of defense in informing student decisions, guiding them in their academic progress, and navigating the minefield that makes up undergraduate student affairs, issues and lifestyles. Considering this, it is easy to see how undergraduate advising is one of the most important and heavily used services within a school (Metzner, 1989). But what exactly does it mean to academically advise a student? Are there difference styles of advising? Is one style or method necessarily better than others? Do student needs play a large role in advising? Does the method or style of advising change depending on the situation that is presented to the advisor? All of these questions are important to consider as students often report that advising is one of the parts of higher education that they are most dissatisfied with (Allen & Smith, 2008), so knowing how to appropriately target student needs can help improve their overall experiences as an undergraduate and their overall satisfaction while earning their criminology and criminal justice degrees.

The importance of advising within the field of criminology and criminal justice has not really been commented on, so the focus of this paper will be threefold: first, different strategies of general undergraduate advising will be discussed, highlighting the advantages of different approaches. Second, different situations that arise in advising will be explored, showing how undergraduate advising must be flexible. Third, student expectations and needs will be introduced, giving undergraduate advising a purpose and goal to strive toward. Lastly, I will end this paper by applying the information presented to describe undergraduate advising strategies, situations, and student needs at a department of criminology and criminal justice at a large, public institution located within the Southeastern United States as an individualized case study.

Strategies in Advising

There are several different methods to advising students, but it should be noted that overall academic advising has three main goals: curriculum or what advising deals with, pedagogy or how advising does what it does, and student learning outcomes which is the results of advising that hopefully ends with student success (Campbell & Nutt, 2008). To achieve this objective, it is important to know how to appropriately reach a student and meet their needs. However, there are many different approaches to reach this goal, and this section of the paper will focus on all of these different advising methods.

The Prescriptive Advising Approach – Advising like a Doctor

The prescriptive advising approach is advising in its most basic form. It is an advisor-driven, outcome-oriented approach that focuses on the advisor telling the student what to do and then expecting them to take personal responsibility in accomplishing this goal (Smith, 2002). An analogy for this approach is that the advisor is acting like a doctor, giving the student a prescription or a
formula for success and expecting the student to follow the instructions to ensure the health of their academic success (Crookston, 1972). This approach is heavily influenced by the authority of the advisor and student responsibility for their actions, and it should come as no surprise that grades and classroom performance are of high importance in this method (Allen & Smith, 2008). Many functions of advising fall underneath the prescription advisor role such as informing students of their remaining coursework, speaking to students about their grades, helping students choose classes, informing them about minor and internship opportunities, and answering general questions that students may have. This approach is one that is straight-forward and focuses mostly on answering questions and providing information, but it can backfire by focusing too much on administrative tasks, reducing students to mere numbers or statistical data instead of recognizing them as human beings with human problems, ignoring overall student needs, and creating dissatisfaction when the prescribed answers given do not lead to a viable solution (Crookston, 1972).

The Developmental Advising Method – Advising like a Teacher

Widespread dissatisfaction with the prescriptive method of advising lead to the advent of the developmental perspective which views advising like a teaching or mentoring relationship (Lowenstein, 2005). This approach not only views the instrumental, administrative tasks of advising as being important, but also states that the advisor should consider the student’s life circumstances, their goals, and their individual abilities when establishing an academic plan (Crookston, 1972). To fully embrace the developmental approach, an advisor should realize that a student’s academic performance is tied to their life performance so personal, financial, and inter-personal relationships need to be taken into consideration to be able to advise students well (Propp & Rhodes, 2006). If the prescriptive advising method is one based on advisor authority, then the developmental perspective is one based on shared responsibility between the advisor and student – a collaborative and process-oriented approach that focuses on teaching students critical problem-solving skills and the self-reliance that they will need to survive in the “real world” outside of the environment of higher education (Smith, 2002; Propp & Rhodes, 2006).

The application of this holistic approach puts an advisor in the position of being a personal mentor and an academic counselor where one is technical enough about the academic requirements of the department and university but also takes a personal concern with a student’s life and their individual goals (Propp & Rhodes, 2006). This approach views advising as an engaging educational process where advisors guide students down the best path by setting expectations, providing support and feedback, and helping students gain skills that make them competitive in the workplace and in their personal and professional lives (Campbell & Nutt, 2008). This type of advising can be considered the gold standard of what advisors should aspire to when speaking with students; however, it can be hard to put into practice with limited time, money, resources and staff to meet the in-depth needs of hundreds to thousands of students that typical undergraduate programs have (Smith, 2002).

The Proactive or Intrusive Advising Method – Advising like a Prognosticator

The final method or strategy of advising is deemed the proactive method. What this method entails is that an advisor puts into practice consistent, concentrated efforts to reach out to students and get them in touch with the resources they need to succeed (Museus & Ravello, 2010). This method is also called intrusive advising because an advisor is intruding into a student’s personal space by sending them reminder messages for registration, having mandatory advising meetings, monitoring student progress, and sending alerts if a student is not performing adequately (Varney, 2007). This method is not “hand holding” as some have deemed it but rather a “pre-emptive strike” to catch problems before they happen and intervening in a way that motivates students to address these problems on their own (Propp & Rhodes, 2006). This approach is different than the prescriptive and developmental aspects of advising as not only are advisors encouraging and helpful but they make a deliberate attempt to initiate contact with students to make sure they are on the right path (Propp & Rhodes, 2006). The good thing about this method is that it brings together the best aspects of the
prescription and developmental methods, allowing advisors to pay attention to students as a whole and being especially aware of student needs and predicting instances where a student might be struggling and in need of assistance (Varney, 2007). The proactive approach can be a good method to keep in contact with students, push them to stay connected with campus resources and seek out help if they need it, and make them accountable for their academic progress, but it can be hard to know when to contact students and how to step in and push students to seek the help they need before it is too late to fix whatever problems they have gotten themselves into (Varney, 2007).

Situations

While the different advising strategies give a general overview of how an advisor is expected to behave, supply basic information pertaining to higher education and obtaining a college degree, and meet student needs, they do not necessarily address the specific different situations that an advisor may run into. Academic advising is often the only structured environment that students will encounter while being an undergraduate (Propp & Rhodes, 2006) so it is important to know how to respond appropriately when different situations present themselves. In this section, I will cover some of the basic student situations that an advisor may encounter and have to adjust their advising style to.

The Distance Learning Student

Distance learning is a special type of education that allows a student to attend classes online in a digital forum that mirrors an in-classroom experience (LaPadula, 2003). 62.5% of higher education institutions currently offer an open online forum that allows a large number of students to earn their entire degrees digitally, and 32% of students report having taken at least one online course (Allen & Seaman, 2013). Online education is still a new horizon however as many higher education institutions report being unsure about its viability or the ability of distance learners to match the performance of on campus students (Allen & Seaman, 2013; LaPadula, 2003). However, there may be many reasons why a student chooses to be a distance learner ranging from physical distance to military service and family obligations, but the fact remains that having a viable online program opens up many opportunities for students that would be otherwise be excluded from the traditional four-year on-campus college experience (O’Lawrence, 2006). However, with a new digital forum comes new challenges as technology makes it easier to become impersonal and a lack of student services online can make distance learning students more isolated (Smith, 2002; LaPadula, 2003). The methods that best accompany distance learning are the prescriptive and proactive approaches which allow problems to be stemmed off and addressed before they can happen and for the student to have access to a support network specifically designed for distance learners to ask questions of advising. There appears to be a direct correlation between the quality of advising received and the performance of distance learners (LaPadula, 2003), so quality advising in this situation is a must for these students to excel.

The Adult Student

Just as distance learning is making its mark on the changing landscape of higher education, the average composition of the student body is shifting to accommodate our changing time. This change primarily makes itself seen through the influx of adult students which now make up 40-45% of students enrolled as undergraduates and whose enrollment may one day overtake their younger, more traditional counterparts (Donaldson & Graham, 1999; Stein & Wainstreet, 2006). The adult student is also a special sub-category under distance learning as many distance learners tend to also be adults already working in their professional fields but just seeking more education either for shifting careers or advancement in their current ones (O’Lawrence, 2006; Stein & Wainstreet, 2006). This population can present a problem for advising as adults coming back to college may feel marginalized, left out of the college experience, are not in the habit of coming to campus when they experience an issue, and may have different life problems and situations than the majority of younger, traditional students (Donaldson & Graham, 1999; Stein & Wainstreet, 2006). These students may need a more...
developmental approach from advising as their life experiences and problems shape their educational desires, experiences, and intellectual growth as a student (Bland, 2003). Having a caring and thoughtful advisor that is available to lend extra support, point out proper resources, and offer concrete solutions to their problems helps adult students more easily adjust to the educational landscape especially if they are also in distance learning (O’Lawrence, 2006; Donaldson & Graham, 1999).

Racial and Ethnic Minorities

Most college mission statements embrace a spirit of diversity and acceptance, and recruitment patterns are put in place that encourage under-represented populations of different races, genders, and ethnicities to apply to their local colleges and universities. However, there are several barriers that impact racial and ethnic minorities from seeking out higher education, most of them being financial in nature (Kao & Thompson, 2003). Racial and ethnic minorities tend to also be predominantly first-generation college students, so they may come into the college environment without the familial support and financial support needed to succeed nor have knowledge of resources on campus that can help them adjust (McCarron & Inkelas, 2006). The feeling of being a fish out of water can make racial and ethnic minority students feel unprepared overall for the college environment and less attached to their college coursework and less engaged with their academic performance (Johnson, Crosnoe, & Elder, 2001). Being a racial and ethnic minority especially at a predominantly white university can put these students at a disadvantage from an advising perspective. Concerted efforts must be made to be inclusive and sensitive to diversity and issues of race (Museus & Ravello, 2010). Some students might feel marginalized and misunderstood especially if they are a first-generation student (McCarron & Inkelas, 2006). In this situation, a more holistic approach to advising seems to work as it acknowledges a student’s needs and individualized situation when coming up with an academic plan. Some proactive advising skills might also come in handy when dealing with racial and ethnic minority students as it can be a tool to keep them on track and put them in touch with resources like scholarships and internship opportunities that can positively shape their undergraduate experience (Museus & Ravello, 2010).

The At-Risk Student

Despite students possessing high aspirations of educational success, many of them often encounter problems early in their academic careers (Kao & Thompson, 2003; Choy, Horn, Nunez, & Chen, 2000). Of the students that attend college, 57% leave without ever completing their degree and 75% of students drop out within their first two years (Mattson, 2007). This situation becomes even more urgent upon realizing that one of the best predictors of retention rates are first semester and first years grades (Mattson, 2007). The at-risk student is perhaps the most special situation that an academic advisor can encounter. This student is one who is usually on academic probation or at risk of being dismissed from the university. Additionally, having this status also makes students less likely to seek out advising help from their instructors or from advising staff, leaving them to fall behind until it is too late to amend the problem (Vivian, 2005). Meeting the needs of this student can be a challenge, especially as many of them are in this position due to financial, personal, or other life circumstances (Kadar, 2001). Many of the groups that are discussed earlier in this paper are at a higher risk of being an at-risk student simply through a lack of support systems in distance learning, academic planning, life circumstances, and financial ability (McCarron & Inkelas, 2006; Kao & Thompson, 2003; Bland, 2003; Choy et al., 2000). However, the proactive or intrusive advising method has been shown to be the single best method of helping the at-risk student (Varney, 2007). This method mostly works by alerting the student to their status, working to find what is causing the problem, and then directing the student to the best intervention to address the problem (Varney, 2007). The at-risk student is often unprepared academically (Vivian, 2005), so being able to target these students can be essential in guiding them to the correct courses and giving them the parameters they need to succeed.
Student Needs and Expectations

The basic purpose of advising is to assist students and meet their various needs (Propp & Rhodes, 2006); however, knowing exactly what students want and need is not always an easy task. Students can often be unrealistic in their expectations of advising which may explain why they are often dissatisfied with the advising they have received and are more likely to blame advising when situations do not work out as academically planned (Boers, 2001; Allen & Smith, 2008; Crookston, 1972). Students can be best seen as customers of academic advising as they pay tuition and expect certain services in return from the university (Boers, 2001). Many colleges are attempting to adjust their advising departments to meet student needs like by offering web-based advising, extended hours, and drop-in/walk-in advising to make advising a convenient service (Propp & Rhodes, 2006). Additionally for many students, speaking with an academic advisor is often the only official form of university representation that they come into contact with, so knowing how to effectively and efficiently advise students can help get them on the right track early and stay on that track in order to graduate (Light, 2001; Smith & Allen, 2014).

However, student behaviors and expectations can present a problem for advisors based upon how students expect them to behave and present information. Students often expect advisors to be warm, flexible, available, business-like, caring, knowledgeable and able to handle problems at a moment’s notice (Lowenstein, 2005). Students also typically expect advisors to not only advise them but to guide them in their academic and life course development (Newton, 1998). The information that an advisor is supposed to be responsible for and cognizant of falls around knowing university timelines and required coursework, referrals to proper campus resources, a student’s life goals and how they can be integrated into their academic programs, an individual’s personal, financial, and emotional situations when advising, and allowing a student to share responsibility for their academic success (Smith & Allen, 2014). Students prefer advisors who are mostly prescriptive when giving out the information they need, but they expect that advisors will also take a developmental approach when planning their academic progress and treat them as human beings, not as statistics in a college program (Smith, 2002). What a student ultimately wants from an advisor, however, can differ depending on what they are trying to achieve in college (ie. career development versus merely passing courses) (Alexitch, 2002).

Some individual characteristics of students (such as education level, race, age, sex, and academic performance) can inhibit students from seeking help from advisors (Alexitch, 2002). There are two different forms of student behavior: adaptive behaviors and non-adaptive help-seeking behaviors (Newton, 1998). What these behaviors mean is that some students may naturally seek out formal undergraduate advising in order to give them an advantage in their academic performance while other students may rely on informal sources such as their fellow students in order to inform their academic process, the classes to take and avoid, and to glean what they need to succeed in college. This distinction is important because students who seek help from advising tend to perform higher on academic and institutional outcomes than students who do not seek out help; these students were also more likely to persist in their programs (Smith & Allen, 2014). Students who rely on informal sources may receive inaccurate information, take the wrong courses, and fall behind in their projected paths to the point where they simply drop out and quit rather than attempt to start again in their programs (Smith & Allen, 2014). Advisors are one of the most crucial factors when it comes to student retention and graduation (Metzner, 1989), so being able to adequately address student needs is an important part of ensuring a program’s overall success.

An Academic Advising Case Study

I’ll now take the opportunity to apply what I’ve presented within this paper to an individualized case study – undergraduate advising and student services within a criminology and criminal justice department at a large, public institution located in the Southeastern United States. This particular department was chosen for two reasons: 1) it has been steadily growing over the past
five years and 2) it has received national recognition for both its online and campus programs. Currently it is responsible for 1,654 undergraduates pursuing a major in criminology and criminal justice, and this department offers several opportunities for students in terms of scholarships, internships for academic credit, and graduate education. The staff in this department, in comparison to the student load, is quite small with four individuals taking up the reins of undergraduate advising, two individuals being available for graduate advising, and one person being in charge of internships. Though it seems like this is a lot for a crew of so few people, this department has a very supportive environment of administrative staff in terms of a program director, an office manager, a social media organizer, a course planner and scheduler, a budget and official management specialist, and an IT professional.

The data for this case study were taken from personal observations of working with students and speaking with the advisors in this department for over the course of two years. I am merely describing the experiences of advising within this department of criminology and criminal justice to demonstrate how it relates to advising as a whole; I am not attempting to generalize the experiences in this department to all other advising departments in criminology and criminal justice as some case studies advocate (Gerring, 2004). All departments experience unique challenges that make them different from one another and how they apply their advising styles. One unique aspect of this department which could explain its high level of office support and organization is that it is both a department and a college, so many of the services that would be provided by different offices at other colleges are covered within the same area here. This distinction makes the job of advising here much more difficult, so flexibility, consistency, and organization become important parts of this job in helping students. In following this department for over two years, it definitely becomes apparent how much hard work goes into its day to day operations.

**Strategies of Advising within Criminology and Criminal Justice**

When it comes to strategies of advising, an advisor must wear many hats, so the methods used to help students changed depending on the situation that advisors encountered. Most students expected a prescriptive method of advising where they simply asked questions about what classes to take, how many credits they had remaining, if the coursework they took at other colleges or universities counted for this program, how to register for the classes they needed, and basic information about pursuing a second major, a minor of interest, a dual degree, or an internship for academic credit. The concerns of these students appeared to often be addressed quickly and efficiently, but the majority of advisors noted that they seemed to take much more responsibility for a student’s welfare than they took for themselves. Some of this added responsibility comes from the fact that this is a smaller department and the administrative and advising tasks are handled by the same individuals, but students often expect these advisors to be chief problem-solvers for any unexpected situation or to resolve conflicts that they had with professors over teaching styles, grades, and availability.

But not all the advising here was prescriptive in nature. Developmental strategies came into play especially when a student was discussing a career path, an internship for academic credit, or if they want to pursue additional education beyond a bachelor’s degree in the criminology and criminal justice field. It becomes especially important in these cases to understand a student’s life circumstances and how they can shape their educational experiences in order to advance them successfully to where they want to be, especially in cases of federal employment which requires a clean background check, a dedicated work history, and a high GPA. The internship coordinator at this department is especially proficient with developmental advising as they work diligently to get students placed in positions that are going to best help their career goals. This individual is also a pre-law and federally certified advisor, and many students came in with questions about both of those areas that were easily able to be addressed. This advisor often has the difficult position of giving students a “reality check” when their career desires do not exactly match up with their academic performance or their personal willingness to engage in the career. This advisor informed me that this disconnect happens often for students who wish to be federal agents, but yet do not want to be involved in
violence or pointing a gun at someone as law enforcement might have to do. The undergraduate advisors themselves were also quite proficient at developmental advising as they were often expected to counsel or talk students through their various life situations. Though this role made some of the advisors uncomfortable, they were able to use their knowledge of campus resources to help get students in touch with the help they needed.

Proactive or intrusive advising was also apparent in its use within this department especially for new transfer students, prospective students, newly admitted students, and at-risk students. For transfer students, a mandatory orientation was held where they were filled in on university requirements, how to search for classes, what classes were needed to graduate, and what courses transferred. Advisors showed students step-by-step how things worked at this university so that they could avoid costly financial and academic mistakes before they occurred. The internship coordinator would also speak at these orientations to let students know what options were available career-wise for them, especially as the transfer students were already upper division students and did not have to work through liberal study requirements upon transfer. At-risk students seemed to be a little more tricky and difficult to deal with for advisors often because these students were dealing with life problems and circumstances that have detrimentally affected their academic standing. These students tended to take a lot more of an advisor’s time to deal with, and many advisors noted that they felt emotionally drained and frustrated trying to address the problems of these students. Some advisors felt powerless in certain situations because their hands would be tied due to university rules and departmental requirements, and the students were more likely to get upset or become dissatisfied in these situations. This department though would still use proactive advising techniques to let these students know they were at-risk, either by informing them of their academic probation status or alerting them to departmental requirements for D and F grades in criminology and criminal justice courses. These methods would often alert students to the risks they faced (dismissal from the major or the university or both) and would prompt students to come into advising for assistance with their life circumstances and academic issues.

Situations in Advising within Criminology and Criminal Justice

When it comes to different situations in advising, this department encountered all of them and had to adjust their advising styles to match the situation. The advisors stated that distance learning students were a different type of student – one that needed more attention due to their disconnected nature. Many of these students tend to be professionals working to advance their positions within law enforcement or corrections or they had family and work obligations that made it hard for them to be a traditional student. Many distance learning students in this program are also adults with families, so they tended to have a different maturity level than main campus, younger students. Phone and email support for distance learning students who might not otherwise have access to traditional advising was provided by this department, and an online orientation is required by this public institution’s distance-learning office for online students. There are also several support services and resources available digitally for distance learning students at this public institution. The advising and administrative staff within this department is composed of several different racial, ethnic, social, and age backgrounds to help adult students and students who are racial and ethnic minorities adjust to college. Having a diverse array of life experience within this department seemed to help these advisors relate to their students’ needs more efficiently and effectively give them advice on what resources they should look into or academic paths they should take. Lastly, in-depth services for students who are at-risk either on academic probation or dismissed from the university were provided by this department on a case-by-case basis in order to make students aware of options that are available to them and to explore every route that can be taken to ensure a student’s success.

Student Needs within Criminology and Criminal Justice

As I stated earlier, advisors are expected to wear many hats and address many different areas of student need. One moment a student could ask for basic information; the next a student could
expect counseling and for an advisor to provide advice on a chosen career path. According to the advisors in this case study, some students expected to be coached about the rest of their lives or have entire academic paths mapped out for them that included post-undergraduate education. Obviously such differing needs from a student body can prove to be quite the challenge to even the most seasoned advisor, and no amount of preparation can help an advisor adequately address all the needs of students that come through their door. However, many advisors within this department note that it is their jobs to help serve students and something they pride themselves upon. Many of the students that come to advising within this criminology and criminal justice department are practicing help-seeking behaviors, and they want to make sure they’re on track for graduation or preparing adequately for further education or their work experience. But traffic on an average day in undergraduate advising for this department is about 15 to 25 students, so many of the 1600 students in this department do not contact or seek out advising help unless they have an issue or are in academic or personal distress. It is for these students that the proactive advising methods can be and do prove to be so helpful. For this department, if a student has made a concentrated effort to contact them, show up to office hours, or reach out through email or telephone, they will do everything in their power to meet their needs. Like any department, efforts to be more efficient, consistent, and connected could be made when meeting student needs, but with their growth, adjustments in advising styles and situations are slowly being made to better accommodate their students.

**Conclusion**

Undergraduate academic advising is one of the most important indicators of academic success for undergraduate students (Metzger, 1989), and this statement becomes no less important for the field of criminology and criminal justice. However, academic advising is also one of the more underappreciated positions on campus (Light, 2001), and many of the advisors in the case study department noted this fact by stating that they wished students would have more respect for what they do and that they would respond with maturity and diligence when it comes to their academic success. Advising in criminology and criminal justice takes on different meanings when considering the expanding platform of distance learning and the educational needs of individuals already working in the criminal justice field but wanting to advance their careers. Unfortunately, our field is one that is plagued by “sexy” misinformation on prime time television docudramas, so the jobs of advisors and internship coordinators in particular are to challenge the “reality” versus “fantasy” of criminal justice career opportunities. However, it is easy to see how advising in this field is very similar to advising in other higher education fields: the purpose of advising is ultimately to serve students and make sure their needs are being met in order to produce successful graduates that can enter the workforce and make a difference in society. To this end, the advisors of this case study fulfill their purpose well and continue to help students within their growing and successful department.

**References**


Life Skills from the Perspectives of Classroom and Science Teachers

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Abstract

The aim of this study is to determine classroom and science teachers’ views about life skills. The study employed phenomenological method. The participants of the study were 24 teachers; twelve of them were classroom teachers and the remaining were science teachers. They were working at public schools in Turkey. The participants were selected using the maximum variation sampling technique. The data of the study was collected through focus group interviews. Six focus group interviews consisting of four participants per focus group were conducted. The findings of the research showed, teachers play a significant role in the process of acquiring life skills. Furthermore, teachers expressed that science courses were significant setting to teach life skills. In the current research it was found that the participants used some in class and extracurricular activities to teach life skills. In addition, teachers expressed that they experienced difficulty in teaching life skills due to problems related to teachers, parents, school, educational program, educational system, school management and society.

Keywords: life skills, classroom teachers, focus group, science teachers, and curriculum

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Introduction

The Turkish Language Society defines a skill as follows: a skill “refers to one’s ability to achieve and complete any action in accordance with the goals based on his information and competency” (www.tdk.gov.tr). Life skills are among the most significant skills for individuals. The World Health Organization (WHO, 1999) argued that there are many skills which can be regarded as life skills and that the nature and definitions of them may vary from one culture to another. On the other hand, there are numerous definitions of life skills (Hodge, Danish and Martin, 2013). For instance, life skills have been defined as “the abilities for adaptive and positive behaviour that enable individuals to deal effectively with the demands and challenges of everyday life” (WHO, 1999). Similarly, Kennedy and Pearson (2014) stated that life skills are competencies needed by individuals to maintain and enrich their daily life.

The WHO classified life skills into three major categories representing ten skills (WHO, 1997). Table 1 shows these skills together with the related category.

<table>
<thead>
<tr>
<th>Table 1. The WHO classification of life skills (WHO, 1997)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication and Interpersonal Skills</td>
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<td></td>
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<tr>
<td>Decision Making and Critical Thinking Skills</td>
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<td></td>
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<tr>
<td>Coping and self-management skills</td>
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</tbody>
</table>

In Uganda the basic education program has a three-category classification of life skills (CCert, 2014). This classification is somewhat different from the classification given above (WHO, 1997). It was reported that this difference resulted from country-specific and region-specific differences (Jayaram and Engmann, 2014; WHO, 1996). Table 2 gives the classification of life skills by the Uganda basic education program.

<table>
<thead>
<tr>
<th>Table 2. Classification of life skills by the Uganda basic education program</th>
</tr>
</thead>
<tbody>
<tr>
<td>The skills of knowing and living with one-self</td>
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<tr>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td>The skills of knowing and living with others;</td>
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<td>Skills of making effective decisions</td>
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</tbody>
</table>

In Turkey life skills have been included in the primary school education program and secondary education program through the revised science teaching program since 2013. As it is known, this program began to cover both the third and the fourth grades of primary education.
Life skills have become a significant part between attainments of educational programs (Mutluer, 2013). The content of educational programs should be organized in a way to improve children’s life skills (Sharma, 2003; CCert, 2014; Roselyne, 2014). As stated above, since 2013, the science course at the third and at the fourth grades has involved life skills. In previous science teaching programs, there was no learning domain related to life skills. Related learning domains were added by the science program, which was revised and became effective in 2013. In parallel to this new learning domain, one of the goals of the science education program is for students to assume responsibility for daily problems and employ the life skills taught in science courses to solve students’ problems (MONE, 2013a: 1). On the other hand, the units related to life skills covered in science courses are as follows: “Living beings and life”, “Matter and Change”, “Physical events” and “The World and the Universe” (MONE, 2013a: 4). Table 3 presents the learning domains covered in the revised science education program (MONE, 2013a: 4).

Table 3. Learning domains covered in the revised science education program

| Knowledge | a. Living beings and life  
| b. Matter and Change  
| c. Physical events  
| d. The World and the Universe |
| Skills | a. Scientific process skills  
| b. Life skills  
| - Analytical thinking  
| - Making decisions  
| - Creative thinking  
| - Entrepreneurship  
| - Communication  
| - Team work |
| Affective domains | a. Attitude  
| b. Motivation  
| c. Values  
| d. Responsibility |
| Science-Technology-Society-Environment | a. Socio-scientific topics  
| b. The nature of science  
| c. Relationship between science and technology  
| d. Contribution of science to society  
| e. Awareness on sustainable development  
| f. Science and career awareness |

As can be seen in Table 3, life skills covered in the science course are analytical thinking related to accessing and using scientific knowledge, decision making, creativity, entrepreneurship, communication and team work (MONE, 2013). Each of these skills are unpacked below.

**Analytical thinking**: Analytical thinking refers to informed guiding of mental processes in the cases of problem-solving and decision making (Stenberg, 2002). Those individuals with this skill know the major components of any problem in order to solve it and think about the characteristics of the problem (Malloy and Jones, 1998). Analytical thinking can be exemplified with an analogy to the work of mechanics. A good mechanics is familiar with the function of each part, but also takes into consideration how all the parts work together simultaneously (Dewey, 2007).

**Decision making**: Decision making refers to those skills which help individuals make choices in their daily (WHO, 1997). The decision making process consists of four steps: identifying the goal, developing alternatives to reach the goal, ordering the alternatives based on their relative importance, and choosing the most important alternative (Brynes, 2002). Those individuals with good decision making skills can evaluate the alternatives they have for their goals.

**Creative thinking**: Creative thinking is the ability to think intensively and in various forms (WHO, 1993). Creative thinking contributes to individuals’ decision making skills and problem-solving abilities.
solving skills in that it allows individuals to find out the results of their actions and to discover the existing alternatives (Erawan, 2010). Creative individuals can define a problem, believe in their ability to solve the problem, think in a logical way, synthesize prior and novel ideas, and develop totally new ideas (Starko, 2004).

**Entrepreneurship:** Entrepreneurship is defined as discovering opportunities in many fields (Reynolds, 2005). It also refers to dealing with an activity, organizing the necessary sources to enter a job, and assuming a responsibility over the risks and failure because of the activity (Kesim, 2010). It is very important to produce entrepreneurial individuals. During these processes teachers, parents, and education play a significant role (Polat and Aktop, 2010).

**Communication:** Communication can be defined as a process in which an individual expresses and communicates his or her feelings, views and information using common symbols to others (MONE, 2014). Efficient communication may be in the form of verbal or non-verbal communication based on cultural norms and specific conditions (WHO, 1997). Like it does in other fields, communication has an important role in science. Frequent ways of communication in science include verbal narrations, written statements, graphics, charts, symbols, diagrams, equations, and visuals (Dökmeci and Ozansoy, 2004).

**Teamwork:** Team refers to a small group of people who work towards a common goal dealing with an activity and share a common approach (Straub, 2002). Teamwork is necessary to have more productive outcomes. In team work, synergy occurs as a result of a collaborative work effort of the team (Ilhan and İnce, 2015).

**Research Focus**

Both classroom teachers and science teachers are expected to make it possible for students to acquire these skills given above. Society needs individuals who efficiently employ the skills of lifelong learning (Soran, Akkoyunlu and Kavak, 2006). Individuals’ success in various fields requires them to efficiently use life skills. Therefore, it can be argued that those individuals with life skills have advantages (Carroll, 2007). For instance, CCert (2014) stated that those individuals with life skills play an active role in accessing information. In addition, it is reported that those with life skills have personal skills, including self control, and emotional regulation as well as the skills needed to learn, including attentiveness, eagerness to learn, and concentration (Chien, Harbin, Goldhagen, Lippman and Walker, 2012). As stated earlier, life skills may vary based on cultural norms (Erawan, 2010). Thus, in each country different life skills may be encouraged and reinforced. On the other hand, life skills are not needed only in schools and formal institutions, but also in numerous settings (Botvin and Kantor, 2001). Therefore, individuals are expected to employ life skills in all fields. As mentioned above, the revised science education program in Turkey emphasizes the significance of life skills for students and the program includes numerous activities that are designed to improve life skills (MONE, 2013).

It is stated that teachers have a significant role to play in the process of life skills teaching (CCert, 2014). One of the ways to teach life skills is to avoid negative acts and to encourage positive acts among students increasing their future expectations (Ibarraran, Ripani, Taboada, Villa and Garcia, 2014). It is reported that, during this process, teachers and parents should have a common understanding about life skills to foster the teaching of life skills (CCert, 2014; James, 2010). On the other hand, in many studies, teachers were found not to have any awareness of life skills (Sharma, 2003; James, 2010). In order to fill this gap, it is recommended that teachers should be educated about the significance of life skills through in-service training activities (CCert, 2014). It is also possible that pre-service teachers can be taught about life skills, because they will need such skills in their future profession in order to teach them to students. Therefore, teachers should have both information and skills regarding life skills and should employ teaching activities to improve life skills of students. There are some studies dealing with the factors affecting the acquisition of life skills. These factors include school, family, teacher, educational programs and society (CCert, 2014; Chien, Harbin,
Goldhagen, Lippman and Walker, 2012; Sharma, 2003; Parvathy and Renjith, 2015). Given that teachers are instrumental in teaching life skills, their views about these skills are significant in identifying the needs of teachers in teaching life skills. Therefore, this study provides an insight about which activities can be carried out to teach life skills to pre-service teachers and teachers through teacher training programs and in-service training programs, respectively.

In Turkey there is a study investigating the views of science teachers about life skills (Özdemir, 2015). Given that such studies are not frequent, the views of teachers about life skills should be further analyzed. In light of this view, the aim of this research is to identify classroom teachers’ and science teachers’ views on life skills. To this end, the study addresses the following research questions:

According to classroom and science teachers,

1) What do life skills mean?

2) Which life skills should be acquired by students?

3) Why is it important to teach students life skills?

4) How effective is science curriculum in helping students acquire life skills?

5) What kind of activities and sources are used to teach students life skills?

6) Which roles are played in teaching life skills?

7) How competent are they with teaching life skills?

8) What are the problems in teaching life skills?

9) What are the solutions and expectations in teaching life skills?

**Method**

**Design**

The study was designed as a phenomenological research study. The basic goal of this design is to reveal the experiences, perceptions and meanings of individuals about a specific fact (Yıldırım and Şimşek, 2013). Such research defines the common meaning of the experiences about a phenomenon or a concept (Creswell, 2013). In phenomenological research, the focus is on how people perceive a phenomenon, how they make sense of it, and how they define it. In order to collect data, in such a research framework, in-depth interviews with individuals who experienced the phenomenon are needed (Patton, 2014). In the study, these components of the phenomenological research were employed. Figure 1 summarizes the process of the research.
Participants

The participants of the study were twelve classroom teachers working at six public primary schools and twelve science teachers working at three secondary schools during the school year of 2015-2016. Therefore, a total of twenty-four teachers took part in the study. The participants were chosen using the maximum variation sampling which is part of purposive sampling techniques. The goal in using the maximum variation sampling is to form a relatively small sample and to include those people who are related to the problem at hand (Yıldırım and Şimşek, 2013). In qualitative research several points are taken into consideration in identifying the sample size. Qualitative research may focus on the study of a single or more than one cases or the study of a single group with certain characteristics. The much data the less participants rule is generally followed. In this study a total of 24 classroom and science teachers was included in the sample (Yıldırım and Şimşek, 2013). The factors taken into consideration in choosing the participants were their professional experience, branch, educational background, and the socio-economic status of the school. Tables 4 and 5 present information about twenty-four participants using their code names.

Table 4. Information about classroom teachers participated in the study

<table>
<thead>
<tr>
<th>Code</th>
<th>Gender</th>
<th>Teaching experience</th>
<th>Teaching level</th>
<th>Educational background</th>
<th>Focus groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>İlker</td>
<td>Male</td>
<td>3</td>
<td>3</td>
<td>Graduate</td>
<td>1st focus group</td>
</tr>
<tr>
<td>Mesut</td>
<td>Male</td>
<td>9</td>
<td>4</td>
<td>Graduate</td>
<td></td>
</tr>
<tr>
<td>Halil</td>
<td>Male</td>
<td>7</td>
<td>4</td>
<td>Graduate</td>
<td></td>
</tr>
<tr>
<td>Furkan</td>
<td>Male</td>
<td>1</td>
<td>3</td>
<td>Graduate</td>
<td></td>
</tr>
<tr>
<td>Ziya</td>
<td>Male</td>
<td>21</td>
<td>4</td>
<td>Undergraduate</td>
<td>2nd focus group</td>
</tr>
<tr>
<td>Bahadır</td>
<td>Male</td>
<td>36</td>
<td>4</td>
<td>Undergraduate</td>
<td></td>
</tr>
<tr>
<td>Harun</td>
<td>Male</td>
<td>16</td>
<td>3</td>
<td>Undergraduate</td>
<td></td>
</tr>
<tr>
<td>Ali</td>
<td>Male</td>
<td>22</td>
<td>3</td>
<td>Undergraduate</td>
<td></td>
</tr>
<tr>
<td>Güiy</td>
<td>Female</td>
<td>22</td>
<td>4</td>
<td>Graduate</td>
<td>3rd focus group</td>
</tr>
<tr>
<td>Umay</td>
<td>Female</td>
<td>30</td>
<td>4</td>
<td>Undergraduate</td>
<td></td>
</tr>
<tr>
<td>Banu</td>
<td>Female</td>
<td>27</td>
<td>3</td>
<td>Undergraduate</td>
<td></td>
</tr>
<tr>
<td>Didem</td>
<td>Female</td>
<td>15</td>
<td>3</td>
<td>Undergraduate</td>
<td></td>
</tr>
</tbody>
</table>

As can be seen in Table 4, there were eight male and four female teachers. In terms of professional experience, four of them had 1-10 year experience, two 11-20 year experience, and six 21 year or more years of experience. All of them graduated from the department of classroom teaching. Seven participants had completed currently enrolled in undergraduate education and five had graduate education.

Table 5. Information about science teachers participated in the study
As can be seen in Table 5, there were seven females and five males. In terms of professional experience, one of them had 1-10 years of teaching experience, eight 11-20, and three 21 years or more. Five participants were the graduates of science teaching department, two were the graduates of physics department, four were the graduates of biology department and one was a graduate of a chemistry department. Ten of them had undergraduate education and two graduate educations.

Data collection tools

The data of the study were collected through a semi-structured interview form developed by the authors. The form included nine open-ended items. Semi-structured interviews allow for researchers to analyze the topics at hand in detail and to comprehend the answers (Harrell and Bradley, 2009). The items in the form were developed based on the review of literature. In order to establish internal and external validity the form was reviewed by seven specialists from the fields of educational programs and teaching, classroom teaching and science teaching. They were asked to review the form in terms of understandability of the items and of the consistency between the aim of the study and the content of items. Based on the feedback, four items were omitted from the form. Two of them were not regarded as consistent with the study aim and the other two were regarded as overlapping. The interview form with nine items was used in a pilot study on two teachers (one classroom teacher and one science teacher). The findings showed that the items were understood by the pilot study participants.

Procedure

Focus group interviews were used to collect the data of the study. The number of focus groups generally varied between four and eight people and the participants were asked to answer the questions. During the interviews the participants listened to one another’s answers and they could use others’ views to develop their own perspective (Fraenkel, Wallen and Hyun, 2012). In the study, there were six focus groups with four people. Interviews were carried out in six sessions at the schools where the participants were working. With the permission of the participants the interviews were recorded. Figure 2 presents the interview duration and date of each interview.

![Figure 2. Interview duration and date of each focus group interview](image-url)
Data analysis

The data obtained were examined through content analysis. Content analysis allows for in-depth analysis of the data and for reaching related concepts and themes. The analysis consisted of the following steps: coding the data, developing themes related to the codes, organizing and describing data based on codes and themes, and interpreting findings (Yıldırım and Şimşek, 2013). The interviews recorded were transcribed by the authors. The text was coded by the authors independently. The interrelated codes were categorized according to their similarities and differences. The researchers decided under which sub-themes the data were gathered and presented. Then, through combining these, sub-themes which were correlated with each other, were placed on main themes presented in broader dimensions. Consistency between the codes created by two researchers was calculated using the formulation: \[ \frac{\text{Agreement}}{\text{Agreement} + \text{Disagreement}} \times 100\% \] (Miles and Huberman, 1994). Accordingly, the reliability of the study was found out to be 0.97. The findings are given with the direct quotations from the statements of the participants.

Results

As stated earlier, the study aims at identifying the views of the science teachers and classroom teachers about life skills. The analysis provided nine categories of themes about the findings, each of which are given as follows. Table 6 provides these themes and subthemes.

Table 6. Themes and subthemes about the views of the participants concerning life skills

<table>
<thead>
<tr>
<th>Themes</th>
<th>Subthemes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definition of life skills</td>
<td>Ability to maintain quality life</td>
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<tr>
<td></td>
<td>Coping with difficulties</td>
</tr>
<tr>
<td></td>
<td>Transforming learning into acts</td>
</tr>
<tr>
<td>Life skills to be acquired by individuals</td>
<td>Decision making and critical thinking skills</td>
</tr>
<tr>
<td></td>
<td>Communication and interpersonal skills</td>
</tr>
<tr>
<td></td>
<td>Coping and self-management skills</td>
</tr>
<tr>
<td>Significance of having life skills</td>
<td>Quality people</td>
</tr>
<tr>
<td></td>
<td>Quality society</td>
</tr>
<tr>
<td>Science education program in improving life skills</td>
<td>Positive views</td>
</tr>
<tr>
<td></td>
<td>Negative views</td>
</tr>
<tr>
<td>Activities and sources for life skills</td>
<td>Classroom activities</td>
</tr>
<tr>
<td></td>
<td>Other activities</td>
</tr>
<tr>
<td></td>
<td>Sources</td>
</tr>
<tr>
<td>Teachers in the acquisition of life skills</td>
<td>Personal roles</td>
</tr>
<tr>
<td></td>
<td>Professional roles</td>
</tr>
<tr>
<td>Teachers in the acquisition of life skills</td>
<td>Competency</td>
</tr>
<tr>
<td></td>
<td>Parents</td>
</tr>
<tr>
<td></td>
<td>Teachers</td>
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<tr>
<td></td>
<td>Educational program</td>
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<td></td>
<td>Educational system</td>
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<tr>
<td></td>
<td>School management</td>
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<tr>
<td></td>
<td>Student</td>
</tr>
<tr>
<td></td>
<td>Society</td>
</tr>
<tr>
<td>Problems related to the acquisition of life skills</td>
<td>Teachers and parents</td>
</tr>
<tr>
<td></td>
<td>Student</td>
</tr>
<tr>
<td></td>
<td>Program, school and educational system</td>
</tr>
</tbody>
</table>

Findings about the definition of life skills
The findings showed that there are three subthemes related to the theme of the life skills definition: “Ability to maintain quality life”, “coping with difficulties” and “transforming learning into acts”. The categories related to these subthemes are given in Table 7.

Table 7. Subthemes about the life skills definitions and related categories

<table>
<thead>
<tr>
<th>Theme</th>
<th>Subthemes</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to maintain quality life</td>
<td>Socialization</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Developing goals</td>
<td></td>
</tr>
<tr>
<td>Coping with difficulties</td>
<td>Problem solving</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Entrepreneurship</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Critical thinking</td>
<td></td>
</tr>
<tr>
<td>Transforming learning into acts</td>
<td>Informed acts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Conscious acts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Observations</td>
<td></td>
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<tr>
<td></td>
<td>Search</td>
<td></td>
</tr>
</tbody>
</table>

As can be seen in Table 7 the participants defined life skills as an ability to maintain quality life, as skills to coping with difficulties and as skills to transform learning into acts to be used in daily life. Of these three definitions, those defined life skills as an ability to maintain quality life included efficient communication, self-reliance, expressing one’s own ideas, socialization, efficient time management, having values, living in a planned way, setting goals and empathy-related skills. One of the participants stated “I think individuals should have certain skills to improve the quality of their life. Socialization is another need for individuals. Unsocial individuals lack certain skills. They could have quality life. For example, critical thinking may help us in daily life related to consuming goods and developing ideas. For instance, skills such as entrepreneurship are needed to have quality life.”

Some of the participants defined life skills as having an ability to solve the problems they come across. It included the skills concerning problem solving, decision making, entrepreneurship, critical thinking and research. One of the participants who produced this definition, Mesut, reported “life skills can be defined as those with which students need to solve the problems in their daily life.”. Another one, Yonca, pointed out “..(these skills) refer to generation of potential solutions when any problem occurs.”

There were other participants who defined life skills as using the learning in daily life. One of the participants, Kenan, stated “They should apply what they learned in the course in daily life. In other words, they should relate their learning to daily life.” and another one, Reyyan, reported “Students with life skills are conscious, informed, can make search and observation and set goals as well try to achieve his goals.”

Findings about life skills to be acquired by individuals

The theme of life skills to be acquired by individuals was discussed by the participants under three subthemes: “Decision making and critical thinking skills”, “communication and interpersonal skills” and “coping and self-management skills”. The categories related to these subthemes are given in Table 8.
Table 8. Necessary life skills for individuals

<table>
<thead>
<tr>
<th>Theme</th>
<th>Subthemes</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decision making and critical thinking skills</td>
<td>Problem solving</td>
<td>Decision making</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Critical thinking</td>
</tr>
<tr>
<td>Communication and interpersonal skills</td>
<td>Communication</td>
<td>Empathy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cooperation and teamwork</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Entrepreneurship</td>
</tr>
<tr>
<td>Coping and self-management skills</td>
<td>Self-reliance</td>
<td>Managing stress</td>
</tr>
</tbody>
</table>

As can be seen in Table 8, the participants provided three subthemes related to life skills to be acquired by individuals: “decision making and critical thinking skills”, “communication and interpersonal skills” and “coping and self-management skills”. For them, thinking skills that are concerned with life skills included problem solving, decision making and critical thinking. One of the participants, Mesut, stated “Life skills, as mentioned in science courses, include decision making, science course focuses on socialization and applicable topics”; another one, Halil, reported “Life skills remind me of critical thinking. For me the ability to eat and drink is also a life skill. For instance, how can we feed ourselves in a healthy way? While teaching such topics in science courses we emphasize critical thinking”; and another participant, Sema, argued “We would like produce those individuals who can solve problems. It is one of our basic goals in courses. Students should generate solutions and should not be those who cannot solve problems.”

There were other participants who regarded communication and interpersonal skills as part of life skills. For instance, Banu, stated “As part of society people should have good relations with other people. I think that people should have effective communicative skills to this end.” Mete, stated ”when students have problems with their friends in classroom they should take into considerations the perspectives of their friends. Therefore, I attach importance to my students’ empathy skills.” Gamze, stated “for instance, in science course I employed collaborative teaching strategy in laboratory studies about power and movement in order to reinforce team work skills of students.” Funda, stated “I guide my students in reinforcing their entrepreneurship skills. For instance, they can tell their desires to school administrators. Or they can work with senior students in student clubs.”

Some participants argued that certain coping and self-management skills such as self-reliance and managing stress are part of life skills. For instance, Gül stated “self-reliance, he must express his own ideas. Children may be very successful in the course, but they may lack self-confidence.” Fuat stated “as you know our education system is examination-oriented. Therefore, we should reduce their anxiety about exams. Thus, they can be more successful if they learn to cope with this stressor.”

**Significance of having life skills**

The findings showed that the participants produced two subthemes related to the theme of the significance of life skills: quality people and quality society. Table 9 presents the categories related to these subthemes.
As can be seen in Table 9, the participants reported that the significance of having life skills is about both quality people and quality society. In other words, for them having life skills leads to quality life for individuals and to quality society. It can be argued that those individuals with life skills have acquired the skills concerning lifelong learning, survival, assuming responsibility, setting goals and decisions making.

Yonca emphasized the importance being individuals who learn throughout life and who are responsible citizens and said “in the classes we emphasize that they should be open to learn weverftime. They will assume responsibility of their learning in this way.” Kemal stated that those individuals with life skills can survive and live a quality life and reported “students should solve daily life problems using the information they learned in science courses. It helps them in surviving and in having a happy and quality life.” One of the participants who also reported this view, Harun, pointed out “Thirty years ago companies looked for those people who had good command of foreign languages and a successful undergraduate education. However, now companies are looking for those who have good communication skills, problem solving skills. Previously being a graduate of the physics engineering department of a good university was enough to find a job in Turkey or abroad. It is not true now. Although these are prerequisites, they should be additional qualifications such as problem solving skills, communication skill, and entrepreneurship.”

The participants also stated that those individuals with life skills contribute to societal development and to interpersonal communication. For instance, Mesut pointed out “If children do not acquire life skills at home they cannot adapt to society. Therefore, they may have problems in communication, decision making. In fact, any children lacking these skills cannot be successful at secondary school, become introverted and cannot be active in the learning process. Therefore, teaching life skills in science courses is very significant for individuals to have healthy social relationships”.

Findings about the role of science education programs in improving life skills

About the theme of the role of science education program in improving life skills two subthemes, namely positive views and negative views, appeared. The categories related to these subthemes are given in Table 10.

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**Table 9. Significance of having life skills**

<table>
<thead>
<tr>
<th>Theme</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significance of having life skills</td>
<td>Lifelong learning</td>
</tr>
<tr>
<td></td>
<td>Assuming responsibility</td>
</tr>
<tr>
<td></td>
<td>Survive</td>
</tr>
<tr>
<td>Quality people</td>
<td>Quality life</td>
</tr>
<tr>
<td></td>
<td>Happy life</td>
</tr>
<tr>
<td>Quality society</td>
<td>Societal development</td>
</tr>
<tr>
<td></td>
<td>Interpersonal communication</td>
</tr>
</tbody>
</table>

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**Table 10. Role of science education program in improving life skills**

<table>
<thead>
<tr>
<th>Theme</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science education program</td>
<td>Spirality</td>
</tr>
<tr>
<td></td>
<td>Connections to daily life</td>
</tr>
<tr>
<td></td>
<td>Extracurricular activities</td>
</tr>
<tr>
<td></td>
<td>Improving the skills to make search</td>
</tr>
<tr>
<td></td>
<td>Directing to primary sources</td>
</tr>
<tr>
<td>Positive views</td>
<td>Information overload</td>
</tr>
<tr>
<td></td>
<td>Examinations</td>
</tr>
<tr>
<td></td>
<td>Intense gains</td>
</tr>
<tr>
<td>Negative views</td>
<td></td>
</tr>
</tbody>
</table>
As can be seen in Table 10 the participants developed two subthemes with regard to the role of science education program in improving life skills. The majority of the participants regarded the new science education program as positive and efficient in terms of the acquisition of life skills due to the fact that the program has a spiral nature, has gains related to daily life is supported by extracurricular activities, among others. One of the participants, Tayfun, reported “in science courses some topics are repeated. In a sense this repetitive pattern helps students to understand the topics better and to acquire the desired skills.”

Focusing on the efficiency of the program in terms of connections to daily life, Ümay argued “the program is really nice. It covers numerous interesting science topics. For instance, how things move, how a magnet attracts objects.”

Focusing on extracurricular activities included in the program, İlker stated “There are extracurricular activities about entrepreneurship. At the end of each unit, there is either an assignment or project work or an activity which requires students to produce something. Therefore, the science education program is really good.”

Reyyan reported that the program is very proper in terms of improving the skill to conduct research and of directing students to primary sources and her views are given as follows: “the program is very nice, since it has a goal of gaining the skill to conduct research. Students may visit physicians, medical institutions or talk to their parent to for information search. Teachers now do not give them all information.”

On the other hand, there were other participants who had some negative views about the program in terms of improving life skills. For them, the major problems are as follows: the program is still based on information provision, it still deals with preparing students for examinations and time constraints. Stating that the program covers many topics which should be delivered in a limited time period, Dilber argued “Although the science education program has a goal of teaching life skills to students there are serious problems in practice. We try to prepare students for examinations. Therefore, it is very hard to focus on teaching of life skills. Unfortunately, the education system heavily focuses on examinations. I would like to deliver science topic in a more flexible way, but it is not possible due to time constraints.” Another participant, Kenan, pointed out “Now we are following the revised science education program for the grades of 5, 6 and 7, that for the eight grade will be modified next year. For me the revised science program is still full of intensive topics. On the other hand, students are mostly studying for tests for TEOG, then how we can show students that science is life?.

Findings about activities and sources regarding life skills

Regarding the theme of activities and sources about life sciences, the participants produced three subthemes: “classroom activities”, “extracurricular activities” and “sources”. The categories related to these subthemes are given in Table 11.

<table>
<thead>
<tr>
<th>Theme</th>
<th>Subtheme</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activities and sources</td>
<td>Classroom activities</td>
<td>Team work</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Experiments</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Relations with daily life</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Giving examples form experiences</td>
</tr>
<tr>
<td></td>
<td>Extra curricular activities</td>
<td>Interviews</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Research and project work</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Visits</td>
</tr>
</tbody>
</table>
As can be seen in Table 12, the participants reported that they mostly make use of teaching activities, extracurricular activities, visits, and various sources such as to teach life skills. Regarding teaching activities about life skills they employed experiments, relating topics with daily life, peer education, demonstrating and doing, team work, examples from experiences and drama.

For instance, Furkan reported “I employ team work in activities to improve their life skills. For instance, in science courses, they designed materials related to a gain through cooperative learning method.”

In regard to using experiments and using daily life topics, he further stated “We try to make experiments. I want them to observe experiments. We have iron balls. I use them to teach them the effect of these balls on soil based on the length of fall. They can observe the amount of potential energy. Regarding kinetic energy, the temperature of ice does not change and they can observe it using thermometers.”

One of the participants, Kenan, reported that he employed the examples from significant figures: When Aziz Sancar was awarded Nobel Prize in chemistry a few months ago, the student interest in our course increased. His studies about structural damages in DNA and the cure of cancer attracted student interest. They asked many questions about these topics. I told them that they can also be like him if they study hard. Aziz Sancar became a good model. What Aziz Sancar did is an example of life skills.”

The participants reported that they realized extracurricular activities through interviews, project work and visits. Concerning interviews, the students were reported to talk to various professionals such as physicians, veterinarians, academics. For instance, Sema stated “there was an assignment to conduct an interview with a person who is experiencing kidney disease. One of the students conducted an interview with his aunt who was experiencing it and it was very nice.” Another participant, Mesut, reported “I assigned them a homework regarding asthma. They conducted a project with the assistance of related institutions and presented their work to the class. I think this assignment reinforced their entrepreneurship skills. More specifically, they improved the skills about how to talk to a person and how to ask questions. Then in the course, I organized activities to improve their critical thinking skills and creative thinking skills through brainstorming.” Another participant, Kenan, stated “I used an activity about body mass index and each student found the body mass index of their family members. They also developed graphics using these indices and presented their work to the class.” In addition, the participants reported to employing visits as an extracurricular activity to improve the life skills of students. The students visited with their teachers the following institutions: Solid Waste Center, Health Center, Meteorology, universities, Factory. For instance, Kamuran stated “We visited various institutions. With the seventh grade students we visited a solid waste center. Education may help students, to avoid wasting water and natural sources. They learned how waste water was cleaned, increasing their sensitivity.” Another participant, Reyyan, stated “We visited a science laboratory at the university, it attracted their interest. We also visited local medical center and meteorology. We visited meteorology in relation to the topic of climate. This visit made it possible for them to observe the measurement of weather conditions.”

The participants regarded the use of sources to improve life skills as using institutions, using technology and as inviting specialists. Institutions used by the participants as sources included medical centers, fire departments, forestry departments, meteorology and civil defense units. For instance, Mesut told “Last year I used materials produced by TEMA in the activities to show students living being and to improve their environmental sensitivity.” Another participant, İlker, stated “We need trees to use in the activity of tree planting. We applied for the forestry department to plant trees.” Oğulcan stated “We went to local medical center while teaching blood groups to learn their blood groups.”
There were a few participants who invited specialists to the classroom. They mostly invited physicians, academics and dentists. One of the participants, Bahadır told “Regarding health-related topics, I invited a physician. He gave students information. We also invited the mayor to provide information about local governments. The students asked many questions to these people.”

Some of the participants reported that they were using educational websites. It was found that such websites used by the participants to watch videos, animations and to use visuals, test items and experiments. For instance, Gül pointed out “I try to frequently use educational websites. It includes very useful videos, experiments and visuals about the science education program. These tools tell about daily life using various examples. The students like it very much.”

Findings about the role of teachers in the acquisition of life skills

Concerning the theme of the roles of teachers in the acquisition of life skills, the participants developed three subthemes: “personal characteristics”, “professional roles” and “competency”. The categories of these subthemes are given in Table 12.

Table 12. Role of teachers in the acquisition of life skills

<table>
<thead>
<tr>
<th>Themes</th>
<th>Subthemes</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role of teachers in the</td>
<td>Personal characteristics</td>
<td>Modeling</td>
</tr>
<tr>
<td>acquisition of life skills</td>
<td></td>
<td>Self-development</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Being open to new ideas</td>
</tr>
<tr>
<td></td>
<td>Professional roles</td>
<td>Guidance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Using various activities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Assigning responsibility</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improving students’ problem-solving skills</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Using collaborative activities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Organizing visits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Making connections with daily life</td>
</tr>
</tbody>
</table>

Table 12 shows that the roles of teachers in the acquisition of life skills by students are categorized into two subthemes: “personal characteristics” and “professional roles”. The participants argued that teachers should be models for students regarding life skills, including critical thinking, awareness and sensitivity about health-care and environmental protection, paying importance to recycling. Teachers should also improve their potential (through reading books and articles, having graduate education). Stating that teachers should be role models for students, Reyyan told “We are leaders and models for our students. So, we should have life skills before trying to improve the life skills of students. In order to improve life skills of students, we should introduce them problems. Therefore, they learn to solve the problems. It is also useful for them in their daily life.” Another participant, Sema, argued “We should be models for students. For instance I focus on recycling. They all know that I am very sensitive about it. I always put waste paper in recycling boxes. I also direct them to do the same. I always advise them to have breakfast before coming school. In this way, I am trying to be a model for them.” In order to improve their life skills, teachers should read articles about novel teaching methods and approaches, educational sciences and should update their knowledge base through graduate studies. For instance, Halil said “Teachers should avoid monotonous activities. In-service training activities can be designed to motivate teachers. Teachers should read articles or books about educational sciences and classroom teaching. It is certain that teachers should develop themselves and update their knowledge.”

The participants also reported that professional roles of teachers were also significant in terms of the acquisition of life skills of students. Such professional roles of teachers included guidance, using various activities, assigning responsibility, using collaborative activities, cooperation with parents, organizing visits, making connections with daily life and. The participants also argued that in order to improve life skills of students, teachers should employ cooperative activities, various in class and extracurricular activities, visits.
One of the participants, İlker, told “Life skills should not be developed by children themselves, they must be formally taught. Therefore, teachers should guide the work of students and improve students’ sense of responsibility through assignments and homework.” and therefore, emphasized the significant roles of teachers in guiding, providing variety of activities and giving responsibilities to students in teaching life skills.

One of the participants, Dilara, argued “In fact, teaching methods are also significant for the acquisition of life skills such as teamwork and collaborative study. Students work together and understand the significance of teamwork, peer education and communicative skills. When a student comes across a problem, he/she makes use of several life skills such as decision making, making analysis and synthesis. We ask a question and student groups try to find a solution for it. In this practice, students’ life skills are used.” Thus, she emphasized the significance of using different teaching methods and of students involvement in collaborative activities in problem-solving process.

Arguing that topics should be related to daily life Gamze pointed out “relating the topics studied to daily shows students that everything in daily life is part of science. So teachers should relate topics to daily life.”

Findings about the competency of teachers in the acquisition of life skills

Concerning the theme of the competency of teachers in the acquisition of life skills, the participants developed one subtheme: “competency”. The categories of these subthemes are given in Table 13.

Table 13. Competency of teachers in the acquisition of life skills

<table>
<thead>
<tr>
<th>Themes</th>
<th>Subtheme</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competency of teachers in</td>
<td>Competency</td>
<td>Not having life skills</td>
</tr>
<tr>
<td>the acquisition of life</td>
<td></td>
<td>Not developing himself</td>
</tr>
<tr>
<td>skills</td>
<td></td>
<td>Lack of necessary information and skills to improve students’ skills</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Deficient information about the education program</td>
</tr>
</tbody>
</table>

In improving life skills of students, teachers have many roles to play. However, teachers should have certain qualities to achieve these roles. Table 13 shows that the participants reported that teachers themselves did not have certain life skills, couldn’t develop their potential, lacked necessary information and skills needed to improve the life skills of students and lacked of information about the science education program. Concerning these points, Halil argued “I think we should think in a critical way in order to reinforce critical thinking skills of students. I think teachers themselves are not ready for critical thinking. Because we were not raised in consistent with life skills. For me first, teachers should be trained about life skills. For instance, critical thinking skills are taught to students and when a student criticizes a teacher, the teacher does not give them an opportunity to express his views. Instead, teachers try to silence students. So there is a gap between teaching and the acts of teachers. In order to implement the program fully, first, teachers should be trained.”

Findings about the problems in improving life skills

The analysis showed that the participants produced seven subthemes concerning the theme of problems in improving life skills. The categories related to these subthemes are given in Table 14.
Table 14. Problems in improving life skills

<table>
<thead>
<tr>
<th>Theme</th>
<th>Subthemes</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher</td>
<td>Information-based teaching</td>
<td>Lack of necessary skills</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Using monotone activities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lack of information to improve skills</td>
</tr>
<tr>
<td>Educational program</td>
<td>Overload in terms of topics to be covered</td>
<td>Time constraints</td>
</tr>
<tr>
<td>Educational system</td>
<td>Exam-based</td>
<td>Disallowance by school management</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Crowded classrooms</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Insufficient laboratories</td>
</tr>
<tr>
<td>School</td>
<td>Being extremely protective</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Being extremely oppressive</td>
</tr>
<tr>
<td>Parents</td>
<td>Settings</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lack of self-confidence</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Playing computer games</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lack of communication</td>
</tr>
<tr>
<td>Students</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Society</td>
<td>Modeling undesired behavior</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 14 indicates that the problems in improving life skills reported by the participants are about teachers, education programs, parents, educational systems, schools, students and society. For the participants, the problems related to teachers occurred due to extensive information transfer in courses, monotonous activities, teachers’ lack of necessary information about how to improve these skills. Direct quotations are not given here, since the related quotations are given above. The participants argued that the program was very intensive and there was not enough for achieving the stated gains. Direct quotations are not given here, since the related quotations are given above.

The other problem reported by the participants about the educational system which was regarded by them as exam-oriented. They were told that they could not carry out activities to improve children’s life skills; instead, they had to deliver information and to solve test items together with students. Stating that she could not use experiments in the courses, Sema told “Children have many expectations from science course. They think that they will do experiments in the courses. In the fifth grade, they partly deal with experiments. Because topics are proper for it. But during the grades of 6, 7, and 8, we experience pressure to complete the program so that experiments cannot be done. So the course becomes less attractive for students.” On the other hand, Kamuran said “TEOG limits teaching. Because it is a twenty-minute examination that determines the future of students. In this examination, there are less items about experiments. So in the courses we focus on theoretical information and we can conduct less experiments.” On the other hand, some participants had complaints about textbooks. For instance, Kenan argued “textbooks are getting worse, there are errors in the books and the system is not correct. Science textbooks have many errors. In short, there are serious problems.” Some participants reported that school management did not allow for visits. They also mentioned crowded classes and a lack of laboratories as problems. For instance, Mesut said “In regard to extracurricular activities we experience time constraints and if we visit somewhere we could find a proper vehicle. Sometimes school management does not give permission for visits. We need to take permission from parents and from local education departments. Such procedures can be much easier and visits can be increased. In turn, it will improve student achievement.” Focusing on crowded classrooms Dilber stated “I want to use those activities which require active student participation, since they should learn by doing. But the class is very crowded.”

Some participants argued that parents’ child rearing styles were also a significant problem in improving life skills. In short, both protective parents and oppressive parents were thought to create significant barriers for children to develop life skills. Stating that oppressive parents had negative effects on children, Halil claimed “We experience numerous problems due to child rearing styles of
parents. Children are told by parents not to talk. I am teaching the fourth grade and I have been teaching these students for two years. They have just begun to talk in the courses before they did not talk. When I asked why they did not bring the textbook, they did not give any answer. In this year, they begin to talk and to defend their rights.” Banu argued that extremely protective parents led to low levels of self-confidence in students and further said “Such parents extremely protect the child. They intervene everything and solve all problems. Therefore, the child cannot express their views and he even cannot go to canteen to buy a bottle of water and go to outside.”

One of the problems inhibiting life skills was found to be family settings. For instance, İlker argued “I was raised in a village under very oppressive conditions. Children are mostly introverted, cannot express their views, cannot defend their rights. Because they were not given an opportunity to express their views. When they tried to do so, they were silenced by parents. When I asked questions, they were scared and could not tell the answer because they were afraid of doing something wrong.” Regarding extremely protective family settings Furkan stated “My students have not had any difficulty in their life. They are given everything that they want, so they do not need to think creatively.” Playing computer games all the time was also given as a reason for a lack of communicative skills. For instance, Ali said “When we were children, we had friends in our neighborhood. Now children do not go outside and they always play computer games. They do not interact with other people. Then they have communication problems.”

The participants argued that negative or undesired behaviors seen in society have negative effects on children. For instance, Harun stated “Students see quarrel in daily life and while on the bus they see that the driver does not follow traffic rules. They also see that the driver swears. All of these undesired acts shape the concept of life skills for children and they develop these skills based on such examples.”

Findings about solutions for the problems in improving life skills

Concerning the theme of solutions for the problems in improving life skills, it was found that the participants provided three subthemes of “teachers and parents”, “educational program, school and educational system”, and “students”. Categories of these subthemes are given in Table 14.

Table 14. Solutions for the problems in improving life skills

<table>
<thead>
<tr>
<th>Theme</th>
<th>Sub theme</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers and parents</td>
<td>Creating positive classroom</td>
<td>Environment</td>
</tr>
<tr>
<td></td>
<td>work</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Creative drama</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cooperation with parents</td>
<td></td>
</tr>
<tr>
<td>Students</td>
<td>Peer education</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Team work</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Encouragement</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Improving entrepreneurship skills</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Assigning research-based work</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Assigning responsibility</td>
<td></td>
</tr>
<tr>
<td>Science education program, school and educational system</td>
<td>Increasing class hour</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Improving textbook quality</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reducing the number of gains</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Increasing the number of equipment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reducing student number</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Having enough materials at school</td>
<td></td>
</tr>
</tbody>
</table>

As can be seen in Table 14, the participants reported to that they could reduce the problems in improving life skills by creating positive classroom atmospheres, using group work to improve cooperation and communication and creative theatre, skills to improve students’ affective skills and frequent communication with parents. For instance, İlker, who supported positive classroom
atmosphere and group studies, reported “I am trying to reduce their shyness. When they cannot achieve anything, I encourage them to repeat it. I also encourage them to talk. I am trying to create a positive classroom atmosphere to make students relaxed. The most serious barrier for creativity is tense and restless students. They should be comfortable. I form groups of students with different abilities.” Halil, who employed drama, reported “I frequently use creative theatre. I asked students to bring materials for a creative drama. In the science courses we do not just give information through lectures. They present the activities using creative theatre to the class. Students themselves form the groups, I never intervene this process. Now all students take part in creative drama activities.” Stating that he was in regular interaction with his parents, Furkan told “I generally prefer to solve problems through meeting with parents. We can easily solve problems together. I guide them. I inform them about child development.”

The participants reported they tried to overcome student-related problems through peer education, team work, encouraging of students to talk, and improving of their sense of responsibility. One of the participants, Kemal, stated “I employ group work to improve students’ self-confidence. They work together and they learn something from one another and they communicate with each other. They better learn some skills better from their peers.” Another participant Ziya told “I frequently assign them homework which requires conducting research and they present their work to the class in order to improve their public speaking skills and responsibility.”

Major problems reported by the participants due to educational programs, schools and education systems were mostly concerned with class hour, textbooks quality, the number of gains, lack of necessary equipment, crowded classes. For instance, Kenan suggested “class hour should be increased. There must be more laboratories at schools. Although we can make experiments using materials which children bring from home, they like to make experiments in laboratories. We have some problems about textbooks. Textbooks should be chosen by teachers.” Another participant, Gamze, argued “If classes are not crowded and we have all necessary equipment in the classroom, it will be useful for children.”

Discussion

The participants defined life skills under three categories: “The ability to maintain quality life”, “coping with difficulties” and “transforming learning into acts”. Baysal (2015) argued that information learned could only be valuable when it becomes a skill. Otherwise, it does not have any significance for students. On the other hand, transforming information into skills requires many processes. First, information should be related to a situation at hand, it should be adapted to the conditions of that situation and should be internalized. Özdemir (2015) found that some science teachers regarded life skills as science literacy and the other teachers regarded life skills as skills which facilitate daily life, making it possible for individuals to cope with daily problems and to be successful in their social life. CCert (2014) analyzed the perceptions, competency and attitudes of teachers and parents about life skills education. It was found that for teachers’ life skills were not valuable and in-service training activities were needed to train teachers to enable them available to effectively teach life skills.

The participants reported that those individuals having life skills are ones who have acquired decision making and critical thinking skills such as problem solving, decision making and critical thinking; communication and interpersonal skills including communication, empathy responsibility, cooperation and teamwork; coping and self-management skills such as self-reliance and managing stress. They claimed that such individuals will have qualified life and contribute to the improvement of society. Güneş (2012) claimed that those individuals with critical thinking skills can develop different perspectives regarding their professional responsibility and can make independent decisions and can the ability to behave objectively under social pressure. Similarly, Tillman (1997) stated that individuals with life skills have many advantages regarding the development of creative thinking skills.
Kalanda (2010) argued that life skills are very significant in that they make it possible for students to cope with daily life problems.

Concerning the views of the participants regarding the properness of the science education program in the acquisition of life skills were mostly positive, but some participants had negative views and reported that there were some problems in this respect. Those who had positive views stated that the program had spirality and gains which required connections with daily life and that it supported for extracurricular activities, among the others. In addition, the participants paid importance to the positive sides of the programs, including the contents which were about making research and about the use of the primary sources. Similarly, Karaman ve Karaman (2016) found that for science teachers the science course program dated 2013 is much more daha plain and understandable and is based on activities and inquiry. Prinsloo (2007), maintained that when teachers do not act as role models for students, the efficiency of life-based programs is at the minimal level.

The participants also reported some negative views about the science education program. These negative points include its focus on knowledge, excessive focus on gains, less time allocated for gains and focus on examinations rather than life skills. Özdemir (2015) identified the views of science teachers about life skills. In this study the participants mostly had positive views about the science program in terms of the acquisition of life skills. They thought that the revised program was much more plain and covered enough number of gains. However, some participants argued that these positive points are not enough, and that schools should be financially supported. CCert (2014) maintained that the educational programs which aim to improve life skills should take into consideration the cultural features of societies.

In the current study, it was found that the participants used some in class and extracurricular activities to teach life skills. In class activities used included team work, experiments, relations with daily life and giving examples form experiences. Extracurricular activities reported were interviews, visits and project work. The visited institutions included solid center, medical center, and meteorology. It is also found that the participants employed some sources in reinforcing life skills, including official institutions, specialists and technology. Some participants reported use of educational websites. Roselyne (2014) argued that life skills should be acquired in schools beginning at an early age through both in class activities and extracurricular activities. Therefore, students should be given an opportunity to acquire life skills at an early age.

The participants reported that teachers played a significant role in the process of acquiring life skills. However, in order to achieve this role, teachers were reported to have certain personal characteristics such as modeling, self-development and being open to new ideas. The participants also reported that professional roles of teachers were also significant in terms of the acquisition of life skills of students. The participants also reported that professional roles of teachers were also significant in terms of the acquisition of life skills of students. Such professional roles of teachers included guidance, using various activities, assigning responsibility, using collaborative activities, organizing visits, making connections with daily life and improving students’ problem-solving skills. They argued that teachers themselves did not have life skills, did not develop their potential, and lack of necessary information and skills. Baysal (2015) stated that teachers should think based on questioning, transform their knowledge base, and try to improve their skills. In short, they should focus on skills as well as on information. Similarly, Parthsarathy, Renjith and Shobitha (2009) stated that teachers have very significant roles in improving students’ life skills. Chirva and Naido (2014) argued that students’ life skills need to be reinforced by appropriate professional behavior by teachers to develop these skills at the desired level.

The participants reported that there are some problems in improving the life skills of students. The problems in improving life skills were reported by the participants were about teachers, education program, parents, educational system, school, students and society. For the participants, the problems related to teachers occurred Information-based teaching, lack of necessary skills, using monotone activities and lack of information. The participants argued that the program was very intensive and
time was insufficient for achieving the stated gains. The participants reported that oppressive or protective child rearing styles were significant barriers in improving life skills. Child rearing in such environments generally leads to the lack of self-confidence, responsibility, and communication skills. Chien, Harbin, Goldhagen, Lippman and Walker (2012) concluded that for children of low from low socio-economic families, it is much harder to acquire life skills in contrast to those from medium socio-economic status families. In addition, teachers reported that they experienced problems due to lack of communication with parents and to a lack of their support. Research suggests that parents have an influential role in the level of children’s life skills (Sharma, 2003; CCert, 2014, Chirva & Naido, 2014; Parvathy and Renjith, 2015). The other problem reported by the participants about the educational system which was regarded by them as exam-oriented. They expressed that they could not carry out activities to improve children’s life skills, instead, they had to deliver information and to solve test items together with students. In a study conducted by Kösterelioğlu and Bayar (2014), it was reported by teachers that the Turkish education system is exam-oriented rather than the student-centered education system which will give the students various skills.

The participants reported to reduce the problems in improving life skills through creating positive classroom atmosphere, team work, creative drama to improve students’ affective skills and frequent communication with parents. The participants reported they tried to overcome student-related problems through peer education, team work, improving entrepreneurship skills, assigning research-based work, encouraging students to talk, and improvement of their sense of responsibility. In order to overcome the problems due to educational program, school and education system, the participants suggested the increasing class hour and equipment, improving textbook quality, reducing the number of gains and having rich materials at school. James (2010) stated that teachers may organize many activities to improve life skills of students, so teachers have a significant role in this process. It seems that teachers play a significant role in the acquisition of life skills.

**Conclusion**

In the study which aimed at identifying the views of classroom and science teachers about life sciences, the views of the participants revealed concerning activities and sources used to improve life skills, the problems, the role of teachers and the competency of the science education program.

In the basic education program developed based on constructive approach life skills are given great importance. In such educational programs there are several skills to be acquired by students (research, problem solving, entrepreneurship, effective communication, creative thinking, critical thinking). Although educational programs cover life skills, the activities by teachers play a significant role in acquiring life skills. Therefore, in the study the views of classroom and science teachers about life skills were examined. The findings indicate that the participants defined life skills different from the definitions given in the related sources. It was also found that the participants were aware of the significance of life skills for students and that they carried out many activities to reinforce life skills in students. In science course they used collaborative activities, experiments, research and projects, visits to institutions as well as specialists and technology. These activities are significant in improving students’ life skills.

The participants reported that individuals should have decision making and critical thinking skills, communication and interpersonal skills and coping and self-management skills and that only such individuals can contribute to the creation of a quality society.

The participants stated that teachers play a significant role in improving life skills of students and that they have certain personal and professional roles in this regard. However, they did not concern themselves competent in reinforcing life skills, indicating that their information was not enough.
The major problems related to teaching of life skills expressed by the participants included educational program, education system, school administration and families. They developed some solution concerning these problems.

Suggestions

Based on the findings of the study the following suggestions are developed:

- Given that education can produce individuals with life skills, educational programs should address these skills.
- Activity booklets should be developed to be used in teaching of life skills.
- Several projects can be developed in corporation with families, schools and society to produce individuals with life skills.
- In-service training activities can be carried out to improve teachers’ information and skills concerning life skills.
- Teacher training programs should also contain activities to improve pre-service teachers’ information and skills concerning life skills.

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A Critical View on Teacher Guidebooks as an Agent in Teacher Deskilling Process

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Abstract

The purpose of this study is to identify the views of teachers on teacher guidebooks and to analyse these views on the basis of the deskilling process. The data were collected from 67 teachers through an open-ended questionnaire, and analysed using content analysis method. Results showed that although most of the teachers considered the guidebooks necessary, they also made a number of criticisms. Among these, there were criticisms indicating that the guidebooks hindered teacher autonomy in various ways. Teachers' views and criticisms in this direction confirm that guidebooks have an important role in the deskilling process of teachers.

Keywords: Deskilling process; guidebooks; technician teacher; control; professionalism

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Introduction

Teaching profession and deskilling process

Teaching, one of the oldest and most universal occupations, is an important profession that plays a crucial role in shaping the society. Societies have many expectations (religious, political, economic, cultural, etc.) from teachers, and for this reason they always try to keep teachers under control. As teachers are always with students throughout a school day, they can have a huge impact on them. They have a great power of what qualities children will grow up with. Probably for this reason, from past to present, teaching has become a profession that various social groups, especially politicians, have had many expectations on one hand and found it dangerous on the other hand. Therefore, it has always been a profession which is kept under control.

According to Apple and Teitelbaum (1986), there is increasingly more external control on the content and processes of the classroom. This control over teachers can be seen in every aspect, from teacher training courses in education faculties to inadequate working and living conditions of teachers, and from discourse and practices that discredit teachers’ profession to official procedures and programs implemented in schools. A closer analysis indicates that this control was realized via many ways, some of which include limiting the authority and autonomy of teachers, giving the educational decisions related to class and the students by the central authority which is far away from the real classes and pupils, and reducing teaching only to a physical, technical workforce. All these efforts to keep teaching under control can be considered as parts of the deskilling process.

Apple (1986, p.179) describes deskilling as a process in which employees lose control over their work. Ballet and Kelchtermans (2009) define deskilling concept as “the loss of certain professional skills due to their decreased importance on the one hand, and the increase of routine, often administrative, work-related tasks on the other hand”. According to Wong (2006), deskilling is the transformation process of a profession from highly skilled work into highly unskilled work. In this deskilling process, as emphasized by Gür (2014), teachers are increasingly losing control over their work. As a result, they become workers who just implement the curriculum like robots and are technicians devoid of autonomy. In this understanding of seeing a teacher as a technician, the teacher must have basic competencies, apply the program in a standard way and be controllable (Yıldırım, 2011). Through this approach, teacher is not seen as an independent decision-maker, but as an implementer and worker who needs to be guided, conveying the content as it is, sticking to the standards and exam scores. The ideology within the teacher seen as a worker minimizes the need for knowledge at professional level through the instruction (Evans, 2010). Hargreaves, Earl, Moore, and Manning (2001, p.196) point that trying to reduce the need for support by writing all standards centrally, in great detail, in a “teacher-proof” way pushes teachers and teaching along the path of deprofessionalization. The deprofessionalized -unskilled teacher gradually steers away from the professional teacher who makes his/her own decisions, prepares and implements the classroom practices according to his/her students, effectively resolves the problems s/he has encountered and has higher-order thinking skills, and has gradually turned into a technician who applies the instructions unquestioningly and imparts the students only the knowledge needed for exams. Giroux (2011, p.126) states this as follows:

*Today, in the age of standardized testing, thinking, and acting, reason and judgment have been thrown out the window just as teachers are increasingly being deskilled and forced to act as semi-robotic technicians good for little more than teaching for the test and serving as a reminder that we are arriving at a day when the school curriculum will be teacher-proof.*

Technician teacher approach has close relationships with competitive neoliberal economic policies; transformations in the teaching profession are among the consequences of neo-liberal policies surrounding the whole world. Emphasizing that these results are internationally prevalent, Apple
(2016) states that in this difficult time in education, attacks on educators at all levels and on their autonomy and their organisations have gained more visibility, and corporate models of competition, accountability, and measurement have been imposed. The loss of respect for the professionalism of educators is striking. In neoliberal approach, the teacher is nothing more than a technician of exam-oriented and corporate education (Yıldız, 2014, p.14). According to Connell (2009), the neoliberal practices and the audit culture in education see the teacher as a technician, doing pre-defined “best practice” with a pre-defined curriculum measured against external tests - a situation for which skill, but not intelligence, is required. Similarly, Sleeter (2008) states that some of the pressures of neoliberalism on the teaching profession include preparing teachers as technicians to implement measures aiming to raise student test scores and defining teacher quality with the testable knowledge in the content rather than professional knowledge. As Neo-liberalism evolves and strengthens, the teacher image traditionally seen as an autonomous professional "who grasps the social meaning of education and has the sufficiency that forms the basis for this comprehension, has social responsibility sense in the teaching-learning process, gives decisions related to his/her own professional behaviour, and refuses acceptance of the external control” is transformed (Ünal, 2015). In this process, the teacher, who is defined as any technical intermediate work-force on the market, is seen as an employee who is unable to comprehend the educational reality as a whole, who tries to teach the certain knowledge that s/he obliged to instruct by using certain teaching techniques and who sees his/her task is restricted to this (Özsoy and Ünal, 2010). As a result, teaching is gradually moving away from professionalism. Giroux (2011, p.135) strikingly remarks this transformation of qualification in teaching profession by his following words: “teachers, once the heroes in this coming-of-age narrative, are now a sideshow. Most are deskilled, reduced to technicians teaching for the high-stakes testing machine.”

Hargreaves (1994, p.14) explains the debates on the nature and transformation of the teaching profession through the concepts of professionalization and intensification-deskilling. While the professionalization approach remarks the changes and rises in the teacher’s roles that in and out of the classroom, and advocates that these changes mean more professionalization; the intensification approach which emphasizes the deterioration of the teaching profession and steering away from professionalism, sees teaching as a routine and unskilled work, with its teachers who are not authorized to apply their own professional decisions. As stated by Bullet et al. (2006), intensification goes hand in hand with depersonalization and deskilling as a teacher's job is no longer conceived of as holistic but rather as a sequence of separated tasks and assignments decided by others. Apple (1986, p.32) states that teachers are increasingly facing more and more deskilling because of the technical control procedures on the curriculum. Easthope and Easthope (2000) also emphasize that teachers are increasingly controlled, depersonalized, and rather than being multi-skilled, they are becoming deskilled. As a result of these processes, many teachers try to fulfil this role obediently, without any questions. In the intensification/deskilling approach, teachers tend to obey and adapt to their own exploitation processes over time (Hargreaves, 1994, p.15). On the other hand, Goodman (1988) who deals with this process through the concept of disenfranchisement emphasizes that the disenfranchisement of teachers occurs when the curriculum and instruction preparation processes are separated from those who actually teach. It means that many decisions about teaching–learning process, such as what should be taught, why it should be taught, and how it should be taught are made without inputs from the teachers; as a result, teachers have little sense of ownership of their work.

**Curriculum and Guidebooks in the Deskilling Process**

Curriculum is the fundamental component serving as a bridge between national education policy and implementations at schools and guiding the teachers for all practices through learning-teaching process (Eryaman & Riedler, 2010). However, since new curricula put into effect in Turkey in 2005 could not provide the necessary guidance for teachers, some guidebooks were prepared and sent to schools all over the country. Within these guides all the followings are described in detail: attainments, content, methods and techniques, assessment tools, and even reinforcements, questions, and instructions. The guidebooks have been adopted by most of the teachers as it relieves them of planning and making preparations for the classes. Yet, these guides, supposedly prepared to lead the
teachers in a more efficient way, hinder both the flexibility of the curriculum and teachers’ autonomy. It is reported that program developments in Turkey usually involve a large stakeholder’s participation. For instance, the draft curriculum prepared in 2017 is reported to have been prepared, with the coordination of the related general directories, by the commissions formed with representatives, teachers, education experts, and academicians. It was also reported that parents, school administrators and experts all over the country also provided input in this process (Ministry of National Education [MONE], 2017). However, in terms of the stakeholder participation, it is difficult to say that the same sensitivity had been shown for the preparation of course books and other materials. Course books and guidebooks are prepared with the participation of a committee and with the approval of authorities, and the Ministry of Education distribute the guidebooks to schools in order to be used by teachers. This situation degrades the teachers’ roles to being only the implementer of the curriculum prepared by some others. This approach sees teachers as technicians more than professionals, and it causes teachers to become more and more unskilled in the process.

Walsh, Brigham and Wang (2011) emphasize that the notion that gradually centralise and increase control over teachers’ job and that sees teachers’ job as transferring what is written in scripted curricula serves neoliberal policies and degrades teachers to technicians. The guidebooks, where all the things teachers will do in the classroom are scripted by the central authority, also reflect this technician teacher approach. In a teaching-learning process where each step in the classroom is determined by others, and the expectations are reduced to observable, measurable, and controllable behaviours in a purely behavioural-neo-liberal sense, it can not be expected that the teacher will make students gain a high level of cognitive and affective qualities, and it can not be expected that s/he herself/himself has these features or develop these skills as well. However, it should not be forgotten in this argument (at least theoretically) that guidebooks have a role as guiding teachers and helping them in teaching practices. Indeed, in the definition of the guidebooks done by MONE (2012) this point is emphasised as “a printed work prepared for the use of teachers, including various examples, exercises, units, subjects, themes, internet addresses related to learning areas, reading resources and other activities that will provide more effective use of the course book in the direction of the gains and clarifications contained in the relevant education and training programs”. The problem here is that how much, in what direction and for what purpose is the “way” will be taught to the teachers. Are the guidebooks prepared for educational purposes, such as guiding teachers, or as a part of the efforts to keep teachers’ work under control? Emphasising the focus and purpose of controlling the teachers’ work, Reid (2003) states that teachers are, and always have been, controlled. For this reason, Reid notes that this control over teachers should be questioned more. Smyth et al. (2000), emphasize that defining the curriculum by using methods or mechanisms which direct teachers to impart a defined curriculum, including content, sequence, methodology and assessment is an important part of control regime of teachers’ work.

Göçer (2011) states that teachers’ guidebooks contain clear and detailed guidance on how to conduct the activities at every stage of the course. Nevertheless, he also indicates the fact that the activities to be realized do not take into account the individual differences of the students, that the activities required in each theme are almost identical, and that the guidebooks are not sufficiently content-rich to develop mental and linguistic skills of the students. Here we can review some examples taken from the Turkish language teachers’ guidebook (2015, 89):

Write the following sentences in the text on the board.

Ask students to separate these sentences into two sentences in the cause and effect relation and then to repeat these sentences or to write them in their notebooks. Once you have checked your students’ writing, share the following sentences and make them become aware of the cause and effect relationship in the sentences (Note: The two-sentence form of these sentences in the cause and effect relation is on the next page).

In another example, after some instructions such as "after reading the text, ask your students to find the main theme and the supporting ideas of the text" and “tell them that their own writing
should also structured around a main idea and supporting ideas”, the main and supporting ideas of the text are presented to the teacher in a ready-to-use format (p.92). Another example from the Turkish course guidebook is as follows (p.262):

Read the parts of the text to your students. To implement this method, stop at the places specified by numbers in your book during reading and ask the following questions in order:

1. ....
2. ....

Ask your students to identify the words they do not know in the story and write them on their notebooks.

Ask them to predict the meaning of these words, and then to find them in the dictionary and write the meaning in their notebooks.

Tell them to compare their own predictions with the lexical meanings of the words.

Ask students who predicted the meaning correctly to share how they predicted the meaning of the words with their classmates.

Tell your students to use the new words they have learned in a sentence.

.....

To illustrate this situation in another course, an instruction given to teachers in the fourth grade social studies guidebook (2015, p.113) was analysed, and it was found that everything to be done in the class was set out in full detail as follows.

Check whether the previous workbook activities you assigned were done.

Ask your students to answer the question in the "Preparation for the topic" section. Ask students what they should pay attention to when spending money.

Ask them to read the text titled "How do we meet our needs?", and to review the photos on the page.

Based on the instructions in the text, ask your students to tell what they see in the photos. Ask them examine the visuals, questioning in which fields they serve.

..............

Based on these and more examples, it seems that the guidebooks went far beyond the guidance of the teachers, and that every step of the way was stereotyped and restricted. As it is seen clearly, the teacher is the implementer-technician. By hindering the need to think, to solve problems, to organize, or to questioning, the guidebooks, where all the things teacher will do in the class are scripted by the central authority, reduce the teachers' position to being only an obedient practitioner.

In order to have an idea of the general structure of the guidebooks, when the examples given here are carefully examined, it can be easily seen that the guidebooks restrain the teacher’s autonomy in the classroom; that the guidebooks have the control over all the dimensions, from the question to the answer, of the learning-teaching processes; that these books do not leave any space to teacher for thinking, creating, planning and organizing on what is going on in the classroom. However, as stated by Demirkasmoğlu (2010), autonomy is a component of teacher professionalism and it provides both
an individual decision making area to achieve one’s aims and an effect on controlling the situations related to his/her work.

According to Wong (2006), the best way to teach is that teachers have the flexibility to organize the curriculum according to the needs of their students. Emphasizing that teachers are not so passive in education processes and that they are always looking for a way or a space, Apple (1988, p.44) states that even though the elements of curricular control were effective in structuring the major aspects of their practices, teachers often respond in a variety of ways. According to the level and characteristics of their classes, teachers determine the teaching methods and materials to be used in implementing the curriculum, changing the goals or subjects when necessary and making various decisions about the teaching process. Apple and Teitelbaum (1986) emphasize that teachers should take action to defend their right to control the classroom, while Acker (1999, p.171) indicated that whether or not teachers are unskilled, it is clear that they are not empowered; despite that they have the power and skills to resist.

Research on teacher's guidebooks in Turkey indicates that teachers generally evaluate the guidebooks as necessary and beneficial (Ayvacı and Er-Nas, 2009; Genç et al., 2014; Göçer and Aktürk, 2015; Kırmızı, 2013). However, in the majority of these studies, it has also seen that the teachers indicate the inadequacies of the guidebooks. The inadequacies mentioned in these studies are related to some negative factors such as guiding teachers inefficiently, being inappropriate for students’ level of development, and including inadequate alternatives and information for teachers. The teachers who participated in the study of Yaman and Demir (2015) were found to have never used guidebooks and the reasons for this were also the inadequacies of guidebooks. In all these research results, it is seen that teachers demand more guidance and desire to being shown a more and more accurate "way".

As it is reported in a small number of studies, teachers think that the guidebooks lack flexibility, confine them to a narrow pattern, discourage their creativity, and prevent them from thinking and commenting on the curriculum (Göçer, 2011, Göçer and Aktürk, 2015, Kulantaş, 2007; Taneri et al., 2014). Although they are few in number and indirectly described, these teachers who do not use and do criticize the guidebooks stated that the guidebooks hinder their professional practice. This point indicates that they have recognized the danger posed by guidebooks in deskillng process. The literature indicates a fairly extensive research which deals with the nature and effects of deskillng process in teaching profession (Acker, 1999; Apple, 1988; Apple and Teitelbaum, 1986; Easthope and Easthope, 2000; Giroux, 2011; Goodman, 1988; Gür, 2014; Hargreaves, 1992, 1994; Seddon, 1997). However, it seems that educational scientists are slow to deal with the issue in terms of teacher guidebooks because no studies were found to have analysed guidebooks and the teachers’ views on these books regarding the professional deskillng process, while it is clear that this approach without any chance for teachers’ autonomy will make teachers more ineffective, destroy their autonomy, and eliminate the possibility to arrange the instruction according to students’ individual characteristics. This study which was conducted with this rationale analysed the views of teachers on teacher guidebooks and evaluated the views on the basis of the deskillng process.

**Purpose of the Study**

The main purpose of this study is to investigate teachers’ views about guidebooks and discuss these views on the basis of deskillng process. In line with this general purpose, the study aims to find answers to the following questions:

1. How often do teachers use the guidebooks?
2. What are the teachers’ reasons for using or not using the guidebooks?
3. What are the teachers’ views about guidebooks?
4. According to teachers’ views, what are the positive or negative effects of guidebooks on professional development and performance?

5. What are the teachers’ suggestions about guidebooks?

**Research Methodology**

**Research Design**

This study, which utilised phenomenology design, is qualitative in nature. Phenomenology studies focus on phenomena which we recognise but would like to explore more in depth and comprehensible information about it. (Yıldırım & Şimşek, 2016, 69). These studies aim to identify how some phenomena are perceived, defined, felt, criticized, and comprehended by others (Patton, 2002, 104). Data sources in phenomenological studies are individuals or groups who experience, express or reflect the phenomena which the study focuses on (Yıldırım & Şimşek, 2016, 71). Teachers are supposed to use the guidebooks for classroom practices; the present study aims to explore views of teachers about these guidebooks. This way, superiority and limitations of these books are explored from the viewpoints of people who know them best.

**Participants**

The research data were collected using a questionnaire consisting of open-ended questions administered to the participants through internet. Therefore, the participants were not limited to a certain geographical region. The participants consisted of a total of 67 teachers including 29 primary school teachers and 37 subject-matter teachers. Of all the participants, 44 were female and 23 were male. Personal characteristics of the participants are presented in Table 1.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Sub-Dimensions</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Female</td>
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<td>65.67</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>23</td>
<td>34.32</td>
</tr>
<tr>
<td>Subject Matter</td>
<td>Primary school teacher</td>
<td>29</td>
<td>43.93</td>
</tr>
<tr>
<td></td>
<td>Subject Matter teacher</td>
<td>37</td>
<td>56.06</td>
</tr>
<tr>
<td>Service Year</td>
<td>0-5 years</td>
<td>10</td>
<td>14.92</td>
</tr>
<tr>
<td></td>
<td>6-10 years</td>
<td>20</td>
<td>29.85</td>
</tr>
<tr>
<td></td>
<td>11-15 years</td>
<td>15</td>
<td>22.38</td>
</tr>
<tr>
<td></td>
<td>16-20 years</td>
<td>10</td>
<td>14.92</td>
</tr>
<tr>
<td></td>
<td>21 years and over</td>
<td>12</td>
<td>17.91</td>
</tr>
</tbody>
</table>

**Data Collection Instrument**

The data were collected using the "Teachers' Opinions on Guidebooks Questionnaire" prepared by the researcher. The questionnaire was mainly formed with the studies in the related literature (Ayvacı & Er-Nas, 2009; Genç, Güner & Güner, 2014; Göçer, 2011; Göçer & Aktürk, 2015; Kırmızı, 2013; Kulantaş, 2007; MONE, 2012; Yaman & Demir 2015). As a result of the review of these studies, a draft was formed with the questions to be used for identifying teachers’ views about guidebooks. These draft questions were sent for expert opinions to five instructors in the field of program development and instruction, two classroom teachers, and two subject matter teachers. The form was revised according to their views. Hence, the questionnaire included one close-ended and six open-ended questions that aimed to identify how often teachers use the guidebooks, reasons for using and not using the guidebooks, views about the guidebooks, negative and positive sides of the guidebooks in terms of teachers' professional development and performance, whether teachers find
these books necessary, and teachers’ suggestions about guidebooks. The beginning of the questionnaire included questions which aimed to identify personal information about teachers (e.g. gender, subject matter, service year).

**Data Collection Procedure**

Teachers’ Opinions on Guidebooks Questionnaire was administered to teachers through the “https://www.onlineanketler.com” website, which enables the preparation and administration of online questionnaires. Therefore, the researcher shared the website link to access this questionnaire through her social media (Facebook) account together with the instructions needed for responses. To reach more participants, she also asked other teachers she knew to share the questionnaire in their social media accounts. Teachers who wanted to participate responded the questionnaire by clicking the link provided. Hence, participation, which was completely volunteer, was enhanced without any worries on the participants’ side as to revealing their identity and views. The questionnaires, which had been submitted by the deadline given, were collected in a folder. 71 teachers answered the questionnaire, four of them were found invalid, and the analyses were performed on the basis of 67 teachers’ questionnaires.

**Data Analysis**

The collected data were analysed using the content analysis. For this purpose, raw texts were obtained in the manner that the responses given to each question were one under the other, and these texts were read carefully line-by-line. Then, based on the raw data, a code list was drawn to classify participants’ responses, and these coded responses were clustered into meaningful categories. Since each participant could state more than one response, calculated frequencies of the codes emerged from the data were based on the frequency of the answers. The main themes derived from the participants’ responses and the related codes are presented in the findings section.

**Validity, Reliability and Ethical Considerations**

To increase validity and reliability of the study, the findings obtained from the analyses were presented without any interpretations. Besides, excerpts from the quotations of the responses were used in order to provide a more detailed picture of the teachers’ views about the guidebooks. The criterion in choosing direct quotations to highlight in the text was providing a supportive evidence of and a sufficient example to the related main themes. Capital T (teacher) and numbers are used in the presentation of the excerpts (T1, T2, …; for example, “T8” shows the eighth teacher in the transcripts). Discussion of the results was based on the main findings of the study. In addition, volunteer participation and confidentiality of the identities were also considered as ethical issues. For this reason, the questionnaire was sent to teachers via internet. The website keeps the identity of the respondent confidential even to the researcher. At the beginning of the questionnaire, detailed explanations were provided about the purpose of the study and the way the questions should be answered. It was also stated that the data to be obtained from this study would not be used for any other purposes.

**Findings**

**Findings Regarding Teachers' Use of Guidebooks**

Among 67 teachers who participated in the study, 8 teachers answered the question about whether they used the guidebooks as "never", 11 teachers as "rarely", 18 teachers as "sometimes" and 30 teachers as "always". As a result of the content analysis performed on the statements made by the teachers as the reasons for their answers, it was found that the statements made for the answers of
"never" or "rarely" consisted of the codes gathered under three themes. These themes and the codes which are within the scope of these themes are presented in Table 2.

Table 2 Teachers’ Reasons for Not Using the Guidebooks

<table>
<thead>
<tr>
<th>Theme 1: In terms of the scope of the content (n:28)</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Being not descriptive enough</td>
<td>9</td>
</tr>
<tr>
<td>Including insufficient content</td>
<td>8</td>
</tr>
<tr>
<td>Being not realistic/up-to-date/practicable</td>
<td>2</td>
</tr>
<tr>
<td>Including many errors</td>
<td>2</td>
</tr>
<tr>
<td>Being inappropriate for the age level</td>
<td>2</td>
</tr>
<tr>
<td>Including unnecessary sections</td>
<td>2</td>
</tr>
<tr>
<td>Being very intense</td>
<td>2</td>
</tr>
<tr>
<td>Being inappropriate for individual differences</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Theme 2: In terms of the Sequence of the content (n:9)</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Having complicated/not systematic sequence of content</td>
<td>4</td>
</tr>
<tr>
<td>Being prepared imprecisely</td>
<td>2</td>
</tr>
<tr>
<td>Being visually unattractive</td>
<td>1</td>
</tr>
<tr>
<td>Being uninteresting</td>
<td>1</td>
</tr>
<tr>
<td>Being written in very small font size</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Theme 3: Creativity (n:5)</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Being restrictive for teachers’/students’ creativity</td>
<td>2</td>
</tr>
<tr>
<td>I'm developing alternative ways on my own</td>
<td>2</td>
</tr>
<tr>
<td>They affect my performance in the course negatively</td>
<td>1</td>
</tr>
</tbody>
</table>

n= number of participants who expressed views about each code/theme

Table 2 shows that the dimension which was the most difficult for teachers regarding the guidebooks was related to the content selection. Under this theme, the problem which was most frequently mentioned by teachers was that the content was not descriptive enough and it was insufficient in terms of attainments. The other two themes were the sequence of the content and creativity. The quotations from the opinions of the teachers who stated that they did not use the guidebooks are presented below.

I am using them because I have to use. Their content is very bad and quite useless (T42).

I cannot go beyond the objectives as an implementer of the program, therefore, I rarely look at the guidebooks to see the objectives. However, I myself use alternative methods for the teaching and learning process, assessment, and evaluation, because I think the guidebooks are actually restricting teachers. As if to say you cannot go beyond this framework (guide)... (T8).

The findings obtained from the statements of the teachers who stated how often and why they used the guidebooks are presented in Table 3, and their responses included "sometimes" (n:18) or "always" (n:30). The reasons are also presented in the table.
An analysis of Table 3 which presents the reasons of the teachers who stated that they used the guidebooks shows that the answers given were gathered under four themes and the opinions were focused on the Guidance in the teaching process (n:33) theme. On the other hand, six teachers stated that they used the guidebooks in the assessment and evaluation activities while five teachers stated that they used them for adding variety to the course, four teachers stated that they used the guidebooks just because they had to use them.

I use them to follow the attainments of the subjects that we will discuss. Sometimes, guidebooks may have effective and good examples for the activities. Besides, it is certainly necessary to follow the instructions in the guidebook to have students make some activities in the course books (T14).

I use the guidebooks because they allow me to progress in a more planned and systematic way. In addition, I like their guidance in understanding and interpreting the text (T24).

They help me to make preliminary preparation for the course. In particular, to determine the limits of the subject I teach... Thus, I can save time without going into unnecessary details (T28).

Findings Regarding Teachers' Opinions on Guidebooks

The findings obtained from the answers given by the teachers to the question “What are your opinions on teacher guidebooks?” are presented in Table 4.
Table 4 Opinions on Teacher Guidebooks

<table>
<thead>
<tr>
<th>Theme 1: Insufficiency/nonconformity (n:44)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Having insufficient information in Activities / examples / exercises /</td>
<td>21</td>
</tr>
<tr>
<td>Containing errors</td>
<td>9</td>
</tr>
<tr>
<td>Being very intense (there are too many attainments/subjects, cannot not be completed on time)</td>
<td>6</td>
</tr>
<tr>
<td>Not being clear and understandable (being complicated)</td>
<td>5</td>
</tr>
<tr>
<td>Having too many details/unnecessary details</td>
<td>3</td>
</tr>
<tr>
<td>Theme 2: Poor Printing - Design (n:14)</td>
<td>N</td>
</tr>
<tr>
<td>Being prepared imprecisely</td>
<td>8</td>
</tr>
<tr>
<td>Having less visual elements</td>
<td>3</td>
</tr>
<tr>
<td>Having small font size</td>
<td>2</td>
</tr>
<tr>
<td>Being too thick</td>
<td>1</td>
</tr>
<tr>
<td>Theme 3: Lack of Integrity (n:6)</td>
<td>N</td>
</tr>
<tr>
<td>Including some pictures that are not associated with the subject</td>
<td>1</td>
</tr>
<tr>
<td>Including contradictory attainments and activities</td>
<td>1</td>
</tr>
<tr>
<td>Lack of subject integrity</td>
<td>1</td>
</tr>
<tr>
<td>Being not distributed in a balanced way according to classes</td>
<td>1</td>
</tr>
<tr>
<td>Being detached from the real life</td>
<td>1</td>
</tr>
<tr>
<td>Ignoring long-term attainments</td>
<td>1</td>
</tr>
<tr>
<td>Theme 4: Inappropriate for students’ level (n:7)</td>
<td>N</td>
</tr>
<tr>
<td>Being inappropriate for the student level</td>
<td>4</td>
</tr>
<tr>
<td>Providing insufficient feedback</td>
<td>1</td>
</tr>
<tr>
<td>Being far from TEOG (Exam for Transition from Primary to Secondary Education) rationale</td>
<td>1</td>
</tr>
<tr>
<td>Ignoring individual differences</td>
<td>1</td>
</tr>
<tr>
<td>Theme 5: Non-functionality (n:15)</td>
<td>N</td>
</tr>
<tr>
<td>Not Being useful/efficient/functional/necessary</td>
<td>9</td>
</tr>
<tr>
<td>Not being up-to-date</td>
<td>3</td>
</tr>
<tr>
<td>Causing teachers to lose time (esp. filling evaluation forms)</td>
<td>2</td>
</tr>
<tr>
<td>Including many activities that do not have any educational value</td>
<td>1</td>
</tr>
<tr>
<td>Theme 6: Blunting Creativity (n:13)</td>
<td>N</td>
</tr>
<tr>
<td>Preventing creativity</td>
<td>4</td>
</tr>
<tr>
<td>Restricting teachers/making them robotized/making them inactive</td>
<td>4</td>
</tr>
<tr>
<td>Raising monotype people</td>
<td>2</td>
</tr>
<tr>
<td>Being far from scientific and universal values</td>
<td>1</td>
</tr>
<tr>
<td>Being based on a uniform approach</td>
<td>1</td>
</tr>
<tr>
<td>Interfering with the self-development of the teacher</td>
<td>1</td>
</tr>
<tr>
<td>Theme 7: Positive Opinions (n: 30)</td>
<td>N</td>
</tr>
<tr>
<td>Being instructive/ helpful in conducting the course</td>
<td>14</td>
</tr>
<tr>
<td>Being functional/useful</td>
<td>6</td>
</tr>
<tr>
<td>Being useful in the planned progress</td>
<td>5</td>
</tr>
<tr>
<td>Being good / not bad</td>
<td>3</td>
</tr>
<tr>
<td>Being contributive in choosing attainment</td>
<td>2</td>
</tr>
</tbody>
</table>

n= number of participants who expressed views about each code/theme

As it is seen in Table 4, teachers' opinions on guidebooks are gathered under seven themes, six of them contain negative opinions and one of them contains positive opinions. While insufficiency/nonconformity (n:44), poor printing-design (n:14), lack of integrity (n:6), inappropriate for students’ level (n:7), non-functionality (n:15) and blunting creativity (n:13) were the themes that included teachers’ negative views about guidebooks; 30 teachers were found to state positive opinions about guidebooks. Some quotations from teachers' opinions are presented below:

Teachers should be able to use the methods, techniques, activities, assessment and evaluation approaches they want. I think guidebooks restrict teachers (T8).

I never stick to the guidebook because it is highly insufficient. It is not clear and understandable. I find its content useless (T16)
I feel like a programmed robot when I constantly remain stick to guidebooks. .... I think guidebooks prevent teachers and waste their creativity (T19).

Guidebooks should be used because they help in guiding the course process and progressing in a planned way. .... The use of guide shortens this process (T24).

The presence of instructions presents a content that makes teachers inactive as if to say do this on that page, do this in this question and write this in this activity (T48).

In fact, guidebooks are not needed in democratic, secular, scientific, contemporary and free education systems. It is also a fact that guidebooks interfere with the self-development of the teacher. Guidebooks restrict teachers and make them lazy (T61).

Findings Regarding Teachers' Evaluations on Guidebooks in Terms of Professional Development and Performance

The participants were asked “What do you think about the guidebooks in terms of your professional development and performance?” Analysis of the answers given to this question is presented in Table 5.

Table 5 Findings Regarding the Contribution of the Guidebooks to Professional Development and Performance

<table>
<thead>
<tr>
<th>Theme 1: Preventing the teacher development (n:35)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>No contribution/Unnecessary</td>
<td>26</td>
</tr>
<tr>
<td>Being restrictive for the development if you stay stick to them a lot</td>
<td>4</td>
</tr>
<tr>
<td>Being an obstacle for those with high performance</td>
<td>2</td>
</tr>
<tr>
<td>Causing teachers to become atrophied</td>
<td>2</td>
</tr>
<tr>
<td>Restricting to generate different ideas</td>
<td>1</td>
</tr>
<tr>
<td>Theme 2: Contribution to professional development and performance (n:28)</td>
<td>N</td>
</tr>
<tr>
<td>Being useful / making contributions</td>
<td>11</td>
</tr>
<tr>
<td>Being helpful instructive/suggestive/productive in teaching</td>
<td>9</td>
</tr>
<tr>
<td>Increasing teachers’ performance</td>
<td>8</td>
</tr>
<tr>
<td>Theme 3: Contribution to planning and implementation (n:19)</td>
<td>N</td>
</tr>
<tr>
<td>Enhancing/saving from preparing plan and/or practice</td>
<td>6</td>
</tr>
<tr>
<td>Being a good guide during the early years of the profession</td>
<td>4</td>
</tr>
<tr>
<td>Allowing to conduct the course in a more efficient way</td>
<td>3</td>
</tr>
<tr>
<td>Ensuring to be prepared to attend the class</td>
<td>2</td>
</tr>
<tr>
<td>Preventing waste of time</td>
<td>2</td>
</tr>
<tr>
<td>Contributing to the assessment and evaluation</td>
<td>2</td>
</tr>
<tr>
<td>Theme 4: Contribution to developing different perspectives (n:5)</td>
<td>N</td>
</tr>
<tr>
<td>Providing different perspectives in Planning/teaching/evaluating</td>
<td>5</td>
</tr>
</tbody>
</table>

As it is seen in Table 5, 35 teachers indicated that guidebooks do not make any contribution to teacher development or have an effect in preventing the professional development of the teacher. 26 teachers, who stated that guidebooks were unnecessary, mentioned that these books did not make any contribution to teachers’ professional development and performance. 28 teachers stated that the guidebooks make positive contributions to their professional development and performance, 19 teachers emphasized that the guidebooks contribute to planning and implementation, and 5 teachers
stated that they contribute to the teachers’ development of different points of view from various perspectives. Some quotations from these teachers’ statements are presented below.

I think they do not contribute to the professional development. Because I see that they have no knowledge or skill that would provide me more than I have (T14).

Guidebooks make contributions in terms of the profession because they enlighten teachers on how to make the course more appropriate. They affect our performance positively (T37).

I do not think that they contribute to my professional development. On the contrary, I am one of those people who believe that the person can develop by investigating and acting in accordance with his/her needs. ... In terms of performance, I think that they make things easier and save teachers from preparing plans (T60).

**Teachers’ Suggestions for the Guidebooks**

An attempt was also made in the study to determine teachers’ suggestions for the guidebooks. These suggestions were gathered under seven themes (Content, Visuality, Activities, Flexibility, Preparers, Sense of modern education, and Conducting the course) in the content analyses. These themes and the codes they contain are presented in Table 6.

**Table 6 Suggestions for the Teacher Guidebooks**

<table>
<thead>
<tr>
<th>Theme 1: Content (n:29)</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>They should be simplified/Unnecessary details should be removed/shortened</td>
<td>7</td>
</tr>
<tr>
<td>They should be reviewed and mistakes should be eliminated</td>
<td>7</td>
</tr>
<tr>
<td>The content should be enriched</td>
<td>5</td>
</tr>
<tr>
<td>Assessment questions / exercises should be added</td>
<td>4</td>
</tr>
<tr>
<td>Assessment questions / exercises should be added</td>
<td>3</td>
</tr>
<tr>
<td>Content should be more practicable</td>
<td>2</td>
</tr>
<tr>
<td>More questions should be included</td>
<td>1</td>
</tr>
<tr>
<td>Theme 2: Visuality (n:16)</td>
<td>n</td>
</tr>
<tr>
<td>CD, video or flash memories should also be given instead of/along with the guidebooks</td>
<td>5</td>
</tr>
<tr>
<td>Visual elements should be increased and material support should be provided</td>
<td>5</td>
</tr>
<tr>
<td>They should be prepared in the form of booklets</td>
<td>2</td>
</tr>
<tr>
<td>Print quality should be increased</td>
<td>2</td>
</tr>
<tr>
<td>Course materials should be delivered instead of books</td>
<td>1</td>
</tr>
<tr>
<td>Larger fonts should be used</td>
<td>1</td>
</tr>
<tr>
<td>Theme 3: Activities (n:15)</td>
<td>n</td>
</tr>
<tr>
<td>Activity diversity should be increased and enriched</td>
<td>6</td>
</tr>
<tr>
<td>Activities leading to different ways of thinking should be included</td>
<td>3</td>
</tr>
<tr>
<td>More realistic activities should be prepared</td>
<td>2</td>
</tr>
<tr>
<td>Introduction to the course activities should be increased</td>
<td>1</td>
</tr>
<tr>
<td>Less costly activities should be included</td>
<td>1</td>
</tr>
<tr>
<td>A book containing the successful activities of teachers should be distributed</td>
<td>1</td>
</tr>
<tr>
<td>Teachers should be given the chance to choose activity</td>
<td>1</td>
</tr>
<tr>
<td>Theme 4: Flexibility (n:13)</td>
<td>n</td>
</tr>
<tr>
<td>School/Classroom/ Changing characteristics of students should be taken into account</td>
<td>5</td>
</tr>
<tr>
<td>It is necessary to be flexible</td>
<td>3</td>
</tr>
<tr>
<td>It is necessary to get prepared multilaterally</td>
<td>1</td>
</tr>
<tr>
<td>Assessment forms should be prepared in accordance with students of all levels</td>
<td>1</td>
</tr>
<tr>
<td>They should contain materials that will appeal to students of all levels</td>
<td>1</td>
</tr>
<tr>
<td>They should be organized regionally</td>
<td>1</td>
</tr>
<tr>
<td>The games, songs, various activities considering individual differences should be added</td>
<td>1</td>
</tr>
<tr>
<td>Theme 5: Preparers (n:12)</td>
<td>n</td>
</tr>
<tr>
<td>Teachers' opinions and suggestions should be taken into account</td>
<td>7</td>
</tr>
<tr>
<td>They should be prepared together with the commissions consisting of teachers and academicians</td>
<td>3</td>
</tr>
<tr>
<td>It is necessary to receive support from the domain experts while preparing them</td>
<td>2</td>
</tr>
</tbody>
</table>
**Theme 6: Sense of Modern Education (n:11)**

- They should be prepared again in accordance with the sense of modern education
- They should be updated continuously
- They should be prepared from universal morality and tolerant perspective
- Learning by doing and experiencing should be kept in the forefront
- They should contain activities that lead to thinking and generating ideas, not by rote
- Techniques and methods/practices that will give new ideas to teachers should be included
- They should not be prepared according to the exam system

**Theme 7: Conducting the Course (n:7)**

- The time should be arranged in a more realistic way
- There should be sample lectures
- Planning should be made according to teacher's knowledge
- Information about conducting the course should be provided

<table>
<thead>
<tr>
<th>n= number of participants who expressed views about each code/theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Among the suggestions of the teachers, those related to the content of the guidebooks constituted the largest group (n:28). 16 teachers made suggestions in the visuality theme. While teachers made such suggestions as “Activity diversity should be increased and enriched” in the Activities (n:15) theme, the suggestions of “School/Classroom/ Changing characteristics of students should be taken into account” was the first suggestion in the Flexibility (n:13) theme. While the suggestion of “Teachers' opinions and suggestions should be taken into account” was mostly mentioned in the Preparers theme (n:12), teachers mentioned in the Sense of Modern Education theme (n:11) that the guidebooks should be prepared again in accordance with the sense of modern education and should be updated continuously.</td>
</tr>
</tbody>
</table>

**Discussion**

Ministry of Education provides teachers with the guidebooks to be used for classroom practices. This study examined teachers' opinions on these guidebooks. Findings show that the teachers had both positive and negative views about the guidebooks. First group of findings included the teachers' positive opinions about the guidebooks. One of the findings is related to the frequency of teachers’ using the guidebooks. Nearly half of the teachers (30) stated that they always used the guidebooks. When the reasons for using the guidebooks were examined, it was found that the participants often talked about their guiding role in the teaching-learning process. In this respect, teachers indicated that they saw the guidebooks particularly useful for "contribution to professional development and performance" and "contribution to planning and implementation". In other studies about the topic, teachers expressed favourable opinions on guidebooks in a similar way (Ayvacı and Er-Nas, 2009; Genç et al., 2014; Göçer and Aktürk, 2015; Gür, 2014; Kırmızı, 2013). Based on these results, it can be said that the teachers generally adopt and use the guidebooks.

Although they directed many criticisms, teachers seem to have adopted the guidebooks well. They might think that these guides save them from planning, preparing for the lessons underlying their adoption of these books despite their criticism. Teachers, especially those who see their own task as only to practice the guidebook as it is, might perceive these guides as a great source of comfort. This notion is supported by the fact that teachers who participated in the study conducted by Gür (2014) were found not to question the expected teacher role in these books. However, many teachers' indicating that the guidebooks are useful does not mean that they adopt the type of the teacher prescribed by these books or they apply the instructions given in the guides without questioning. Indeed, the teachers who indicated that they sometimes benefited from the guides did not apply the guidelines exactly, but merely pointed out that they were benefiting from these books to examine the attainments and get ideas, which can be considered as an indicator that the teachers are actually very critical of the guidebooks. As Gür (2014) states, control mechanisms have step-by-step planning of teachers' work, but this does not mean that teachers apply these books as obedient workers without questioning them at all. Many teachers in the study noted that even though they were using the guidebooks, they were also preparing additional activities, they did not find some guidelines appropriate, and they often examined the guidebooks just to get different ideas. These findings can be
handled in such a way that teachers do not completely give up the autonomy on their profession. As emphasized by Apple (1988, p.44), teachers do not silently comply with these processes and create spaces in various creative ways where they can make decisions about the educational process as an autonomous individual in their schools.

Another important finding in the study is that teachers had some negative opinions and criticism about the guidebooks. When the teachers' opinions on the guidebooks were examined, it was found that 30 positive opinions were expressed under one theme, while 99 negative opinions collected under six themes such as inadequacy, inefficiency, printing-design weakness and teacher's creativity. In this context, teachers seem to have generally negative opinions about the guidebooks. However, considering only 19 teachers out of 67 never or rarely used the guidebooks, it can be said that the teachers continue to use the guidebooks despite their criticisms. When the reasons for why teachers use and do not use the guidebooks are examined, it is seen that they expressed 48 opinions as the reasons for using and 45 opinions as the reason for not using the guidebooks. The fact that these results are very close to each other also supports the comment that teachers keep using the guidebooks. Another supportive finding is that only 15 of the teachers found the guidebooks unnecessary. Based on these findings, it can be said that teachers have some criticisms of guidebooks, but they are trying to use them as guides in general and believe that these books should be provided. These findings remind us Milner's (2013) statements about the possible two-way effects of the scripted curriculum on teacher professionalism. According to Milner, a scripted and narrowed curriculum might move teaching closer to a professional status by defining what should and will be covered, but to the contrary, this kind of curriculum moves teaching away from professionalization by not allowing teachers to rely on their professional judgment to make curricula decisions for student learning, with the consequent sacrifice of higher-level learning, creativity, flexibility, and breadth of learning (p.i).

When teachers were asked to evaluate the guidebooks in terms of the contribution to their professional development and performance, the most frequently stated views were that the guidebooks hindered the teacher development. In addition to the opinions expressed here, opinions such as "guidebooks can be restrictive in professional development if you remain stick to them a lot", "restricts to produce different ideas", "a hindrance for teachers" and "blunts the teachers" have also appeared in the "blunting the creativity" theme. Under this theme, teachers emphasized that guidebooks robotize teachers, turn them into workers, draw them away from the scientific and universal values, lead them to raise monotype individuals and maintain traditional education. Teachers in Göcer's (2011) study also expressed that they do not use guidebooks very often, the guidebooks deteriorate the creativity of teachers and direct them to be free-riders. In other researches on teacher guidebooks in Turkey, parallel findings have been reported (Göçer and Aktürk, 2015; Kulantaş, 2007; Taneri et al., 2014). When teachers' views are carefully analysed, it can be seen that they have actually described the characteristics of a teacher who is obedient and not autonomous and who has adopted the practitioner role that neo-liberal policies want to see. These teachers are criticizing the guidebooks simply because the guides are transforming them into workers and taking their autonomy from their hands. Similar criticisms echoing in the words of a Chinese teacher participated to Wong's (2006, p.29) study “… But now, we are just like factory workers to accomplish the handed down working tasks”. And another example can be given from a teacher participated in the study conducted by Hargreaves (2003) who emphasized that “teachers were worn down by the loss of creativity and spontaneity in their work and wounded by the theft of their autonomy”

“I spent years learning how to teach, learning why kids learn, how they learn, what I can do to help that happen. And suddenly the state says, “No, none of that means anything. None of that means anything at all. We’re going to tell you what to teach.” Essentially, tell you how to teach.”
Conclusion and Recommendations

As a conclusion; it could be asserted that teachers generally adopt and use the guidebooks, despite their criticism. Guidebooks can serve as a very valuable tool for novice and underqualified teachers. However, many teachers state that they do not follow the guidebooks exactly, and they have a critical point of view. Most of the teachers in this study believe in the necessity of the guidebooks but criticize them in many ways. The fundamental criticism is about their adverse effects on teachers’ autonomy. On the basis of these results, it can be said that the guidebooks may have some benefits in showing the “way” to the teachers, but the teachers are uncomfortable that these guides show the entire way with all its details. Teachers point to the «hindering/restricting the development and creativity of teachers and robotizing» role of the guidebooks. These teachers criticize these books for deskilling and turning them into «technicians» through the process. Therefore, it is necessary that these guidebooks are prepared with the qualities enhancing and empowering rather than harming the autonomy, creativity, and higher order thinking of teachers. This is the only way to provide teachers raise a new generation possessing these qualities.

When these views of teachers are carefully analysed, it could be realized that the teacher characteristics they mentioned such as adopting the implementer role, being obedient, not being in need of any further questioning, not having the autonomy were exactly the qualities neo-liberal policies demand. Therefore, it can be said that apart from the teachers, the system itself should be improved with all its dimensions. But unfortunately as it is emphasized by Smyth et al. (2000) who tried to contribute to the theoretical explanations about what is happening to teachers’ work:

“The governments have a tendency to explain the crisis in teaching mostly through individualizing the problems in such a way that blame on the victim understanding in which the discourse is constructed around the idea that the educator who must change, not the structure and organization of the work itself”.

To conclude, it can be said that teachers, of course, should be more and more skilled and empowered, but this does not mean that it is only the teachers who need to be improved. The system as a whole, with its all dimensions, should be empowered. Other points should be specified as follows: first, if the teachers do not have any autonomy or any control right on their own work, it is almost impossible to raise autonomous individuals required for a democratic society. Therefore, teachers must be included in comities who prepare the guidebooks. Second, not only the teachers, as sated by Goodman (1988), if we are to effectively struggle with the deskilling process of teachers, several groups of people must be involved in the process; policy makers, teachers, administrators, teacher educators, and researchers can play a significant role in empowering teachers. Third, both curriculum and the guidebooks must consider the needs of all regions and all students in the country. Fourth and the most important, we have to educate teachers who are aware of and able to resist creatively the spread of attempts that aiming to take their autonomy from their hands. We have to educate teachers who are able to create spaces to struggle with these attempts in their classroom, school and in the society as a whole. We need teachers who see the school as a collective community where people work, develop and liberalise cooperatively, rather than teachers who see school as a factory and themselves as factory workers.

One of the limitations of this study is that it made a general analysis of teachers’ views about guidebooks, and it did not focus on any grade level or course. Although identification of the course is not among the purposes of the study, it was not possible to identify to which book the collected information belonged. Therefore, future studies might focus on each course separately and thus reveal clearer views of teachers about guidebooks.

Another limitation might include the fact that the participants’ views were identified via a form submitted online. As this case kept the participants’ identity totally confidential, it is considered to provide more objective evaluations about guidebooks. Besides, it enables to reach much more participants in comparison to the numbers that could be reached through interviews. However, this
method not only took away the advantages of face-to-face communication but also decreased the chance of obtaining deeper and detailed opinions as there were no opportunities to ask instant questions. Therefore, future studies might include different qualitative methods such as observations and interviews.

As the present study was designed as a qualitative one and was based on the data obtained from a relatively small group, it is not possible to generalize the findings to a large population, which could be considered another limitation. Future studies might involve larger teacher groups and more quantitative data collection tools such as questionnaires and scales. A better idea could be conducting mixed method research which benefits from the superiority of both qualitative and quantitative research approaches.

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Prospective Mathematics Teachers’ Perceptions on and Adaptation of Student-Centred Approach to Teaching

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Abstract

The aim of this study was to investigate prospective secondary mathematics teachers’ perceptions on and adaptation of student-centred approach to teaching. The study was conducted with 58 prospective secondary mathematics teachers who were the graduates from mathematics departments from different universities’ Science and Literature faculties. They were educated to teach in secondary schools during their Pedagogical Formation Certificate Program at the Education Faculty in a western university in Turkey. In this study, Constructivist Learning Environment Survey (CLES) was administered to the participants, and reflection papers were collected to understand their perceptions towards student-centred approach to teaching. To understand whether and how they adapted student-centred curriculum into their teaching, the videos of micro-teaching experiences were examined. The findings suggested an improvement on prospective teachers’ scores on CLES. It was also found that prospective teachers satisfied several expectations of the approach during microteaching.

Keywords: student centred approach to teaching; adaptation of curriculum; prospective mathematics teachers; pedagogical formation certificate program; videos of teaching

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Introduction

Teachers are the key factors in raising successful students. What is meant by being successful refers to that students are expected to be responsible of their own learning and actively construct their own knowledge (Wheatley, 1991) as constructivism suggests. Whether it is cognitive (Piaget), radical (von Glasersfeld), or socio-cultural (Vygotsky) constructivism, in constructivist learning environments, the responsibility of the teachers becomes being a guide and facilitator while the responsibility of the students is to be investigator and the constructor of knowledge (Singer & Moscovici, 2008; Eryaman & Riedler, 2010). Beswick (2007) explains this as “Learning is thus an active and purposeful process whereby individuals adapt their constructions in order to optimize their fit with experience” (p. 97). Constructivist approach refers to that there is no absolute reality, but only the learner can create it, and it is created from the learner’s different experiences (von Glasersfeld, 1989). While the traditional instructional programs mainly see mathematics as facts or rules that are needed to be prescribed to students, and they focus on teaching merely procedural knowledge (Ball, Lubienski, & Mewborn, 2001; McTighe, Seif, & Wiggins, 2004; Talım Terbiye Kurulu Baskanlığı [TTKB], 2006), the programs based on student-centred approach to teaching target meaningful and long-term learning through paying attention to students’ cognitive levels (TTKB, 2006). They provide opportunities for investigation, questioning, inquiry, discovery, active participation, and group work. Fan and Zhang (2013) point that “…the major focus of teachers and educators should be showing students how to construct knowledge by teaching instead of just teaching students to memorise information” (p. 253).

In order to provide learners an effective system where they can learn through questioning and a more student-centred learning alike, in Turkey, constructivist approach became the center of the teacher training programs since 2004-2005. Accordingly, it is expected to create learning environments where students can learn conceptually and meaningfully, actively participate in learning activities, express themselves, question, discuss, communicate, and work together. Several studies have been conducted on the use and effects of constructivist approach since then (Ari & Bayram, 2011; Ayaz & Sekerci, 2015; Bogar, Kalender, & Sarıkaya, 2012; Gul & Yesilyurt, 2011; Kim, 2005). Some of these studies focused on students’ attitudes towards constructivist learning environments while some others investigated the effects of constructivist approach on their achievement and/or self-concept. Toraman and Demir’s (2016) meta-analysis study provides detailed information on the academic studies conducted in Turkey related to the effect of the constructivist approach on lessons. Accordingly, 35 of the 43 studies investigated revealed that constructivist approach increases positive attitude toward lessons. Similarly, in a study by Liang and Gabel (2005), it was suggested that constructivist-based teaching approach had a potential to increase both conceptual understanding and positive attitude towards learning and teaching science especially for lower performers, and the participants preferred this approach over traditional lecture-based approach when they had a choice.

Student-Centred Approach to Teaching and Curriculum Adaptation by Teachers

Von Glasersfeld (1990) underlines that learning happens through constructing new knowledge on prior knowledge. At this point, the constructivist curriculum requires mathematics teachers to provide teaching where they create learning environments to let students construct mathematical concepts. Making the students the center of the learning environment, teachers are expected to provide space for students to discover mathematical concepts and abilities. In order to be able to solve problems, connect concepts, communicate through mathematics, and using multiple representations to understand mathematics; the students need environments where they do mathematics (National Council of Teachers of Mathematics [NCTM], 1989, 2000).

To be able to create effective learning environments, teachers should appropriately adapt the suggested curriculum into their teaching. Adaptation process differs on the teachers who see mathematics as changeable and believe that students can learn mathematics through constructing meaning for it (e.g., Remillard, 1999). Some research in the literature points that teaching is a multi-
dimensional activity and it requires deep analyses to understand the level of curriculum adaptation by teachers (Eryaman & Bruce 2015; Drake & Sherin, 2006; Orrill & Anthony, 2003; Remillard, 1999).

Teachers may not effectively evaluate how productively they adapt student-centred approach to teaching no matter how positive their perception towards constructivism is (Ocak, 2012; Savasci & Berlin, 2012). Frykholm’s (1999) study on the secondary mathematics prospective teachers reveals that they could not apply their vision of reform into their own teaching practices. While some of the prospective teachers were willing to and confident in implementing reform in the classrooms, some had questions in their minds because of some limiting factors. This shows that being willing to implement reform may not be enough in putting it into the practice.

In their study investigating prospective teachers’ instructional preferences for student-centred learning environments as well as the relation between their preferences and their approaches to learning, Baeten, Dochy, Struyven, Parmentier, and Vanderbruggen (2016) point that it is still a proactive research area to explore the interrelation between student teachers’ instructional preferences and approaches to learning, since literature yield ambiguous results. They add that understanding prospective teachers’ instructional preferences is important as they will be the teachers to apply student-centred teaching methods in their future practice.

The Motivation of the Study

Learners construct their own knowledge through building new knowledge on previous knowledge (Harrington, 1995). While doing that they experience disequilibrium, and then create equilibrium in order to construct new knowledge both individually and through social interaction. In a study by Mayo (2004), teachers learned through classroom interaction as they tried to find solutions to the problems together, and they created knowledge through integrating theory and practice as they reflected on the dilemmas of practice. Then, as suggested by sociocultural theory, learners can construct personal and social knowledge through communicating in learning communities (Arellano et al., 2001).

Pedagogical Formation Certificate Program students in the present study are the graduates from universities’ mathematics departments. They represent a group of future teachers for whom teaching was not a first choice, but who decided to become teachers after graduating from Science and Literature faculties. In these faculties, they mainly take courses related to advanced mathematics without any emphasis on teaching competencies. During the 2 to 4 semester-formation programs, on the other hand, they take courses parallel to courses in Education Faculties, and are educated to teach 9-12th grade students in secondary schools.

Considering the requirements of current teacher training programs and secondary school mathematics curriculum, these future teachers are expected to give student-centred teaching, and create meaningful learning opportunities for students. At this point, it should be noted that they were educated through teacher-centred instruction until they were introduced to student-centred approach to teaching during formation program. Thus, they are expected to change their teacher-centred perceptions of teaching in a short period of time. In this study, the aim was to examine whether and how prospective teachers can create a new understanding of teaching and learning through constructing personal and social knowledge via communicating in a learning community (Arellano et al., 2001). When it is considered that teacher effectiveness is one of the factors that has an impact on student achievement (Cochran-Smith & Power, 2010; Darling-Hammond, 2000; Rockoff, 2004), it can easily be understood why it is important to provide places for future teachers to assess their own understanding of effective teaching and learning environments.

The findings are not only expected to shed light on pedagogical formation certificate program students’ perceptions and adaptation levels, but also that of in-service and prospective teachers who need to provide student-centred instruction.
Purpose and Research Questions

In core of this discussion, in this research study, the aim was to investigate prospective secondary mathematics teachers’ perceptions on and adaptation of student-centred approach to teaching in an environment where they had a chance to integrate theory and practice, and reflect on their practice. To do this, an environment where prospective mathematics teachers had an opportunity to undertake micro teaching experience and then held class discussions as a learning community was created. The study explored the following research questions:

1. What are the perceptions of the prospective secondary mathematics teachers towards student-centred approach to teaching after instruction?
2. To what extent the prospective secondary mathematics teachers adapt the student-centred approach to their teaching?
3. What is the relationship between the perceptions of teachers and their adaptation level?

Method

In order to benefit both from the advantages of quantitative and qualitative methodologies, in this study, a mixed-methods design that is the convergence model of Triangulation Design was employed (Creswell & Clark, 2007) for the first research question. Accordingly, it was aimed to obtain complementary qualitative data after collecting quantitative data in order to better understand the perceptions of the participants towards student-centred approach to teaching. For the second research question, an exploratory qualitative study using basic interpretive design (Merriam, 2009) was employed while the last research question was quantitative in nature having correlational design (Fraenkel & Wallen, 2009).

The study was conducted with prospective secondary mathematics teachers in 2014-2015 fall academic year in a university in western Turkey. The prospective teachers were the graduates from mathematics departments from different universities’ Science and Literature faculties, and were educated to teach 9-12th grade students in secondary schools during their Pedagogical Formation Certificate Program at the Education Faculty. The participants were taking Teaching Methods course from the first researcher during the study. The participants were also taking School Experience course where they were practicing teaching in secondary schools.

During the Teaching Methods course, at the beginning of the semester, the prospective teachers received theoretical knowledge on student-centred approach to teaching, after that, they were divided into groups of two and were given their mathematics topics to undertake microteaching in the classroom. There were 31 groups in total, and the assigned mathematics topics were selected among three learning domains (numbers and algebra, geometry, and data and probability). In each lesson, 4-5 groups undertook their micro teaching, and after each teaching experience, class discussions were held. Each microteaching experience and related class discussion were video-taped with the permission of the participants.

Data Collection

To evaluate the perceptions of the prospective teachers towards student-centred approach to teaching, the Constructivist Learning Environment Survey (CLES) was administered at the beginning and at the end of the semester. Among 60, 58 participants were reached. The survey was consisted of 30 items on a 5-point Likert scale ranging from “not at all” to “very much”. The scale was translated into Turkish by Fer and Cirik (2006) from Tenenbaum, Naidu, Jegede, and Austin (2001). CLES has 7 sub-dimensions that are: 1) Arguments, discussions, debates, 2) Conceptual conflicts and dilemmas, 3) Sharing ideas with others, 4) Materials and measures targeted toward solutions, 5) Reflections and
concept investigation, 6) Meeting student needs, and 7) Making meaning, real life examples. The Cronbach alpha value was .91, and the internal consistency among the seven factors in the scale ranged from .89 to .94. In the present study, the Cronbach alpha value was found .84 for pre-test and .87 for post-test.

In order to strengthen the findings of the quantitative data to answer the first research question, in the qualitative part of the study, after they completed their micro-teaching, participants were asked to answer 13 reflection questions prepared by the researchers. For the reflection questions, expert opinion was taken from an educator in the same faculty. In total, 56 participants were willing to answer the reflection questions. The questions were related to the main points of student-centred approach to teaching. Mainly, the prospective teachers were asked to reflect on teacher and student responsibilities during a lesson, how they would make their lessons meaningful for the students, how they would make the students active during the class, how an effective teaching and learning environment should be, and how they would maintain their classroom to be constructivist etc.

To collect data on the second research question, microteaching experiences of the prospective teachers were video-recorded. The content of the videos provided data on the extent that the prospective secondary mathematics teachers adapted the student-centred approach to teaching.

For the last research question on the relationship between the prospective teachers’ perceptions on and adaptation level of student-centred approach to teaching, participants’ post CLES scores and microteaching scores were the data sources.

Data Analysis

For the analysis of the quantitative data, SPSS 17 was used. To answer the first research question on prospective secondary mathematics teachers’ perceptions towards student-centred approach to teaching after instruction, paired-sample t-test was employed to evaluate the impact of the intervention on participants’ scores on CLES. This test was employed as the aim was to compare the mean score of pre and post-intervention on some continuous variable (Pallant, 2007), and also the normality assumptions were met. A Wilcoxon Signed Rank Test -being the non-parametric alternative of t-test- was used to analyze the sub-dimensions of CLES as the normality assumptions of the data were not met for the sub-dimensions.

For the qualitative data, in order to explore prospective secondary mathematics teachers’ perception on student-centred approach to teaching, content analysis technique was utilized (Neuendorf, 2002). In creating the coding framework, we primarily draw upon from the book Seven Goals for the Design of Constructivist Learning Environments by Honebein (1996). We also used NCTM standards as our second framework. Accordingly, the codes were student-centredness, connection, engagement, problem solving, communication, representations, and learning with understanding. Two coders evaluated the reflection papers, and the codes were discussed until full percent of agreement was found among the raters. Selected videos of the class discussions were also analyzed for triangulation purposes.

In order to answer the second research question on the adaptation level of the prospective teachers, while analyzing their microteaching videos, we searched for the same codes we came up during the reflection analysis. To score the participants’ microteaching performance in the videos, we evaluated their adaptation of the codes into their teaching. To do this, we ranked their adaptation levels for each code as 0-no adaptation, 1-low adaptation, 2-medium adaptation, and 3-high adaptation. The total scores for each code were calculated ranging between 0-93, and then related percentages were calculated.

For the last research question to investigate the relationship between the perceptions of teachers and their adaptation level, we looked for the relationship between participants’ post CLES scores and microteaching scores. To score their micro-teaching performance, we evaluated their
adaptation of the codes into their teaching. A Spearman’s (rho) test was used to investigate the relationship between CLES and microteaching scores, since microteaching scores were not normally distributed.

**Findings**

**What are the perceptions of the prospective secondary mathematics teachers towards student-centred approach to teaching after instruction?**

To answer this question, paired-samples t-test was conducted to evaluate the impact of the intervention on prospective teachers’ scores on CLES. Paired-samples t-test results (see Table 1 below) revealed that there was a statistically significant increase in CLES scores from pre-test (M=108.86, SD=9.97) to post-test (M=116.53, SD=10.28), t(57)=-4.75, p<.0005 (two-tailed). The mean increase in CLES scores was -7.67 with a 95% confidence interval ranging from -10.91 to -4.43. The eta squared statistic (.28) indicated a large effect size (Cohen, 1988 as cited in Pallant, 2007).

**Table 1. Paired Samples T test scores of Pre-test and Post-test of CLES scores**

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
<th>sd</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test</td>
<td>108.86</td>
<td>58</td>
<td>9.97</td>
<td>57</td>
<td>-4.75</td>
<td>.000</td>
</tr>
<tr>
<td>Post-test</td>
<td>116.53</td>
<td>58</td>
<td>10.28</td>
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</tr>
</tbody>
</table>

When the sub-dimensions of CLES were analyzed, it was found that on 6 of the 7 sub-dimensions (except for 4th sub-dimension—materials and measures targeted toward solutions) there was a statistically significant increase on CLES scores. Accordingly, a Wilcoxon Signed Rank Test for arguments, discussions, debates sub-dimension (see Table 2 below) revealed a statistically significant increase in CLES scores following intervention, z=-4.34, p<.001, with a medium effect size (r=.41) (Cohen, 1988 as cited in Pallant, 2007). The median score on this sub-dimension of CLES increased from pre-test (Md=19) to post-test (Md=21). The test for conceptual conflicts and dilemmas sub-dimension revealed a statistically significant increase in CLES scores following intervention, z=-2.48, p<.05, with a medium effect size (r=.33). The median score on this sub-dimension of CLES increased from pre-test (Md=7) to post-test (Md=8). For sharing ideas with others sub-dimension, the test revealed a statistically significant increase in CLES scores following intervention, z=-2.27, p<.05, with a medium effect size (r=.30). The median score on this sub-dimension of CLES increased from pre-test (Md=16) to post-test (Md=17). Similarly, a Wilcoxon Signed Rank Test for reflections and concept investigation sub-dimension revealed a statistically significant increase in CLES scores following intervention, z=-1.99, p<.05, with a medium effect size (r=.26). The median score on this sub-dimension of CLES increased from pre-test (Md=23) to post-test (Md=24). The Test for meeting student needs sub-dimension revealed a statistically significant increase in CLES scores following intervention, z=-4.11, p<.001, with a large effect size (r=.54). The median score on this sub-dimension of CLES increased from pre-test (Md=16) to post-test (Md=18). Finally, a Wilcoxon Signed Rank Test for making meaning, real life examples sub-dimension revealed a statistically significant increase in CLES scores following intervention, z=-3.03, p<.005, with a medium effect size (r=.40). The median score on this sub-dimension of CLES increased from pre-test (Md=15) to post-test (Md=17).
Table 2. Wilcoxon Signed Rank Test Results of the Sub-dimension of CLES

<table>
<thead>
<tr>
<th></th>
<th>ADD post-pre</th>
<th>CC post-pre</th>
<th>SI post-pre</th>
<th>MMTTS post-pre</th>
<th>RCI post-pre</th>
<th>MSN post-pre</th>
<th>MMRLE post-pre</th>
</tr>
</thead>
<tbody>
<tr>
<td>$Z$</td>
<td>-.343$^a$</td>
<td>-2.484$^a$</td>
<td>-2.274$^a$</td>
<td>-.069$^b$</td>
<td>-1.986$^b$</td>
<td>-.019$^b$</td>
<td>-3.026$^b$</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.000</td>
<td>.013</td>
<td>.023</td>
<td>.945</td>
<td>.047</td>
<td>.000</td>
<td>.002</td>
</tr>
</tbody>
</table>

Based on negative ranks.
Based on positive ranks.
Wilcoxon Signed Ranks Test

In order to strengthen the quantitative findings, examining prospective teachers’ reflection papers through content analysis, we used the codes student-centredness, connection, engagement, problem solving, communication, representations, and learning with understanding. The data analysis using these codes indicated that the content of the reflection papers could be organized under the themes below:

Student-centredness was the most dominant element of prospective teachers’ reflections with the frequency of 221; connection and engagement were the other issues mostly discussed (frequencies were 71 and 57 respectively); and the other issues were discussed rather in low frequencies where communication was discussed with the frequency of 42, problem solving was discussed with the frequency of 41, representations with 32, and learning with understanding with the frequency of 23.

To provide an example, in the reflection papers, we learned from the following quotation that a prospective teacher (p-17) focused on student-centredness as well as connection together as the important requirements of a student-centred teaching environment:

For an effective teaching and learning environment, student should be active, they can raise questions freely, the teacher should be a guide and facilitator, and the concepts should be integrated into real life.

In another quotation, participant-21 reflected that engagement, student-centredness, and communication were the important requirements of a student-centred teaching environment:

The role of the teacher is to attract students’ attention via developing their awareness about the concept. After that, the teacher should help students grasp the content through providing guidance and true interventions. Also (s)he should make students face the problem themselves, and be a facilitator during the problem solving process. The teacher should also let students interact and learn from each other.

In another reflection paper, participant-6 reflected on connection issue as a requirement of student-centred teaching:

Students should be informed about why they are learning the concept, and how the concept will be useful in the following lessons and in their daily lives.

Also, participant-27 reflected on problem solving issue as a requirement of student-centred teaching:

After a short review of previous lesson, I started the lesson with a problem. Instead of giving the rule and solving following exercises, I gave students enough time to think about the problem and I let them solve the problem themselves... I also forced them to think about different ways of solutions instead of getting only one solution.
The above quotations indicated that prospective secondary mathematics teachers were able to reflect on several dimensions of student-centred approach to teaching as their CLES scores increased after instruction.

**To what extent the prospective secondary mathematics teachers adapt the student-centred approach to their teaching?**

To answer this question, we examined prospective teachers’ microteaching videos. For this, in the videos, we searched for the codes we came up during the reflection analysis. Accordingly, we came up with the findings below.

The prospective teachers were mostly able to fulfill the **connection** expectation of student-centred approach to teaching (90.3%). They were able to integrate their lessons into real life, able to integrate former knowledge to the present, and also able to connect subjects to each other as well as to other fields.

Their lessons also covered **representations** and **engagement** dimensions with high percentages respectively (80%). Accordingly, they used materials, technology, and modelling in their lessons; and they drew students’ attention, and motivated them through addressing the history behind the subject, mentioning the usage of the area of the subject etc.

The prospective teachers were mostly able to fulfill the **student-centredness** expectation of student-centred approach to teaching (74.2%). During their lessons, the students were responsible of their own learning and the teachers were the facilitators of student learning.

They also mostly satisfied the **learning with understanding** expectation (73.1%). Accordingly, teachers guided students to learn the concepts meaningfully without memorization, and they let the students discover the concepts.

Their lessons also covered **problem solving** and **communication** dimensions (72%). Accordingly, they based their lessons on problem-based learning, let the students think about the problems, and asked them to find different ways of solutions. They also promoted classroom discussions and group work.

**What is the relationship between the perceptions of teachers and their adaptation level of the student-centred approach to teaching?**

To answer this question, we looked for the relationship between participants’ post CLES scores and micro-teaching scores.

| Table 3. Correlation between CLES and Micro-Teaching Scores of the Participants |
|--------------------------------------|-------------------|--------|
| Correlations                        | CLES              | Micro-teaching |
| Spearman’s rho                      |                   |               |
| CLES scores                         | Correlation Coefficient | 1.000 | .212 |
| Sig. (2-tailed)                     | .                 | .117           |
| N                                   | 56                | 56             |
| Micro-teaching scores               | Correlation Coefficient | .212 | 1.000 |
| Sig. (2-tailed)                     | .117              | .              |
| N                                   | 56                | 56             |

Spearman’s (rho) test investigating the relationship between CLES and micro-teaching scores revealed that there was no correlation between the two variables, $r=.21, n=56, p>.05$ (Cohen, 1988 as
cited in Pallant, 2007), indicating that high levels of CLES did not significantly associated with higher levels of microteaching scores.

**Discussion and Conclusion**

Aiming to understand prospective mathematics teachers’ perceptions on and adaptation of student-centred approach to teaching, the findings of this study revealed that there was an improvement on prospective secondary mathematics teachers’ scores on CLES indicating that the instruction they received helped them improve their perceptions towards student-centred approach to teaching. This finding is motivating, since some studies in the literature (i.e. Baeten et al., 2016) suggest that prospective teachers may prefer teacher-directed instruction over student-centred instruction and/or demand guidance and support in student-centred learning environments as they are mostly used to teacher-directed approach. On the other hand, there are also studies suggesting that when they had a choice, participants prefer constructivist-based teaching approach over traditional lecture-based approach (Gursoy & Karatepe, 2006; Liang & Gabel, 2005).

The findings also revealed that prospective teachers’ perception towards student-centred approach to teaching was organized under the themes student-centredness, connection, engagement, problem solving, communication, representations, and learning with understanding; student centredness being the most dominant element, and connection and engagement being the mostly discussed elements. As stated before, these themes were driven from NCTM (2000) standards, and were pointing to the requirements of classrooms in which doing mathematics was targeted, and the students were the constructors of their own knowledge. In line with this finding, Ocak (2012) and Aglagul (2009) found that teachers considered their lessons constructivist as they let the students discuss and share ideas, they used materials for problem solving, and they connected their lessons to real life. In her study examining graduate students’ perspectives on effective teaching, Hill (2014) also pointed that teaching competence, relationships with students, and teacher attitudes were the categories the data was organized into. Accordingly, effective teaching involved affective processes in learning as well as relationships with students beyond the content presentation and method use. In another study by Sural and Saritas (2015) on pedagogical formation certificate program students’ competencies regarding teaching profession, it was stated that the prospective teachers mostly thought that knowing students was the most vital competency for a constructivist and effective teaching. From here, we can deduce that prospective mathematics teachers in the present study were able to grasp important aspects of constructivist teaching as they received instruction on student-centred approach to teaching.

Analyzing videos of the prospective teachers’ microteaching performance also helped us validate their intentions through student-centred approach to teaching and to understand their adaptation levels. Accordingly, the participants adapted student-centred approach to their teaching in high level, and they were able to satisfy connection, representation, engagement, student-centredness, learning with understanding, problem solving, and communication expectations. As in Mayo’s (2004) study, in the present study, prospective teachers were able to learn through classroom interaction. Experiencing micro-teaching opportunities and reflecting on them helped prospective teachers create new understanding of teaching. As Shirvani (2009) suggests, to create a constructivist environment, merely discussing the importance of the approach is not enough, instead implementation of the approach should be ensured. We believe that the microteaching experience with the following class discussions helped prospective teachers better internalize the structure of the student-centred approach to teaching. As stated before, no matter how positive their perception towards constructivism is, teachers may not be able to adapt student-centred approach into their teaching (Ocak, 2012; Savasci & Berlin, 2012) as in the Frykholm’s (1999) study on the secondary mathematics prospective teachers’ implementation process of reform in the classrooms. From here, in the present study, we can deduce that being exposed to student-centred approach to teaching during the course as well as trying to experience microteaching in line with student-centred approach to teaching helped participants satisfy several expectations of this approach.
Plourde and Alawiye (2003) suggest that when prospective teachers are exposed to constructivist learning, they generally can provide constructivist teaching during their lessons. Moreover, Pajares (1992) underlines that teachers’ perceptions influence their behaviors in their classrooms. In the present study, we were expecting to find that prospective teachers’ positive perceptions towards student-centred approach to teaching would have brought about higher adaptation levels of the approach. In a study by Uredi (2013), a significant relationship between in-service teachers’ attitudes towards constructivist approach and the level of constructivist learning environment establishment was found. On the contrary, we did not find a significant relationship between prospective teachers’ perceptions and adaptation levels. From here, we understand that higher/lower perceptions towards student-centred approach to teaching did not guarantee higher/ lower adaptation levels. At this point, Savasci and Berlin (2012) indicated that teachers’ high embracement of constructivism did not ensure true implementation of constructivist approach. We believe that it should be further investigated how prospective teachers’ perceptions on constructivism relate to their adaptation levels.

To conclude, since the prospective teachers are expected to provide student-centred instruction when they enter the profession, it was important to analyze how effective the Teaching Method course they received during their pedagogical formation certificate program was on influencing their perceptions towards student-centred approach to teaching with their adaptation levels. As a limitation, in the present study, we could not interview the participants face-to-face in order to understand their ideas on and concerns about the implementation of this approach more deeply. For future studies, we recommend to conduct interviews for a better understanding of their reflections about the implementation of the approach as well as the quality of the course.

For future studies, it is also recommended to conduct further studies on understanding the relationship between teachers’ perceptions and adaptation levels with respect to student-centred approach to teaching. We also recommend researchers to investigate how prospective teachers’ perceptions are reflected on their internship practicum, and to examine the long-term effects of intervention on their teaching when they enter the profession. When it is taken into account that prospective teachers may have different views of teaching when they enter the teaching programs as they carry the influence of several years of observation and instruction (Kagan, 1992; Pajares, 1992), and their constructed beliefs might be resistant to change in spite of training (Pajares, 1992; Tabachnick & Zeichner, 1984), it might be necessary to examine how they react to the training when they enter the profession.

References


Educational Website Design Process: Changes in TPACK Competencies and Experiences

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Abstract

The number of technological pedagogical and content knowledge (TPACK) studies has been increasing day by day; however, limited number of studies has provided both quantitative and qualitative findings based on teachers’ learning by design experiences. This study aimed to reveal the changes in pre-service teachers' TPACK competencies in the educational website design process and their experiences in the design process within the scope of a course based on TPACK framework and the learning by design approach. Designed as an embedded mixed design research, the study was conducted with 28 pre-service teachers. The data were collected through the TPACK-deep scale, a survey and e-mails sent to the instructors. The research concluded that the learning by design approach brings pre-service teachers' TPACK competencies in highly effective significant contributions. Moreover, it was revealed that the design process expands pre-service teachers' schemas regarding the properties which digital instructional materials should possess. The research also enlightened the motivating factors such as receiving support and the challenging factors such not being able to use software for the pre-service teachers in the design process. Finally, the findings were interpreted within the framework of TPACK and the learning by design approach and recommendations were made for future practices and studies.

Keywords: TPACK; Pre-Service Teachers; Website Design

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Introduction

Professional teaching courses that are taught at the faculties of education play an important role in pre-service teachers being able to integrate the education with information and communication technologies (ICT). One of the most important courses preparing pre-service teachers for the technological integration in Turkey is the Instructional Technology and Material Design (ITMD). The content of the course includes concepts about instructional technology, planning and implementing the proper technology, features of different instructional technologies and developing materials by using these technologies, and examining and evaluating the visual design principles and educational software (the Council of Higher Education, 2007). The vision set by the Ministry of National Education (2013) regarding the information technology in the Turkish educational system emphasizes the importance of this course on preparing prospective teachers for technology-integrated lessons.

Preparing pre-service teachers for the ICT integration is a complicated task due to the quick-changing nature of ICT and different information sources that need to be synthesized (Chai, Koh & Tsai, 2010). It is also difficult to create a knowledge base composed of different components for pre-service teachers (Pamuk, 2012). Technological integration models and approaches may lead the way in this respect. Yet, there are no guides on how to teach the ITMD course, which aims at bringing the ability to integrate learning-teaching processes with technology in pre-service teachers, on the basis of a certain theoretical infrastructure. At this point, technological pedagogical content knowledge (TPACK) framework, which focuses on what teachers need to know in integration of technology into education, and the learning by design approach, which shows the way of how to bring in TPACK, can be considered.

In this research, learning by design approach was adopted and the pre-service teachers designed an educational website for primary and secondary school students in the ITMD course. Hence, it was aimed that the pre-service teachers attain knowledge and skills necessary to create an interactive online environment that would contribute to students' non-class learning. The study investigated possible changes in the TPACK competencies of pre-service teachers who experienced a learning process by designing. It also aimed to reveal the factors that motivate and challenge the pre-service teachers in this process by focusing on their design experiences.

Theoretical background

The instructional planning should focus on the curricular requirements, learner needs, the affordances and limitations of existing technologies and the school and classroom environment so that educational technologies can be integrated with instruction effectively (Eryaman, 2006; Harris & Hofer, 2011). For such a planning, one needs to understand and support the mutual and complex relationship between technological, pedagogical and instructional contents in the TPACK framework through teacher training programs (Hoffer & Grandgenett, 2012).

The TPACK framework is composed of three main components: technology, pedagogy, and content. The components formed by the intersection of these three main components are the pedagogical content knowledge (PCK), the technological content knowledge (TCK), technological pedagogical knowledge (TPK) and the technological pedagogical content knowledge (TPCK) (Mishra & Koehler, 2006). The TPACK model is based on Shulman's (1987) idea of pedagogical content knowledge (PCK). PCK is about how a given subject or problem is organized and presented in accordance with different interests and skills of students (Shulman, 1987). TPACK, on the other hand, is a type of knowledge that a teacher possesses regarding the use of both pedagogical and technological knowledge together in teaching a given subject. The components of the TPACK model defines different types of knowledge which teachers need to have for an effective technological integration (Mouza, 2016). Criticizing the approaches that focus on attaining technological skills independently from pedagogy and content, the TPACK model argues that teachers' knowledge is complicated and versatile (Baran, Chuang & Thompson, 2011). The TPACK model can be utilized as
a theoretical framework for the professional developments of both pre-service and in-service teachers as well as for measuring the knowledge of teacher (Schmidt et al., 2009).

TPACK does not specify how to enhance the types of knowledge that teachers need to have even though it defines them (Koehler et al., 2011). Koehler and Mishra (2005a) regard the learning by design approach as a way of establishing relationships between technology, pedagogy, and content knowledge and securing the integration of pedagogy with educational technologies. In the learning by design approach, teachers design for a given area of subject and learning objectives by using the technological tools (Koehler & Mishra, 2005b). These designs are intended for solving an authentic problem. Learning by design is a form of contextualized knowledge construction (Chai, Koh, & Tsai, 2013) and teachers use technological, content and pedagogical knowledge together at every step of the design process (Koehler & Mishra, 2005b). Rosson and Carroll (2010) states that authenticity of the learning by design approach is developed through the brainstorming and the discussion of design ideas among peers in a team environment. More systematically, Baran and Uygun (2016) specified eight principles in accordance with the learning by design approach for improving participants’ TPACK. These include These principles are “brainstorming of design ideas, design of technology-integrated artefacts, examination of design examples, engagement with theoretical knowledge, investigation of information and communication technology (ICT) tools, reflection on design experiences, applying design in authentic settings, and collaboration within design teams” (Baran & Uygun, 2016, p. 48).

The ITMD course, which will guide pre-service teachers in designing materials for a given area of subject by using instructional technologies, can be organized as a course in which pre-service teachers’ TPACK is developed by adopting the approach and principles of learning by design.

Implementing materials enriched with collaborative design activities and technology is an effective solution that improves teachers’ TPACK (Voogt, Fisser, Pareja Roblin, Tondeur, & van Braak, 2013). Different research studies conducted with pre-service teachers, in-service teachers, lecturers and faculty members reported the positive impact of learning by design activities on TPACK (Ansyari, 2015; Chai, Koh, & Tsai, 2010; Kafyulilo, Fisser, Pieters, & Voogt, 2015; Koehler & Mishra, 2005a; Koh & Chai, 2014; Sancar Tokmak, Yanpar Yelken, & Yavuz Konokman, 2013; Sancar Tokmak, 2015). There are few studies that integrate different strategies such as instructional design with educational technologies or content-based method courses (Mouza, 2016) and that investigate computer-based material design experiences of pre-service teachers (Baytak & Hirca, 2013). In addition, Baran and Canbazoglu-Bilici (2015) stated that majority of TPACK research in Turkey is quantitative and based on scale results and requires design and application studies. It is considered important to design the research studies in consideration of the shortcomings in the literature.

The purpose of this research is to reveal the possible changes in the TPACK competencies of pre-service teachers in the process of designing an educational website within the scope of a course based on the TPACK model and the learning by design approach. This study also aims at reveal pre-service teachers’ experiences in the design process. The guiding research questions are as follows:

1. Is there any significant difference between the TPACK competency pretest and posttest scores of pre-service teachers who design an educational website?
2. How does the pre-service teachers’ perception of the necessary features of digital instructional materials change after designing educational website?
3. What are the contributions of educational website design to the pre-service teachers?
4. What are the circumstances that motivate the pre-service teachers in the process of educational website design?
5. What are the challenges the pre-service teachers confront in the process of educational website design?
6. What are the pre-service teachers’ solutions to cope with the challenges confronted in the process of educational website design?
Method

Research design

The design of the research is the embedded mixed design which is one of the mixed research methods. In the embedded mixed design, researchers integrate a qualitative or quantitative research with the collection and analysis of both quantitative and qualitative data. Collection and analysis of the second data set can be before, during and/or after collecting and analysis of the data for the main research design (Creswell & Plano Clark, 2011). In this research, the qualitative data were embedded in the one-group pretest-posttest experimental research. Before, during and after the implementation, the qualitative data were collected and answers were sought for the last five questions abovementioned. The steps followed during the data collection process of the research which extended to 14 weeks are shown in Figure 1.

![Figure 1. Data collection procedure of the study](image)

Participants

The research was conducted with 28 pre-service teachers who were selected with the convenience sampling method and who registered in the Instructional Technology and Material Design (ITMD) course at the Department of Computer Education and Instructional Technology (CEIT) in a Turkish state university.

The characteristics of the research group are as follows in accordance with the data obtained with the participant information form filled by the pre-service teachers before the ITMD course started (Table 1).

**Table 1 Participant characteristics**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>10</td>
</tr>
<tr>
<td>Male</td>
<td>18</td>
</tr>
<tr>
<td>Experience of using computer</td>
<td></td>
</tr>
<tr>
<td>1-3 years</td>
<td>3</td>
</tr>
<tr>
<td>4-6 years</td>
<td>9</td>
</tr>
<tr>
<td>7-9 years</td>
<td>10</td>
</tr>
<tr>
<td>More than 10 years</td>
<td>6</td>
</tr>
<tr>
<td>Duration of daily Internet usage</td>
<td></td>
</tr>
<tr>
<td>Less than 1 hour</td>
<td>4</td>
</tr>
<tr>
<td>1-3 hours</td>
<td>13</td>
</tr>
<tr>
<td>4-6 hours</td>
<td>5</td>
</tr>
<tr>
<td>7-9 hours</td>
<td>5</td>
</tr>
<tr>
<td>More than 10 hours</td>
<td>1</td>
</tr>
<tr>
<td>Logging in social networks</td>
<td>25</td>
</tr>
<tr>
<td>Purpose of Internet usage</td>
<td></td>
</tr>
<tr>
<td>Researching</td>
<td>22</td>
</tr>
</tbody>
</table>
Before the course started, pre-service teachers' levels of using different instructional technologies such as image, audio and video editing, animation and game creation and website design were determined through the participant information form. It was seen that the percentage of pre-service teachers who had not used any of the instructional technologies in the form or who had low levels of using those technologies varied between 67.9% and 100%. In addition, the participants took the Introduction to the Science of Education and Educational Psychology courses before taking this course and the Instructional Principles and Methods and Curriculum and Education courses during this research under the name of pedagogical courses.

### Data collection

The participant information form, TPACK-deep scale, the survey regarding the digital instructional materials and design process, and the e-mails sent to the instructors are the data collection instruments of this study. The participant information form is composed of questions related to gender, experience of using computer, duration of daily Internet usage, purpose of Internet usage, experience of digital instruction material design, and levels of using different instructional technologies.

The TPACK-deep scale, developed by Kabakçı Yurdakul, Odabaşı, Kılıçer, Çoklar and Kurt (2012), was used to observe the change in pre-service teachers' techno-pedagogical competencies. The reason why the TPACK-deep Scale was chosen over other TPACK scales in the literature is that it focuses on different aspects that shape the basis of TPACK's theoretical framework instead of measuring the components of TPACK individually. The TPACK-deep scale is composed of 33 items and four factors. These factors are design, exertion, ethics and proficiency. The design factor involves items related to pre-service teachers’ design of instruction within the framework of their TPACK competencies; the exertion factor is composed of items regarding their competency of using technology for conducting the instruction and assessing and evaluating the effectiveness of the instruction; the ethics factor includes the items regarding their competencies about ethical issues such as privacy, accuracy and accessibility; and the proficiency factor is composed of items regarding pre-service teachers' ability to lead the technological integration and to solve problems about pedagogy, content and technology. The scale items are 5-point Likert type: “Strongly disagree”, “Disagree”, “Neither Agree or Disagree”, “Agree”, and “Strongly Agree.” Cronbach's Alpha internal consistency coefficient was found to be .95 for the whole scale (Kabakçı Yurdakul et al., 2012). The internal consistency coefficients were found to be .97 for the pretest and .96 for the post test in this research conducted with 28 pre-service teachers. It was confirmed through the confirmatory factor analysis that the scale constitutes a four-factor structure (Kabakçı Yurdakul et al., 2012).

The survey on the digital instructional materials and the design process included an open-ended question asking what properties the digital instructional materials should possess. This question was asked to the participant both before and after the course. At the end of the course, three open-ended questions more were asked about the motivating and challenging factors experienced by pre-service teachers in the design process, how they cope with the challenging factors and the contributions made by digital instructional material design. Finally, several e-mails were sent to the course instructors to receive feedbacks about the problems experienced by pre-service teachers in the design process and their progress plans of their designs. All these e-mails were replied by the researchers meticulously.
Procedure

Firstly, the researchers prepared the content of the ITMD course' theoretical and practical class hours for the 14-week research period. TPACK-deep scale's design, exertion, ethics and proficiency subdimensions and the principles of TPACK-learning by design approach were considered during design of the course. The activities to guide pre-service teachers when designing digital instructional materials were specified for both theoretical and practical class hours.

In the theoretical class hours, the researchers gave place to the subjects such as concepts about the instructional technology, technological integration in education, properties of different instructional technologies and developing materials by using these technologies, and examining and evaluating the visual design principles and the educational software. It was aimed in the theoretical class hours that the pre-service teachers acquired the information that could play a role in improving their design competencies.

During the practical class hours, different instructional technologies and software programs that can be used for image, audio and video editing, animation and game creation and website design were presented. In addition, activities for improving pre-service teachers' skills of using these technologies in instruction (e.g. material design aiming the instruction of geometric shapes through the drag-and-drop game method using the Adobe Flash software and infographic design that allows for a visual presentation about the course contents of the first year of the CEIT department using Adobe Photoshop) were performed. These pieces of homework were designed as activities in which the pre-service teachers could use all the components of the TPACK model before starting their material design projects.

As a course project, it was asked from the pre-service teachers to design an educational website for a certain target group and area of subject as a digital instructional material. It was expected that these educational websites would include different materials such as infographic, video, game, test and animation to attract students' attention in accordance with their target grade levels, enhance their motivation and participation and ensure the evaluation of their knowledge.

Working in collaboration in pairs, the pre-service teachers firstly examined the curricula of Science, Mathematics and Instructional Technologies and identified the instructional objectives. They shared the target group and general purpose of the materials they were planning to design in regard to those instructional objectives with their friends. Next, they analyzed the target group and content of those materials and wrote reports by using the digital and printed sources in the company of guiding questions provided by the researchers. They also determined in their reports what to be careful about in their material designs in consideration of the target group and the content.

In the next step, it was asked from the pre-service teachers to specify the instructional methods, media and materials they would use for each instructional objective in a table along with their justifications. In addition, it was expected from them to plan every step of how the instruction would take place in their educational websites and create the template images of the materials. Hence, it was aimed that the pre-service teachers would design their educational websites taking all three of their technological, pedagogical and content knowledge into consideration. Finally, the reports written by the pre-service teachers in the stage of designing their materials were reviewed by the instructors and feedbacks were provided to the pre-service teachers.

The pre-service teachers who designed the materials started to develop their materials by using different instructional technologies in accordance with the knowledge and skills they had acquired in the theoretical and practical classes. In this process, the pre-service teachers were required to pay attention to the ethical issues regarding the technology. They were asked to mention the sources of different types of contents they used in their materials and be sure about the validity and reliability of those sources.
Different strategies were applied in the scope of the proficiency factor of their TPACK competencies. Primarily sharing the new technologies during the course in which the research was being conducted and using those technologies in the courses, the researchers set examples for leading the use of new technologies in instruction. In addition, the researchers diminished the amount of help they were giving to the pre-service teachers and asked them to investigate and solve the problems they were facing in the design process. Finally, the pre-service teachers shared their digital instructional materials and design processes with their friends in the classroom environment and they received feedbacks about the designed materials from each other.

Data analysis

The SPSS 20.0 software was used in the analysis of the quantitative data obtained with the TPACK-deep scale. Firstly, the dependent groups’ t-test was performed by controlling its assumptions to see if there was significant difference between pre-service teachers’ pretest and posttest TPACK-deep scores. Score difference distributions being normal and the data being in the type of at least equal interval type are the two assumptions of the dependent t-Test (Field, 2009). The differences between pretest and posttest scores obtained in each subdimension of the scale were calculated and it was examined with Kolmogorov-Smirnov test whether the normal distribution was achieved. It was seen that the normality assumption was met in all the scores calculated ($p > .05$).

Table 2 Inter-rater reliability scores of data analysis

<table>
<thead>
<tr>
<th>Categories</th>
<th>Experts</th>
<th>Number of Coding</th>
<th>Intercoder Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>What properties the digital instructional materials should</td>
<td>Coder 1</td>
<td>52</td>
<td>86.8%</td>
</tr>
<tr>
<td>possess (Before the course)</td>
<td>Coder 2</td>
<td>49</td>
<td></td>
</tr>
<tr>
<td>What properties the digital instructional materials should</td>
<td>Coder 1</td>
<td>101</td>
<td>89.4%</td>
</tr>
<tr>
<td>possess (After the course)</td>
<td>Coder 2</td>
<td>113</td>
<td></td>
</tr>
<tr>
<td>The contributions to the pre-service teachers at the end of the</td>
<td>Coder 1</td>
<td>34</td>
<td>84.6%</td>
</tr>
<tr>
<td>educational website design</td>
<td>Coder 2</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>The circumstances that motivate pre-service teachers in the</td>
<td>Coder 1</td>
<td>32</td>
<td>82.9%</td>
</tr>
<tr>
<td>process of educational website design</td>
<td>Coder 2</td>
<td>37</td>
<td></td>
</tr>
<tr>
<td>The challenges pre-service teachers confront in the process of</td>
<td>Coder 1</td>
<td>32</td>
<td>88.6%</td>
</tr>
<tr>
<td>educational website design</td>
<td>Coder 2</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>Ways of coping with the challenges pre-service teachers</td>
<td>Coder 1</td>
<td>50</td>
<td>81.0%</td>
</tr>
<tr>
<td>confront in the process of educational website design</td>
<td>Coder 2</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>86.1%</td>
</tr>
</tbody>
</table>

The content analysis method was utilized in the analysis of the qualitative data collected in the research. The four phases developed by Yıldırım and Şimşek (2013) were applied in the content analysis process. These are coding the data, finding the themes, organizing the codes and themes, and defining and interpreting the findings. To enhance the reliability of the qualitative data analysis, the two author of the research worked independently and identified the codes and themes in the first place, and then they came together to compare and discuss the given codes and themes. In addition, the intercoder reliability was calculated using Miles and Huberman's (1994) formula, Percentage of Agreement = Consensus / (Consensus + Dissidence) x 100. According to Miles and Huberman (1994, p. 64), it is recommended that percentage of agreement between two coders is higher than 70%. The reliability percentage was calculated separately for each category. The average reliability percentage of all categories as well as the number of coding and the reliability percentages for each category are shown in Table 2.

It is seen in Table 2 that the average percentage of agreement for all the categories is higher than the critical value mentioned by Miles and Huberman (1994, p.64). It is therefore possible to say
that the intercoder reliability was achieved (Büyüköztürk et al., 2008). Upon the completion of all validity and reliability procedures in the research, the codes obtained under the categories of the qualitative research questions were gathered under the themes and presented under the titles of findings and interpretation individually.

Findings

Change in pre-service teachers’ TPACK competencies

To be able to see the changes in pre-service teachers’ TPACK competencies after having designed the educational website, the scores obtained from the subdimensions of and the whole TPACK-deep scale were compared with the dependent t-test, and the results are presented in Table 3.

<table>
<thead>
<tr>
<th>TPACK-deep</th>
<th>Pretest</th>
<th>Posttest</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>p</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td>Pretest</td>
<td>28</td>
<td>36.36</td>
<td>6.19</td>
<td>-3.04</td>
<td>.005</td>
<td>.50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Posttest</td>
<td></td>
<td>40.36</td>
<td>5.79</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exertion</td>
<td>Pretest</td>
<td>28</td>
<td>44.14</td>
<td>6.91</td>
<td>-4.76</td>
<td>.000</td>
<td>.66</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Posttest</td>
<td></td>
<td>49.93</td>
<td>5.72</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethics</td>
<td>Pretest</td>
<td>28</td>
<td>21.71</td>
<td>4.12</td>
<td>-3.92</td>
<td>.001</td>
<td>.60</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Posttest</td>
<td></td>
<td>24.64</td>
<td>3.18</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proficiency</td>
<td>Pretest</td>
<td>28</td>
<td>17.00</td>
<td>2.99</td>
<td>-3.32</td>
<td>.003</td>
<td>.54</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Posttest</td>
<td></td>
<td>19.57</td>
<td>3.64</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total score</td>
<td>Pretest</td>
<td>28</td>
<td>119.21</td>
<td>18.20</td>
<td>-4.38</td>
<td>.000</td>
<td>.64</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Posttest</td>
<td></td>
<td>134.50</td>
<td>16.33</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It is seen in Table 3 that the average posttest scores obtained by the CEIT students from the scale subdimensions and the whole scale are higher than the average pretest scores. The t-test results in the table shows that there are significant differences between the design pretest ($M = 36.36, SD = 6.17$) and posttest scores ($M = 40.36, SD = 5.79$) ($t = -3.04, p < .05, r = .50$), the exertion pretest ($M = 44.14, SD = 6.91$) and posttest scores ($M = 49.93, SD = 5.72$) ($t = -4.76, p < .05, r = .66$), the ethics pretest ($M = 21.71, SD = 4.12$) and posttest scores ($M = 24.64, SD = 3.18$) ($t = -3.92, p < .05, r = .60$), the proficiency pretest ($M = 17.00, SD = 2.99$) and posttest scores ($M = 19.36, SD = 3.64$) ($t = -3.32, p < .05, r = .54$), and finally, the total TPACK competency pretest ($M = 119.21, SD = 18.20$) and posttest scores ($M = 134.50, SD = 16.33$) ($t = -4.38, p < .05, r = .64$). In addition to the significant differences, it was found that designing an educational website has a high impact on pre-service teachers’ TPACK competencies. Based on this finding, it can be said that a course adopting the learning by design approach makes contributions to pre-service TPACK competencies.

Changes in pre-service teachers’ perceptions of the properties of digital instructional materials (DIM)

The pre-service teachers wrote their thoughts about what properties the digital instructional materials (DIM) should possess down in the survey before and after the course. The data obtained were coded and are presented in Table 4 and Table 5.
As can be seen in Table 4, the pre-service teachers mentioned about 13 properties of digital instructional materials under the themes of conformity to goal, visual design and providing motivation for 46 times before the course. The pre-service teachers emphasized the properties of digital instructional materials regarding content conformity and evaluation beside the mentioned three themes after the educational website design process (Table 5). In total of 23 properties were reported for 101 times. The increasing number of properties and repetitions may indicate that the pre-service teachers were more informed of the elements to look out for in the design of technology integration. When looking at the codes under the themes more closely, it can be seen that to which direction this change
of knowledge is. For example, the conformity to learner characteristics code emerged under the conformity to goal theme after the course and it was the most repeated code. As for the visual designs of the materials, the pre-service teachers rather mentioned about visual elements such as video and animation after the course. The role of games was emphasized under the providing motivation theme after the course. Properties regarding the materials' content conformity and evaluation are the two new themes created by the pre-service teachers at the end of the design process.

**Contributions of the educational website design to pre-service teachers**

Pre-service teachers' thoughts about the contribution of the educational website design process to them were coded and are presented in Table 6.

Table 6 Contributions of the educational website design to the pre-service teachers

<table>
<thead>
<tr>
<th>Category</th>
<th>Theme</th>
<th>Code</th>
<th>Number of coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contributions of the Educational Website</td>
<td>Learning</td>
<td>Ability to use some of the software</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Learning material design</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ability to produce projects</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acquiring permanent learning</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Inference</td>
<td>Importance of repetition in learning</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Difficulty of teaching profession</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Importance of group work</td>
<td>1</td>
</tr>
</tbody>
</table>

The significant increase in pre-service teachers' TPACK competencies and more detailed definitions of what properties the digital instructional materials should possess are the first indicators of the contributions made by the educational website design. In addition, pre-service teachers' thoughts about the contributions of this process are given in Table 6. The most repeated code among the contributions thematized as learning and inference is learning how to use some of the software. This finding suggests that pre-service teachers' technological knowledge improved. Learning the material design is another emphasized theme. The pre-service teachers having designed an educational website by using their technological, pedagogical and content knowledge and having been informed of how to design materials may be the proof that there was an increase in their TPACK. The inferences they had via reflection at the end of the design process are such as to guide them about future learning experiences.

**Factors motivating the pre-service teachers in the design process**

The data on the factors motivating pre-service teachers in the educational website design process were coded and are presented in Table 7.

Table 7 Factors motivating the pre-service teachers in the design process

<table>
<thead>
<tr>
<th>Category</th>
<th>Theme</th>
<th>Code</th>
<th>Number of coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Factors</td>
<td>Technological prior knowledge</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Awareness of advancing in the right path</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Liking the instructional technologies</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Examining other groups</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Motivating Factors in the Design Process</td>
<td>Participating in the course regularly</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Receiving Support</td>
<td>Support from my friends</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Support from the instructor</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Usefulness</td>
<td>Producing a product</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Benefiting the teacher</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Benefiting the students</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
As shown in Table 7, the factors motivating the pre-service teachers in this process are gathered under three themes: individual factors, receiving support and usefulness. The most repeated motivating factors among the individual factors are pre-service teachers having technological prior knowledge and being aware of advancing in the right path in this process. Receiving support from their friends and instructors are also important factor that motivate the pre-service teachers in the process. Finally, the pre-service teachers were motivated by producing products and benefiting the teacher and students. These factors, especially receiving support and usefulness, provide important inferences about how pre-service teachers can be motivated in the design process.

**Challenges faced by the pre-service teachers in the design process and their ways of coping with the challenges**

The data on the challenges faced by the pre-service teachers in the design process and their ways of coping with those challenges were coded and are presented in Table 8 and Table 9.

**Table 8 Challenges faced by the pre-service teachers in the design process**

<table>
<thead>
<tr>
<th>Category</th>
<th>Theme</th>
<th>Code</th>
<th>Number of coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Challenging Factors in the Design Process</td>
<td>Intrinsic Factors</td>
<td>Not being able to use some of the software</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lack of knowledge</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Disharmony with the project group</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not being able to go down to the level of target group</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Extrinsic Factors</td>
<td>Expensiveness of the software</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inappropriate environment for videos</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Selection of subject</td>
<td>1</td>
</tr>
</tbody>
</table>

The challenges which the pre-service teachers went through the educational website design process were gathered under two themes: intrinsic factors and extrinsic factors (Table 8). It was revealed that the pre-service teachers had difficulty especially in using the software programs and this challenge was quite emphasized. The majority of the e-mails sent to the instructors were about how the problems faced by them could be solved when using the software programs. Lack of knowledge and expensiveness of the programs are also among the challenges reported by the pre-service teachers. Pre-service teachers' ways of coping with those challenges are presented in Table 9.

**Table 9 Pre-service teachers' ways of coping with the challenges in the process**

<table>
<thead>
<tr>
<th>Category</th>
<th>Theme</th>
<th>Code</th>
<th>Number of coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ways of Coping with the Challenges in the Design Process</td>
<td>Receiving Support</td>
<td>Receiving help from the instructor</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Receiving help from friends</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Individual Effort</td>
<td>Receiving help from related webpages</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Researching through several sources</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Repeating what has been learned</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Trial and error method</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Examining other materials</td>
<td>1</td>
</tr>
</tbody>
</table>

According to Table 9, the pre-service teachers overcame the challenges they confronted in the design process by receiving support and/or through individual effort. The most repeated ways of coping with the challenges are receiving help from the instructor and friends and researching through...
several sources. Based on these findings, it can be concluded that the pre-service teacher had the biggest trouble with using the software programs and they overcame the problems by receiving help from more informed and experienced people around them and researching the sources.

**Discussion**

This study aimed to investigate the changes in TPACK competencies of pre-service teachers who designed an educational website and to reveal their design experiences. Firstly, it was found that there are significant differences between the pretest and posttest scores obtained from the TPACK-deep scale's design, exertion, ethics and proficiency subdimensions and the whole scale by the pre-service teacher who designed an educational website. It was also discovered that the application process had a high impact. In similar studies (Koehler & Mishra, 2005a; Chai, Koh & Tsai, 2010; Sancar Tokmak, Yanpar Yelken & Yavuz Konokman, 2013; Koh & Chai, 2014; Sancar Tokmak, 2015), it was also shown that there were significant increases in pre-service teachers' TPACK as a result of designing the materials and courses into which ICT was integrated. These findings indicate that a course adopting the learning by design approach improve teachers' competency of technology integration and TPACK.

Secondly, the change in pre-service teachers’ perceptions of what properties the digital instructional materials should possess was examined. Before the course started, the pre-service teachers addressed the properties of digital instructional materials regarding conformity to goal, visual design and providing motivation while they also emphasized their properties regarding the content conformity of the materials and evaluation after the course ended. There was an increase in the number of properties which the materials should possess and the number of the repetition of these properties. In a closer look at the themes obtained, differently than the properties mentioned before the course, the pre-service teachers emphasized materials’ conformity to learner characteristics, possessing visual elements such as video and animation and providing learner motivation through games. Materials' content conformity and having the evaluation elements are two new themes emerged at the end of the course. These findings may prove that the pre-service teachers became more informed of the elements to look out for in the material design in terms of technology, pedagogy and content and their schemas expanded in this sense. Similarly, it was found in the study conducted by Sancar Tokmak et al. (2013) that pre-service teachers performed different design activities (3D material, ppt presentation, website design, etc.) and their knowledge about different principles of the material design were improved at the end of the process. In another study, the students of the department of early childhood education who were designing an educational game stated that they learned the principles of game design (Sancar Tokmak, 2015). This research also revealed pre-service teachers’ thoughts about what properties the digital instructional materials should have both before and after the course. Thus, the improvement of pre-service teachers' TPACK could be examined more explanatorily with the comparison of the qualitative data obtained before and after the course. In the literature reviews conducted with the TPACK studies in Turkey, it was stated that there are few studies revealing participants' TPACK development processes and studies based on qualitative data are needed (Baran & Canbazoglu-Bilici, 2015; Kaleli Yilmaz, 2015). At this point, this study can lead the way about what kind of a data collection method can be used in related studies in future.

The contributions made by the educational website design process to the pre-service teachers were also investigated in the study. The findings showed that the pre-service teachers emphasized they firstly learned how to use some of the software programs, in other words, their technological knowledge were improved. Secondly, they emphasized that they learned the material design. In the research studies which aimed to improve pre-service teachers' TPACK through design (Koh & Chai, 2014; Koh & Divaharan, 2013), it was indicated that the participants attached more importance to their technological knowledge before the design and that importance lost its strength after the design. In this research, it is intriguing that the participants emphasized their improved technological knowledge more even though there was a significant increase in pre-service teachers' TPACK at the end of the course. The pre-service teachers having the biggest trouble with using some of the software programs
and their effort to overcome the challenges may have caused them to emphasize the component of technological knowledge at the end of the course. As well as the contributions mentioned, the pre-service teachers made some inferences such as how important the repetition is important in learning. Why the pre-service teachers made inferences for their future actions can be explained by the fact that the design process includes conscious thinking, analyzing and learning through reflection (Koehler & Mishra, 2005b).

Pre-service teachers’ design experiences were investigated as well as the improvement of their TPACK. Firstly, the factors motivating them in the educational website design process were examined. It was determined that individual factors such as possessing technological prior knowledge, receiving support from friends and instructors, producing a product, and benefiting teacher and students motivated the pre-service teachers. The pre-service teachers went through a design process aiming to improve their TPACK within the framework of the learning by design approach. The learning by design approach is a constructivist approach based on the assumption that learning occurs through an action and with the interaction between the individual and the environment (Koehler & Mishra, 2005a). Learners play an active role in questioning, investigating and designing processes cooperatively to find solutions to authentic problems and produce tangible and significant products as the outputs of the learning process. The instructors play the role of facilitators and problem solvers instead of being content specialists. In this research, receiving support from friends and instructors and creating a product, which are the factors motivating the pre-service teachers, emphasize the importance of the learning by design approach. Differently from other related studies, the pre-service teachers were motivated by designing an educational website and thinking that they would benefit the teachers and students in the design process. The fact that instructors stated in the design process that the websites to be designed by the pre-service teachers might be used by teachers and students may be one of the strong factors contributing to the case. In future applications, allowing the products created by pre-service teachers for the use by teachers and students in the real classroom environment may ensure that the pre-service teachers respond to authentic problems affectively in the design process.

Challenges faced by the pre-service teachers and their ways of coping with those challenges in the design process formed another research problem. It was especially found that the pre-service teachers had difficulty in using the software programs. It was also determined that their ways of coping with challenges were receiving help from the instructor and friends and investigating several sources. Similar findings were achieved in the studies performed with pre-service teachers from different branches (Sancar Tokmak et al., 2013; Sancar Tokmak, 2015). It was interesting that the participants experienced difficulty in using the software programs although they were the students in the CEIT department. Learning different instructional technologies and software programs such as image, audio and video editing, creating animation and games and designing websites within a term may have caused the pre-service teachers to have difficulties in the design process. Since the design process of ICT integration requires the synthesis of different information and decision phases, it may cause a cognitive load on teachers (Kramarski & Michalsky, 2010). In this sense, trying to integrate learning and education with several software programs may have caused a cognitive load on the pre-service teachers in their design processes. It can be recommended for the future studies that pre-service teachers design educational materials with easy-to-use Web 2.0 technologies instead of software programs.

Conclusion

TPACK has been a developing focus of research among the teacher educators working especially in the field of educational technologies since 2005 (Chai, Koh, & Tsai, 2013). While the number of TPACK studies has been increasing (Wu, 2013), there is insufficient number of studies showing teachers’ TPACK development in regard to the difference between their pretest and posttest scores (Chai, Koh & Tsai, 2010). Limited number of studies which examine development of participants’ TPACK and show how this development occurs in a long application period by using different data collection tools (Kaleli Yılmaz, 2015) encouraged the researchers to conduct such a
study in a necessity. It was firstly concluded in the research that a course adopting the learning by
design approach made important contributions to participants' TPACK competencies. Secondly, it was
revealed that the design process expands pre-service teachers' schemas regarding the properties that
digital instructional materials should possess. This improvement is considered important for showing
the development of pre-service teachers' TPACK from a different aspect. Lastly, recommendations
were made in the research for future practices by revealing factors that motivate and challenge pre-
service teachers in the design process.

There are some limitations of this study. First, the research sample was selected with the
convenience sampling method. That is why the findings obtained are limited in terms of
generalizability. Secondly, the pre-service teachers did not apply their educational websites to the
students in the classroom environment. This is the reason why participants' experiences of carrying out
the instruction and assessing and evaluating the effectiveness of the instruction are limited. This might
have affected the pre-service teachers' scores on the exertion factor of TPACK-deep scale. Therefore,
it is important to allow teachers to apply their design products in real environments in addition to
design activities in future studies aiming to improve their TPACK competencies. Finally, the period of
14 weeks, which is the duration of application in the research, can be too short for teachers to improve
their TPACK competencies in consideration of the complex and versatile structure of technological
integration in education. It is recommended by researchers to integrate different courses in the teacher
training program with design activities in future studies.

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‘We are a Chinese school’: Constructing school identity from the lived experiences of expatriate and Chinese teaching faculty in a Type C international school in Shanghai, China.

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The University of Nottingham: Ningbo Campus

Abstract

This study explores school identity by analysing the perceptions of Chinese and expatriate teachers in a Type C, non-traditional international school in Shanghai, China. The purpose of this study was to build on Hayden’s (2016) work by offering a detailed description of this type of school which continues to be under researched. A mixed-methods approach was adopted that explored the school’s identity on three levels: the rhetorical, the curricula, and the lived. The data revealed considerable discontinuity between these levels, particularly from the perspective of the international teachers. The findings are discussed in relation to cultural scripts for teaching and learning and institutional logics and implications are drawn for creating a more interculturally inclusive school ethos.

Keywords: school identity, mixed methods, curricula, international schools

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Introduction

The number of international schools continues to increase at a staggering rate with 4.2 million children currently attending international schools worldwide (Bunnell, Fertig, & James, 2016). While once the preserve of the children of an elite transnational class, international schools now cater to a diverse range of students. The proliferation of schools calling themselves international has led to considerable confusion as to what constitutes an international school which has been labelled ‘the big terminology debate’ (Marshall, 2007). The need to define these terms has become so complex that many researchers have given up trying to settle on a specific definition of international education and its related aspects (Hayden, 2006). The rapid spread of international education and international schools, which can in part be attributed to the effects of globalisation (Hayden, 2011), has led to new hybrid form of school that caters to the children of affluent national parents. These schools have generally been labelled Type C non-traditional international schools (Hayden, 2006), but in the Chinese context these schools have also been referred to as internationalised (Poole, 2016), bilingual or experimental (Robinson & Guan, 2012). Their emergence in the international market, however, is by no means unproblematic with Bunnell et al. (2016) observing that ‘the emerging presence of the Type C International School substantially further complicates an already complex International School landscape’ (p. 10). The fact that these new schools are primarily aimed at national children also raises the question: how international does a school need to be in order to qualify as an international school? Researchers have offered a number of criteria by which to measure international legitimacy (Bunnell et al., 2016) – that is, the extent to which a school can truly be said to be international. The ISC, for example, define a school as international if it ‘delivers a curriculum […] wholly or partly in English outside of an English-speaking country’ (ISC, 2015, p. 1). Some researchers (Gellar, 2002; Walker, 2016) go further and argue that an international school must be committed to universal values which find their root in an internationally minded curriculum committed to making the world a better place. According to this definition, even IBO World schools which are often perceived to be the gold-standard of international education fall short of this lofty ideal (Gellar, 2002).

This study

Against this backdrop of rapid internationalisation, this study focuses on a Type C non-traditional school in Shanghai, China called East China Normal University Affiliated Bilingual School (ECNUAS for the rest of this article). This types of schools have increased rapidly in China (Robinson & Guan, 2012) and therefore deserve to be explored in more detail. However, little critical research has been done on them (Pearce, 2013). Within the context of this study, an internationalised school is defined as a ‘Chinese’ local school which follows the Chinese National Curriculum and observes symbolic routines such as flag raising ceremonies but also offers some form of international curriculum (e.g. IGCSE or IBDP) which is often taught by both Chinese and expatriate staff. This study aims to add to the literature by offering a detailed description of a Type C school in Shanghai that is informed by Mary Hayden’s work on international schools, particularly her classification of international schools according to a tripartite typology (2006, 2011, 2016). While the work of Hayden and others (Bunnell & Furtig, 2016; Bunnell et al, 2016) is both timely and illuminating, its focus on the macro-level has resulted in the voices of grass roots actors, specifically international teachers being absent from the literature. As an insider practitioner-researcher based in a Type C school in China, I am thus in an advantageous position to offer a qualitative perspective to a complicated, emerging phenomenon. This study, then, builds on that work by offering a qualitatively driven case study of an internationalised school in Shanghai. As such, it answers Bunnell, et al.’s (2016) call for a ‘sharper and more comprehensive analysis of the nature of schools referring to themselves or being referred to as international schools’ (p. 25) – in the context of this study, Type C schools. Taking a pragmatic approach, the nomenclature of ‘school type’ is deemed unsuitable for this endeavour. Therefore, in its place, I offer ‘school identity’ as a conceptual approach that is more congruent with the lived experience of grass roots actors. While I explored the school’s curriculum as an aspect of school identity, I nevertheless privileged the voices of the teachers and their perceptions of the school. This
Combining of deductive and inductive reasoning is reflected in the three research questions that guided this study:

1. What is the school’s rhetorical identity?
2. How is this identity reinforced by the curriculum?
3. How do stakeholders perceive the school’s identity?

Data for questions 1 and 2 were collected through analysis of school documents, such as brochures, and reflecting on my own experience as a teacher in the school. Data for the final question were collected through interviews with both Chinese and expatriate teaching faculty about the school’s flag raising ceremony which provide an insight into the teachers’ perceptions of the school’s identity.

Road map

This study begins by offering a more detailed overview of Hayden’s typology and related studies that have appropriated her typology. As will be shown, there is still a paucity of studies on Type C schools, particularly in the Chinese context, and what does exist is predominantly macro in nature. I next offer a review of two interconnected concepts from the field of organisational studies, namely institutional logics and institutional identity which I then use to analyse the case study school’s identity on three ontological levels. The first level, the rhetorical, explores the school’s identity as it is articulated in school publicity material. The second level, the curricula, makes inferences about the school’s identity by critically analysing the school’s curriculum and related institutional logics. The third level, the lived, explores the school’s identity from the perspective of the expatriate and Chinese teachers. While I expected there to be some incongruence between these three levels, I was surprised to discover that there was in fact considerable discontinuity between them, particularly from the perspective of the international teachers. The results are discussed in relation to the concepts of institutional logics and cultural scripts for teaching learning, and implications are drawn for creating a more inclusive school ethos.

Review of Literature

Typology of International schools

Type A Traditional international schools can be traced as far back as the late 19th century (Hayden, 2016), but really only started to gain traction in the early twentieth-century with the establishment of the International School of Geneva and Yokohama International in 1924 (Hayden & Thompson, 2013). These international schools were designed to cater for the children of globally mobile expatriates and, until late into the twentieth-century, represented the majority of international schools (Hayden and Thompson, 2013). Generally speaking, Type A schools exist in response to a pragmatic market demand. In contrast to the Type A schools, there are international schools that are not created specifically to satisfy market demand, but serve an ideological purpose (Hayden & Thompson, 2013). These schools are exemplified by the United World Colleges (UWC) and are based largely on the vision of Kurt Hahn who sought to promote international understanding and peace through education (Hayden, 2006). These schools have been created to bring young people together which, according to Hayden and Thompson (2013), is based on an underpinning ideology that many of the problems faced by this world – such as misunderstanding, violence and hatred – can be overcome if young people from different parts of the world study together in order to develop greater empathy and intercultural awareness. Finally, the most recent type of international school, Type C, has emerged in part due to the effects of globalisation which has led to a growing international focus in some national school systems (Hayden, 2016). For the affluent middle class of these countries, an international education is considered to be both superior to that available in their own national system...
(Hayden and Thompson, 2013) and a means to securing a competitive edge for their children (Hayden, 2016).

**Educational and policy context of Type C schools in China**

In China, growing dissatisfaction with exam-orientated education has resulted in sustained educational reform designed to help China move away from knowledge transmission and towards the perceived gold-standard of education, student-centred learning (Poole, 2016). Some of the practices promulgated by policy documents (for example, see the MoE’s Outline of China’s National Plan for Medium–and long-term Education Reform and reform Development, 2010–2020 (2010)) include borrowing assessment practices from the Anglophone West, such as formative assessment (Gu, 2014; Yin & Buck, 2015), the flipped classroom (Liu & Feng, 2015) and inquiry learning (MoE, 2010). Although the 2012 round of PISA (the Program for International Student Assessment) has been invoked by some as confirmation of the reform’s efficacy (such as Tan, 2013), recent PISA results show China slipping down the league-tables, this time eclipsed by Singapore which looks set to become the new “poster boy” of PISA (Sellar & Lingard, 2013). Whether or not the reforms have achieved their intended purpose, the appropriation of international curriculum, such as the IBDP and Cambridge Examinations, appears to be the product of market forces and a growing demand from affluent Chinese parents who are dissatisfied with the quality of national education (Robinson & Guan, 2012). Therefore, education reform and the growth of international education in China are inextricably linked, the product of globalizing forces that find their articulation and response from two seemingly contradictory positions: namely, from the perspective of the state in the form of top-down policy reforms that promote *pedagogical and assessment change* and from the bottom-up, from the demand of affluent parents who seek a ‘superior’ form of education in the form of *international curricula* for their children that functions as a passport to a top-quality overseas university (Yang, 2015). While the state views reform as China’s ‘main human capital development strategy for coping with the challenges of the 21st century’ (Law, 2014, my italics), Chinese parents take advantage of Type C international schools as a way to gain more *symbolic capital* for their children (Lowe, 2000) despite the intimidating costs of doing so and the less than inspiring job market that awaits students on their return (Yang, 2015). The notion of universal values and international-mindedness – defining characteristics of any international education for Walker (2016) – appear to be of little significance in the Chinese context where international education continues to be valued as a means to a pragmatic end rather than an ethical end in itself.

**Research on Type C schools**

Research on Type C schools is still somewhat limited and conceptual in nature (Pearce, 2013). This may be because these types of school are a relatively recent phenomenon, the product of 21st century globalisation. Although there is a dearth of empirical studies on Type C schools, there are nevertheless a few studies that resonate with my own teaching and research context, such as Bunnell et al. (2016) and Bunnell and Furtig (2016). These conceptual studies develop a framework grounded in institutional theory in order to analyse the legitimacy of international schools. The framework, as the author’s acknowledge, is undergirded by a normative analysis based on characteristics of Type A and Type B schools. Therefore, in order for Type C schools to be gain international legitimacy they need to embody aspects from these previous two types. Even though the authors’ intention is not to dismiss Type C schools but to highlight the challenges they may face in attempting to gain legitimacy, the normative framework they propose may preclude the exploration of Type C schools from a phenomenological perspective as it is normative – that is, prescriptive – in nature. While the framework they propose prescribes what a school should be or aim to be in order to gain international legitimacy, it may not be able to offer the researcher a detailed picture of what is actually going on in these types of schools. This points to the need to develop a methodology that is inductively grounded.

There is an even greater paucity of studies in the Chinese context from an international perspective. While recent edited volumes (Gu, 2014; Ryan, 2013) have explored the
internationalisation of Chinese local schools, they do so from the Chinese perspective, privileging the voices of Chinese teachers while marginalising the voices of international teachers who still make up a significant number of teachers of international curricula in the Chinese context. However, one study that does draw on the definitions that comprise Hayden’s typology is Robinson and Guan’s (2012) comparison of two international schools in China. Although they do not use Hayden’s nomenclature, their descriptions nonetheless correspond to her definitions of Type A and Type C schools. In their study, the researchers adopted a comparative framework which identified two types of international school in China. The first are described as independent international schools that cater to foreign passport holders (Type A) while the second are described as international programmes in the public system that cater for Chinese nationals (Type C). However, their methodology - the use of a priori categories for categorisation, such as school history, mission and curriculum - only gives a snap shot of what these schools are like on the meso level and is therefore unable to capture the ambivalence that typifies stakeholders’ lived experience of organisations such as schools.

Taking inspiration from Bunnell et al. (2016), this study appropriates two concepts from the field of organisational studies, namely institutional identity and institutional logics. Rather than conceptualising international schools as types (which assumes a fixed set of characteristics or attributes) this study adopts a constructivist ontological perspective from which organisations like schools are seen to be in a continual process of becoming. The conceptual lenses of institutional identity and institutional logics bring into focus (thereby making sharper and more comprehensive) the relationship between national and international curriculum in a Type C school in Shanghai. This conceptual approach also foregrounds the voices of institutional actors. By juxtaposing a meso perspective (the curriculum) with a micro perspective (teachers’ lived experience) it is possible to get a more detailed picture of the living and evolving identity of an internationalised school in China.

**Institutional Identity and institutional logics**

Institutions and organisations were once understood to be stable, taken-for-granted ‘beings’ (Bierregaard and Jonasson, 2014) but recent research in the field of organisation studies views institutions as socially constructed – that is, formed by the actions of individuals and organisations (Thornton and Ocasio, 2008). Within this ‘social ontology of continuous becoming’, institutions and their identities are not fixed but are part of a process of perpetual coming into being that is reflected in a constructivist view of society as something that ‘happens’ rather than something that ‘is’ (Bjerregaard & Jonasson, 2014). When viewed through this lens of *becoming*, institutional identity is subsequently characterised by change, contradiction and indeterminateness. To borrow a phrase from Ball (2010) which I have adapted: ‘the ontological status of [identity] is not “ready-made in reality” […] but is routinely taken to do so’ (p. 69). Such an open-ended interpretation of identity has consequences for the way stakeholders perceive a Type C school. Institutional logics, meanwhile, have been understood as ‘socially constructed, historical patterns of material practices, assumptions, values, beliefs and rules’ (Thornton & Ocasio, 1999, p. 804) that prescribe appropriate behaviour and provide guidelines on how to interpret and operate in social situations (Greenwood, Raynard, Kodeih, Micelotta & Lounsbury, 2011).

The notion of institutional identity and institutional logics are essential to my study as they foreground organisations as complex and contested spaces, made up of competing institutional logics, and populated by stakeholders who reflect and challenge these logics in various ways. This study identifies two main institutional logics. The first one is labelled a *Chinese institutional logic* which is a synthesis of Confucian and socialist values. Confucian values here are taken to refer to respect for tradition and authority (Tan, 2013) while socialist values are defined as the development of ‘patriotism, collectivism, and love of socialism’ (Nanzhou, Muju, Baohua, Xia, & Wenjing, 2007, p. 23). In terms of teaching practice, a Chinese institutional logic emphasises teacher-centred instruction and memorisation of knowledge points. Even though China has initiated vigorous and sustained reform to promote student-centred learning, my experience of teaching in a number of internationalised schools indicates that in practice Chinese teachers still favour a traditional approach to teaching. The second logic is labelled an *International institutional logic* and is characterised by a
commitment to perceived universal values as identified in the IB Learner Profile such as risk-taking and international-mindedness. An international institutional logic is also characterised by the teacher as facilitator and student-centred learning. Expatriate teaching staff were observed to embody and enact this institutional logic during the school’s weekly flag raising ceremony. It must be stressed, however, that in practice either Chinese or expatriate teachers could mobilise both of these logics in hybrid form, and future research could explore this in more detail. However, for the purposes of this study I make something of a crude distinction, cognisant all the while that in practice institutional logics are inherently complex and hybrid in nature (Mair, Mayer & Lutz, 2015).

**Methodology**

As the research questions explored school identity on the *meso* and *micro* levels it was decided to utilise a pragmatic research design that mixed both quantitative and qualitative paradigms. Although qualitative and quantitative approaches have been shown to be incommensurate (Kuhn, 1996), others (Ivankova, Creswell & Stick, 2006; Johnson & Onwuegbuzie, 2006; Morgan, 2007) consider both as having something valuable to add to the study of individuals and society. Moreover, as social phenomena are inherently complex, in practice it is arguably unrealistic to choose between different positions (Creswell and Plano Clark, 2011; Saunders, Lewis & Thornhill, 2009). This is also true of individual identity and institutional identity which is simultaneously something which exists ‘out there’ as an *a priori* given and also shaped by individual stakeholders’ perceptions. This ‘institutional complexity’ (Bjerregaard and Jonasson, 2014) cannot be captured by just one paradigm, but requires both. This is also reflected in the choice of methods for data collection.

**Methods**

Data about ECNUAS’ curriculum were collected from the school’s website, publicity brochure, and a UNESCO commissioned analysis of the Chinese experiences in curriculum change (Nanzhao, et al., 2007). Information about the IGCSE and the IBDP was collected from publicly available documents on Cambridge Examinations and IBO and are supplemented with my own experience of teaching both of these curricula in ECNUAS. The turn to the micro-level reveals that actors are able to challenge, change and subvert taken-for-granted structures (Battilana, Leca & Boxenbaum, 2009). This suggested the use of interviews as an appropriate method for capturing the complex and contradictory nature of identity as constituted by the participants’ lived experienced which can be characterised as ‘complicated, confused, impure, uncertain’ (Bourdieu, Chamboredon and Passeron, 1991, p. 259). Semi-structured, purposeful interviewing focused on the school’s flag raising ceremony as a vehicle for gaining insight into the way the teachers perceived and articulated the school’s identity. Four participants from the Chinese teaching faculty and four from the expatriate faculty were chosen based on their English language skills and willingness to be interviewed. All interviews were conducted in English, recorded and then transcribed. Analysis of interview data involved a semi-grounded approach that drew upon themes that emerged in the first stages of analysis while remaining open to new and unexpected patterns that emerged as data analysis progressed. These were coded and then condensed into categories. Teachers are referred to by code: CT1, CT2 for Chinese teachers and ET1, ET2 for expatriate teachers. While this does homogenise and dehumanise these groups, it preserves their anonymity, an ethical imperative given the school’s identity could be established as I quote directly from the publicly available school brochure.

**Validity**

In order to enhance validity, the study focused on a small number of Chinese and expatriate participants in some depth which allowed for the creation of ‘thick description’ (Denzin, 1989). The study also draws upon data from the school’s brochure, school routines, like the flag raising ceremony, and the author’s experience of teaching in the school. Finally, the study also employs deductive and inductive approaches to data analysis in order to distinguish between the different levels of ontology across which school identity is dispersed. When integrated, these different data sources, and analytic
approaches, allowed for triangulation through contrast and comparison. Although I draw upon both qualitative and quantitative paradigms, I privilege the former as the notion of identity is inherently complex and is the product of social forces and individuals’ beliefs. As such, qualitative approaches have been shown to be more effective at capturing the ambivalence of lived experience and is commensurate with the notion of identity as socially constructed.

Findings

Background

ECNUAS is a recently opened private boarding school in Shanghai that offers an ‘internationalised’ curriculum that combines aspects of ‘Chinese’ and ‘Western’ approaches to learning, such as the IGCSE (International General Certificate of Secondary Education) and IBDP (International Baccalaureate Diploma Programme) and employing international teachers to deliver these courses. It also emphasises subjects such as music, art and dance, which are typically considered to be of less significance within the curriculum. This appears to be in response to the general trend towards quality-orientated education (su zhi jiao yu) in China which aims to take a more holistic approach to learning which places the student at the centre of the learning process (Tan, 2013). In addition to an international focus, the school also emphasises the Chinese national curriculum. For example, primary and middle school students follow the local curriculum until grade 9, after which they sit the Zhong Kao exam (high school entrance examination) and transition to an internationalised stream from grade 9 onwards.

The Rhetorical

The school brochure contains information about the school’s history, mission, educational objectives, management team, and school orientation. As such, it is a useful artefact to establish the school’s intended or rhetorical institutional identity. Chinese and international education are repeatedly joined by the verb ‘integrate’ thereby suggesting that these two educational philosophies are commensurate. This is illustrated in the following example: ‘Internationalised education is tailored to the needs of the students who seek an integrated learning environment drawing on the best of Chinese and Western education’ (ECNUAS, 2015, p. 3). ‘Tailored’ is an interesting choice of verb, and suggests that both Chinese and Western education is something tangible that, to follow the metaphor through, can be ‘cut’ and ‘fitted’ to the needs of the students who ‘seek’ a synthesis of both Chinese and Western education. The brochure continues to make repeated use of the word ‘integrated’ as shown in the following two examples: ‘International section (1-9 grades) implementing school-based Chinese curriculum integrated with quality international curriculum’ (p. 7) and [The school will use] its resources and strengths in international schooling integrated with the best of Chinese education Philosophy to establish the highest standard of international education’ (p. 12). The verb ‘integrated’ in these examples conveys a sense of effortless and harmonious combining. From the brochure, the existence of such a hybrid curriculum suggests the school is truly internationalised in nature.

The Curricula

While the school’s rhetorical internationalised identity presents a hybrid curriculum that is drawn from Western models but with ‘Chinese characteristics’ (Ryan, 2013), the actual curriculum reveals that Chinese and international education are in fact firmly compartmented. This can be illustrated using Lan’s (2014) term, segmented incorporation. Lan’s (2014) critical examination of hukou reform in Shanghai revealed that while city-born migrant students were technically part of the case-study school, they nevertheless remained segregated by visible and invisible barriers such as different playgrounds and deeply entrenched prejudice (see Poole, 2016 for further analysis of the hukou). Similarly, while the IBDP is incorporated into the overall curriculum, there is a caesura
between the compulsory nine-year education from primary to middle school and the international curriculum in the high school which creates a disconnect. Table 1 provides an over-view of the school’s curriculum. By comparing the two, it can be seen there is pedagogical and ideological discontinuity between Chinese and international curricula.

**Table 1: ECNUAS' curriculum**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Curriculum</th>
<th>Subjects</th>
<th>Assessment</th>
<th>Objectives and aims of curriculum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junior Secondary</td>
<td></td>
<td>education, P.E., Sciences, Chinese traditional culture, STEM.</td>
<td>External examination</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Internal examinations: two per term (mid-term and end of term)</td>
<td></td>
</tr>
<tr>
<td>10: High School</td>
<td>Pre-Diploma</td>
<td>English Language, Maths, Chinese, Chemistry, Biology, Economics, Global</td>
<td>External examinations with option for course work</td>
<td>To produce students who are 1. Confident 2. Responsible 3. Reflective 4. Innovative 5. Engaged students</td>
</tr>
<tr>
<td></td>
<td>school-based programme using</td>
<td>Perspectives, P.E., Art, Music.</td>
<td>Internal school-based examinations: two per term</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IGCSE</td>
<td></td>
<td>(mid-term and end of term)</td>
<td></td>
</tr>
<tr>
<td>11-12: High School</td>
<td>IBDP</td>
<td>Chinese A, English B, Economics, Chemistry, Physics, Biology, Maths,</td>
<td>Internal assessment</td>
<td>To develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Theory of Knowledge, Community Activity Service</td>
<td>Written assessment</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Extended essay (4000 words)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>External assessment</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Internal examinations: two per term (mid-term and end of term)</td>
<td></td>
</tr>
</tbody>
</table>

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In terms of pedagogical discontinuity, the nine-year compulsory curriculum culminates in the Zhong Kao examination, an externally assessed examination that decides students’ eligibility to attend high school. Given the high stakes nature of this examination, there is a considerable wash-back effect that pushes teachers to employ teaching approaches that are commensurate with an examination-orientated culture. As a practitioner researcher, I was in a position to observe many instances of rote learning and memorisation, both of which are aspects of a Confucian culture of learning (Jin & Cortazzi, 2006). This is not to denigrate this approach to learning – in fact, as a strategy for promoting examination success it is very effective – but to underscore the fact that due to examination pressure, a great deal of middle school teaching is focused on what could be called knowledge points or facts, thereby leaving little space for the cultivation of intercultural or global perspectives, both of which are foundational to the IBDP.

In terms of ideological discontinuity, the aims of the compulsory nine-year curriculum are nationally focused with an emphasis on citizenship education through the development of ‘patriotism, collectivism, [and] love of socialism (Nanzhou et. al., 2007, p. 23). In ECNUAS, the inculcation of patriotism is reinforced by symbolic routines, such as the flag raising ceremony, the singing of the National anthem, and the school’s motto: Originate from China; impact the World. It is interesting to note that a global perspective is not encouraged in the National Curriculum until high school and then it is expressed as ‘understanding of cultural diversity, and open-mindedness to the outside world.’ Although this does resonate with some aspects of the Learner Profile (such as intercultural awareness), the phrase ‘outside world’ implies that China is the centre with the rest of the world on the periphery. This is echoed in the school’s motto which is to ‘originate from China; impact the world.’ In contrast, the IBDP is underpinned by an ideology to ‘make the world a better place’ through international mindedness, intercultural awareness, and instantiation of the Learner profile. These two curricula cannot be integrated because on an ideological level they are incommensurate. Overall, the school’s emphasis on the compulsory nine-year curriculum mobilises Chinese institutional logics which suggests that the school is fundamentally ‘Chinese’ despite promoting itself as an internationalised (hybrid) school.

The lived

However, when the school’s identity is explored from the point of view of grass roots actors a different picture emerges. While Chinese teachers’ perception of the school as ‘Chinese was congruent with the segmented curriculum discussed above, the expatriate teachers perceived the school as international. The interviews focused on the teachers’ experience of the school’s flag raising ceremony. Flag raising ceremonies have been described as symbolic routines designed to create positive attachments to the state (Fairbrother, 2003). Rather than simply existing as isolated expressions of patriotic pride, these symbolic events have been absorbed into the education system, working in tandem with subjects such as citizenship education (Chen & Reid, 2002) to foster a feeling of patriotism.

‘We are a Chinese school’: Chinese teachers’ perceptions of school identity

The majority of Chinese teachers interviewed explicitly or implicitly identified the school as Chinese. For example, one teacher when asked why the school had a flag raising ceremony answered in a matter of fact way that ‘we are a Chinese school, that’s why we are doing all this’ (CT1). For these teachers, the reason for holding the flag raising ceremony was self-evident as illustrated by another teacher who explained that ‘because every school no matter it is public school or private school, must have a flag raising ceremony on Monday morning’ (CT2). This is echoed by another teacher who explained that from the school’s perspective, ‘the middle school and the primary school follow the national curriculum and they have support from the local government. So, they need to raise the flag every Monday morning’ (CT4). However, none of the Chinese teachers expressed any significant emotional attachment to the flag or the singing of the anthem. A sense of apathy or a lost emotional attachment to the flag was evident their responses which is illustrated in the following two
examples: ‘honestly, I feel nothing. When I was young I actually feel something when singing the anthem. But when I grow older the anthem is not that meaningful to me (CT1) and ‘to be honest, when I was a student I felt a lot […] I really feel a lot about my country when I was a student (CT2). The repetition of honest is quite revealing, suggesting that the teachers believe they should feel some deep attachment to the flag, and by extension the party, yet have a rather perfunctory attitude towards the ceremony. And when emotional attachment was expressed, as in the case of ‘sometimes I feel I should love my country (CT3), the use of the modal ‘should’ suggests that love for the country is a duty, something of an obligation. The interview data suggests that, despite the rhetoric of an integrated curriculum, from the perspective of the Chinese teachers, the school is essentially a local school.

‘I don’t really see the point for an international school’: Expatriate teachers’ perceptions of school identity

In contrast, the majority of expatriate teachers interviewed identified the school as international or emphasised an international institutional logic in their criticism of the flag raising ceremony. Overall, the majority of teachers considered the flag raising ceremony to be redundant. This sentiment was articulated by one of teacher who succinctly described the ceremony as a ‘total waste of time’ (ET1). The reason for the expatriate teachers’ resistance to the flag raising ceremony appears to lie in the way they perceived the school’s identity which is revealed in two similar, yet subtly different, responses. The first example is ‘I don’t really see the point for an international school’ (ET2) and the second is ‘I know we should be respectful of the local culture, of course, and I respect that. But at the same time, it is an internationalised school and it should be quite democratic’ (ET4). Although both teachers explicitly identify the school as international in nature, ET2 refers to it as ‘international’ while ET4 calls it ‘internationalised.’ The former term implies that the teacher perceives the school’s identity in terms of a Type A traditional international school in which students are typically non-local residents. ET4’s perception of the school as ‘internationalised’, however, corresponds more to a Type C school in that the school contains aspects of international education but ultimately is national in nature. Moreover, he also draws on aspects from Type B ideological schools by stating that an international education should be democratic - that is, students should be free to choose whether or not they attend symbolic routines like the flag raising ceremony. Although ET4 did not explicitly refer to the school as international or internationalised, his firm rejection of the ceremony suggests that his perception of the school is mediated by an international institutional logic. However, in contrast to the three teachers above, ET3 held the opposite view. In response to being asked why the school had a flag raising ceremony, she replied that ‘maybe it’s because we are a local school so we have to raise the flag each Monday’ (ET3). This echoes the responses of the Chinese teachers who also stressed the school’s connection to a local or national context. The fact that she uses the collective ‘we’ to refer to both Chinese and expatriate faculty suggests that this teacher embraces the school’s identity as a local school.

Overall, despite ample evidence to the contrary, the expatriate teachers interviewed still perceived the school as ‘international.’ What this seems to suggest is that the teachers’ perception of the school’s identity is the product of deeply held beliefs about international education. The logic here is that because the school has an international curriculum, the IBDP, it follows that the school is ‘international.’ The school’s identity, then, is inextricably linked to its curriculum which supports the definition given by the ISC (2015). Moreover, it also suggests that teachers’ lived experience of the school is instrumental in the way they construct the school’s identity. Significantly, all of the teachers at the time of being interviewed were part of the high school. Therefore, their assumptions and beliefs about teaching an international curriculum in the school function as lenses which bring into focus certain international aspects of the school – the IB curriculum – while blurring other more overt Chinese aspects.
Resistance to the flag raising ceremony

The interview data also identified a number of strategies that the expatriate teachers deployed in order to challenge the school’s Chinese identity. The first strategy involved remaining emotionally passive during the ceremony. One teacher stated that ‘I do not concentrate at all on anything to do with the flag raising ceremony itself. But I try to show a little bit of respect in a way of just standing still. But I don’t, like, look up to the flag and go ‘wow’ (ET1). This is reinforced by another teacher who explained that ‘I have to come, I have to show face. And just don’t care’ (ET2). The use of simple sentences and the repetition of ‘I have to’ conveys the perfunctory nature of attending the ceremony: the teachers recognise that the ceremony is not aimed at them, but nevertheless still ‘go through the motions’ (ET4) in order to show face. The notion of ‘face’ (mianzi) is an important concept in China and has been defined as the need to be respected by others and to avoid embarrassment in social interactions (Hwang et al., 2002). This implies that the expatriate teachers exhibit a degree of intercultural understanding and adjust their behaviour accordingly, suggesting the existence of hybrid institutional logics. However, ET2 stated he ‘has’ to show face which implies that, from his perspective, he is not only forced to attend the ceremony, but also forced to ‘appear’ to agree with the ceremony by giving face. In contrast to the previous two teachers, ET3 showed more of a conciliatory approach to the ceremony. She stated that ‘I don’t want to judge too much […] I’m not here in my country so I don’t want to judge. If they asked me to join the flag raising ceremony every Monday I would do it because I am here and I don’t want to be too rebellious’ (ET3).

Another strategy for challenging the school’s Chinese identity highlighted by the interview data was through physical action and gesture. In contrast to the conciliatory approach of the other three expatriate teachers, ET4 defined himself as ‘rebellious.’ ET4 emphatically expressed his disapproval of the ceremony by stating that ‘we’re made to stand there, and then the flag goes up, the music starts, and I just stare at my feet. In fact, I intentionally don’t look at the flag, I intentionally look away. So, I go through the motions, but I don’t really agree with it at all (ET4). There are a number of interesting points to mention here. Firstly, the teacher feels coerced into attending the ceremony. This is corroborated by ET2 who states that ‘I have to come.’ Secondly, the repetition of the word ‘intentionally’ emphasises the teacher’s act of resistance, perhaps in an attempt to further cement his reputation as himself the ‘rebel’ of the group. The act of staring at his feet and looking away from the flag is also a way for the teacher to not only distance himself from the ceremony – as if to show that the purpose of the ceremony is not relevant – but also a way to assert agency. Finally, the interview data is supplemented with this author’s own participation in, and observation of, the flag raising ceremony on numerous occasions. In addition to the forms of resistance outlined above, teachers were seen to talk and joke during the raising of the flag and the playing of the anthem. Some also refused to line up in rows, choosing to stand outside of the designated teachers’ line. This author was even asked to stand back in line by another Chinese teacher on one occasion. One expatriate teacher even sporadically boycotted the ceremony altogether. These strategies – or international institutional logics - appear to be a way for teachers to contest what they perceive to be a dominant Chinese identity and to reassert their own international identity.

Discussion

Overall, this study found that school identity is dispersed across a number of ontological levels. The first is what I called the rhetorical. This is the identity of the school as articulated through publicity material, such as the school brochure, and as such embodies the intended identity of the school. The brochure presents a harmonious hybrid school identity, what could be described as ‘western education with Chinese education’. The second level of analysis is what I called the curricula. On this level, it is possible to infer school identity by exploring the curriculum, its aims and assessment strategies. This study found that the school’s curriculum appeared to be integrated, thereby enacting the intention stated in the brochure, but on closer analysis it was found that the Chinese national curriculum and the international curriculum were segregated by a process of segmented incorporation, a term appropriated from Lan’s (2014) study of migrant children in Shanghai. Finally,
school identity becomes more complex and contested when explored from the perspective of the lived. This is shown in my study by the way the Chinese and expatriate teachers perceived the school’s flag raising ceremony. While the Chinese teachers’ acceptance of the ceremony shows congruence with the school’s dominant ‘Chinese’ institutional logic, the expatriate teachers resistance to the ceremony suggests that they perceive the school as international or internationalised. Their response to the ceremony – such as standing out of line, talking and remaining emotionally detached - are examples of what could be called international institutional logics that are not only incongruent with the school’s expressed Chinese identity and curriculum, but also appear to be deployed as a way to reaffirm an international identity.

To a large extent, these findings reinforce Hayden’s definition of a Type C school which is worth quoting at length in order to make the connections between her definition and my study explicit:

‘Type A’ schools in, very often, employing expatriate teaching staff and offering an international curriculum, ‘Type C’ schools are arguably national rather than international in that, as private, fee-paying schools, they recruit students largely if not exclusively from the affluent non-native-English speaking socio-economically advantaged middle classes from whom an English medium education through an international curriculum recognised by universities worldwide provides a competitive edge for their children, compared with compatriots, in accessing university education in prestigious institutions worldwide’ (Hayden, 2016, p. v).

However, this work builds on her definition in a number of ways. Firstly, while international schools have been categorised according to type (Hayden, 2006, 2016; Robinson and Guan, 2012) or curriculum (Gellar, 2002; Walker, 2016) this study compared the curriculum and the perceptions of both local and expatriate teachers. A meso analysis of school identity, however, may give the false impression that the school as an organisation is a stable entity. This is reflected in the choice of nomenclature for describing international schools in Hayden’s typology – they are types, thereby implying that they are defined in terms of a set of fixed characteristics. However, the literature on organisational studies (Bjerregaard and Jonasson, 2014; Thornton and Ocasio, 2008) emphasises the socially constructed nature of organisational identity, particularly in relation to grassroots stakeholders’ perception of the organisation and deployment of institutional logics. As this study shows, in practice, Type C school are more like living organisms, embodying aspects from all three parts of Hayden’s typology. This is because the organisation of the school is made up of individuals whose lived experience of the school is characterised by change, contradiction and contestation. Therefore, the definition of a Type C school or any international school is inextricably linked to grassroots stakeholders. Secondly, this study builds on Hayden’s typology by showing that teachers’ lived experience is significant aspect in defining school identity, although school type (or identity) and curriculum need to be triangulated with the teachers lived experience of teaching and negotiating the discursive spaces of the school. Identity, as conceptualised here, is not a priori, but rather something that comes into existence in response to teacher belief and institutional logics.

These findings also problematise the notion of a normative framework for assessing international legitimacy in Type C schools as the findings highlight the essentially contested nature of the term ‘international’. Depending on an individual’s positionality, they will interpret, embody and enact international education in different ways. However, is this enough to make a national school international? According to the ISC’s definition it is, as a Type C schools is international if it offers an international curriculum that is in English. However, the school would not qualify as international if judged according to Walker (2016)’s ethical curriculum or a normative framework of legitimacy. Clearly, ECNUAS has a great deal of work to do in order to qualify as ‘truly’ international according to a normative framework of international legitimacy. However, the interesting aspect here is not why the school fails to embody a truly ‘international’ ethos, but the fact that the expatriate teachers still identified the school as international or internationalised, despite ample amounts of evidence to the contrary. To reiterate my point above: from the perspective of lived experience, a national school is international as a result of stakeholders’ perceptions of school identity which constitute their
institutional logics. However, the relationship between identity and logics is not linear, but dialectical and reciprocal. Stakeholders’ perceptions of school identity are a significant aspect in defining a school’s identity; therefore, they should be incorporated into a normative framework.

To return to the point mentioned above, why despite so much evidence to the contrary, did the expatriate teachers still perceive the school as international? This question can be explained by considering the role that cultural scripts for teaching and learning and institutional logics play in shaping teachers’ beliefs and determining behaviour. Stigler and Hiebert (1998) define a cultural script as a generalised piece of knowledge that resides in the heads of both teachers and students. Therefore, cultural scripts are based on “a small and tacit set of core beliefs about the nature of a particular subject, how students learn, and the role that a teacher should play in the classroom” (1998, p. 2). Tan (2013) develops the notion of cultural scripts by defining them as a “coherent and evolving set of shared beliefs and assumptions located within a particular tradition that undergird the vision and purposes of society” (Tan, 2013, p. 8). Related to the notion of cultural scripts are institutional logics which have been understood as ‘socially constructed, historical patterns of material practices, assumptions, values, beliefs and rules’ (Thornton & Ocasio, 1999, p. 804). The expatriate teaches perceived the school as international because they shared a cultural script that emphasises certain values and beliefs about education. Although it is beyond the scope of this present study to identify these values and beliefs, the IB Learner Profile may offer a way to more fully describe international cultural scripts. The act of standing out of line during the flag raising ceremony embodies the trait of ‘risk-takers’ while the stated need to give face demonstrates intercultural awareness. Another explanation might be that the expatriate teachers considered an international curriculum to be a defining aspect of international education. Because ECNUAS offered the IBDP it therefore followed that the school must or should be international. However, this does not adequately explain why one of the teachers (ET3) perceived the school as Chinese. Ongoing data collection with this teacher suggests that her knowledge and understanding of Chinese culture, born out of ‘a dream’ to come to China when she was ten, may help to explain this incongruity. It points to the existence of hybrid cultural scripts/institutional logics that need to be explored further. This also highlights a limitation of this study which was its primary focus on expatriate teachers; therefore, future research could focus on Chinese teachers in more detail in order to explore their perceptions of the school’s identity. Their beliefs about teaching and learning also need to be taken into consideration, as they are a significant aspect of institutional logics. Again, this is another limitation of this study that needs to be addressed in future research.

Conclusion

These findings have relevance to other Type C schools in China and other developing countries, particularly in relation to creating a unified and inclusive school culture that draws on all stakeholders’ cultural backgrounds. Even though the case-study school is technically a Type C ‘Chinese’ school, the existence of expatriate teaching faculty and international curricula create many potential spaces for hybridity. Therefore, national schools should emphasise an intercultural ethos that is created from the bottom up, incorporating aspects of local and expatriate cultures. A top-down approach to school ethos and culture is likely to exclude expatriate teaching staff as it privileges the lived experience of Chinese faculty – that is, the lived experience of being a Chinese teacher in a Chinese school is taken as the de facto norm which informs school routines and policies and mechanisms that privilege Chinese institutional logics. This is certainly reflected by the interview data which showed the expatriate teachers felt alienated by the flag raising ceremony – a symbolic routine clearly meant for Chinese students and staff but at which attendance was nevertheless compulsory. In order to create a more cohesive and intercultural school culture, Type C schools need to consider the expectations and beliefs of expatriate teaching staff. While expatriate staff should aim to develop intercultural competence, national schools offering international curricula must also respect and reflect the beliefs of its expatriate teaching staff. This study suggests that national schools should aim to be more ‘international’ not to satisfy a normative discourse of international legitimacy, but to create a more intercultural school ethos. After all, the international teacher, along with the school and the
curriculum constitute the ambiguous umbrella term ‘international education.’ Any school employing international teachers and offers an international curriculum, regardless of its place in the overall curriculum, is (un)wittingly committing itself to offering an international education to its students, one that is undergirded by certain values and beliefs about learning. The precise identification and definition of these values and beliefs is open to debate as they should be situated in nature and therefore need to be negotiated through inclusive intercultural dialogue between local and expatriate teachers as well as and senior and middle management. However, I consider the IB Learner Profile to be a good framework as a starting point for constructing an internationally orientated school ethos that also remains faithful to the local context. Senior management and leaders of Type C schools in China have two choices: they can choose between a democratic school ethos that embraces plurality and difference or an authoritarian one that emphasises the needs of the country over the needs of the global.

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Abstract

With rapid industrialization and technological development, India is facing adverse affects of unsustainable pattern of production and consumption. Education for sustainable development has been widely recognized to reduce the threat of environmental degradation and resource depletion. This paper used the content analysis method to explore the extent to which green curriculum has been incorporated in engineering education. The green curriculum index suggests that Indian technological education is following vertical integration, with low emphasis on horizontal integration of green curriculum resulting into non-sustained green culture and environmental behaviour among the students. Furthermore, higher educational institutions should understand and accept the relevance of sustainable development rather than responding to the legitimate formality for creating a low-carbon and green economy.

Keywords: Technological education, sustainable development, green curriculum index, India

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Introduction

In the present era, children are disconnected from nature. They must understand the challenges of climate change, biodiversity, unsustainable production and consumption patterns. In ‘Our Common Future’, also known as Brundtland Commission Report advocated the concept of Sustainable Development (SD) as ecological preservation, economic viability and social justice (WCED, 1987). The report pointed out the significance of poverty eradication, principles of intergenerational and intra-generational equity, link between a healthy economy and healthy environment and limitations set by the carrying capacity of the environment (WCED, 1987). The notion of sustainable development was further popularized in the Rio Earth Summit where Agenda 21, Chapter 36 highlighted the role of education in meeting the needs of the present without compromising the ability of future generations to meet their needs (UNCED, 1992).

Education for Sustainable Development (ESD) was the key outcome of the Rio Earth Summit held in 1992. ESD includes key sustainable development issues like climate change, disaster risk reduction, biodiversity, poverty reduction, sustainable production and consumption. It has been seen as a major contributor towards the achievement of sustainable future through promoting awareness, developing values and influencing behaviour. ESD consequently promotes competencies like critical thinking, imagining future scenarios and making decisions in a collaborative way, particularly in professional and technical education (Mulà and Tilbury, 2009). With the progress in Education for Sustainable Development (ESD), a co-evolution of pedagogy has occurred where sustainable development is included at all levels of education through greening of the curriculum.

Greening curriculum needs genuine investment as it encourages environmental awareness as well as empowers participation in minimizing adverse environmental impacts. In 1991, Honourable Supreme Court of India mandated Environmental Education (EE) in all undergraduate programs to develop more environmentally sensitive and responsible citizens of the country. This directive has made Environmental Education (EE) compulsory in almost all undergraduate courses accounting for 85 per cent of students’ enrolment in higher education in India. In December 2002, United Nations (UN) at its 57th session proclaimed the time period between 2005 and 2014 as Decade of Education for Sustainable Development (DESD). The objective behind DESD was to integrate the principles, values and practices of sustainable development into all aspects of education and learning. Since its inception in 2005, DESD has been a catalyst to promote the agenda for change in support of education for sustainable development (ESD) in the country (Mulà and Tilbury, 2009). During the decade, a growing interest has been observed among many universities and higher educational institutions (HEI’s) in embedding sustainable development into their curricula.

Relevance of Green curriculum in Technological Education

Technological education plays a vital role in emerging economy, like India. The acquisition of knowledge, skills and abilities in an undergraduate level are aimed to develop individuals with the right attitude and competency to compete favourably in the global society. An increase in technocratic ideology expands human power on technical control which significantly contributes to environmental and social problems resulting in the emergence of discourse about sustainable development (Pavlova, 2009). It is believed that green curriculum in technological education would enable an individual to become more resourceful and productive citizen of the society. But still, there is a long way for many technological institutions to understand and accept the relevance of sustainability as an integrated part of their course curriculum.

Technological education curriculum is generally based on disciplinary specialization and reductionist thinking resulting in unbalanced, over-specialized and mono-disciplinary education (Lozano, 2010). Lozano (2010) have proposed different approaches ranging from limited coverage in an existing module, specific SD modules, discipline-oriented modules with integrated SD topics and SD as an optional specialisation within a course. Horizontal and vertical integration methods are also
recognized for effective incorporation of green curriculum into technological education (Ceulemans and De Prins, 2010). When green curriculum is integrated into several courses is called as horizontal integration, while vertical integration involves the addition of new sustainability course or courses into an existing curriculum.

The study investigates the extent to which green curriculum is practised in technological education in Indian university.

**Delhi Technological University (DTU) Overview**

Delhi Technological University (DTU), formerly known as Delhi College of Engineering (DCE), was established in 1941 as Delhi Polytechnic. Previously, the institution was under the control of the Government of India, but in 2009, it was given a state university status. It is believed that national capital represents specimen of the changes taking place across the country. Therefore, the research wisely considered Delhi Technological University for the purpose of the study.

The undergraduate engineering program (BTech) forms an integral part of the university. BTech is comprised of 13 different disciplines (Appendix 1). Each discipline serves various areas of engineering. The duration of the degree is four years including eight semesters of six months each.

**Methodology**

**Data Collection**

The research adopted content analysis method to study green curriculum in engineering program of Delhi Technological University. Content analysis has been defined as the study of recorded human communications or written information (Babbie, 2001). Data relies on module information (syllabus) available on the university’s website in the month of May, 2015. Twenty four keywords has been listed denoting green curriculum in engineering course curriculum as mentioned in Table 1. The curriculum obtained from the website has been critically scrutinized, based on the selected keywords to examine each discipline’s contribution towards sustainable development.

**Table 1 Keywords to assess contribution to green curriculum**

<table>
<thead>
<tr>
<th>Green environment</th>
<th>Productivity</th>
<th>Future capability</th>
<th>Biodiversity preservation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental impact analysis</td>
<td>Economic feasibility</td>
<td>Sustainability</td>
<td>Ecological implications</td>
</tr>
<tr>
<td>Waste recycling</td>
<td>Use of bio-products</td>
<td>Cleaning process</td>
<td>Disaster management</td>
</tr>
<tr>
<td>Pollution control</td>
<td>Intellectual Property Rights</td>
<td>Risk assessment</td>
<td>Competitive advantage</td>
</tr>
<tr>
<td>Quality control and assurance</td>
<td></td>
<td></td>
<td>Ethical standards</td>
</tr>
<tr>
<td>Energy conservation</td>
<td></td>
<td></td>
<td>Social welfare</td>
</tr>
<tr>
<td>Cost efficiency</td>
<td></td>
<td></td>
<td>Personnel management</td>
</tr>
<tr>
<td>Health &amp; safety</td>
<td></td>
<td></td>
<td>Information and communication</td>
</tr>
</tbody>
</table>

**Result and Discussion**

**Curriculum description**

While examining the course, it is manifest that the subjects has been categorized into three groups namely core, electives and open electives. Core subjects are compulsory for respective disciplines, whereas in case of elective and open elective, a selective number of subjects can be opted from a given number of choices.
Construction of Green Curriculum Index

Subject-wise green curriculum analysis

Figure 1 illustrates three categories of subjects, i.e. core, elective and open elective along with their respective percent of green curriculum. It presents that the core subjects and open electives for all the disciplines embed almost a similar percentage of sustainability content whereas the scenario differs for elective subjects. The sustainability content variation is highly erratic between the elective subjects. Electronics and communications (ECE), mathematics & computation (MC) are two branches whose green consideration found to be incredibly low, with a slightly higher result for computer engineering (CE). Even core and open electives do not reflect a pleasing green concern.

The concept of sustainability needs to be incorporated into every technical facet of engineering curricula likewise designing buildings and structures, construction of machines, ICT applications and preparation of development plans. In mathematical analysis, environmental cost aspect should be considered to validate the significance of the model or project. This can be done by considering “Environment Adjustment Value (EAV)” i.e. a threshold value below which a project should not be considered as it may prove a threat to the environment. Technological advances should not be made at the expense of natural resources; therefore engineers must be aware of the safety measures for compensating the environmental uncertainties established with their projects. Therefore, all subjects irrespective of core, elective and open elective must emphasize on sustainability content to reduce the threat of environmental deterioration with increasing technological development.

Year-wise green curriculum analysis

Further analysis has been done to evaluate green curriculum of each discipline on a yearly basis (see Table 2). In the first year, sustainability orientation is same, as the subjects and the content of teaching for the first two semesters are common in all disciplines. Applied chemistry, fundamentals of information technology, basic mechanical engineering and environmental sciences altogether contains 33% green curriculum in the first year. In second year, the average contribution accounts for 18 percent. During this year, electronics & communication engineering (ECE), mathematics & computation (MC) demonstrate the lowest contribution (8%) whereas environment engineering (ENE) exhibits a higher and consistent green curriculum (33%). It further decreases in third year and many disciplines present nil contribution, including biotechnology (BT), computer engineering (COE), electronics and communication engineering (ECE), mathematics and computing (MC) and software engineering (SE). In fourth year, the contribution increases to 22 percent but disciplines like biotechnology (BT), electrical engineering (EE), electronics and communication engineering (ECE),

Figure 1: Subject-wise green curriculum incorporation

Type one graph description here.
information technology (IT), mathematics and computing (MC), mechanical engineering (ME) cease on its sustainable contribution (see Table 2).

Table 2 Green curriculum index (year-wise)

<table>
<thead>
<tr>
<th>Disciplines</th>
<th>1st year (%)</th>
<th>2nd Year (%)</th>
<th>3rd Year (%)</th>
<th>4th Year (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AE</td>
<td>33</td>
<td>25</td>
<td>30</td>
<td>25</td>
</tr>
<tr>
<td>BT</td>
<td>33</td>
<td>17</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CE</td>
<td>33</td>
<td>17</td>
<td>30</td>
<td>25</td>
</tr>
<tr>
<td>COE</td>
<td>33</td>
<td>17</td>
<td>0</td>
<td>33</td>
</tr>
<tr>
<td>EEE</td>
<td>33</td>
<td>25</td>
<td>10</td>
<td>33</td>
</tr>
<tr>
<td>EE</td>
<td>33</td>
<td>17</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>ECE</td>
<td>33</td>
<td>8</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ENE</td>
<td>33</td>
<td>33</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>IT</td>
<td>33</td>
<td>17</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>MC</td>
<td>33</td>
<td>8</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ME</td>
<td>33</td>
<td>17</td>
<td>30</td>
<td>0</td>
</tr>
<tr>
<td>PT</td>
<td>33</td>
<td>17</td>
<td>40</td>
<td>33</td>
</tr>
<tr>
<td>SE</td>
<td>33</td>
<td>17</td>
<td>0</td>
<td>33</td>
</tr>
<tr>
<td><strong>Average contribution (in %)</strong></td>
<td><strong>33.00</strong></td>
<td><strong>18.08</strong></td>
<td><strong>16.92</strong></td>
<td><strong>21.69</strong></td>
</tr>
</tbody>
</table>

From the above analysis, it has been found that environment engineering (ENE) maintains its perseverance to green curriculum where it reaches its extreme contribution in fourth year. Polymer and chemical technology (PT) follows environmental engineering (ENE) in its green participation with a great variation. Electronics & communication (ECE), mathematics & computation (MC) and biotechnology (BT) are the disciplines which remain on its lower green profile. These disciplines express outrageously lowest contribution in their last two years. It can be concluded that sustainability has been emphasized in the first year of the program which changes indifferently for rest of the years.

Table 3 Green curriculum index (discipline-wise)

<table>
<thead>
<tr>
<th>Disciplines</th>
<th>Total Subjects</th>
<th>Subjects with green curriculum</th>
<th>Contribution to green curriculum (%)</th>
<th>Analysis of clustering</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENE</td>
<td>64</td>
<td>35</td>
<td>54.68</td>
<td>A</td>
</tr>
<tr>
<td>PT</td>
<td>53</td>
<td>17</td>
<td>32.07</td>
<td>B</td>
</tr>
<tr>
<td>AE</td>
<td>73</td>
<td>21</td>
<td>28.76</td>
<td>B</td>
</tr>
<tr>
<td>CE</td>
<td>207</td>
<td>55</td>
<td>26.57</td>
<td>B</td>
</tr>
<tr>
<td>EEE</td>
<td>74</td>
<td>17</td>
<td>22.97</td>
<td>B</td>
</tr>
<tr>
<td>ME</td>
<td>64</td>
<td>14</td>
<td>21.87</td>
<td>C</td>
</tr>
<tr>
<td>COE</td>
<td>69</td>
<td>15</td>
<td>21.73</td>
<td>C</td>
</tr>
<tr>
<td>SE</td>
<td>69</td>
<td>15</td>
<td>21.73</td>
<td>C</td>
</tr>
<tr>
<td>EE</td>
<td>77</td>
<td>14</td>
<td>18.18</td>
<td>C</td>
</tr>
<tr>
<td>IT</td>
<td>77</td>
<td>12</td>
<td>15.58</td>
<td>C</td>
</tr>
<tr>
<td>BT</td>
<td>194</td>
<td>25</td>
<td>12.88</td>
<td>C</td>
</tr>
</tbody>
</table>
Discipline-wise green curriculum analysis

The total numbers of subjects in four years of the program are analyzed to measure each discipline’s contribution towards sustainability. Biotechnology (BT), civil engineering (CE) and electronics & communication engineering (ECE) are the disciplines which provide choice for their students to select subjects of open elective from the open elective subjects offered in other engineering disciplines. As a result, these three disciplines have maximum number of subjects offered in their degree.

Mean value method has been used to derive the average green contribution of the curriculum undertaken. The contribution has been measured as a ratio of sustainability-focused subjects assessed on the basis of the selected keywords and total number of subjects in a particular discipline. Green curriculum index of the engineering disciplines of Delhi Technological University (DTU) is presented in Table 3. It is found that green curriculum is offered in the university engineering curriculum. But maximum number of disciplines exhibit low green curriculum incorporation in their syllabus. Thirteen engineering disciplines of the university are clustered into three groups of greening levels. The order of greening extent is A > B > C. ‘A’ denotes disciplines which incorporates more than fifty percent of green curriculum, ‘B’ denoting 25 to 50 percent contribution and ‘C’ include disciplines contributing less than twenty five percent. Environmental engineering (ENE) is highest in green curriculum and solely belongs to level A. The third cluster C contains nine disciplines which really need to work hard towards the path of sustainability.

Conclusion

Successful integration of sustainability principles and methods into engineering curricula requires a systemic change in our approach to education. Sustainable development is not just another topic to be considered in the curriculum, but competence-oriented approaches should be adopted in technological education. Students must be equipped with higher-level cognitive and critical thinking skills towards the transition of low-carbon economy, rather than a theoretical knowledge on sustainable development.

The results revealed that DTU introduced environmental engineering (ENE) as an optional specialization but green curriculum is not sufficiently integrated horizontally in its engineering curriculum. Adding a new course with sustainability content into a curriculum may be isolated as it does not encourage sustainability incorporation into professional designs and practices (Peet et al., 2004). However, horizontal integration is considered to be essential for fundamental concepts and principles related to sustainability. The integration of sustainability into existing courses may aid students in viewing sustainability in a systemic and holistic manner by demonstrating how sustainability and technical content can be blended to create sustainable designs (Ceulemans and De Prins, 2010). Moreover, it seems that incorporation of environmental studies in engineering curriculum is done only to fulfil the legitimate formality mandate by the highest court of the country. Green curriculum should be practised throughout the engineering program at a continuous and consistent pace to ensure environment responsive behaviour among the budding engineers and creating a just and sustainable world.

Engineering curriculum requires revision for sustainability integration in Delhi Technological University. The relevance of green curriculum should be understood by the University for infusing sustainability into the institutional culture. Technical University of Catalonia (UPC), University of Tokyo (Todai), Teri University are few examples which can be followed to integrate green curriculum in the present course structure. Ministry of Human Resource development (MHRD), University Grant
Commission (UGC) and All India Council for Technical Education (AICTE) should pay more attention regarding incorporation of green curriculum in engineering education. Industry, government and local communities can encourage universities to revive its curriculum towards developing low-carbon economies.

Appendix 1

Disciplines in B. Tech in DTU

<table>
<thead>
<tr>
<th>Code</th>
<th>Discipline’s Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>AE</td>
<td>Automobile Engineering</td>
</tr>
<tr>
<td>BT</td>
<td>Biotechnology</td>
</tr>
<tr>
<td>CE</td>
<td>Civil Engineering</td>
</tr>
<tr>
<td>COE</td>
<td>Computer Engineering</td>
</tr>
<tr>
<td>EEE</td>
<td>Electrical and Electronics Engineering</td>
</tr>
<tr>
<td>EE</td>
<td>Electrical Engineering</td>
</tr>
<tr>
<td>ECE</td>
<td>Electronics and Communication Engineering</td>
</tr>
<tr>
<td>ENE</td>
<td>Environmental Engineering</td>
</tr>
<tr>
<td>IT</td>
<td>Information Technology</td>
</tr>
<tr>
<td>MC</td>
<td>Mathematics and Computing</td>
</tr>
<tr>
<td>ME</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>PT</td>
<td>Polymer Science and Chemical Technology</td>
</tr>
<tr>
<td>SE</td>
<td>Software Engineering</td>
</tr>
</tbody>
</table>

References


Developing Culturally Relevant Literacy Assessments for Bahamian Children

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Abstract

The strong presence of culturally relevant materials in classrooms is seen as an indicator of good teaching but the development and use of these materials is under-investigated. Similarly, the actual construction and use of culturally relevant materials for literacy assessment purposes is under-reported. This paper examines the development and field-testing of culturally appropriate reading assessment materials for primary-school children in the Bahamas. The construction of culturally relevant assessment materials relies on the deep and intimate knowledge of the context and the use of the materials involves analyses from several perspectives: estimation of readability levels, creation of a range of question and activity types, analyses of students’ performance and comparison with other literacy performance indicators. This paper describes the development and field-testing of culturally relevant materials in the Bahamas.

Keywords: Culturally relevant materials; culturally relevant assessment; developing culturally relevant materials; culturally relevant pedagogy in the Bahamas

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Introduction

The Center for Culturally Responsive Evaluation and Assessment (CREA) in the College of Education at the University of Illinois at Urbana-Champaign hosted its inaugural conference in April 2013. The call for proposals stated, “The Inaugural Conference is to bring together an interdisciplinary group of scholars from the United States and internationally to focus on the role of culture in theory and practices of evaluation and assessment.” The call for proposals also underscored the void that exists in studying the role of culture in our educational practices nationally and internationally. The conference organizers stated, “CREA conference will be unique in its definitive recognition of culture’s centrality to evaluation and assessment and will illuminate the landscape of culturally responsive evaluation and assessment, a space that remains largely uncharted” (http://crea.education.illinois.edu/crea). The uncharted nature of the development of culturally responsive instructional and assessment materials for smaller nations is also the context of this paper as we recognize the dominance and influence of large super powers like the United States in shaping the educational texts of other English-speaking countries in its proximity and beyond.

The Commonwealth of the Bahamas (hereafter the Bahamas) is located a mere 60 miles off the coast of Florida. An independent democratic nation and former British colony, the Bahamas owes much of its past and present economic, cultural, linguistic and historical influences to its colonial heritage, its proximity to the United States and its cultural connections to the other island nations in the Caribbean. Because the three locales are socio-politically, linguistically, historically and geographically connected through colonialism, the slave trade and English bi-dialectal patterns for example, the Bahamas shares close affinity and kinship with the African descendants who live in the eastern United States and the Caribbean (Cash, Gordon, & Saunders, 1991; Lee, 1974; Nero, 2006; Schneider, 2008). However, despite the strong cultural influences of the United States in particular (e.g. Hall-Campbell, 2011, p. 99), Bahamians pride themselves on a unique culture and maintain an identity that is expressly Bahamian. This paper is situated in the educational context of the Bahamas but draws on the wealth of literature that is United States-centric to inform our understandings of the issues of cultural relevancy in developing culturally appropriate materials and assessments for Bahamian children. Our researchers are all United States-based and of African descent with the first author being a citizen of the Bahamas and the three who follow being Americans. Two members of our team are first-generation Americans whose parents migrated from West Indian countries and one member was born and raised in Jamaica, subsequently moving to the United States.

This paper therefore draws on Tinker Sachs’s deep and intimate knowledge of her home country (2014a) which, as Merriam (2009) reminds us, is essential because “in order to understand the culture of a group, one must spend time with the group being studied” (p. 28). Tinker Sachs’s “ethnic, racial and cultural identity” similar to Geneva Gay’s statement are her “primary anchor” from which she studies “current educational realities and future possibilities” (2013, p. 53). The other three authors’ rich Afro-Caribbean and American backgrounds also inform, reinforce and also interrogate our (mis)understandings of the connections that exist within and beyond each other’s borders.

Culture is the heart of the matter because its multifaceted, intangible essence is who we are as human beings, Swarts-Gray asks the question, “Can you imagine going through elementary school without ever finding a book that includes characters that look like you or remind you of your family?” (2009, p. 472). Tinker Sachs (2014a) begs a similar and more extended question: “Can you imagine going through 12 years of schooling without ever having seen anyone that looked like you in school texts or never having read any books about your own history, country or cultural background?” Have our educational backgrounds, which are not built upon our rich cultural heritages, enslaved people of African descent (Woodson, 1933)? In his text, Mirror for Adjustment, Porterfield (1967) talks about the use of bibliotherapy to provide “cures for personal and social arrows” (p. 7) and even though Brown wrote about Bibliotherapy and its Widening Applications (1975), the applications have not been fully exploited in rehabilitating the damaging effects of a lack of culturally appropriate literature and assessments for peoples of African descent. There is, indeed, a void and such a void can be filled.
by truly extending our conceptualization of bibliotherapy to one that wholeheartedly embraces culturally appropriate approaches in education to decolonize our minds and to reach places in our hearts that are yet untapped (Banks & McGee Banks, 2013; Gay, 2013, 2000). Just as Trounstine and Waxler’s *Finding a Voice* can free the minds of the incarcerated, so too can well-conceived, culturally responsive approaches be “an axe for the frozen sea within us” (2005, p. xiii).

**Purpose of Study**

This study, led by the first author, is part of a large-scale, whole-school longitudinal project located in one primary school in the Bahamas. The overarching goal of the project is to foster the development of dialogic communities in schools through culturally responsive pedagogies in literacy (Tinker Sachs, 2014b). The current investigation took place in the third year of the project and the purpose was to develop and field test the assessment materials to obtain baseline data and information for the future development and wide-scale use of these and other materials. This paper describes the development and use of the passages to assess students’ reading.

Our key questions are:

1. What processes and strategies support the development of culturally appropriate reading passages for learners?
2. What measures can be used to ensure the validity and reliability of the passages?
3. What did the results reveal about students’ performance in reading and what insights can be gleaned from the use of culturally appropriate assessment materials?

Caring is one of the understated foundations of teaching (Noddings, 1984). When educators choose to demonstrate an ethic of caring, it becomes evident in their academic planning and instructional decisions. Describing the traits common among educators committed to improving the educational experiences of learners disadvantaged by racial, cultural, linguistic, and socioeconomic hegemony, Ladson-Billings (1995) illustrates a portrait of a teacher with colorful strokes of personal accountability, community membership, and the desire to return something positive to a marginalized learning environment. As researchers who serve dual roles as educators, we recognize the complexities associated with creating culturally relevant materials and responsive environments. According to her study examining the challenges of conceptualizing and actualizing culturally relevant pedagogy, Young (2010) reveals that undergirding structural issues related to teachers’ cultural biases, the racist nature of American schools, and the failure to appropriately transform theory into practice all work together to present a considerable challenge for teachers who strive to create culturally relevant materials for their students. For Bahamian educators, it is the European colonial legacy, American cultural dominance and national and local socioeconomic forces that need to be addressed if the large-scale attainment of culturally responsive pedagogies is to be achieved.

Teachers must begin to realize their positions of power and privilege within the classroom. The ways teachers engage their students and their selection of curriculum materials impact how children learn. The decision to embrace the cultural diversity that permeates the learning environment is powerful in that it can invite children to become active participants during instructional activities (Ladson-Billings, 1995). On the contrary, attempts to ignore this diversity may be met with resistance and disengagement on the part of the students. For example, incorporating the interests of students in a lesson, perhaps through language or dialect they feel comfortable speaking or utilizing a genre of music with which they are familiar may yield higher levels of enthusiasm and inquisitiveness. Choosing to disregard these interests due to biases toward language and culture may hinder the learning process. Failing to be in tune with the needs and interests of students is a step in the direction of resisting culturally relevant pedagogy. Indeed, teachers work from a position of power and privilege (Tate, 1997) as they are responsible for making decisions about what and how children learn.
The nature of schools presents a challenge to teachers as they endeavor to prepare and develop culturally relevant materials. Traditionally, the school environment is a location where power struggles between dominant (oppressive) and subordinate (oppressed) groups are likely to occur (Delpit, 1995; Tate, 1997). Economic (wealthy vs. poor/working class), linguistic (high varieties and registers of English vs. low varieties and registers of English), racial (white vs. people of color), and gender (male vs. female) biases impact the educational enterprise. In an environment where students are expected to meet the learning and living standards set forth by largely white, middle-class families, teachers are under intense pressure to “school” non-white children to repress their cultural differences in order to achieve high test scores on exams that are neither produced by nor for people of color. When the school structure promotes an atmosphere that academically rewards students based on skin color, class, and language, it is difficult to confront historically and structurally entrenched European colonial supremacy and privilege. It then becomes difficult to engage in culturally relevant pedagogy. In formerly colonized contexts, these issues continue to resonate as the educational systems were built upon the foundations laid by their former colonial masters (Bhabha, 1994; Césaire, 1955; Dubois, 1969). Teachers in the Bahamas face some of these challenges with creating culturally responsive materials and learning environments. Bahamian teachers have experienced high pressure with preparing students for the national Grade Level Achievement Tests (known locally as the GLAT) and not having enough time or flexibility for extending students’ learning in adopting inquiry-oriented dialogic and critical thinking practices (Tinker Sachs, 2014b). Teachers also face the added challenges of the many varieties of English spoken by their students due to their differing cultural, linguistic and socio-economic backgrounds (Childs & Wolfram, 2008; Nero, 2006).

Through our review of pertinent literature on the topic of culturally relevant pedagogy, we realized that many studies and conceptual pieces focused heavily on the racial dynamics between the teacher and student in the context of the United States (e.g. Banks & McGee Banks, 2013; Delpit, 1995; 2002; Gay, 2013; 2000; Ladson-Billings, 1995) rather than language, economic, and cultural differences that are specific to the context of the Bahamas. Saunders’ (2004) work for example, was one of the few studies that highlighted the cultural differences within the literature the author was exposed to growing up in the Bahamas. Further, he describes how he attempted to create culturally relevant pedagogy in his classroom in the Bahamas. He incorporated literature written in Bahamian dialect to support students’ comprehension. He discussed reading aloud stories about Bre Bouki and Bre Rabbi (Bahamian cultural tricksters; see for example, Glinton-Meicholas, 2014) to children and using these stories to support comprehension.

As a group of researchers committed to the principles of culturally relevant pedagogy, our efforts to design appropriate materials in literacy were challenging as we could not presume to know or to be able to identify the students’ interests. While our racial identities permitted some level of common experience, our diverse nationalities also presented a challenge in working with materials that are culturally appropriate for Bahamian learners. It is significant for educators and researchers to acknowledge the complexity of learners of African descent, particularly within the United States, which has a large multicultural population. People of African descent form the majority racial group in the Bahamas yet even within this group there is significant diversity in relation to ethnicity, class, nationality, language and region. Therefore, practitioners cannot assume that any implemented culturally responsive pedagogies will be sufficient for all African-descended learners in the United States, Bahamas or other places. Code (1993) frames this epistemologically by stating, “knowers are always somewhere—and at once limited and enabled by the specificities of their locations” (p. 39). For educators in the Bahamas and in the wider Caribbean, there is also a concern. Not all children are of African descent and those of African descent and skin colors may have come originally from different countries, socio-economic and linguistic groups. In the Bahamas, some areas, settlements, islands and cays are inhabited predominantly by White Bahamians, White expatriates and Black Haitian Bahamians, as, for example, in settlements at Elbow Cay, Abaco or Spanish Wells (Bahamas Dept. of Statistics, 2013). There is no such thing as one culture and all multicultural groups draw on different “funds of knowledge” which are those “historically developed and accumulated strategies (skills, abilities, ideas and practices) or bodies of knowledge that are essential to a household’s functioning and well-being” (González et al., 2005, p. 91-92). Further, as researchers, we could not
assume cultural membership within the students’ community. Therefore, we also had to acknowledge our experience and how it may not be aligned to the students’ in such areas as interests, residence, age, and background knowledge. Despite the challenges of the aforementioned, it is essential to note our shared identities with the young Bahamian school children and that as people of color, we are committed to the adoption of culturally responsive pedagogies and assessments in literacy.

Drawing on the cultural understandings of our team member born and bred in the Bahamas and who identifies as Bahamian, reading passages were constructed which referenced sights, cities, events and attractions that we hoped would be familiar to our participants. For example, one passage discusses a family’s memories around a massive sapodilla, a tree native to the tropics. In another, a child visits North Eleuthera, one of the districts of the Bahamas on the island of Eleuthera.

There is a significant gap in the literature regarding the development of culturally relevant assessment in the United States and in particular, for students from countries in the Caribbean. The small body of research that exists will be addressed (Cazden, 2001; Cunningham, 1976; Delpit, 1995; Hall-Campbell, 2011). According to Delpit (1995) children who speak non-mainstream varieties of English do have a more difficult time becoming proficient readers based on inadequate assessments, which are influenced by the dialect variety children speak. Teachers may confuse the teaching of reading with the teaching of a dialect variation. For instance, a study conducted by Cunningham (1976) concluded that teachers across the United States were often marking reading miscues that were dialect related. The extent to which this marking occurs in the Bahamas is unknown due to inadequate research.

Schools are filled with a unique blend of diversities. Addressing these diversities is essential to delivering the appropriate assessment. Nonetheless, teachers who do not address diversity can construct ethnic bias and inaccurate results. For instance, in a research study, children’s topic-centered and episodic narratives were mimicked to five African American and seven Caucasian graduate students of education (Cazden, 2001). The episodic narratives which reflect structures of African American dialect were labeled by the Caucasian informants as hard to follow, terrible stories, and incoherent. Yet, the African American informants found the episodic stories easy to understand, interesting, and full of detail and description. Subsequently, Cazden questions, “Why these differences?” (2001, p. 19). Thus, she advocated more research that employs authentic materials to measure students’ knowledge and skills. Further, she insisted that high-stakes testing environments are common in schools and are detrimental to student progress and learning. Cazden suggested sociocultural approaches to improve classroom discourse and student learning, fewer prescribed curriculums and more authentic lessons derived from student input.

Hall-Campbell is the only known Bahamian work on developing culturally responsive psychometric measures. Hall-Campbell’s doctoral dissertation set out to define culturally relevant pedagogy, develop culturally responsive scenarios that are reflective of Bahamian pedagogy, and to examine constructs of school climate, culturally relevant outcome expectancy and culturally relevant teaching efficacy (2011, p. 48).

Hall-Campbell believes that school climate is a factor that affects teachers’ pedagogy and student success. She employed a mixed-methods approach to test the efficacy of her theories through three data-gathering phases. In the first phase she interviewed prominent Bahamian educators and secondary school teachers from three schools and four subject areas and from these interviews she went on in phase two to develop four teaching scenarios to test the relationship between school climate and culturally relevant pedagogy. In the final phase of the investigation, 226 newly recruited government school-teachers and administrators were then given demographic questionnaires, Bahamian classroom scenarios and questionnaires on school climate and culturally responsive pedagogy (p. 57). Hall-Campbell found four themes related to culturally relevant pedagogy for Bahamians: cultural knowing, designing culturally relevant curriculum, acknowledging cultural differences and minimizing cultural incongruence (p. 99). The results of the first two phases showed that “there is indeed a pedagogy that is uniquely Bahamian and this pedagogy is enacted in ways
shaped by the Bahamian context” (p. 103). In the third phase of the study, after establishing the validity and reliability of the subscales for the research, the author found that “school climate was established as a significant predictor of all the culturally responsive scales” (p. 109). This means that when teachers felt more efficacious and open to teaching in pedagogically relevant ways, the more open and better the school climate.

While there are numerous challenges to creating culturally responsive texts and local assessments in the Bahamas, it is important to state that today there are Bahamian texts in existence in Bahamian schools. These texts can be found in the teaching of the language arts at the primary level, for example, the series, Preserving Our Heritage (Jack, 2004) and at the secondary level, for example, More Talkin’ Bahamian (Glinton-Meicholas, 1995); An Evening in Guanima: A Treasury of Folktales from the Bahamas (Glinton-Meicholas, 2014) and in social studies, for example, Sources of Bahamian History (Cash et al., 1991). National assessments continue to be enriched with Bahamian cultural content such as evidenced in the primary school GLAT and at the secondary level Bahamas Junior Certificate of Education and Bahamas General Certificate of Secondary Education exams (Bahamas Ministry of Education, 2010). However, the move away from Euro-British and American culturally-centered texts has not been obvious in the classroom-level literacy assessments under discussion.

**Methodology**

The first author wrote the passages for the assessment by drawing on her deep knowledge and constant engagement with family members, friends, teachers and students who reside in the Bahamas. Her observations, experiences and photographs of local life when visiting and travelling about the country assisted in the creation of the texts. The latter were tempered by her many years as an instructor of literacy and were all narrative in structure. A total of 20 passages were created for primary Grades 1 to 6.

The three doctoral students on this project completed the readability assignments, developed the questions and prepared the passages for use. When we initially began studying students’ readability with regard to culturally relevant pedagogy, as educators and doctoral students, we were familiar with the terms. As early childhood educators, we have all determined, more informally than formally, the readability of a text before allowing our students to read or peruse books and other reading materials. Leveled readers are typical components of the classroom. Rarely as teachers, however, were we called upon to assign a formal readability level to any text. Books and leveled readers that line our classroom libraries are pre-labeled by the distributor, publisher, or school district for teachers to easily select reading material for learners or for children to choose books on their level with a good balance of challenge and ease. Educators seek to provide reading materials which will enrich and encourage students’ comprehension, oral, and literacy skills. By categorizing or assigning a level to various texts, educators engage students in the responsibility of selecting texts that meet their reading level. In doing so, we hope learners spend less time with simple, unchallenging reading materials as well as more difficult, frustrating text. Rather, the goal is for students to spend more time with rich, interactive text.

With this in mind, there were plenty of factors that we needed to consider while assigning the reading levels. Some of the questions included: How do we simplify the text without losing the language and flow of the writing? Which readability formula will be used? How can we ensure that the stories for each grade level were using a similar structure and readability level?

There are various ways researchers can choose to analyze texts within their studies. Depending on the research question, the nature of the study and context, a researcher may determine the best way to approach answering the research question. A researcher may adopt a constructivist approach, which will require a more interpretative analysis. For instance, a researcher may use textual discursive analysis, which examines the linguistic elements and phrasing in a text. Specifically, textual discursive analysis looks at the grammatical structure, word attribution and coded language within a text. A researcher may also choose to adopt literary analytic methods, which looks more
specifically at the layout of the text. Literary analytic method is also ideal for analyzing contemporary realistic fiction. Specifically, a researcher could examine the plot, character and thematic development of a text.

Researchers are increasingly using more computer-assisted programs for research analysis of texts. While quantitative researchers using computer-assisted programs can readily cut and paste data, sort information, classify and search for common themes, the qualitative researcher would need to include additional analysis. Ezzy cautions, “qualitative data analysis cannot be done by a computer” (2002, p. 111). Rather the computer program operates as a facilitator. Therefore, one benefit is that the program can identify patterns and common themes; however, the programs fall short of interpretation of the data (Ezzy, 2002). However, if there is a word, phrase or idea to be analyzed, a computer program may be used. The computer can count the text for occurrence or frequency of specific words and phrases.

Textalyser is one contemporary electronic analysis tool researchers can use to examine the texts in their reports (www.textalyser.net). The online program is accessible to students, teachers and researchers. The program can determine the subject of a text, aid with translation, and analyze word choice. The program may also be used to determine key word density and prominence of certain words used in the text.

Using our experience as early childhood educators who specialize in reading instruction and work with leveled texts, we determined what a particular grade level text should look like. This includes, for example, the understanding that Grade 2 texts would have more complex words than kindergarten texts. Further, Grade 2 texts would include more compound words or significantly longer words with prefixes and suffixes. We recognized that although there were multisyllabic words, we would not allow these to affect the readability of the text. For example, computer, a multisyllabic word, is common and familiar in Grade 2 texts and therefore did not necessarily increase the readability level.

In order to measure the level of complexity of each short passage, we turned to the Spache (1953), Flesch (1948), and Dale and Chall (1948) readability formulas. By comparing the results of each measure, we were able to determine the appropriate grade level to assign to each text. While these formulas generally yielded similar outcomes, there were occasional outliers that could be explained. For example, if measures suggested the readability of a passage be near the fourth grade level, yet one indicated that readability was closer to the seventh grade level, we considered proper nouns and multisyllabic words which may have thwarted the scale along with our own levels of expertise as reading specialists and early childhood educators with years of teaching experience and background in children’s literature. Adjusting our levels accordingly, we recognized that each formula was created for a particular group of reading levels. For example, the Spache readability formula is ideally suited for passages near or below the third grade reading level (primary), while the Dale-Chall method is particularly useful for advanced text.

The use of readability formulas leaves room for error and faulty reading levels (Rush, 1985). Their limitations compelled us to consider issues of how meaning is communicated, reader interests, experience, knowledge, and motivation for reading. Arguing that formulas only focus on the surface of the text, Kazemek (1984) suggested that consideration must be given to the background knowledge and language of the reader prior to making decisions about reading levels. Further, teachers should engage in dialogue with students and observe them reading in various contexts to determine which texts are most suitable.

Created in 1953, the Spache readability formula was introduced to establish the reading level for primary text, that is third grade and below. To manually determine the Spache readability formula, we selected 100 words from a passage we believed to be the least challenging text. We then counted the number of sentences within the sample text and divided that figure by the total number of words in the selected sample to determine the average sentence length (ASL). This figure also provided the
percentage of difficult words (PDW). The text’s readability level was established by plugging our figures into the Spache Readability Index formula \( ((0.142 \times \text{ASL}) + (0.086 \times \text{PDW}) + 0.839) \).

Created by Rudolph Flesch in 1948, the Flesch readability formula was introduced to establish the reading level for school-related texts. However, it has been used widely by various agencies to assess the difficulty of any reading passage. The measurement scale is between zero and 100 with scores closer to zero regarded as extremely complex and results near 100 as uncomplicated. To employ the Flesch readability formula, we began by applying a mathematical formula of 206.835 - (1.015 x ASL) - (84.6 x ASW). The outcome yields the passages’ reading ease.

Finally, we used the Dale-Chall Readability formula to assess the reading level for passages near or above a fourth grade level. Edgar Dale and Jeanne Chall created the Dale-Chall formula to improve Flesch’s formula; it offers leveling for adult text. Unlike other formulas that consider word length, the Dale-Chall (1948) bases reading ease on the number of complex words, or words that do not appear on grade-level sight-word lists. To utilize this formula, we selected a text sample of 100+ words. We then calculated the ASL and the percentage of words that do not appear on sight-word lists, or PDW. We plugged those figures into the equation: \( 0.1579 \times \text{PDW} + 0.0496 \times \text{ASL} + 3.6365 \) to ascertain the passage’s raw score. The higher the raw score, the higher the grade level for each text. For example, a text with a raw score of 7.5 would be a ninth or tenth grade reading. Table 1 gives the titles and word counts of the passages and their assigned reading levels.

The design and creation of comprehension questions were an important part of the development process. Questions were categorized as factual, sequential, vocabulary, inferential and personal response following work done by Tinker Sachs and Mahon (2006) to allow students a range of question types. The questions went through several rounds of development by the research team and were checked and counter-checked for accuracy of question type and appropriateness for the text.

**Table 1. Story Title, Grade Level and Word Count**

<table>
<thead>
<tr>
<th>Story Title</th>
<th>Grade Level</th>
<th>Word Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 My Ball</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>2 My Birthday</td>
<td>1</td>
<td>50</td>
</tr>
<tr>
<td>3 My Pet</td>
<td>2</td>
<td>55</td>
</tr>
<tr>
<td>4 My Boat</td>
<td>2</td>
<td>70</td>
</tr>
<tr>
<td>5 My School</td>
<td>2</td>
<td>93</td>
</tr>
<tr>
<td>6 A Rainy Day</td>
<td>2</td>
<td>102</td>
</tr>
<tr>
<td>7 A Day at the Beach</td>
<td>2</td>
<td>185</td>
</tr>
<tr>
<td>8 Saturday Evening</td>
<td>3</td>
<td>241</td>
</tr>
<tr>
<td>9 Peanut Man</td>
<td>3</td>
<td>175</td>
</tr>
<tr>
<td>10 The Fruit Stand</td>
<td>3</td>
<td>137</td>
</tr>
<tr>
<td>11 Where I live</td>
<td>3</td>
<td>188</td>
</tr>
<tr>
<td>12 Tourist</td>
<td>4</td>
<td>204</td>
</tr>
<tr>
<td>13 The New School Year</td>
<td>4</td>
<td>256</td>
</tr>
<tr>
<td>14 The Cookout</td>
<td>4</td>
<td>320</td>
</tr>
<tr>
<td>15 A Jitney Ride to the Beach</td>
<td>5</td>
<td>411</td>
</tr>
<tr>
<td>16 A Ferry Ride to North Eleuthera</td>
<td>5</td>
<td>415</td>
</tr>
<tr>
<td>17 The Christening</td>
<td>6</td>
<td>193</td>
</tr>
<tr>
<td>18 A Visit to Crooked Island</td>
<td>6</td>
<td>281</td>
</tr>
<tr>
<td>19 The Dog Show</td>
<td>6</td>
<td>270</td>
</tr>
<tr>
<td>20 The Dilly Tree</td>
<td>7</td>
<td>282</td>
</tr>
</tbody>
</table>

In formulating the presentation of the texts to our young participants, we chose to include pictures to match the context of the passages, to build schema and to support their background knowledge. Enlarging font sizes for students, we deemed, made it easier to read. For the examiner, we included introductory statements that we believed were essential for young readers to hear in order
to comprehend the instructions for the assignment. On the examiner’s copy, we chose to include space for comments and reflections on areas such as retellings, miscues, self-corrections, re-readings, omissions, substitutions, and other reading-related behaviors.

This pre-planning stage of data collection included several steps. First, we enlarged the font size of the student copy of the transcripts to ensure that students could read the script easily. Transcripts are the actual sheets with the stories and pictures that the students read from. We copied three sets of each student set and bound them in transparent report folders. Since there would be two researchers assessing students at a given time, we wanted to ensure that with extra copies we could work more efficiently. Then we copied about twenty examiner copies of each story. The examiner copy included each story with the directions at the front of the sheet to be read to students before beginning. Retelling prompts and comprehension questions were at the back of the examiner copy. We wanted to have sufficient transcripts in case we needed to test the students higher or lower. Students who read stories at a frustration or difficulty level would need a lower level story and those who could easily read a story independently would be given a more challenging story at a grade level higher. For students who had difficulty with the grade one text, we asked them to tell us about the picture.

Before collecting the data, we created a coding system to provide accurate tracking of each student. Merriam posited, “… the validity and reliability of a study depend upon the ethics of the investigator” (2009, p. 228). She further stated, “… by establishing basic descriptive categories early on for coding, the researcher will have easy access to information in the analysis and interpretation stage” (p. 152). The characteristics we used for the codes were based on the grade, each student’s teacher’s name, the gender and the student’s number placement in the class. We received a class list from each teacher within each grade and assigned every child a code within the class. The teachers had grouped their students as either low, medium, or high in reading but this information was not used in the selection of students as we randomly selected every fifth child in each class for assessment. The teacher information was used at the end of the school data collection period to see if there was a match between the researchers’ and teachers’ grade level association.

The students were assessed at the beginning of the last month in the school year just before final exams in June 2011. The testing session lasted approximately 10-20 minutes depending on the pupil. We chose particular days to test specific grades. The morning of the first day, one researcher assessed fourth graders and in the afternoon both researchers randomly assessed the fifth graders. On the second day of testing, we assessed some second and all third graders in the morning followed by some sixth graders after lunch in the afternoon. On the third day, we assessed the remaining sixth and second graders. On the fourth and final day, we tested the first graders all morning. The rationale behind the order of grades to assess rested on the closing events that were happening at the time at the school such as the end-of-year assessments and the upcoming graduation for sixth graders.

The assessment took place in the teachers’ staff room and a researcher assessed individual students. On arriving in the staff room, the student was allowed to examine three or four texts that were at, above and below his or her grade level. The student then selected one text to read and was asked to practice reading it before being assessed. The instructions were then read to the child and then the assessment began. A sample of the student copy is shown in Figure 1.

The researcher had the student sit beside her as s/he read the first story. If a student could read that particular story successfully or independently, then the student was given the more challenging text or above grade level text to read. However, if the student had difficulty decoding the words, and was unable to answer 80% of the questions, the researcher had the student read a story from a lower grade level.
Mrs. Cooper has a fruit stand near our school. On Fridays when my Daddy is driving me home from school, he likes to stop there and buy fruit. I usually stay in the car looking out at the variety of things Mrs. Cooper has to sell. She has everything nicely displayed. I could see red ripe tomatoes, big yellow oranges, green and purple grapes, yellow hairy mangoes and the big green mangoes, my favourite. Daddy liked to buy her tomatoes and pears when they were in season.

**Figure 1.** Sample of student copy with picture.

Before testing, both researchers decided on the criteria for determining reading accuracy for a level of frustration (hard), instructional or independent (easy) reading level. See Figure 2.

<table>
<thead>
<tr>
<th>Comprehension Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/5- Independent/ with 95% decoding</td>
</tr>
<tr>
<td>4/5 – Instructional/ with 90-94% decoding</td>
</tr>
<tr>
<td>3/5- Frustration below 90% decoding OR 100% decoding and below 4/5 comprehension</td>
</tr>
</tbody>
</table>

**Figure 2.** Criteria for determining reading accuracy

Because this study is a preliminary field-testing of the texts, we wanted to ensure that procedures were being developed and followed so that in future investigations, the design and procedures could be improved. We also wanted to create a study in which we “made as many steps as operational as possible” (Yin, 2009, p. 45).

Figure 3 shows an example of an excerpt of an actual direction that researchers read to the students. After students read the story aloud, they were then asked to give an oral retelling of the story. The oral retelling was necessary to gather a sense of students’ comprehension through recall of the details of the story. A student who gave a few details was recorded as giving minimal retelling. A student could also receive partial or complete retelling, if s/he gave most or all of the main ideas, retold coherently and used specific vocabulary from the story. Finally, students were asked to answer five comprehension questions about the story.

**Where I Live**

**Examiner Says:** This is a story about a group of children playing outside in their backyard. First, I need you to read the story silently. Then I need you to read the story aloud. Finally, I need you to retell the story. After which, I need you to answer some questions about the story.

Mum was hanging clothes in the backyard. I was playing cowboys and crooks with my brothers. Our sister wanted to play too but we would not let her. Mum had two big tubs on the wash
stand and she washed our school clothes in one and rinsed them in the other. I was the cowboy and my two brothers were the crooks. I had to catch them and carry them to jail.

Figure 3. Sample of an excerpt of examiner’s copy.

After determining students’ reading level based on the criteria mentioned above, the researchers decided if students should be tested above or below the initial level. We kept a running inventory of all data collected to ensure validity of the study. As part of the data collection process, students were also tape recorded as they read each of the stories. Each student transcript as well as the tape recordings would be used later as part of the data analysis process.

Merriam posits, “Simultaneous data collection and analysis occurs both in and out of the field. That is, you can be doing some rudimentary analysis while you are in the process of collecting data, as well as between data collection activities” (2009, p. 171). To that end, one of the doctoral researchers scored the transcripts each day and wrote up a complete analysis of an individual student’s reading behavior. Further, notes were written officially on the transcript of specific reading behaviors such as self-correcting, rereading, stretching sounds or reading with fluency. She also prepared a partial analysis of each student’s reading level specific to the ability to decode, retell and comprehend questions. Using 3 x 5 cards, she recorded the levels for each child in each class. These cards were then stapled together and used by the senior researcher to do a more comprehensive report and cross analysis of each grade. Before leaving the school, the two researchers met with some of the teachers and shared their general findings about their individual classes. They also discussed the preliminary report with four administrators about the students’ performance. The results were later reported to the school’s faculty in professional development follow-up work.

Results

The results echoed and verified the teachers’ categorization of their students’ general performance in reading and were roughly confirmed by students’ performance on the country’s standardized GLAT annually administered by the Ministry of Education. Table 2 shows the distribution of the students by grade level and their overall reading performance in reading aloud, reading comprehension and retelling. An estimated 21% (n = 37) of the total school’s population (n = 367) were randomly selected and assessed and of that number 37% (n = 30) were below grade level while 31% (n = 25) were at or above grade level. The results clearly indicate a strong need for the development of intervention programs for all grade levels across the school. Table 2 gives the breakdown.

<table>
<thead>
<tr>
<th>Grade</th>
<th>N</th>
<th>n</th>
<th>Below Level</th>
<th>At</th>
<th>Above</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>70</td>
<td>15 (21%)</td>
<td>4*</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>61</td>
<td>13 (21%)</td>
<td>5</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>55</td>
<td>13 (23%)</td>
<td>4</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>51</td>
<td>12 (23%)</td>
<td>7</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>60</td>
<td>12 (20%)</td>
<td>4</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>6</td>
<td>70</td>
<td>15 (21%)</td>
<td>6</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>367</td>
<td>80 (21%)</td>
<td>30 (37%)</td>
<td>25 (31%)</td>
<td>25 (31%)</td>
</tr>
</tbody>
</table>

*Non readers

Bahamian researcher, Saunders (2004) found that although he incorporated culturally relevant texts in his instruction, his Grades 1-4 students did not show improvement in their comprehension. The results of this study as well as Saunders’ help to explain why it is that despite exposure to
culturally relevant texts, students were not as successful in reading as would be anticipated. The preliminary findings clearly show that reading culturally relevant text does not mean that one will necessarily be a better reader. Moreover, not all students within a culture are exposed to similar experiences. Not all parents can afford to expose their children to trips and rich cultural experiences.

The second level of students’ reading was the miscue analyses that gave us an idea of the types and frequency of students’ miscues. Another important reason for the miscue analysis was to examine the extent to which students’ dialect variety influenced the processing of text. Before the analyses of the miscues, researchers worked together to establish inter-rater agreement on the coding of the passages. Data from six of the students (approximately 7% of the data) were randomly selected for coding by the research team. Agreement was subsequently established at .88.

We report here a sample of the findings from the students by zeroing in on the dominant types of miscues. Miscues were coded as omissions, substitutions, repetitions and insertions. They were also coded to indicate the influence of dialect variety and whether or not meaning was impacted. Students’ omissions, substitutions, repetitions and insertions indicated an association with Bahamian linguistic speech patterns but these miscues did not exert a negative influence on the comprehension of the text. In several examples, we can see the use of the verb form impacted by Bahamian linguistic patterns. For example: the target met became meet; took became take; became was changed to come and seemed became seems (Grade 6 readers). Table 3 gives more examples of these phenomena in the reading of text.

Here is an excerpt from one fifth grade reader who is struggling with a second grade level text, *A Day at the Beach*. Miscues are italicized and underlined while the target word is emboldened in parentheses.

<table>
<thead>
<tr>
<th>Text and Miscues</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>We went to the beach today. I was so happy. I put on my bathing suit and got my</td>
<td>“Tool” for “Towel” - The student read the initial and final letters but failed to process the lack of fit with the context.</td>
</tr>
<tr>
<td>towel [tool] with the boats on it. I went to look for my beach bucket [basket] and</td>
<td>“Basket” for “Bucket” – This is a semantically appropriate match with both initial and final consonants being correctly read.</td>
</tr>
<tr>
<td>shard [self-corrected – shovel] but I could not find them. I found [found] my</td>
<td>“Find” for “Found” – This miscue could be linguistically based as Bahamian dialect speakers often use the present tense as the past tense</td>
</tr>
<tr>
<td>beach ball under my bed. I asked my brother to blow it up for me. Then my parents</td>
<td>marker and rely on context to signify tense.</td>
</tr>
<tr>
<td>said it was time to go. My [brothers] and I raced to the car. When we got there,</td>
<td>“Brother” for “Brothers” – miscue is a deletion of the plural marker and may be linguistically based as the plural noun is often not used but</td>
</tr>
<tr>
<td>my mother [mr] and I ran [ran] into the water. Daddy took the cooler [cool] [</td>
<td>qualified by contextual markers.</td>
</tr>
<tr>
<td>self-corrected] out. We ran [ran] into the water.</td>
<td>“Surprise” for “Spread” – In this reading the student got only the initial letter match and guessed the remainder of the word without checking for</td>
</tr>
<tr>
<td></td>
<td>comprehension match.</td>
</tr>
<tr>
<td></td>
<td>“Run” for “Ran” – This miscue is linguistically based as the present tense is used often to denote the past.</td>
</tr>
</tbody>
</table>

Other miscues indicated students’ need for word recognition strengthening which the overarching results support.

**Discussion**

In responding to the research questions underpinning this paper, it is clear that the construction of culturally appropriate assessments in literacy is not a simple construct. The creator of the text needs to have deep and intimate knowledge of the context. The writing of these texts requires, as Gay intones, “tapping into a wide range of cultural knowledge, experiences, contributions, and perspectives” (2000, p. 31). Gay believes that “Emotions, beliefs, values, ethos, opinions, and feelings
are scrutinized along with factual information to make curriculum and instruction more reflective of and responsive to ethnic diversity” (p. 31-32). The writer or materials developer needs to be immersed in the culture of the community to be able to capture the subtle nuances of its lifestyle and ways of knowing. Once the writer begins to write, s/he needs to be mindful of the audience so that s/he can construct passages in ways that will be age and content appropriate. Texts also need to be developmentally appropriate for students. As in the case of these texts, teachers were consulted on what children would like to read about and their general interests. Children can also be consulted and the texts tested on several of them for suitability prior to use. In this preliminary investigation we did not consult the children on their views of the text before or after selection. This is an area for further exploration as we continue to develop the passages.

What are valid measures or indicators of someone’s culture depends on the people who are members of that cultural group. The writer needs to have contact with members of the group to know what is of interest and importance in their lives. The usability of the texts needs to be ascertained through field testing of the passages, close note taking and examination of the students’ response to the text and the demands of the task. One way to ensure cultural validity is to consult members of the cultural group which we can do more of the next time around but reading comprehension assessment validity also means that the measures must assess what they claim to measure. In comprehension the question types went through several iterations before use to ensure that, for example, inferential questions indeed were inferential questions and agreed upon by all the researchers to be so. Reliability in assessment means that the results are confirmed if done again and again. What we did here was to get superficial confirmation of the reliability of the results by consulting teachers’ placement of their students and the GLAT results. Now the texts we used need to be validated over a period of time with similar groups of children to ensure that they are indeed reliable measures of literacy. The matches with other measures confirmed that our results were approximately in the right ballpark in being able to assess students’ reading accurately.

A final important question in this research is what can the provision of culturally familiar texts reveal about students’ reading performance and what insights might be gleaned from the use of culturally appropriate assessment materials. Tinker’s (1989) dissertation addressed this question closely by giving Bahamian and Canadian sixth graders culturally familiar and unfamiliar passages to read. Using think-aloud, Tinker found that Bahamian children were able to process the culturally familiar Bahamian passage (Junkanoo) with higher levels of storying, for example associations, inferences and critical thinking, than the unfamiliar Canadian text (subway). Likewise, Canadian children were able to do the same on their culturally familiar (subway) and unfamiliar (Junkanoo) passages. In the work reported here, we do not have an experimental group to test the efficacy of our texts over other culturally un/familiar ones. However, conceptually, it stands to reason that one will generally perform at a higher level on something with which one is familiar over something with which one is unfamiliar (Anderson, 2004; Bransford, 2004). Tinker (1989) has demonstrated this view to be of merit in using culturally familiar Bahamian texts with Bahamian elementary children. However, a few studies are insufficient to establish this claim and there is clearly a need for more rigorously designed longitudinal research to fully establish the veracity of the claim that using culturally responsive texts will result in greater student learning and overall achievement. Needless to say, it would certainly appear that culturally responsive teaching is a major step in the direction of stronger teaching and learning. Gay puts it this way:

Culturally responsive teaching: simultaneously develops, along with academic achievement, social consciousness and critique; cultural affirmation, competence, and exchange; … individual self-worth and abilities; and an ethic of caring. It uses [different] ways of knowing, understanding, and representing various ethnic and cultural groups in teaching academic subjects, processes, and skills. It cultivates cooperation, collaboration, reciprocity, and mutual responsibility for learning among students, and between students and teachers. It incorporates high-status, cultural knowledge about different ethnic groups in all subjects and skills taught. … Thus, [it] validates, facilitates, liberates, and empowers
ethnically diverse students by ... cultivating their cultural integrity, individual abilities, and academic success. (2010, pp. 45-46)

In general, these passages appear to be a useful foundation for further development. The results indicated that the passages were reliable in ascertaining students’ reading levels through matching teachers’ ranking of the students and their performance on standardized measures. However, the passages all need to be more closely scrutinized for consistency in text structure, levels of interest and familiarity, variation in word length and quality of questions asked. Further and more detailed analyses would need to be done on students’ responsiveness to question types and retellings. It would also be important to gather students’ views on the texts’ themes and topics for further input and refinement. Larger scale measures also need to be developed over time to investigate the extent to which culturally responsive pedagogies support improved academic performance. In addition to the aforementioned areas, this work is very much hampered by lack of funding to invest in the creation and field-testing of culturally responsive texts. Such a task should be a major and important national undertaking if the Bahamas wants to truly divest itself of the many hampering vestiges of colonialism in its educational system. Teacher professional development is a great necessity as part of the campaign to take on culturally responsive pedagogies (Sleeter, 2011; Tinker Sachs, 2014b).

No information texts were included in the development of these culturally responsive materials. There is a great need to create this text type and balance the genres that are given to the students for both instructional and assessment purposes. Further development is needed if this project is to be taken to the next level and this means more time to construct and field test the materials before they can be used for large scale or school and systems-wide assessment. Does the use of culturally appropriate assessment materials really make a difference for learners? Research designed along the lines of Tinker (1984; 1989) would need to be developed to test the efficacy of this claim in both assessment and instructional conditions with culturally familiar and unfamiliar materials. Intuitively, we know it makes sense to give learners materials with which they are culturally familiar to reinforce and affirm their identities, develop their personalities and optimize their foundations for learning new things based on their own experiences and those who care about them. Thus we close with the following broad recommendations for supporting the development of culturally responsive pedagogies in the Bahamas and beyond:

1. Colleges of Education and institutions that support the professional development of teachers need to ensure that pre-service and in-service teachers are schooled in the understanding of critical and transformative culturally responsive pedagogical practices;

2. Administrators, school personnel and teachers should be encouraged and affirmed in supporting and adopting culturally responsive pedagogies and assessments in their schools and classrooms;

3. Governments and agencies that provide sources of funding for education need to offer grants that support the professionalization of teachers in the adoption of culturally responsive pedagogies and the writing and development of culturally responsive texts and assessments;

4. Educational researchers need to be funded to investigate the long-term adoption and development of local, culturally appropriate pedagogies and assessments.

Souto-Manning helps us with the following challenge in education:

... the challenge of education is to consider access, equity, and power and embrace liberatory transformative practices. The challenge is then not to create master texts or intense experiences, but to develop (or adapt) pedagogical processes which can honor situated contexts and promote authentic forums for problematization, dialogue and transformation (2010, p. 97).
Ultimately, the strong adoption of pedagogies and assessments that are culturally responsive is about helping both teachers and students to “develop a critical consciousness through which they challenge the status quo of the current social order” (Ladson-Billings, 1995 p. 160).

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References


War, Peace, And Peace Education: Experiences and Perspectives of Pre-Service Teachers

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Abstract

The purpose of this study was to reveal the perceptions of preservice teachers with war experience regarding war, peace and peace education. In the study, the phenomenological design was applied. The participants of the study were individuals who experienced wars or conflicts for several reasons in their countries and who received teacher training in Turkey. In this respect, the causes of war were reported to include economic and political benefits and religious and ethnical discrimination. In addition, the participants mentioned the social, psychological and economic reflections of war. Also, peace was associated with the participants’ experiences and explained with such concepts as living together, freedom, confidence and happiness. In relation to peace education, the main focus was on respect to differences, and on prevention of discrimination. The preservice teachers also emphasized giving importance to children’s psychology in peace education, women’s rights as well as to avoidance of discrimination.

Keywords: War, causes of conflict, migration, war experiences, peace education activities, pre-service teacher

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Introduction

With its basic and clearest meaning, peace can be defined as avoidance of violence (Galtung, 1969). Galtung (1969) explains peace using the concepts of positive peace and negative peace. According to the researcher, negative peace refers to lack of violence, while positive peace means securing social justice by avoiding violence thanks to certain skills. The conceptual analysis conducted by Johnson and Johnson (2006, 2005) revealed two dimensions: Imposed peace and consensual peace. According to imposed peace, those with the power use their current economic or military strength to establish peace by forcing the weak group to obey the rules, while consensual peace is defined as reaching consensus in harmony in line with the common goals by ending the violence and hostility. Accordingly, in both conceptual analyses could be said to be similar as the consensual peace concept and the positive peace concept focus on certain skills.

Basically, peace, which disregards violence, has become a concept receiving increasing attention in line with the growing violence. The value of peace has been taught to people via various religious and educational institutions throughout the history (Eryaman & Bruce, 2015; Eckhardt, 1987; Galtung, 1985). In this respect, as an educational reform movement, peace education has been shaped in different ways in different countries and cultures. Peace education is known as Ghandian studies in India, as disarmament education in North and Scandinavian countries and as development education in South Africa and South America. At universities in United States of America, courses reflecting the increasing concerns about the level of violence in the world have been given (Harris, 1990). In addition, in the field of education, children’s rights/human rights education, education for development, gender education, global education, life skills education, and other different educational movements like landmine awareness and psychological rehabilitation are all associated with peace education (Eryaman, 2009). Today, it is seen that there is an increase in the amount of such individuals’ negative behavior as tendency towards violence and lack of tolerance and an increase in wars, conflicts and intolerance on national or international basis. In this respect, educational institutions undertake one of the most important roles for establishing social change and for achieving equality, justice, tolerance, empathy and democracy among individuals. Therefore, due to great importance of friendship groups and relations at early ages, it is considered important to develop peace culture (Demir, 2011; Jabbour, 2013).

Peace education is defined as the development of knowledge, skills, attitudes and values that will allow changing open or structural conflict an violence behaviors of children, young people and adults, solving conflicts in a peaceful manner and making contributions to the peace environment on individual and social basis as well as on national and international basis (UNICEF, 1999). Peace education hinders the breakdown of people’s perceptions and feelings regarding peace-related issues such as independence, equality, cooperation and harmony (Biton and Salomon, 2006). Peace education is expected to contribute to individuals and to the society as well as to world peace (Eckhardt, 1987).

In peace education, the change expected from the individual cannot be achieved only via education. In addition, achieving this change requires a difficult and complex process (Rose, 1991). Therefore, limitation of peace education to a specific discipline or to a certain age group would be a superficial approach. Compared to traditional education pedagogically, peace education provokes violence consciously or unconsciously. Pedagogies of traditional education and peace education can be compared as follows (Harris, 1990, 256-268):

- **Involving the right / making use of dialogue**: Traditional educators generally regard themselves as the source of information and students as the receiver of the information. However, in contrast with authoritative teaching methods in which the teacher always tells the right, peace educators encourage their students to interrogate the nature of the violence world they live in and to discuss possible ways of solution.
• **Encouraging competition / encouraging cooperative learning:** The traditional understanding of education divides the society into two: winners and losers. Since traditional classrooms also encourage competition, they encourage violence as well. Encouraging competition will have negative influence on individual and social relationships. According to the pedagogy of peace education, a cooperative class will lead to breakdown of competitive processes which provoke structural violence.

• **Passive students / problem solving students:** Teacher-based presentation of information and environments in which students take the information without first questioning it make students passive. Therefore, students will be trained as individuals who are dependent on the authority and who forget their own values. Students who are willing to question examples of violence in the society should first learn the causes underlying the problems in their own classrooms. Thanks to problem solving, students learn how to be active and how to solve problems in class rather than just being passive receivers of information.

• **Weakness / Approval:** Teachers not just provide information during the teaching process but behavioral norms as well via the hidden curriculum. As teachers in traditional classrooms direct in-class interactions students are not powerful in this type of interaction at all. Moreover, in this way, they learn that students are punished if they rebel against the authority and that those who are obedient are awarded. Thanks to approval, students start developing confidence to overcome their weakness.

• **Use of force / democratic environment:** In traditional system, teachers ignore different viewpoints due to their authoritative teaching styles, direct their students towards the only correct information via strict learning processes, convince their students that the teacher is always right and avoid different learning experiences and ways of questioning. This situation causes students to ignore themselves and their own experiences. Democratic environment allows students to get involved in classroom rules and prevents teachers from using force on students.

It is pointed out that an effective curriculum for peace education at schools includes five steps (Johnson and Johnson, 2006). These steps are (1) establishing a compulsory education system to gather social diversity, (2) establishing mutual dependence as the basis of a peaceful society and helping students develop the competencies and attitudes necessary for cooperation, (3) teaching students how to make peaceful political speeches while making certain difficult decisions, (4) teaching students how to demonstrate peaceful attitudes and (5) transferring citizenship values to students. Bar-Tal and Rosen (2009) suggest two models for a healthy peace education at schools: direct model and indirect model. The model of indirect peace education means helping individuals develop such competencies as creative thinking, tolerance, ethno-empathy, human rights and conflict resolution. The direct peace education model includes such processes (which are necessary to establish the peace environment and which support direct peace education model) as conflict and peace, the peace process, recognizing the competitor, history of the conflict, new effects, and emotions.

In peace education, there should be close interest in the stereotypes, schemes and values that individuals create in their minds as a result of their social experiences and observations (Biton and Salomon, 2006; Maoz, 2000; Eckhardt, 1987). When related literature is examined, it is seen that several studies were conducted in different countries on peace education projections and applications (Fontanel, 1986; Lopez, 1985; Clarke-Habibi, 2005; Shuayb, 2015; Torsti, 2009; Orjuela, 2003), peace and perceptions of peace education (Cengelci Kose and Gurdogan Bayir, 2016; Demir, 2011), peace education for young Israeli and Palestinian individuals (Maoz and McCauley, 2009; Biton and Salomon, 2006; Maoz, 2000), effects of peace education on various skills like empathy, conflict solution and communication (Sagkal, Turnuklu and Toton, 2012; Damirchi and Bilge, 2014; Kaya, 2013) and peace education in teacher training programs (Jabbour, 2013; Makoni, 2015). In addition, it is pointed out in related studies that peace education is an approach to be used for the establishment of peace culture and for equality, independence, cooperation and harmony (Makoni, 2015; Biton and
Salomon, 2006). Also, it is reported that for effective peace education, it is necessary to determine new educational goals at schools, to develop new curricula, “develop materials and course books, to train teachers and to create a school atmosphere to support peace (Bar-Tal and Rosen, 2009). As mentioned by Eckhardt (1987), peace educators cannot directly prevent war/peace phenomena. However, they can contribute to peace by influencing their students’ minds in class. In this respect, in order to reflect effective peace education in schools, it is important to reveal the views of teachers, students, preservice teachers and other sharers who have war or conflict experience. Depending on this, the purpose of the present study was to determine the views of preservice teachers who were taking education in Turkey and who had faced the reality of war about peace and peace education.

Method

In the study, the qualitative research method was applied. In this respect, the phenomenology design was used. Phenomenology is a field dealing with individuals’ giving meaning to themselves and to their lives in line with their own experiences (Heidegger, 1994; Moustakas, 2004). When viewed from the methodological perspective, phenomenology refers to definition of individual experiences regarding a universal phenomenon (Creswell, 1997). In phenomenological studies, the main effort is to reveal a real life phenomenon with all its complex and rich descriptions. In this respect, phenomenology includes strong description, reduction, discovery of relationships between individuals and situations and identification of the basis and structure of human experiences (Finlay, 2009). Therefore, in the present study, the purpose was to reveal the participants’ experiences regarding war, peace and peace education who were all preservice teachers with personal experiences in war.

Participants

In the study, the participants were selected with the criterion sampling method. Criterion sampling allows studying on situations or with participants determined in line with certain criteria to provide rich related data (Patton, 1990). In this respect, the criteria included (1) being a student in a faculty of education, (2) coming to Turkey from abroad for educational purposes and (3) having war experience at local or national level in one’s home country in the past. Within the framework of these criteria, the profiles of the preservice teachers who came from abroad in the academic year of 2014-2015 and who were attending at the education faculty of either of the two state universities in the city of Eskisehir were examined, and all the participants determined in line with these criteria were reached. Table 1 presents the nicknames and characteristics of the participants.

Table I. Characteristics of the participants

<table>
<thead>
<tr>
<th>Nickname</th>
<th>Mehmet</th>
<th>Hilal</th>
<th>Zeliha</th>
<th>Ali</th>
<th>Gulcan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country</td>
<td>Afghanistan</td>
<td>Lebanon</td>
<td>Syria</td>
<td>Kosovo</td>
<td>Afghanistan</td>
</tr>
<tr>
<td>Department</td>
<td>Guidance and psychological counseling</td>
<td>Mathematics Teaching</td>
<td>Elementary School Teaching</td>
<td>Elementary School Teaching</td>
<td>English Language Teaching</td>
</tr>
<tr>
<td>Class Grade</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

As can be seen in Table 1, the five preservice teachers participating in the study were students at different class grades from different departments. Mehmet was from a family who had to immigrate to several countries (Pakistan, India, Kashmir and Uzbekistan) due to the war in Afghanistan. In addition, as a result of these immigrations, he had taken education in a number of different education systems, learned many different languages and eventually come to Turkey his university education. At
the time of the present study, the participant was a senior student in the department of Guidance and Psychological Counselling. Hilal, another study was from Lebanon, and her family members had to work in different countries due to the problems in their home country. For instance, her father worked as a machine engineer in Arabia, and his elder brother worked in America. Hilal was directly influenced by the current cosmopolitan life in Lebanon in the sense of both politics and ethnicity. In this respect, she learned French and Arabic, and throughout her education life, she made friends with students with different identities (Sunni, Shia, Catholic and Orthodox). She came to Turkey for her university education, and she was a second grade student in the department of Mathematics Teaching at the time of the study. Another preservice teacher, Zeliha, was born and grown up in Syria, and she is a Syria Turkmenian. She lived in Lazkiye, which was least influenced city by the civil war in Syria. Since she was a Turkmenian, she did not have any language problem in Turkey. She was trained in an education system similar to the one in Turkey, and she was a freshman student in the department of Elementary School Teaching in Turkey at the time of the study. Ali, another preservice teacher, was a Kosovo Turkmenian. He grew up in an environment where there were conflicts from time to time and where different ethnical identities (Bosnians, Albanians, Turks and Serbians) lived together. He was a third grade student in the department of Elementary School Teaching in Turkey at the time of the study. The last preservice teacher, Gulcan, was Afghan who, with his whole family, had to immigrate to Uzbekistan due to the war. He had various experiences due to his father’s job (an Afghan military officer), the migration and his frequent visits to Afghanistan. In Turkey, he was a freshman student in the department of English Language Teaching at the time of the study.

Data Collection Tools and Data Analysis

The research data were collected with semi-structured interviews. In this respect, a personal information form, a research consent form and a questionnaire including the interview questions were developed by the researchers. The interview questions were generally related to 1) participants’ individual experiences regarding the war environment, 2) their perceptions of peace, 3) effects of the peace environment on individuals and on the society and 4) peace education, and the researchers deepened the interviews with additional questions in line with the data they obtained in the data collection process.

For the analysis of the data, thematic analysis was applied. Thematic analysis can be defined as defining, analyzing and finally reporting the patterns within the data (Braun and Clarke, 2006). In this respect, in the process of analysis of the data collected, the patterns were determined and categorized as themes. For the analysis of the data, the package software of NVIVO 11 was used. The software is commonly used for analyzing the qualitative data. The researchers also used to analyze, categorize and visualize the data. The research data were analyzed by each researcher individually. In this process of analysis conducted within the scope of validity and reliability studies, the process of presenting a certain part of the raw data for expert view was followed, as suggested by Barber and Walczak (2009). The codes obtained as a result of the analysis were compared by the researchers and finalized by doing the necessary corrections.

Findings

The findings obtained in the study were examined within the scope of the themes of war, peace and peace education. Accordingly, the findings related to the theme of war can be seen in Figure 1.
As can be seen in Figure 1, the preservice teachers mentioned causes of conflict, war experiences and effects of war within the scope of the theme of war. In relation to war experiences, one of the preservice teachers, Ali, mentioned the migration during the war saying “I remember, it was in 1999; as ours is a Turkish village, we were not influenced at all; but other villages around were influenced a lot, and there were even some people took shelter in our village during the war. Normally, 5000 people live in our village, but at the time of the war, the population increased up to 15000.” Another preservice teacher, Hilal, reported her war experience as follows: “One day, there were a group of people, and a problem occurred between these people and the soldier. They shot at each other near my house, and I remember lying down at that time”.

The preservice teachers explained the causes of the conflicts they had experienced as religious conflicts, economic interests, ethnic discrimination, interests of different countries and political interests. Regarding religious conflict, Hilal emphasized the religious structure of the country saying “It is too complicated. For example, there are many different religious groups. Sometimes, problems occur between them, I mean religious problems, because Lebanon is quite a cosmopolitan country; sixty percent of the population is Muslim, Sunni or Shiah, and forty percent is Christian. Also, there are Orthodox and Catholic people, I mean there are many people from different religious backgrounds. Our president, for instance, is Christian.” Gulcan, another preservice teacher, based the causes of conflicts on belonging to different religions saying “Well, I don’t exactly know why, but it seems to that there are religious reasons for these events.” Ali, who mentioned the economic interests as one of the causes of conflicts, mentioned the underground sources for economic wealth, saying “In Kosovo, in the district of Mitrovica, there are Serbians and Albanians, and there is a place in that region, where diamond is mined. Serbians want to own this region, and Albanians do not want to leave it because it belongs to Albanians. Thus, a conflict occurs there.” In addition, Ali, who thought that ethnic discrimination leads to conflicts, said “There occurs discrimination. It is really getting worse and worse, and they, as you know, they are trying to pull you down... there are five different ethnic races living in Kosovo. Since Albanians are more in number than others, they don’t give a chance to other races...” Similarly, Mehmet, another preservice teacher who reported his views about ethnic discrimination, said “Different nations live in Afghanistan, I mean, there are many people from different nations. The ethnic structure is a bit complicated. There are those from Uzbekistan, and there are Turkmens and Pakhtuns living in Afghanistan, and of course, Persians. You grow up in cold war there. When the Russians were taken out of Afghanistan, we faced civil wars in our country; and these wars continued for years.” Mehmet associated this problem with racism saying “We are from different nations, and we still see each other as an enemy. In my own identity card, Uzbek is written; I mean
every person has his or her nation written in his or her own identity card, Afghan, Uzbek, or whatever it is. For example, if you go to a government office, they look at your nation written in your identity card. They behave you accordingly. They say ‘you are Uzbek and I am Pakhtun; so you face ethnic discrimination, or racism, there.’ Ali, who thought that interests of different countries lead to conflicts, drew attention to the attitudes of different countries, saying “In Kosovo, there was no such thing. Well, there were sometimes conflicts experienced only between Albanians and Serbians, but actually, these conflicts occurred due to the interventions by other countries just for the purpose of dividing the country… Now, the unity of Albania and Kosovo is on the agenda, and they do not foresee this.” In relation to this, Hilal, one of the preservice teachers who considered political interests to be among the causes of conflicts, said “Well, the most important thing is that they should do their best for Lebanon. I mean they just support the central authority.” In this respect, it could be stated that the preservice teachers generally associated causes of conflicts with interests and that they regarded differences as another cause of conflicts.

The preservice teachers explained the effects of war as economic reflections, concerns about future, migration, lack of confidence, psychological reflections, social reflections and effects on transnational transitions. Regarding the economic reflections of war, Zeliha mentioned the monetary issues, employment and living conditions, saying “The value of Syrian currency was too low, and you cannot import goods from abroad as in the past. This is not easy today; thus, the prices of goods increased a lot. People are unemployed, and everything is too expensive. Also, once, there was no petrol, and we couldn’t find even bread because bakeries were closed. Also, there are frequent cuts in electricity...” Another preservice teacher, Mehmet, talked about employment saying “Well, I was in Afghanistan about six months ago. I went there to search for job opportunities because I will graduate soon. I have seen that here is no job opportunity, and there are even those working for the government have not taken their salaries for the last seven or eight months. I can really say that you have no chance to find a job there in any area of business. There is an employment problem. You want to work; you have the necessary educational background; you have a university degree; and even you have a postgraduate degree; but there is no job for you...” In addition, Mehmet mentioned the effects of war in relation to his concerns about future, saying “There are still problems in Afghanistan. Now, I have more concerns about the future. I mean I don’t know where I will be or what I will do. Of course, conditions are better in Turkey, but employment conditions are harder for foreigners, and this makes me a bit worried, too.” Among the preservice teachers who mentioned effects of war in relation to migration, Zeliha said “People living in villages are also from Syria or from Latakia. Actually, there are not many people living in villages. Almost everybody migrated to other places. There are only those combatting in the war...”, while Mehmet, another preservice teacher talking about migration, said “To me, everything has been ruined including my family, peace and life. All the members of family have to live in a different country now. For example, my elder brother is living in Kazakhstan with his family because, as mentioned before, there is no job opportunity in our own country. They have no other choice except for living abroad. Also, I am here, and my other elder brother is in Australia. My elder sister is in another country... these are all very important for me. I wish there were peace in our country; I wish there were no war there; I wish people were not so illiterate; and if there were job opportunities in our country, we would all live there together.” Another preservice teacher, Gulcan, mentioned effects of war in relation to lack of confidence, saying “In Afghanistan, the situation is really distressing and worrying. Whenever I go there, I feel worried and stressed because you can never know what you will face a minute later. There are some safety problems there.” In addition, Hilal reported her concerns about lack of confidence in her country, saying “Well, to give a simple example, I can go out of my house whenever I want because I know there is no bomb anywhere. However, in my country, when I go from my hometown to another city, we can walk around as usual but we experience fear at the same time. Sometimes, you may feel stressed; then you get frightened because you may not go back to your hometown again. Well, actually, the reason is that a number of people died during their visit to other cities. For example, something fatal happens and you die. Thus, nobody feels good and safe there.” In relation to her war-based concerns, Zeliha reported her views as follows: “In the past, people did not use to live in fear of anything. They were free to travel, but now, they are in fear, and they do not know what to do.” In addition, Zeliha mentioned psychological reflections of war as well, saying “To me, experiencing such fear makes people
frustrated. I mean they feel stressed because of lack of peace.” Also, Zeliha reported that people got used to this fear in time, saying “In fact, people get accustomed to this situation after a while. For example, you used to be afraid of the sound of a bomb, but now you find it ordinary. You go on doing what you are doing even when you hear the sound of a bomb because you think it is normal. I mean you say it is just a bomb.” Mehmet mentioned the psychological reflections of war and pointed out that people lost their will to live, saying “Today, people living there have lost their desire to live in their home country. I have met many desperate people, and most of them have committed suicides, and all these suicides were due to helplessness.” Regarding the social reflections of war, Ali said “People living in the same country today cannot continue their lives together. They do not get on well with each other.” Zeliha, another preservice teacher who thought wars made transnational transition difficult, said “In the past, all the borders were closed. You were not allowed to go to another country. The last time I went to Syria, I went there through Lebanon because the border between Turkey and Syria was closed.” Accordingly, it could be stated that the preservice teachers viewed the war from a multi-dimensional perspective and considered the war effects in terms of individuals themselves, the society and the country. In addition, it was revealed that the preservice teachers mentioned the causes of war and its possible effects based on their own experiences regarding the war they had experienced. Figure 2 presents the preservice teachers’ views about peace.

As can be seen in Figure 2, the preservice teachers’ views were gathered under the headings of definitions of peace, effects of education level on peace, effects of peace on national development, peace as a national policy and multiple perspectives. It was found that the preservice teachers explained peace as freedom, living together, happiness, confidence and tranquility. Ali viewed peace from a different perspective and said “Peace reminds me of happiness, freedom and something like that. Also, I can say living together, getting on well with each other and tranquility. Where there is peace, you live together there; you do everything together; for example, you have a drink together, and you spend good time having fun.” Another preservice teacher, Gulcan, associated peace with living together and tranquility, saying “it means people will get on well with each other; there will be no pressure on the society, and similar other things... Peace reminds me of tranquility, comfort and lack of argument between people or between cities. I mean living in comfort.” Based on the views of the preservice teachers, it could be stated that they generally mentioned such dimensions of peace as confidence, tranquility and living together.

In relation to the effect of education level on peace, Gulcan said “If people have a high education level, then I believe many things will be better and there will be no war environment.” Regarding this, Mehmet mentioned the importance of education, saying “I especially think that
education is of great importance because people should be made conscious. If not, no progress can be achieved... I mean education is important not only for peace but also for the wealth of a society.” In addition, Mehmet compared countries with respect to the effect of education on peace depending on his own related experiences and observations in these countries and said “Well, now, I want to talk about my new life. As I said before, I have been to different countries, and I can say I witnessed peace in these countries. I thought about how they developed this peace environment. I have always believed that lack of education is one important obstacle in front of peace. For example, Pakistan, India and Uzbekistan are the countries I have been to besides Turkey. Considering Turkey, education is the basic issue in terms of peace.”

Hilal, who thought that peace could contribute to development, said “For example, if there is peace, the country is always more developed in economy in all other areas; also, people can safely travel in that country…” In relation to this, Zeliha explained the effect of peace on national development referring to education and said “What causes a geographical region to become a country is peace. If there is no peace or no tranquility, nothing will be there. As I said before, peace influences everything including education. Also, people get unemployed. Well, they want to make something good for their country, but they can’t. Somehow, they always face obstacles. Thus, peace is important. You can’t do anything in a place lacking peace.” Mehmet emphasized the importance of peace for the development of a country, saying “Peace is really important for a country. It is essential for the development of the nation…” Another preservice teacher who thought there should be peace for the sake of the national policy, Ali mentioned the things to be done by governors, saying “For the benefit of the country, the prime ministry should be the first person to establish peace. The government should not allow any discrimination. Albanians are not different from Turks, and they live together. Greeks and Bosnians are all the same. Whatever Albanians have in hand should be provided for others as well.”

Hilal drew the attention to multiple perspectives and respect to differences, saying “For example, I may have friends from different religions, Shiah or Christian. This is quite normal, and we are all human beings. We are all from Lebanon living in the same country. There is no difference between us.” In relation to this, Gulcan thought there might be different views, saying “Of course, there are many people with different views. One cannot say people should have the same opinions... I mean they may support different thoughts.” Depending on the views of the preservice teachers about peace, it could be stated that they explained peace in association with the current situations in their own countries and that they considered peace to an indicator of development in all respects. Figure 3 presents the preservice teachers’ views about peace education.
As can be seen in Figure 3, the preservice teachers explained peace education via definitions, things to do and peace education activities. In relation to the things to be done regarding peace education, the preservice teachers mentioned giving instructive seminars, considering child psychology, avoiding discrimination, considering women’s rights, education at an earlier age, promoting activities and teacher training, while they explained peace education activities as in-class activities and related courses. In relation to in-class activities in peace education, the preservice teachers pointed to explaining negative results of war, creating a discussion platform, giving examples from different countries, considering differences and the teacher as the role model. Regarding the dimension of related courses, the preservice teachers believed that peace education could be given within the scope of such courses as Life sciences, Religion, Citizenship and Turkish Language as well as in all other related courses.

Ali, one of the preservice teachers who defined peace education, associated peace education with learning to live together, saying “Peace education means teaching peace to students and teaching them how to live together.” In relation to this, Mehmet mentioned the values necessary for peace education, saying “What I understand from peace education is the education itself regarding anything... I mean showing respect to others is very important, and love is important. For this, learning to live together is essential. Also, economy is among the most important things for a country. These are all important, and they can accomplish all these.” In addition, Mehmet believed peace education should initially start with the close environment, saying “We should first learn what can be done for the country. To me, we should teach it to people in a hierarchical manner; I mean we should start with our own family and go on with the society and then with the whole country.” Also, Mehmet reported his views about the things to be done for peace education and mentioned the importance of
instructive seminars at all education levels, saying “Besides these, for example, in Turkey, such applied courses and constant seminars and conferences are given to both students and teachers in all education levels including elementary schools, high schools or universities, but unfortunately, there are no such applications in our own country. These are all very important to raise people’s consciousness.” In relation to instructive seminars, another preservice teacher, Zeliha, mentioned the need for teaching what peace means, saying “I think what is most important is, for example, to organize conferences regarding peace education for young people. In fact, there are many people who do not understand what peace or freedom actually means, and these young people do not even know how to behave as they do not know much about this.” In addition, regarding the things to be done for peace education, Zeliha mentioned the importance to be given to child psychology and the need for expert support to be provided especially for children who experienced war, saying “To me, you should behave considering the psychological states of those children living there... Also, psychiatrists should be asked for their help in relation to this. It is not something that the teacher can cope with alone, especially if the child is someone who personally witnessed the war. Of course, the psychological state of that child will be different from that of others.”

Another preservice teacher who thought avoiding discrimination is important for peace education, Mehmet reported his views about this as follows: “In a country like ours, we, as the whole nation, have to avoid racism to protect and maintain our unity...” Regarding peace education, Gulcan, who believed that the necessary importance should be given to women’s education, emphasized equal rights of men and women, saying “Well, no war, no pressure on humans. People should be able to make their own decisions and to defend their human rights, and men and women should have equal rights. We should not feel under pressure, and we, as women, have the freedom... I can say, for example, in our family, my father’s words are more important. Daughters are forced to get married at early ages. There are no women’s rights. I mean we cannot defend our rights.” In relation to this, Hilal mentioned education at early ages, saying “To me, children should be given peace-related courses at early ages at school...”

Regarding the importance of practice in education, Mehmet said “Of course, I can see the benefits of all the courses I have taken so far, but there could be something more practical.” Zeliha, another preservice teacher mentioned teacher training, gave importance to psychology-based courses and to the related experiences of teachers, saying “I would like to have taken courses related to psychology. Think about children who witnessed war or about those who experience peace-related problems... I really would like to learn about their psychological states. For example, I would like to make use of the related experiences of teachers. Once, in that way, I found a solution to a problem experienced by one of my students.” Ali, who held the belief that the negative aspects of wars should be taught via in-class applications for peace education, said “I will talk to my students about the bad things experienced during wars. I want to show these bad things just to help them avoid such events. I want to tell them the causes of wars.”

Mehmet, who pointed out that discussion platforms should be created in peace education, said “Well, we can create a discussion platform to let them express their feelings and thoughts. In this way, we can talk about peace.” In addition, mentioning the need for giving examples from different countries, Mehmet reported his views as follows: “Examples could be given from different countries via the search of related articles...” Ali, who thought students should avoid discrimination in peace education, pointed out that there should not be any ethnic discrimination and said “To talk about peace education, well, first of all, we are preservice teachers for now, and we will become teachers. One day in the future, we will have students from Albania, Turkey or Bosnia in our classes. We will not allow any discrimination among them, and we will be demonstrate equal attitudes towards them all. We will teach peace to them, and we will teach how to live together.” Similarly, another preservice teacher, Hilal, reported that there should not be any religious discrimination, saying “For me, if I will teach peace to children one day, I will tell them that they should behave well to others regardless of whether they are Muslims or Christians.”
Zeliha stated that the teacher should be role model for students and said “Children always see their teachers as a role model. I mean according to children, a teacher is someone holly. They think whatever a teacher says is true. Thus, teachers are the main actors that can lead and guide students. If students have confidence in their teacher, they may then develop confidence in other people around as well.” Among the preservice teachers, Ali mentioned the importance of the course of Social Studies, one of the courses related to peace education, and said “You can carry out an activity within the scope of the applied course of Social Studies. You can bring all students together whether they are from Albania or Bosnia. You can teach them the true friendship.” In relation to the course of Turkish Language, the same preservice teacher said “In Turkish Language classes, you can bring reading texts into class to make them aware of what is going on in our countries.” Mehmet, who believed peace could be taught via the course of Religion, said “I think peace could be taught within the scope of a religious course because there are many nice things regarding peace in religion. I mean there are related holly verses and words of the Prophet Mohammed. I am sure heard about them.” Another preservice teacher, Hilal, associated the course of Citizenship with peace education and said “This course teaches peace to students as citizens, and it also mentions social and political aspects of peace.” Zeliha, who thought that all kinds of courses could cover the issue of peace, said “Peace can be taught in all courses. It is not something special to a certain course. Children can learn via many things. For example, if you read a poem, they can understand peace better via the influence of that poem on them. Also, you can teach peace via music. I mean with the help of a song. You can mention wars in history. It is also true for religious courses. Well, all courses point to the importance of peace. In the first place, the teacher should tell how to establish peace among students in class…” Depending on the preservice teachers’ views about peace education, it could be stated that they emphasized the need for teaching peace in their definitions of peace education; that they thought peace education should be given at all education levels; that they emphasized the importance of in-class applications; and that they gave examples from different courses.

Conclusion

In the study, it was seen that the preservice teachers explained the importance of peace by associated it with their own war experiences and by considering the causes and effects of wars. Depending on their war experiences, the preservice teachers talked about what their family members faced during the war. In relation to the causes of wars, the preservice teachers mentioned economic and political interests, interests of different countries and religious and ethnic discrimination. In related literature, religious and ethnic differences are reported to be among possible causes of conflicts (Orjuela, 2003; Aktas, 2012). In the present study, the preservice teachers mentioned the issue of migration and the social, psychological and economic reflections of war and reported that they lacked confidence and had concerns about the future. In addition, they also stated that transnational transmission was quite difficult due to wars. It is reported in literature that even long years after a war, it will maintain its bad effects on cultural codes and psychological states of individuals (Biaggio, De Souza and Martini, 2004). In addition, it is claimed that a conflict in a country triggers migration and spreads to other neighboring countries due its effects on the dynamics of these countries (Linebarger, 2016; Demircan and Uysal, 2015). It could be stated that mass migration has great influence on the dynamics of daily life of citizens of a country which has admitted immigrants due to a war in their own country.

In the study, it was revealed that the preservice teachers associated peace with the concepts of tranquility, living together, freedom, confidence and happiness. This findings overlaps with the thoughts of Freire (2000). Freire’s (2000, p.146) thoughts as follows: “It happens that peace cannot be bought; peace is experienced in solidarity and loving acts, which cannot be incarnated in oppression. Similarly, in one study conducted by Deveci, Yilmaz and Karadag (2008), the researchers found that preservice teachers define peace using concepts like tranquility, love, respect and happy life. In addition, Sagkal (2011) reports that elementary school students refer to peace as happiness, unity, togetherness, confidence and tranquility. On the other hand, different from the present study, the elementary school students participating in Sagkal’s research also associated peace with tolerance,
benevolence, an environment without any fight, a more powerful country, win-win, finding a solution via talks and delight. Cengelci Kose and Gurdogan Bayir (2016) reported in their study that students define peace as avoiding fights and arguments, agreement, friendship, development of universal values, brotherhood, solidarity and happiness. Moreover, in one other study, Kartaltepe (2014) found that teachers made more associations with peace and explained it using such concepts as love, respect, tolerance, tranquility, understanding and freedom. In another study carried out by Biton and Salomon (2006), it was revealed that Israeli and Palestinian students used the words of independence, equality, cooperation and harmony to refer to peace, which could all be said to be consistent with the concepts used by the preservice teachers in the present to define peace such as living together and freedom. In addition, as a support to the definitions of peace provided by the participants in the present study, Aktas (2012), who conducted a study with secondary school students, demonstrated that the students defined peace using positive personal feelings like happiness and tranquility. However, depending on the fact that the secondary school students participating in Aktas’s study also defined peace with the help of such concepts as religion, nature and universal rights, it could be stated that the preservice teachers provided limited definitions of peace in the present study. Furthermore, considering negative perception of peace which does not involve war and positive perception of peace which involves justice (Galtung, 1969), the concepts associated by the preservice teachers with peace generally included positive perception of peace. The reason is that according to Tabachnick (1990), positive peace involves tranquility, interaction and cooperation (cited in Aktas, 2012). In the present study, it was seen that the preservice teachers made associations between education level-peace-national development and that they considered multiple perspectives to be important for peace.

In the study, it was seen that the preservice teachers’ definitions of peace education featured teaching of peace. In one study conducted by Johnson and Johnson (2003), it is reported that the basic purpose of peace education is to inform students about peace, to develop their competencies in peace, to help them acquire the values necessary for peace and to allow children to live in peace in their environment. In this respect, this definition could be said to be parallel to the definitions provided in relation to peace education by the preservice teachers participating in the present study. In addition, it is pointed out that peace education activities lead to harmony, tolerance, cooperation and consideration of others (Maoz, 2000; Biton and Salomon, 2006). In the present study, the participants were found to associate peace education with certain values to be acquired by individuals regarding peace. On the other hand, it is seen in literature that there are various comprehensive definitions of peace education such as teaching students to solve conflicts in peace without any violence (Coskunler, 2008 cited in Harris and Morrison, 2003); giving education regarding patience, friendship and understanding considering all races, religions and nations (Gazioglu, 2008 cited in Declaration of Human Rights, 1948); and teaching children, young people and adults how to prevent and solve conflicts in peace without any violence and how to create conditions leading to peace on individual, social and national bases (Saglam, 2015 cited in Flowers, 2010). In one study conducted by Biaggio and colleagues (2004), the researchers emphasized the importance of education for the prevention of violence. In this respect, the preservice teachers participating in the present study could be said to provide general definitions of peace education. In one other study carried out by Kartaltepe (2014), peace education was associated with value education, tolerance, agreement, tranquility and conflict resolution. In the present study, the preservice teachers did not ever mention these concepts within the scope of peace education. In the study, the preservice teachers put forward several suggestions regarding peace education such as avoiding discrimination, organizing instructive seminars, considering child psychology, applying peace education in teacher training and taking actions in relation to women’s rights. In another study conducted by Deveci, Yilmaz and Karadag (2008), the suggestions put forward by the participating students regarding peace education such as using techniques to make students more active, giving trainings to teachers and including peace education courses in teacher training curricula support the suggestions put forward by the preservice teachers participating in the present study. In one other study, the finding obtained by Makoni (2015) who reported that the teacher training process should include peace education for the establishment of future classes could be said to be consistent with the peace education suggested by the preservice teachers in the present study to be included in teacher training curricula. In addition, as a support to the finding obtained in the present study in relation to the dimension of teacher training, Baxter and Ikobwa (2005) and Tapan (2006)
point out that teacher training is a key to peace education and that teachers should understand this subject well. In the present study, the preservice teachers mentioned such things to done in class as talking about the negative effects of war, giving examples from different countries, respecting differences, creating a discussion platform, being a role model as a teacher. Moreover, the fact that Baxter and Ikobwa (2005) claimed peace education could be given via active participation, games and discussion platforms and that Turay and English (2008) associated peace education with diversity, indigenous knowing, global perspective, participatory learning and spiritual underpinning supports the suggestions put forward in the present study. In addition, the preservice teachers participating in the study reported that peace education could be given within the scope of the courses of Social Studies, Turkish Language, Religion and Citizenship in particular as well as within the scope of all other courses in general. Similarly, one study conducted with preservice teachers by Deveci, Yilmaz and Karadag (2008) revealed that the preservice teachers associated peace education with such courses as Social Studies and Citizenship.

In the present study carried out with preservice teachers, it was found that the most important point for effective teaching of peace and for peace education is to respect all differences. Depending on their own war experiences, the preservice teachers claimed the causes of wars to be differences. In addition, the participants also mentioned the duties and responsibilities of teachers for peace and mentioned the things to be done based on their own experiences.

In line with the results of the present study, it could be stated that peace education can be given in the early childhood period. Peace education activities to be carried out with children should focus on such skills as respecting differences, avoiding discrimination and solving conflicts. In addition, teacher training curricula should include applications regarding how to give peace education, and seminars regarding peace education could be organized for teachers.

Notes

23-25 April 2015: This study is an extended version of oral proclamation held in the 4th International Symposium on Social Studies Education in Bolu, Turkey.

References


Multilevel Classification of PISA 2015 Research Participant Countries’ Literacy and These Classes’ Relationship with Information and Communication Technologies*

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Abstract

In this study, it is aimed to distinguish the reading skills of students participating in PISA 2015 application into multi-level latent classes at the student and country level. Furthermore, it is aimed to examine how the clusters emerged at country-level is predicted by variables as students have the information and communication technology (ICT) resources. The population of this research, which is in a descriptive survey model consists of all students who are aged 15 from 72 countries which participated in the PISA 2015 application. As for sample, it is made up of 519,334 students and 17,908 schools which were chosen randomly for PISA 2015 application from these countries. In analyzing data, a multi-level latent class and three-step analysis were employed. Analyses have shown that having ICT resources at home is the most influential variable on the reading skills of countries. It is determined both in in-country and across countries that there are some differences in ICT resources at home and school. In this context, it may be stated that the equal opportunity in education has not been provided in many countries on international scale.

Keywords: PISA, reading achievement, information and communication technologies, multilevel latent class analysis

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Introduction

Programme for International Student Assessment (PISA) is an application which is carried out in every three years and which aims to evaluate countries’ education system worldwide by testing knowledge and skills of 15 years of age students (Organisation for Economic Co-operation and Development-OECD, 2016a). PISA 2015 application is carried out on computer base for the first time (OECD, 2016b) and some countries did not participate in application, instead they received old PISA questions with paper and pencil application. According to the results of this application, compared to 2012, some increases and decreases are observed in some countries’ averages. According to 2012 application, the field in which countries experienced decrease in the averages the most is the reading skill (OECD, 2016a). Reason for this situation might be application’s being computer based, since factors such as length of reading texts might have affected reading skills more than the other fields. This was also seen in the results of some countries which responded to both digital and paper-pen questions in PISA 2009 and 2012. According to the results of this application, there is no difference between digital and paper-pen application scores of students with high reading achievement, yet it is observed that among the other performance levels, there is a difference between students’ digital and paper-pen application scores. This situation is considered to depend on the skills used in online reading. Because there may be changes in students’ familiarity with basic information and communication technologies (ICT) skills (e.g., the ability to use keyboards and mouse for text entry) (OECD, 2015). At the same time, some countries and economies were found to have a second level and above reading skill in paper-pen application and they are found out to perform below the second level when they were evaluated with computer-based application. In Colombia, Hungary, Israel, Poland, the Russian Federation, Spain and the United Arab Emirates, one in ten students showed a poor performance in digital reading yet they did better in paper-pen application. Many students in these countries may have difficulty with the general ICT skills which are required to interact with the test platform and thus show poor performance in digital reading in spite of their relatively good reading skills (OECD, 2015).

Tunisia, which is one of the countries that received all questions in computer environment in PISA 2015 application, and upon comparing reading skill scores with the 2012 application, it is seen that Tunisia is the country that experienced the highest decrease in reading ability scores with 21 points, and followed by Turkey with 18 points. There are also countries that increased their scores in 2015 application. Being one of these countries, Argentina has the highest increase in score with 46 points, nevertheless this country received all questions with paper-pen application. Russia is the country that participated in the computer-based application and increased the reading skill score the most, with 17 points and it is followed by Qatar with 15 points (OECD, 2016a). When the results are broadly evaluated, it is thought that the students’ computer literacy may have been in the background of increases and/or decreases in the scores.

Rapid changes in today’s world present serious challenges for the education system. The most changing area is information and communication technology (Eryaman, 2007; Allen & van der Valden, 2012). In the last decade, competencies in information and communication technologies have also become an important feature in the labour market and everyday life (Anikó, 2016). These competencies are among the 21st century skills (Finegold & Notabartolo, 2010). International education policies are determined considering the increasing importance of computer skills and digital literacy in the society. Countries are now increasingly seeking to integrate information and communication technologies into both the school infrastructure and teaching-learning methods (Eryaman, 2006; Anikó, 2016). Schools’ possessing the necessary infrastructure and creating equal opportunities for all students, ensures that the children of poor families have equal conditions, thanks to the school environment (Holmlund, 2016), because, family background is seen to be effective for students in reaching equal opportunities in education (Schütz, Ursprung, & Woessmann, 2005). Besides, there is a widely shared view that regardless of family background, all children should have equal opportunities to live and equal opportunities to succeed in their lives (Holmlund, 2016). In this
context, the identification of the ICT resources that students have in their homes and schools will also allow to examine the equal opportunities in education.

When the related studies in the field literature are examined, there are some research in which positive or negative relations between ICT and the students’ reading achievement are found, along with studies in which no meaningful difference is found between them. When we look at some studies that find positive relationships between students' reading achievement and ICT; it is observed that Italian students with high reading achievement in the PISA 2009 application used computers better than the ones with low achievement and ICT had a more positive influence on the achievement of these students (Freddano & Diana, 2016). In another research based on the data of PISA 2012 application in Turkey, it is determined that as the availability of the ICTs based materials (such as laptop, printer, USB, internet connection) at the school and the frequency of student's use of these materials increase, the reading performances also increase (Bilican Demir & Yıldırım, 2016). In another study which is conducted using PISA 2012 Hungary application data, it is seen that ICT access at home and its use contributed to school success (Anikó, 2016). In a longitudinal study conducted in the USA, it is seen that students 12-13 years of age who had a low reading skills at the beginning developed reading skills via using internet (Jackson, von Eye, Witt, Zhao, & Fitzgerald, 2011). In a study conducted with PISA 2000 application data, positive relationships are found between computer presences at home or at school and student performance (Fuchs & Wößmann, 2005).

Looking at the studies in which negative relations between students' reading success and ICT are found or no meaningful difference is observed, it is seen in a study conducted on the data of PISA 2009 application in Turkey that there are negative relations between students’ reading success and computer and internet usage durations at home and school (Gürsakal, 2012). In another study based on PISA 2012 Turkey application data, it was determined that the presence of ICT-based materials at home and the frequency of usage did not predict their reading performance significantly (Bilican Demir & Yıldırım, 2016). In a longitudinal study carried out in the USA it is seen that use of ICT has no significant effect on reading skills of students aged 12-13 with above-average reading (Jackson, et al., 2011). In a study conducted with PISA 2000 application data when the family background and school features are controlled, a negative relation is seen between having a computer at home and academic achievement, while no significant relation is observed between having a computer at school and academic achievement (Fuchs & Wößmann, 2005).

Upon looking at the field literature, it is seen in the studies conducted on the effects of ICTs on reading achievement that they are usually confined to a single country data and there is no consistency between the findings of the studies, and the results vary from country to country and according to the presence of ICT resources at home or at school. For this reason, it is necessary to conduct further studies on this subject. Since competencies in information and communication technologies are also important in the labour market and everyday life, this study is also thought to contribute to international education policies. In addition, conducting a study which deals with all countries in order to be able to see the trend in this field gives opportunity to both generalize and to approach equal opportunity in education at the international level. For these reasons; it is aimed to distinguish the reading skills of the students participating in the PISA 2015 application in multi-level latent classes at student and country-level in this study. Furthermore, it is aimed to examine how information and communication technology resources students have at home and the number of computers at school and the ratio of computers with internet access at school variables predict the clusters emerged at the country-level. In this context, the questions to be answered in this study are:

1) How are the latent classes emerged at the student and country-level of reading achievement of all students participating in the PISA 2015 application?

2) How are the latent classes emerged at the country level according to the reading achievements predicted by the information and communication technology resources that the students have at home, and the number of computers at school and the ratio of computers with internet access at school?
Method

Model of Research and Population and Sampling

The population of this research, which is in a descriptive survey model consists of all students who are aged 15 from 72 countries which participated in the PISA 2015 application. As for sample, it is made up of 519,334 students and 17,908 schools which were chosen randomly with stratified sampling for PISA 2015 application from these countries. The number of students participating in the application according to the countries is given in the Table 1.

Table 1. The number of students participating in the application according to the countries

<table>
<thead>
<tr>
<th>Countries</th>
<th>f</th>
<th>Countries</th>
<th>f</th>
<th>Countries</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania*</td>
<td>5215</td>
<td>Indonesia*</td>
<td>6513</td>
<td>Romania*</td>
<td>4876</td>
</tr>
<tr>
<td>Algeria*</td>
<td>5519</td>
<td>Ireland</td>
<td>5741</td>
<td>Russian Federation</td>
<td>6036</td>
</tr>
<tr>
<td>Australia</td>
<td>14530</td>
<td>Israel</td>
<td>6598</td>
<td>Singapore</td>
<td>6115</td>
</tr>
<tr>
<td>Austria</td>
<td>7007</td>
<td>Italy</td>
<td>11583</td>
<td>Slovak Republic</td>
<td>6350</td>
</tr>
<tr>
<td>Belgium</td>
<td>9651</td>
<td>Japan</td>
<td>6647</td>
<td>Vietnam*</td>
<td>5826</td>
</tr>
<tr>
<td>Brazil</td>
<td>23141</td>
<td>Jordan*</td>
<td>7267</td>
<td>Slovenia</td>
<td>6406</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>5928</td>
<td>Korea</td>
<td>5581</td>
<td>Spain</td>
<td>6736</td>
</tr>
<tr>
<td>Canada</td>
<td>20058</td>
<td>Kosovo*</td>
<td>4826</td>
<td>Sweden</td>
<td>5458</td>
</tr>
<tr>
<td>Chile</td>
<td>7053</td>
<td>Lebanon*</td>
<td>4546</td>
<td>Switzerland</td>
<td>5860</td>
</tr>
<tr>
<td>Chinese Taipei</td>
<td>7708</td>
<td>Latvia</td>
<td>4869</td>
<td>Thailand</td>
<td>8249</td>
</tr>
<tr>
<td>Colombia</td>
<td>11795</td>
<td>Lithuania</td>
<td>6525</td>
<td>Trinidad and Tobago*</td>
<td>4692</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>6866</td>
<td>Luxembourg</td>
<td>5299</td>
<td>United Arab Emirates</td>
<td>14167</td>
</tr>
<tr>
<td>Croatia</td>
<td>5809</td>
<td>Macao (China)</td>
<td>4476</td>
<td>Tunisia</td>
<td>5375</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>6894</td>
<td>Malta*</td>
<td>3634</td>
<td>Turkey</td>
<td>5895</td>
</tr>
<tr>
<td>Denmark</td>
<td>7161</td>
<td>Mexico</td>
<td>7568</td>
<td>Macedonia*</td>
<td>5324</td>
</tr>
<tr>
<td>Dominican Republic</td>
<td>4740</td>
<td>Moldova*</td>
<td>5325</td>
<td>United Kingdom</td>
<td>14157</td>
</tr>
<tr>
<td>Estonia</td>
<td>5587</td>
<td>Montenegro</td>
<td>5665</td>
<td>United States</td>
<td>5712</td>
</tr>
<tr>
<td>Finland</td>
<td>5882</td>
<td>Netherlands</td>
<td>5385</td>
<td>Uruguay</td>
<td>6062</td>
</tr>
<tr>
<td>France</td>
<td>6108</td>
<td>New Zealand</td>
<td>4520</td>
<td>B-S-J-G (China)</td>
<td>9841</td>
</tr>
<tr>
<td>Georgia*</td>
<td>5316</td>
<td>Norway</td>
<td>5456</td>
<td>Spain (Regions)</td>
<td>32330</td>
</tr>
<tr>
<td>Germany</td>
<td>6504</td>
<td>Peru</td>
<td>6971</td>
<td>USA (Massachusetts)</td>
<td>1652</td>
</tr>
<tr>
<td>Greece</td>
<td>5532</td>
<td>Poland</td>
<td>4478</td>
<td>USA (North Carolina)</td>
<td>1887</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>5359</td>
<td>Portugal</td>
<td>7325</td>
<td>Argentina*</td>
<td>1657</td>
</tr>
<tr>
<td>Hungary</td>
<td>5658</td>
<td>Puerto Rico (USA)*</td>
<td>1398</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iceland</td>
<td>3371</td>
<td>Qatar</td>
<td>12083</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: f: frequency, *: countries that do not participate in computer based application

As seen in Table 1, it is observed that the largest number of students participated from Spain (Regions) with the highest number (32330) followed by Canada with 20058. The lowest participation is seen from Puerto Rico (USA) with 1398 students. Differences can be seen between the rates of students participating in the PISA since the sampling is done considering the number of students in the 15-year-old group for each country. As it can be seen in Table 1, 15 countries [Albania, Algeria, Indonesia, Romania, Vietnam, Jordan, Kosovo, Lebanon, Trinidad and Tobago, Malta, Macedonia, Moldova, Georgia, Argentina, and Puerto Rico (USA)] did not participate in the computer based application.

Data Collection and Data Collection Tools

In this study, data which collected in PISA 2015 application in all countries are used. Data for all countries are obtained from international website of the PISA. In this study, reading literacy are described as “understanding, using, reflecting on and engaging with written texts, in order to achieve
one’s goals, to develop one’s knowledge and potential, and to participate in society.” (OECD, 2013, p.9). The students' reading scores are converted to a scale with a mean of 500 and a standard deviation of 100. Moreover, students' scores are divided into seven different levels of competency. These levels and scores are as follows: level-6: higher than 698.32, level-5: higher than 625.61, equal to or lower than 698.32, level-4: higher than 552.89 and equal to 625.61, level-3: higher than 480.18 and equal to or less than 552.89, level-2: higher than 407.47 and equal to or less than 480.18, level-1a: higher than 334.75 and equal to or less than 407.47, level-1b: equal to or less than 334.75 or up to 262.04 (OECD, 2013).

In this study, reading skill scores of the students are taken as dependent, while index of information and communication technologies resources students have at home, the number of computers in school and ratio of computers with internet access in school variables are taken as independent variables. Information and communication technology (ICT) resources index (ICTRES) that students have at home is derived from; whether students have educational software (ST20Q05) and/or whether there is internet connection at home (ST20Q06) and the number of computers at home (ST21Q03) variables. The high level of this value means that there are more ICT sources at home (OECD, 2011). The number of computers at school and the ratio of computers with internet access at school variables contain numerical information provided by the school principals through the school survey.

Data Analysis

The analysis of the data was carried out in two stages. Firstly, multilevel latent class analysis (MLCA) is used in order to investigate latent classes which were composed by students’ reading skills between students and countries. It is accepted that all observable variables originates of an unobservable latent variable in latent class analysis (Vermunt & Magidson, 2004). However, in most practices in education fields, people (level-1) are sampled from clusters (level-2) such as schools or countries. This situation gives rise to correlations between observations from the same group (Asparouhov & Muthen, 2008). Latent class analyses are advised to be advanced to multilevel models for that reason. It is let in multilevel latent class models that membership probabilities and/or item response probabilities can change randomly between groups (Vermunt, 2003; Vermunt & Magidson, 2005). All probabilities ranging from a model with a latent class at student and country level to the best fitting model are tested in the MLCA. In the model selection, the simplest model (which has minimum latent class and the least predictive parameter) is preferred (Vermunt, 2003; Vermunt & Magidson, 2004). Fitting measures such as log-likelihood (LL) and Bayesian information criterion (BIC) are used in order to define the best number of clusters. However, related literature (Lukočienė, Varriale, and Vermunt, 2010) recommends only using of BIC value. Thus, this research was used BIC value as criteria regarding model selection. Secondly, three-step analysis is employed in order to determine chosen independent variables’ ability to predict emerged latent classes (Vermunt, 2010). Latent Gold 5.1 package programme is used in analyses (Vermunt & Magidson, 2013a, 2013b). Furthermore, country level weightings are employed while analyzing.

Findings and Comments

As a result of the MLCA, which was done in order to distinguish reading success into latent classes at student and country level, the model with four clusters at student level and six clusters at country level fitted the best. The fitting statistics for this model were obtained as LL: -3441908.3500 and BIC: 6884228.2209. Information on the size, average values, and competency levels of the latent classes emerged at the student and country levels are given in the Table 2.
Table 2. Student and Country Level Latent Classes and Averages

<table>
<thead>
<tr>
<th>Student level</th>
<th>Cluster(C)s</th>
<th>C-1</th>
<th>C-2</th>
<th>C-3</th>
<th>C-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentages</td>
<td></td>
<td>11</td>
<td>41</td>
<td>28</td>
<td>20</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>356.33</td>
<td>407.13</td>
<td>495.81</td>
<td>573.10</td>
</tr>
<tr>
<td>Latent Classes (LC)</td>
<td></td>
<td>LC-1</td>
<td>LC-2</td>
<td>LC-3</td>
<td>LC-4</td>
</tr>
<tr>
<td>Percentages</td>
<td></td>
<td>17</td>
<td>1</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>401.38</td>
<td>405.01</td>
<td>428.36</td>
<td>437.48</td>
</tr>
</tbody>
</table>

As can be seen in Table 2, the average of the first cluster emerged at the student level is 356.33 (la level of competence, low-level achievement) and 11% of the students are in this cluster. 41% of the students are in the second cluster and they have an average of 407.13 (la and second level of achievement, medium-low level achievement). Students at the third cluster constitutes 28% of the group and their average is 495.81 (third level of competence, medium level achievement). The possibility of students to be in the fourth cluster is 20% and the average of this group is 573.10 (fourth level of competence, medium-high achievement).

When clusters emerged at country level are examined, the average of Cluster1 [Albania, Algeria, Brazil, Dominican Republic, Georgia, Jordan, Kosovo, Lebanon, Moldova, Peru, Puerto Rico (USA), Qatar, Tunisia, Macedonia] is 401.38 (la level of competence- low-level achievement). Countries which have the lowest reading skill are in this cluster. Nine of these countries has taken old PISA questions with pencil and paper application. The average of Cluster2 (Indonesia) is 405.01 (la level of competence, low-level achievement). This country as well participated in the pencil and paper application. The average of Cluster3 (Colombia, Costa Rica, Mexico, Thailand, Turkey) is 428.36 (second level of competence, medium-low level). All countries in this cluster participated in the computer based application. The average of Cluster4 (Bulgaria, Lithuania, Malta, Montenegro, Romania, Slovak Republic, Trinidad and Tobago, United Arab Emirates, Uruguay) is 437.48 (second level of competence, medium-low level). The average of Cluster5 [Chile, Chinese Taipei, Croatia, Denmark, Greece, Hungary, Iceland, Italy, Latvia, Macao, Portugal, Russian Federation, Vietnam, Slovenia, Spain, United Kingdom, Spain (Regions), Argentina (Ciudad Autónoma de Buenos)] is 494.70 (third level of competence, medium level achievement). Vietnam and Argentina, which are among countries in the fifth cluster participated in pencil and paper application. The average of Cluster6 [Australia, Austria, Belgium, Canada, Czech Republic, Estonia, Finland, France, Germany, Hong Kong, Ireland, Israel, Japan, Korea, Luxembourg, Netherlands, New Zealand, Norway, Poland, Singapore, Sweden, Switzerland, United States, B-S-J-G (China), USA (Massachusetts), USA (North Carolina)] is 503.18 (third level of competence- medium level achievement). All countries in this cluster participated in the computer based application and they have the highest achievements. Table 3 shows the results of the 3-step analysis conducted to examine the probability of finding independent variables in classes emerged at country-level.

Table 3. Likelihood of independent variables to be found in country-level clusters

<table>
<thead>
<tr>
<th>Variables</th>
<th>C-1</th>
<th>C-2</th>
<th>C-3</th>
<th>C-4</th>
<th>C-5</th>
<th>C-6</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT Resources* (R²=0.51)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1.922 → -0.904</td>
<td>0.50</td>
<td>0.12</td>
<td>0.25</td>
<td>0.06</td>
<td>0.06</td>
<td>0.02</td>
</tr>
<tr>
<td>-0.855 → -0.334</td>
<td>0.21</td>
<td>0.08</td>
<td>0.23</td>
<td>0.30</td>
<td>0.17</td>
<td></td>
</tr>
<tr>
<td>-0.328 → -0.0833</td>
<td>0.03</td>
<td>0.01</td>
<td>0.18</td>
<td>0.38</td>
<td>0.40</td>
<td></td>
</tr>
<tr>
<td>-0.0818 → 0.171</td>
<td>0.00</td>
<td>0.14</td>
<td>0.33</td>
<td>0.53</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.179 → 0.696</td>
<td>0.00</td>
<td>0.06</td>
<td>0.22</td>
<td>0.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The number of computers in school* (R²=0.26)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.106 → 0.331</td>
<td>0.40</td>
<td>0.10</td>
<td>0.20</td>
<td>0.12</td>
<td>0.12</td>
<td>0.06</td>
</tr>
<tr>
<td>0.381 → 0.567</td>
<td>0.26</td>
<td>0.02</td>
<td>0.10</td>
<td>0.18</td>
<td>0.25</td>
<td>0.19</td>
</tr>
</tbody>
</table>

170
Given in the Table 3, when the probability of the independent variables to be found in the classes formed at the country level are analyzed, ICT sources are seen to be the most effective variable on reading skills ($R^2 = 0.51$) of countries and followed by computer with internet access ratio ($R^2 = 0.50$). Students who have the lowest level (-1.922 to -0.904) ICT resources are with 50% probability seen in the Cluster1, which is the group where the countries with the lowest reading achievement are. Students who have the highest level of ICT resources (0.179 to 0.696) are found to have 71% probability to be in Cluster-6, in other words the group with the highest level of reading achievement.

When the situation is evaluated for the number of computers at school, the students with the lowest percentage to have computer at school (0.106 to 0.331) are in Cluster 1 with a probability of 40% (the group with the lowest reading achievement). It has been determined that students in schools which have computers at the highest level (0.179 to 0.696) are in the Cluster-6 with a probability of 63%, that is, the group with the highest level of reading achievement. There is a similar situation for the rate of computers with internet access at school variable too. Students in cluster-1 have a 63% chance of having an internet connected computer ratio at the lowest level (.32 to 0.811). Students with schools which have a very high rate (0.978 to 1.00) of computers with internet access have an 89% (.30 + .59) probability to be in the Cluster-5 and Cluster-6 (students with medium and high level of reading achievement).

When the results are broadly evaluated, Indonesia, which is the only country in cluster 2, has the lowest resources of information and communication technology at home, the lowest number of computers in the school and the lowest rate of computers with internet access at school. These resources are also at low levels at home and at school in countries in Cluster 3. However, it also possess 1% and 2% schools in which the number of computers at school and rate of computers with internet access at school are at high levels. It can be stated that the countries in Cluster 4 have these resources at home and at school at low-medium level, and the countries in Cluster 5 have these resources at medium-high level.

When the results are evaluated in general, students who have the lowest information and communication technologies resources at home, number of computers in school and ratio of computers with internet access in school are most probably in the Cluster 1 (countries with the lowest achievements). Students who have these resources in the highest level are most probably in Cluster 6 (countries with the highest achievements).

**Discussion, Conclusion and Recommendations**

In this study, it is aimed to distinguish the reading skills of students participating in PISA 2015 application into multi-level latent classes at student and country level. Moreover, it is aimed to examine how the clusters emerged at country-level is predicted by variables as students have the information and communication technology (ICT) resources at home and school. As a result of the analyses conducted, at student level the model with four clusters and at country level the model with six clusters fitted the best. In the student-level clusters, while is a group formed by the students at the
fourth competency level in the reading achievement, the average of the best group in the classes emerged at the country level corresponds to the third level of competency. It is thought that this situation is resulted from the change of the range between successful and unsuccessful students in the country.

When the country-level clusters are examined, nine of the countries with the lowest reading skills [Albania, Algeria, Georgia, Jordan, Kosovo, Lebanon, Moldova, Puerto Rico (USA), and Macedonia] have received the old PISA questions with paper-pencil application. While some of these countries (Algeria, Kosovo, Lebanon, Macedonia, and Puerto Rico) are participating in the PISA application for the first time, others seem to have had very low achievement upon evaluating PISA 2012 reading achievement. In this context, even though they took the old PISA questions with paper-pencil application, these countries have achieved low success regardless of their ICT skills. Vietnam and Argentina are countries in Cluster 5 also participated in the paper-pencil application, yet they were in the third competency level, the medium-performing group. Vietnam, with the reading score averaged 508, placed again at the third proficiency level in PISA 2012 application (OECD, 2014). However, it is quite surprising that Argentina has risen to the third level competence in PISA 2015 when it had a low level reading achievement at 1a competence with an average score of 396 in PISA 2012. This situation may be related to the increase in expenditure of education in Argentina, and it is also thought that it might be originated from the high teacher salaries paid in order to increase the teacher quality (UNESCO, 2015).

Students with the lowest level of resources regarding information and communication technology at home, the number of computers at school and the ratio of computers with internet connection at school are most likely to be in the Cluster 1 (countries with low-level achievement: Albania, Algeria, Brazil, Dominican Republic, Georgia, Jordan, Kosovo, Lebanon, Moldova, Peru, Puerto Rico (USA), Qatar, Tunisia, and Macedonia). It is seen that all the countries in the Cluster 3 (Colombia, Costa Rica, Mexico, Thailand, and Turkey) participated in computer-based application, while Indonesia, the only country in Cluster 2, participated in paper-pencil application. These countries are composed of students with low reading achievement as well as low sources of information and communication technology at home, low number of computers at school and low rate of computers with internet access at school. When PISA 2012 reading success of these countries are assessed, it is seen that all countries except for Colombia have diminished the average reading achievement score in 2015 (OECD, 2014; OECD, 2016a). In this context, the low success of these countries may be due to the inadequacy of ITC resources at home and at school and participating in the PISA 2015 computer-based application, yet other factors may have influenced in the background.

The ratio of students in countries in the Cluster 1, 2 and 3, which have low level and medium-low level reading achievements to own moderate or high level of ICT resources at their homes is zero. The inadequacy or lack of ICT resources at home is in fact an indirect indication that the socioeconomic status of the family is low in the background. At the same time, the state of countries in this cluster having moderate and high levels of the number of computers at schools, the rate of computers with internet access at schools are zero or very low. This also indicates that the state of having ICT resources either within the country or among countries changes. In addition, the results of the analyses showed that having ICT resources at home is the most influential variable on the reading skills of the countries, followed by the rate of computers with internet access at school with a close ratio. In this context, it can be stated that the rate of computers with internet access at school is as effective as the socio-economic level of the family on the reading skills of the students. In the field literature, family background (Schütz, et al., 2005) and school resources (Borman & Dowling, 2010; Gamoran & Long, 2006; Holmlund, 2016) are found to be effective for students to reach equal opportunities in education. In this context, it can be deduced that equality of opportunity in education is not provided in many countries on the international scale. Countries in these clusters are encouraged to examine the policies of countries with high-level reading achievement and take advantage of these policies that are appropriate for their country’s circumstances.
In the International Computer and Information Technology Literacy Study report, Thailand and Turkey are the countries with the lowest ICT development index score among the participating countries (Fraillon, Ainley, Schulz, Friedman, & Gebhardt, 2014). In both countries, the sources related to information and communication technology at home, the number of computers at school and the rate of computers with internet access are in a low level, and they are in the Cluster-3, which has medium-low level achievement in this study. It is stated in the same report that while Turkey is the lowest spending country with less than three percent of its gross domestic product (GDP), Denmark is the country with the highest expenditure on education with about nine per cent of its GDP (Fraillon, et al., 2014). Considering that Denmark is included in the group with medium level reading achievement in this study, even though it is important for countries to invest in education from GDP, examples of good countries should be examined for it to bring the desired achievement. In addition, in this study, Denmark is in the fifth group, in the group with third level reading competence. Countries in this group have medium-high level sources of information and communication technology at home, the number of computers at school and ratio of computers with internet access at school. This finding is consistent with the findings of some studies in countries in this cluster. In a study conducted in Italy, which is one of the Cluster 5 countries, it was consistent with the finding that Italian students with high reading achievements in the PISA 2009 application were using computers better than the ones with low achievement and that the ITC had more positive influence on the success of these students (Freddano & Diana, 2016). In a study conducted using PISA 2012 data on Hungary, which is among the countries in Cluster 5, and it was seen that ITC access at home and its use contributed to school success (Anikó, 2016).

The students in Cluster 6, which have the highest student ratio, are in the third competency level and have medium-high success. All of these countries in this cluster participated the computer-based application and they are the countries with the highest achievements [Australia, Austria, Belgium, Canada, Czech Republic, Estonia, Finland, France, Germany, Hong Kong, Ireland, Israel, Japan, Korea, Luxembourg, Netherlands, New Zealand, Norway, Poland, Singapore, Sweden, Switzerland, Switzerland, United States, B-S-J-G (China), USA (Massachusetts), USA (North Carolina)]. These countries are at the same time in the group in which students with the highest level of information and communication technology resources at home, the number of computers at school and the ratio of computers with internet access at school are most likely to be in. This finding is also consistent with the finding of some studies in the countries in this cluster. For example; in a longitudinal study conducted in the USA (Jackson, et al., 2011), which is among the countries in this cluster, it is seen that students at the age of 12-13 with a low reading ability at the beginning developed their reading skills with internet usage. A significant relationship in a positive way between the reading scores of the PISA 2000 application and the Canadian students’ having computer or internet connection at home is detected (Bussière & Gluszynski, 2004). In another study which is conducted on all countries participating in the PISA 2000 application, positive relationships are seen between computer presences at home or at school and student performance (Fuchs & Wößmann, 2005).

There is almost no student in most successful clusters with inadequate resources regarding information and communication technologies at home or schools. When it comes to the students with low level achievements, there seems to be almost no students having these resources in high levels. In this sense, it can be deduced that students who have these resources at home or schools are more successful; however, it is not compared with a direct differentiation between the reading skills of countries which participated in the pencil and paper application and countries which participated in computer based application. On the other hand, when the state of having ICT resources in the classes formed according to the students' reading skills is examined, it can be said that the relationship between them is in the positive direction.

The study that is carried out also has some limitations. For this reason, the results obtained should be evaluated within these limits. The first one of these limitations is related to the statistical model used in the study. It is not possible to obtain direct cause-and-effect relationship since the statistics used are probabilistic models. For this reason, interested researchers can examine the results.
obtained in the context of cause-and-effect relationships. The second limitation is also gathering information on students' mathematics and science skills in PISA application. Only the reading skills are used in this study. In this context, interested researchers can carry out studies on other skills as well.

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The Opinions of the Multigrade Classroom Teachers on Multigrade Class Teaching Practices (Multiple Case Analysis: Netherlands-Turkey Example)

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Abstract

In this study, the opinions of 20 classroom teachers who work in multigrade classes in İzmir, Turkey and Rotterdam, Netherlands were received via an interview form prepared by the researcher. The study was designed as a multiple case study. Descriptive and content analysis were applied to the data obtained from the study. The data obtained from the analysis were grouped under three main themes: difficulties faced in multigrade classes, solution suggestions regarding the problems of multigrade classes, effective practice examples in multigrade classes. The study has revealed that there are difficulties stated by the classroom teachers as the excessive effort of the teacher, high expectations from the student, lack of time, difficulty in reaching the aims, non-teaching roles, not being supported, lack of education, physical conditions, and language problems. It has been seen that the solution suggestions suggested by the teachers are openness, assistant personnel, improvement of the physical conditions, increasing the quality and quantity of training services, and legal regulations. At the end of the study, significant practice examples which can be easily applied by the multigrade classroom teachers have been reached. These practice examples have been tried to be introduced. The results of the study were discussed comparatively in terms of the opinions of Turkish and Dutch teachers. Suggestions were made in accordance with the results of the study.

Keywords: Multigrade Class, Teaching in Multigrade Classes, Multigrade Class Teaching Practices

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Introduction

Multigrade teaching is a practice in which students from different age, skill and class level continue their education and training together in the same class, are taught by one teacher because of various reasons such as lack of teacher, lack of school, low number of student (İlter, 2015; Gürel, Çapar and Kartal, 2014; Köksal, 2005; Brown, 2010). When reviewing the literature, it is seen that various studies have been conducted on longstanding multigrade class practice (Göksoy, Arıcan & Eriş, 2015; Uygur & Yelken, 2010; Yıldız & Köksal, 2009; Taşdemir, 2014; Şahin, 2003; Sumak, Sumak & Gelebek, 2011; Saraçoğlu, Büyük & Tanku, 2012; Sağ & Sezer, 2012; Sağ, Savaş & Sezer, 2009; Palavan, 2012; Karakuş, 2016; Kazu & Aslan, 2011; Külekçi 2013 etc.). Multigrade class teaching practices are not peculiar to Turkey, it is possible to see multigrade class practices in numerous countries all over the world (Kazu & Aslan, 2012; İzci, Duran & Taşar, 2010; Brown, 2010; Hyry-Beihammer & Hascher, 2015; Thomas & Shaw, 1992; Bergersen, 2004).

When the multigrade class literature is reviewed, it is seen that the studies mention the advantages (Proehl, Douglas, Elias, Johnson & Westsmith, 2013; Köksal, 2005; Kucita, Kivunja, Maxwell & Kuyini, 2013; Gürel et al., 2014 etc.) and disadvantages of these practices (Mulryan-Kyne, C. 2007, Sumak et al. 20011; Köksal, 2005; Veenman & Raemaekers, 1995; Göksoy et al., 2015; Uygur & Yelken, 2010; Saraçoğlu et al., 2012; Sağ et al., 2009; Palavan, 2012; Kaya & Taşdemirci, 2005; Gürel et al., 2014 etc.). It is possible to see studies which mention the disadvantages of the practice such as the heavy burden of the teacher, lack of time, difficulty in showing individual attention to the students, difficulty in planning the teaching, careless parents, language problem, lack of material, not being able to receive in-service training and consultancy, dealing with non-teaching tasks, not being able to comply with the environmental conditions, not being able to individualize the teaching, not gaining necessary competency in teacher training education. As for the advantages, it is seen that some points such as an increase in cooperation between students and learning from each other, improvement of self-regulated learning skills, taking responsibilities and sharing the leadership, increase in in-class respect, peer tutoring and latent learning from upper or lower class lecture are mentioned.

The success of the multigrade class teaching practices has been regarded as important both in our country and all over the world (Göksoy et al., 2015, Uygur & Yelken, 2010; Yıldız & Köksal, 2009; Taşdemir, 2014; Şahin, 2003; Sumak et al., 2011; Saraçoğlu et al., 2012, Miller, 1991; Hyry-Beihammer & Hascher, 2015 etc.). For this purpose, it is definitely so significant to determine the problems, advantages and disadvantages of these practices. However, it is clear that we need the studies that suggest concrete and applicable suggestions for the problems stated clearly in numerous studies. The number of the studies which present multigrade class practice examples is considerably low and it is necessary to include studies that will meet the deficit in this field (Hyry-Beihammer & Hascher, 2015). Some studies which include suggestion regarding the sustainable practices in multigrade classes will be mentioned below.

Thomas & Shaw (1992) emphasized that the teacher training programs for multigrade class teaching should focus on effective teaching practices. According to them, peer tutoring, self-regulated learning, teacher preparation (planning, organization and distribution methods), maintenance of an orderly environment, evaluation and feedback skills should be emphasized in order to perform an effective teaching in multigrade classes. Thomas & Shaw (1992:32) addressed the necessity of well-designed lesson plans that support peer tutoring and self-regulated learning, the necessity of preparing productive learning environments and providing the students with effective feedback and revision in the learning process. But these are not enough. The school and class environment should be appropriate for success. These schools should have libraries and the teachers should be able to easily reach the materials they need.

Bergersen (2004) has contributed regarding the effective process in multigrade classes by making use of Bacharach et al. 1995. She made suggestions regarding how the multigrade classes
generally look, methods and approaches that can be used in the learning and teaching process in these
classes and the evaluation. According to her, multigrade classes are seen as a child-centered and active
process for the learner. These classes focus on the process and include learning by experience,
activities which allow the children to experience. The classrooms include students of different age,
level, skill and readiness. Thus, the value of these classes comes from diversity. These practices give
self-regulation skills to the students who have to organize their individual studies. Methods and
approaches which can be used in accordance with the multigrade classroom in educational process are
defined as process writing, literature-based reading, thematic teaching, learning centers, math
manipulatives which help students understand math easier, cooperative learning, peer tutoring,
computer assisted instruction, team teaching, project papers, outdoor learning activities, problem-
based instruction, use of story-line method and entrepreneurship. She saw the evaluation as a
consistent, ongoing process and defined it as authentic and multidimensional. She emphasized that
following the instructions, the effort for cooperation and the portfolios created can be taken into
account in the evaluation (cited by Bergersen 2004:13 from Bacharach et al. 1995).

In his study, Miller (1991:10-11) included 6 main variables that affect the success in
multigrade classes stated by Wragg (1984). These variables were classified as classroom organization,
classroom management and discipline, instructional organization and curriculum, instructional
delivery and grouping, self-directed learning and peer tutoring in the study. Classroom organization
means preparing both the physical environment of the classroom and the instructional sources in
accordance with both the individual and interactive studies for the students to have an effective
learning experience. Classroom management and discipline title includes clarifying the schedules and
routines that will help students to take responsibilities. Instructional organization and curriculum title
emphasizes educational strategies that are followed in the planning, improvement and application of
the individual and group studies which enable using the time effectively. Instructional delivery and
grouping mentions the use of effective teaching methods that will also increase the interaction between
class levels which need the mutual commitment and cooperation of the students. Self-directed learning
includes the student’s self-adaptation in order to have independent studying skills, structure his/her
own learning and take advantage of the process in group learning. Peer tutoring means that the
students help each other like teachers. In the light of these, Miller (1991) emphasized that every
teacher who wants to take into account the individual needs of the students and monitor their
development in multigrade classes should make a great effort and spend a lot of time on the planning
and organization of teaching. One of the most significant points of succeeding in this is to clarify the
rules and routines by talking to the students. Determining correctly the subjects appropriate for the
whole class instruction will provide high level learning and saving on time. For instance, there is no
harm in brainstorming for writing or discussion subjects with the whole group. Based on the
discussion, everyone can create their own text.

In a study conducted in Virginia, the United States of America, OERI (1990) defined 102
strategies that the multigrade classroom teachers thought to be effective in multigrade classes. These
strategies were organized according to the frequency of the teachers' answers. The categories obtained
from the strategies were stated as classroom management, time management, grouping, parent
relationships, getting started and socialization. In order to teach more effectively in multigrade classes,
teachers were suggested to give significant tasks to a group while working with another group to keep
them active, state the academic and behavioral expectations clearly and consistently, help students to
understand that they are a class even though all students have different groups, provide awards such as
outdoor trips, design sitting arrangements which mix the classes and are appropriate for learning,
prepare the task before the students arrive, determine the appropriate students for peer tutoring, be a
role model by adopting a positive attitude toward the school, class and the environment, give
information about the process to the parents by organizing a parents meeting before the school starts,
give information to the parents by sending the related development files or calling them for a meeting
(OERI, 1990).

A study conducted in Netherlands with multigrade classroom teachers stated that there were
problems in effective use of teaching time, designing the teaching effectively, classroom management,
organization of the activities that should be done individually, definition of the multigrade classes' purposes (cited by Veenman & Raemaekers, 1995 from Veenman, Lem, Voeten, Winkelmolen & Lassche 1986). It is seen to be important to train teachers about the teaching time. Because students’ being able to manage their learning time, determining the time period needed for learning, sparing time, determining the success levels of the students, providing the task convenience are related to teaching time and highly significant in both multigrade and mixed-age classes (Veenman & Raemaekers, 1995). It shouldn’t be forgotten that the effectiveness of teaching refers to the content and the providing well-defined skills. For this purpose, the teachers should give information to the students about the objectives and remind them of the prerequisite learning. Providing the new information by small steps in an organized way, providing feedback and revisions by enabling every student to experience, supervising the students even when they work individually are the duties that should be done to increase the teaching effectiveness of the teacher (Raemaekers, 1995). Increasing the in-class participation, cooperation and attention of the students and providing the necessary conditions for them to study in an effective and productive way are indicators of a good classroom management. A very good classroom management and organization in multigrade classes are one of the requirements of success (Veenman & Raemaekers, 1995). Another important point in multigrade classes for the students who spend most of their time with individual activities is the need for understanding what to do while studying individually. So, it is important to be sure that the students are ready for the task, explain the duty to the students in detail and guide them when they have a problem (Veenman & Raemaekers, 1995). School climate is another important subject. In order to be able to increase the success of multigrade class practices, it is important to share the mutual problems with the teachers and the personnel, help each other for planning and work together to realize the objectives of the program (Veenman & Raemaekers, 1995).

In their study, Hyry-Beihammer & Hascher (2015) tried to define the teaching practices performed in multigrade classes in Austria and Finland. The data collected in the study of Hyry-Beihammer & Hascher (2015:108) were investigated under 3 categories. These categories were (1) student group formation and subject organization, (2) peer tutoring and (3) differentiation. The first main category, student group formation and subject organization, is thought to provide opinions to in-class practices. The sub-categories of this main category are based on the definitions of the multistage practices suggested by Kalaoja (2006) and Cornish (2006b). These practices are defined as below (cited by Hyry-Beihammer & Hascher, 2015:108).

Parallel curriculum: the students learn the same themes or subjects. But each group follows their own syllabus. In this practice, each grade is taught in turn.

Curriculum rotation: The whole class studies the curriculum of one grade for a year. They follow the other grades curriculum next year. In this practice, all groups are taught together.

Curriculum alignment and spiral curriculum: Similar subjects are defined in the different grade curricula and all students in the class share the same themes or subjects. The main concepts or ideas taught in lower grades are deepened or expanded in upper grades.

Subject stagger: Different subjects are taught at each grade level. In this practice, the teaching time for each grade differs. The teacher studies with all classes in turn.

Whole class teaching: The grades study the same subject at the same time using the same materials. (Cited by Hyry-Beihammer & Hascher, 2015:108).

The suggestions stated by the studies above regarding the multigrade classes are thought to guide the teachers who will perform them. It is inarguable that the number of this kind of studies should increase and suggestion regarding the solution of the problems defined should be developed. Multigrade practices are used in Turkey and all over the world. Then, instead of complaining that this practice should be stopped, we should think and research what to do to provide a more effective teaching.
The aim of this study is to determine the opinions of classroom teachers who teach in the multigrade classes in Rotterdam, Netherlands and Izmir, Turkey about the problems of the multigrade classes and to understand, define and explain the in-class practices they use in order to make the learning-teaching process efficient. For this purpose, the answers to the research questions below have been sought.

1) What are the problems of multigrade class practices according to the teachers who work in multigrade classes in Rotterdam and Izmir?

2) What are the solution suggestions regarding the problems of multigrade classes according to the teachers who work in multigrade classes in Rotterdam and Izmir?

3) What are the effective practices the teachers who work in multigrade classes in Rotterdam and Izmir use in order to increase the performance of the multigrade classes?

**Method**

This chapter includes the information about the study model, study group, data collection tools, data collection and analysis.

**Study Model**

In order to collect detailed data about the multigrade classes which continue to be relevant and have a place in life, this study was conducted as a multiple case study with place and time restriction (Izmir-Rotterdam/2016-2017 school year), by defining a mutual subject (multigrade classes) in different conditions (Turkey-Netherlands multigrade classroom teachers) (Aydin, 2013:98). Case studies are expected to be particularistic, descriptive and heuristic. The case studied was stated clearly in this study. The findings regarding the multigrade classes were tried to be described clearly. A detailed reporting was done in order to provide a better understanding of multigrade class practices and to think about the practices in the study (Karadağ, 2015:43-44).

**Study Group**

The data of the study were collected from 20 teachers in total; 10 multigrade classroom teachers who work in Rotterdam and 10 multigrade classroom teachers who work in Izmir. Being voluntary to participate in the study and being easily accessible were taken into account in the selection of the teachers. The data regarding the teachers who participated in the study were stated in Table 1.

**Table 1 Features of the Teachers Who Participated in the Study.**

<table>
<thead>
<tr>
<th>Country</th>
<th>Gender</th>
<th>Professional experience</th>
<th>Professional Experience in Multigrade Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Netherlands</td>
<td>N1</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>Netherlands</td>
<td>N2</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Netherlands</td>
<td>N3</td>
<td>38</td>
<td>5</td>
</tr>
<tr>
<td>Netherlands</td>
<td>N4</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Netherlands</td>
<td>N5</td>
<td>40</td>
<td>20</td>
</tr>
<tr>
<td>Netherlands</td>
<td>N6</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>Netherlands</td>
<td>N7</td>
<td>25</td>
<td>5</td>
</tr>
<tr>
<td>Netherlands</td>
<td>N8</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Netherlands</td>
<td>N9</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Netherlands</td>
<td>N10</td>
<td>10</td>
<td>5</td>
</tr>
</tbody>
</table>
A questionnaire which consisted of purpose-related personal information and open-ended questions related to the subject was prepared. This form includes five questions related to personal information and 19 questions which are thought to be helpful in getting an answer to the research questions. The questionnaire form was formed by receiving opinions from 3 instructors who gave ‘teaching in multigrade classes’ lesson in the department of classroom teaching. 3 multigrade classroom teachers were asked to answer the questionnaire in order to check the functionality of the form. It was evaluated if the answers received are understandable enough to answer the research questions and the questionnaire took its final form. This questionnaire form was translated into Dutch by two multigrade classroom teachers who are dual citizens and then its linguistic validity was checked by discussing a Dutch teacher.

Data Collection

The data of the study were collected in 2015-2016 school year. The teachers who work in Izmir were reached via telephone calls, the questionnaire form was sent to their e-mail addresses with their permission and the answers were gathered via the same way. The teachers who work in Rotterdam were reached via a multigrade classroom teacher and the form was sent to their e-mail addresses with their permission and the answers were received. The answers received in Dutch were translated into Turkish by 3 teachers who work as classroom teachers in Netherlands; the teachers who helped the translation of the questionnaire form and one of their colleagues. The answers given to the questionnaire questions were investigated and related teachers were asked to take photographs of the good examples of the in-class practices in multigrade classes and the photographs were shared via e-mail.

Data Analysis

The descriptive analysis which enables using exact quotations and is frequently used in qualitative studies, and content analysis which helps readers to understand the subject betters and is used for combining the related concepts and themes were used together in the analyses of the data (Yıldırım & Şimşek, 2000). After the first classification in the scope of the research questions, the related data were classified in detail and divided into sub-codes. The raw study data and their analyses were sent to two experts who are experienced in qualitative research and the analyses took its final shape with an evaluation in accordance with the experts’ opinions.

Findings

This chapter includes the findings of the study and comments. The findings of the study were divided into three main themes in accordance with the study questions and investigated. The first main theme is the difficulties faced in multigrade classes. The second main theme is the solution suggestions regarding the problems of multigrade classes. And the third main theme is the examples of the effective practices in multigrade classes.

<table>
<thead>
<tr>
<th>Turkey</th>
<th>T1</th>
<th>14</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turkey</td>
<td>T2</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Turkey</td>
<td>T3</td>
<td>15</td>
<td>12</td>
</tr>
<tr>
<td>Turkey</td>
<td>T4</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>Turkey</td>
<td>T5</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>Turkey</td>
<td>T6</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Turkey</td>
<td>T7</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Turkey</td>
<td>T8</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Turkey</td>
<td>T9</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>Turkey</td>
<td>T10</td>
<td>9</td>
<td>4</td>
</tr>
</tbody>
</table>
1) The findings related to the difficulties faced in multigrade classes theme

Table 2. Sub-themes and Frequency Distributions of the Difficulties Faced in Multigrade Classes Theme

<table>
<thead>
<tr>
<th>THE DIFFICULTIES FACED IN MULTIGRADE CLASSES</th>
<th>Frequency of Mentioning of the Dutch Teachers (f)</th>
<th>Frequency of Mentioning of Turkish Teachers (f)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excessive Effort of the Teacher</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>High Expectations from the Student</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Lack of Time</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Difficulty in Reaching the Aims</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>Non-teaching Roles</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Not Being Supported</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Lack of Education</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Physical Conditions</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Language Problem</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>

As seen in Table 2, 9 sub-themes were created under the difficulties faced in multigrade classes theme. When looking at the frequency distributions, it is seen that the Dutch multigrade classroom teachers did not mention the difficulty in reaching the aims of the curriculum, non-teaching duties, lack of physical conditions and language problem. The excessive effort of the teacher, high expectation from the student and lack of time were stated as problems by both the Dutch and the Turkish teachers. Difficulty in reaching the aims of the curriculum, lack of education and physical conditions were frequently stated as problems by Turkish teachers.

All of the Dutch and Turkish teachers mentioned the Excessive Effort of the Teacher sub-theme. Some of the statements of the teachers are listed below.

N1: "I have to work a lot... I have to make a very good classroom organization. It takes a lot of time to work with different levels. The children also learn from each other in this process."

N10: "Multigrade class means planning for me. It means preparing for the lesson two, even three times harder. It means working 45, sometimes 50 hours and never being sad... Being a teacher in a multigrade class really requires working too much. I usually do the school work also at home. I do not have difficulty in giving the learning outcome in my in-class practices but sometimes I realize I run out of time when I want to do different activities."

N4: "Teaching in a multigrade class is a very heavy burden for a teacher. A teacher is expected to do so much. Your teaching knowledge should be appropriate. You have to be good at classroom organization. And you have to be very patient."

T5: "It is an environment in which the teacher has to make a tremendous effort in order not to have more than one responsibilities."
T8: "The most difficult part of teaching 2 classes together is the classroom control. We need to try different methods in order to achieve this. Another important point is to plan similar lessons together and teach it to two classes. Choosing the subjects appropriate for both grades' levels and exemplifying it so that also the lower grade can understand it is one of the difficulties of teaching in a multigrade class. I think I gained experience in this subject in time."

As it can be understood from the statements of the teachers, all teachers who participated in the study think that a teacher should spend a lot of effort to be able to teach in a multigrade class.

All of the Dutch and Turkish teachers mentioned the high expectation from the student sub-theme. Some of the statements of the teachers are listed below.

N8: The children should always have sufficient homework. They should never be left unattended. Everything must be in sight. The rules, the homework they have to do. You should define the rules properly with children. The children should know how to obey the rules. Ask opinions of the children when setting these rules. Because they will apply them. They need to study hard and they will usually do that on their own."

N10: I compare me and my students to a bee. Because we all learn, produce and study with discipline as a team. The children start their weekly homework after they finish their daily homework and they define how they will use the time. They follow the signs in the classroom (for example the colors of the traffic light, timer (chronometer), a symbol of a friend who needs help etc.). They are expected to be easy going students who help their friends and obey the rules."

T10: ... Sometimes you have to assign higher grades for peer tutoring to control lower grades."

All of the Dutch and Turkish teachers mentioned the lack of time sub-theme. Some of the statements of the teachers are listed below.

N4: "I don't have difficulty in teaching a lesson. But I usually have a problem related to time. Sometimes the time is not enough."

N9: "I have no problems related to the lessons. I am able to give every lessons without difficulty but the time can sometimes be a problem. I am not always able to do the things I want in that short time. Sometimes you cannot give the attention a child demand from you."

T4: ... The Ministry does not privilege multigrade classes about this subject. However it is too difficult for the teacher to teach all curricula of all grades."

T2: "A teacher who teaches a multigrade class cannot achieve all aims that are achieved in independent classes. Because the lesson duration spared for the class levels differs."

As can be understood from the opinions of the teachers, teachers frequently face time problems when they teach more than one group at the same time.

None of the Dutch teachers mentioned the difficulty in reaching the aims sub-theme, on the contrary, they stated that it is possible to achieve the aims of the curriculum. All Turkish teachers stated that reaching the aims of the curriculum is a problem. Some of the statements of the teachers are listed below.

N3: "I think you can achieve the goals in single grades more easily, you achieve them in multigrade classes, too but it is harder and takes much more time. But you achieve it."

N7: "Of course you can reach the aims set by the Ministry. Reaching the aims of two classes is difficult but not impossible. It is easier in single grades."
T2: "A teacher who teaches a multigrade class cannot achieve all aims that are achieved in independent classes. Because the lesson duration spared for the class levels differs."

T5: "We try to achieve all the goals, we do not have leisure time. But it is obvious that the goals are not achieved completely. Because we use the same books, sources the independent classes do; the aims we should reach are the same."

None of the Dutch teachers mentioned non-teaching roles sub-theme. Seven of the Turkish teachers stated that the non-teaching roles are an important difficulty. Some of the statements of the teachers are listed below.

N2: "Newly graduate teachers also teach in multigrade classes in Netherlands and every school in Netherlands has a school principal but they are not at school all the time. In some schools, principal of the school also gives lessons but this is not a hard task for them."

T2: "Being a multigrade classroom teacher means being responsible for all the school related tasks. In a school, the principal rules the school; deputy principal is responsible for the information and control of the students and teachers; teacher is responsible for the education of his/her own grade; the officer conducts the correspondence related to national education; janitor is responsible for the cleaning and maintenance of the school; security guard (hall monitors) is responsible for the security of the school and the students; so multigrade classroom teacher means the teacher who can do the tasks of principal, deputy principal, teacher, officer and janitor on his/her own."

T7: "Yes, I am the principal at the moment and my biggest problem is that I am trying to teach four different grades on one hand, to cope with the maintenance, cleaning, paperwork, meetings and procedures on the other hand."

Four of the Dutch teachers and six of the Turkish teachers mentioned the not being supported sub-theme. Some of the teachers' opinions related to this theme are listed below.

N1: "There are some institutions we can receive education about the multigrade classes from but they are too expensive."

N7: "They did not help me at all. I did not receive education, too. I feel like they put me into an emptiness. In a way, they told me to learn how to do it on my own. I learned it by experience. And I still have difficulties."

T2: "The curricula are planned not taking into account the schools with single teachers. For example, while we are writing this lines, we are in the seminar period of the teachers. And I attend these seminars alone in my school. Because the letter received says we have to be in the school. However, I think these seminars which took 2 weeks could be more useful if they were arranged in a way the teachers who work in multigrade classes gather, share information and talk about examples of practices. There aren't any institutions or organizations from which you can receive education on multigrade classes. I think this kind of education will be effective for the teacher because they can see in advance what they can do for their development and for the school..."

T9: "We definitely need to be supported. The most important issue is timing and planning. Then, an education should be received about classroom management and official correspondence rules."

T10: "More descriptive presentations about the parallel age and developmental characteristics can be done. In other words, you teach 3rd graders this while teaching 4th graders that but you can teach that much because they are not in the abstract thinking period yet etc."
Only one of the Dutch teachers and all ten Turkish teachers mentioned lack of education sub-theme. Some of the statements of the teachers listed below.

N8: "I did not receive education to teach in multigrade classes in my teacher training (in the collage). I usually went on a training period in multigrade classes in my internship during my education period. I did not receive any help or information from the Ministry. Most schools decide how to teach in multigrade classes themselves."

T7: "I received in-service training. I think in-service training never guide a teacher in no circumstances because the ones who taught us were on an ego trip... I would like to change our honorable lecturers who give this lesson (teaching in multigrade classes in the undergraduate program) and take this lesson from the ademicians who are experienced in this subject."

T8: "More in-service training should be provided for classroom management, lesson planning and discourse techniques... (Teaching in multigrade classes lesson in undergraduate training) I would be lying if I said I received it, but I would be also lying if I said I didn’t receive it. There was a lecturer aged 60+, named x and he didn’t teach us anything. He wasn’t able to climb up the stairs. We used to remind him that he had a class."

T6: "I took this lesson only theoretically. It would be better for the teacher candidates if they apply this practices in the schools which have multigrade classes instead of receiving it theoretically."

While physical conditions sub-theme was not included in the difficulties stated by the Dutch teachers, eight of the Turkish teachers mentioned the difficulties resulted from physical conditions. Some of the opinions of the teachers are listed below.

T1: "Existence of different level groups in the class as well as the different grade levels, a heavier burden of the teacher than an independent class teacher, lack of material and physical opportunities in the schools with multigrade classes can be disadvantageous... I think a service is needed to provide educational material."

T3: "Another factor that affects the academic success is the physical environment. The fact that rural schools don’t have computer class, library, sports hall etc. is the biggest disadvantage."

T5: "... the opportunities of the school, the physical conditions are always insufficient. The ones who want to help the school want to send the things they don’t use, because it is a rural school. As it is a rural area, they often face transportation, heating, power cut problems. When we ask someone’s help for anything, they can say it is a rural area, dear teacher, it doesn’t worth the fuel I spend to come there. The chance of attendance of National Education authorities to the activities such as exhibition, theatre etc. is higher for the schools in the city center, their chance of attendance is lower for the rural schools as reaching there needs extra effort. We made an exhibition with our preschool teacher and unfortunately no one from Ministry of National Education came. It is not always possible for us to take our students to an activity, trip in the city center. Transportation company owners demand more money because of the distance of the village to the center and a low number of students. Theatrical producers do not want to come as we cannot afford the price of the activity because of the low number of students etc."

While language problem sub-theme was not included in the difficulties stated by the Dutch teachers, three of the Turkish teachers mentioned the difficulties resulted from language problem. Some of the opinions of the teachers are listed below.

T2: "Different languages spoken in the families cause big problems in literacy education."

T7: "I started teaching with 94 students in a classroom, this was very hard for me but two months later a paid teacher was appointed and my number of students decreased to 49. I felt
comfortable. Not all the relatives of the children knew how to read and write and some of them did not even know how to speak Turkish."

2) The findings related to the suggestions regarding the difficulties faced in multigrade classes theme

Table 3. Sub-themes and Frequency Distributions of the Suggestions regarding the Difficulties Faced in Multigrade Classes Theme

<table>
<thead>
<tr>
<th>SUGGESTIONS REGARDING THE DIFFICULTIES FACED IN MULTIGRADE CLASSES</th>
<th>Frequency of Mentioning of Dutch Teachers</th>
<th>Frequency of Mentioning of Turkish Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theme (f)</td>
<td>Theme (f)</td>
<td></td>
</tr>
<tr>
<td>Openness</td>
<td>9</td>
<td>Physical Conditions</td>
</tr>
<tr>
<td>Assistant</td>
<td>2</td>
<td>Education</td>
</tr>
<tr>
<td></td>
<td></td>
<td>New regulations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Assistant</td>
</tr>
</tbody>
</table>

When the sub-codes regarding the suggestions regarding the difficulties faced in multigrade classes are investigated, it has been seen that the Dutch teachers mentioned from the openness and that an assistant teacher should be present in the class, and the Turkish teachers stated that the physical conditions should be improved, the quality and the quantity of the education should be increased, new regulations should be done for the practice and there should be an assistant teacher in the class like the Dutch teachers mentioned.

It is seen that the Dutch teachers stated their opinions about the openness sub-theme. The statements of the teachers are listed below.

N2: "(In order to increase our success, the employees of the Ministry and the school principals) should be more open and say what they request for certain."

N8: "I ask (the ministry) not to put us into an emptiness. They should help us when we need... They should inform us about what they want. They should help the schools."

Two of Dutch teachers and two of Turkish teachers stated their opinions about assistant sub-theme. The statements of the teachers are listed below.

N3: "We need an assistant teacher in the classes so much."

N5: "... Besides, the classes should include an assistant teacher. I can be more helpful for the children this way."

T4: "I don't know if it is called an assistant teacher, trainee teacher or subsidiary teacher but the multigrade classes definitely need that kind of teachers."

It is seen that eight of the Turkish teachers submitted suggestions on the physical conditions sub-theme. Some of these opinions are stated below.

T1: "I think there should be a service for providing teaching materials."

T2: "The school desks and black boards should be handled. The schools should have heating, teaching materials, basically they should have a photocopy machine and internet access. The sports hall, classroom of four grades and the library are the same classroom. The buildings should be reorganized."
It is seen that all Turkish teachers submitted suggestions regarding the education sub-theme. Some of these opinions are stated below.

In-service and pre-service training:

T1: "Besides, as each multigrade class is an institution directorate at the same time, service should be provided regarding the civil service and administrative services... I only received teaching in multigrade classes lesson in the faculty of education on this subject... This lesson should be supported with the application of it..."

T2: "We don't have any idea about the multigrade class practices in the countries higher than us in the educational ranking. The examples of the practices conducted in other countries can be shared."

It is seen that nine of the Turkish teachers stated suggestions regarding the new regulations sub-theme. Some of these opinions are stated below.

T2: "In my opinion, the traffic security and human rights lessons for 4th grade can be given in the learning outcomes of social sciences. So, we can spare more time for the students. The annual plan can be regulated separately for multigrade classes. Because the lesson periods of the multigrade classes differ from the lesson periods of the independent classes. So, the learning outcomes and the curricula can be simplified."

The statements of the Turkish and Dutch teachers on the effective practice examples theme presented separately as the statements of the teachers of two countries differed significantly.

3) The findings related to the effective practice examples in multigrade classes

Table 4. Sub-themes and Frequency Distributions of the Effective Practice Examples in Multigrade Classes Theme (Netherlands)

<table>
<thead>
<tr>
<th>Theme</th>
<th>Frequency of Mentioning of Dutch Teachers (f)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning</td>
<td></td>
</tr>
<tr>
<td>Weekly homework</td>
<td>10</td>
</tr>
<tr>
<td>Daily activities (homework)</td>
<td>10</td>
</tr>
<tr>
<td>Organization of the teaching materials before the lesson</td>
<td>7</td>
</tr>
<tr>
<td>Preparing a tasks board</td>
<td>10</td>
</tr>
<tr>
<td>Time management</td>
<td></td>
</tr>
<tr>
<td>Teaching by joining different groups</td>
<td>9</td>
</tr>
<tr>
<td>Using a timer</td>
<td>10</td>
</tr>
<tr>
<td>Creating an information board</td>
<td>10</td>
</tr>
<tr>
<td>Classroom Management</td>
<td></td>
</tr>
<tr>
<td>Using signal cards</td>
<td>2</td>
</tr>
<tr>
<td>Peer support</td>
<td>10</td>
</tr>
<tr>
<td>Traffic light</td>
<td>10</td>
</tr>
<tr>
<td>Developmental follow-up of students by keeping a developmental journal with the help of a computer program</td>
<td>2, 10</td>
</tr>
</tbody>
</table>

Table 4 includes the themes and frequencies under which the practices that the Dutch teachers think effective in multigrade classes and apply in the class are stated. These practices were divided into four sub-themes, which are planning, time management, classroom management and developmental follow-up of students. Each sub-theme and the teacher opinions regarding the practices used in this sub-theme are stated below.
The Dutch teachers mentioned that a) they prepare weekly homework, b) they richen the daily activities, c) they organize the teaching materials before the lesson, d) they prepare a board on which they announce the tasks to the students under the planning sub-theme. Some of the opinions of the teachers are shared below.

a) N2: “... The children should always have homework. You can give it as weekly homework. You give the extra homework at the beginning of the week, they do this homework when they finish their daily homework and they always have some homework to do.”

N10: “I prepare the homework children will be assigned for the week in advance and hang it on the board. The children choose homework from the board and do it after they finish the homework related to that day's lessons. The number of the homework each child should do in a week is defined but they decide when to do them, so they learn how to use time and regulate their own learning. They don't have any spare time.”

N6: “The children should always have homework. You can give it as weekly homework. You give the extra homework at the beginning of the week, they do this homework when they finish their daily homework and they always have some homework to do.”

N7: “If the homework of the children is finished, you teach the other grade as a teacher, the children who study independently should certainly have extra homework. You can give it as weekly extra homework.”

b) N10: “I prepare subject-specific activities on different levels for each age group, in other words I prepare basic, medium and difficult activities, at least 3 activities for each level.”

N5: “Teaching multigrade classes has a lot of advantages. But I have to work a lot as a teacher. Classroom management should be very good. The organization should be very good. And the extra homework should be ready when the children finish their homework. You need to plan well and prepare the homework to assign to children in time.”

c) N1: “You have to get ready for the lessons very well, because you don’t have much time during the lesson. Classroom organization should be very well. You have to know what is what, how is each student.”

N4: “As a teacher, your classroom organization should be good. Weekly homework set should always be ready on time. You have to prepare everything in advance. You cannot say ‘I need to go get that’ suddenly. Prepare the material you need daily in advance. You don’t have time to get them during the day. The children sometimes make noise when you deal with the other grades. You have to explain the rules very well. The children should know what you expect of them.”

N9: “Prepare your lessons very well. You have to know what to do with which group. Prepare the material you need during the lesson before you start the lesson.”

d) N1: “I definitely hang a text defining the tasks of the children if they will study without a teacher and define what they will do.”

N5: “If the children finish their homework, they choose homework from the homework wall. This homework is different homework.”

The Dutch teachers mentioned a) teaching by joining different groups, b) using a timer (chronometer), c) creating an information board under the time management sub-theme. Some of the opinions of the teachers are shared below.
a) N9: "I give the reading classes together to all groups... Because each child reads on his/her own level. You can easily give this lesson to two groups together."

N10: "I provide the lessons such as reading and English to all students at the same time. They sometimes take the history and geography classes together, their contribution to each other in terms of general knowledge can be more than my contribution."

N8: "In my opinion, you can teach all lessons to all students together. But the point is if you will be able to reach the goals at the end of the year or not. I usually teach the lessons such as history, geography together. Their general knowledge on this subject increases."

b) N7: "We use traffic light and timer at school. It is so important to explain the colors of the traffic light. Timer tells them how long they will study."

N6: We use traffic light practice and timer. The timer is also important for the time. The children know how much time they have."

N5: "I usually work with small groups. I change the group in a definite time. Thus, I can help each child."

N4: "If a group does their homework on their own, I lecture the other group. This process takes approximately 15 minutes. And then I lecture the other group for 15 minutes. After I lecture both groups, I still have 15 minutes to help children. After this 15 minutes, I lecture another group and then the group changes again. This process continues all day."

c) N1: "There is a board in the classroom, the children write what they confuse about the lesson that week and I study the parts they have difficulty in the lesson the next week. The children write the lesson in which they never have difficulty to that board."

N8: "The students are informed about the homework at the beginning of the week. The content of the homework differs. And I plan it as at least 30 minutes so that the children can ask me about their homework. The children who don't have any question can choose a homework from the homework list and do that homework during this period. The children can also write the homework they couldn't understand to a piece of paper and hang it on the board. We don't have a discipline problem when they finish their homework because they always have extra homework to do."

N10: "They note the things they don't understand, have difficulty in or which are very easy for them during the lessons that day to a board in the classroom, to their own part of it."

The Dutch teachers mentioned that they use a) symbol cards, b) peer support, c) traffic light under the classroom management sub-theme. Some of the opinions of the teachers are shared below.

a) N10: “The ones who cannot ask me a question during the lesson (because the light is orange or red) can put a question mark on their table. I handle the question when I am available."

N1: “The children do their homework on their own when I teach the other grade. If they have a question, they put the card with the question mark on their table. Thus, I can see that they need help when I walk around the classroom."

b) N6: "I totally use peer tutoring and I pay attention to it. The children usually study together in reading lessons. They read with each other. And sometimes we have projects,
they work on the projects together. Sometimes, the children who are very good help the children who have difficulties. I usually pay attention to their behavior towards each other. I pay attention to if they listen to each other."

N4: "I usually use peer tutoring in the lessons. The children help each other. In the lessons such as English, history, geography etc. Such as math. The important thing is that they do it silently. Without disturbing the other children."

c) N8: "The group assigned with homework have to do their homework on their own, if the light is red they can never talk, if it is orange they ask their desk mate..."

N10: "We use traffic lamb. If the light is red, the group works on their own silently. If it is orange, they can ask a question to their friends quietly. If it is green, they can ask questions both to their friends and to the teacher."

The Dutch teachers mentioned that they a) keep a developmental journal, b) they use a computer program under the developmental follow-up of the student sub theme. Some of the opinions of the teachers are shared below.

a) N1: "I write in the developmental journal every day. I continue meeting parents, children and observing them."

N10: "I spare 1.5 hours to fill the student development pages at the end of the day. The program on the computer analyses them. I take precautions if necessary according to the results. I inform the parents."

b) N4: "I give a lecture related to the social development of the children once a week. And I answer the questions regarding the children, their social development and general development twice a year. And the computer program analyses the answers."

N6: "We follow the development of the children via a computer program. We write the information about the children here and answer the questions. This program conduct analyses using this information."

The practices the multigrade classroom teachers in Netherlands stated to use in order to increase the academic performance in class is presented above. Among these practices, dividing the lesson into time periods, joining the groups while teaching, enriching the daily activities, providing peer support, keeping a developmental journal and meeting the parents are stated to be used by the classroom teachers in Turkey. It is seen that the Turkish teachers didn't mention the practices all Dutch teachers mentioned such as traffic light (Figure 1), using a timer (Figure 2), weekly homework, symbol cards, information board, tasks board and entering the developmental data to a computer program and analyzing them. The fact that the group with homework interrupts the teachers while they study with a group was frequently stated by Turkish teachers. In order to solve this problem, it has been suggested to use traffic light, timer (chronometer), information board and tasks board and symbol use (Figure 3) used by the Dutch teachers. These practices are tried to be introduced below.
Traffic light consists of three colors.

Red light: It means "Do not talk to your friends and teacher. Study on your own." for the student.

Green light: It means "You can ask questions to your friends and teacher." for the student.

Yellow (orange) light: It means "You cannot consult with your teacher but you can consult with your friends." for students.

An arrow with the level of the group is stuck to the related color in order to determine which group will study according to which color.

**Figure 1. "Traffic Light Practice"**

Timer shows the time a group should study with homework or with teacher. The student who cannot handle the problem can put "?" among symbol cards in order to inform the teacher.

**Figure 2. "Use of Timer"**

The student who cannot handle the problem can put "?" among symbol cards in order to inform the teacher. The teacher writes or hangs what the students will do during the day to the board before the students come. This board also includes the weekly homework. The student see the homework they are assigned for a week and they decide when they will do it. Completing the homework in that week is the important point. This freedom helps them to gain self-regulation competency. Besides, the students can write the problems they have difficulty in or couldn't overcome to the information board. In addition, the computer program which the Dutch teachers enter the personal features of the students help the teachers to follow the development of the students with the analyses it conducts.

**Figure 3. "Symbol Cards"**
Table 5 includes the themes and frequencies under which the effective practices that the Turkish teachers think effective in multigrade classes and apply in the class are stated. These practices were divided into four sub-themes, which are planning, time management, classroom management and developmental follow-up of students. Each sub-theme and the teacher opinions regarding the practices used in this sub-theme are stated below.

The Turkish teachers mentioned that they enrich the daily activities under planning sub-theme. Some of the opinions of the teachers are shared below.

T2: “When the students finish their homework, another homework can be given or they can help their friends who don’t understand the subject.”

T10: “Each group includes students at different paces. I suggest that the students who finish the homework faster help the others in the group with homework. If they don’t want to help, I give them extra activities.”

The Turkish teachers mentioned a) teaching by joining different groups, b) using the duration of some lessons for other lessons, c) dividing the lesson into periods under the time management sub-theme. Some of the opinions of the teachers are shared below.

a) T8: “Initially, I had difficulty in the control of class as I wanted to teach the two grades separately. Then, I decided this approach was wrong and it would be better if I teach the lessons except for first-reading and writing and math mutually”.

T2: “The lessons the students in multigrade classes take together are;

a. Visual Arts
b. Music
c. Play and Physical Activities
d. Free Activities

I think these lessons can be taught mutually because they are seen as less important. If they had asked me this question during my university education, I would have certainly given a speech on the importance of these lessons and argued it. However, when it comes to the students’ learning how
to read and write, reading comprehension skills and written self-expression skills, the other lessons can sometimes be ignored."

b) T8: "... I use the lessons such as painting and music for the lessons such as Turkish and math in order to teach them in time."

c) T6: "Yes, there is. I divide a lesson of 40 minutes into definite time periods. I developed studying plans for 10 minutes as I think the attention span of the students is low. In this way, I have the opportunity of conducting the lessons with homework with a teacher."

The Turkish teachers stated that they use peer support under the classroom management sub-theme. Some of the opinions of the teachers are shared below.

T9: "I receive support the lessons with homework of the 1st grade from the 4th grade. I usually direct the 2nd and 3rd grades by giving them behavior supplementary homework (writing, cut-stick, preparing a board etc.) in their lessons with homework."

T3: "Peer tutoring is an effective method applied in the groups with homework. Peer tutoring, namely the student who helps is chosen among the students who are responsible, have a higher academic success and have positive relationships with their friends."

The literature includes some teachers who state that they do not use peer tutoring which is very appropriate for the nature of multigrade classes. The statements of these teachers are listed below.

T1: "I don't use peer tutoring."

T8: "In peer tutoring, the student of the higher grade does the homework of the lower grade student in order to win the classroom teacher's favor and thinks that when the lower grade student does the homework correctly, he/she will be appreciated. Thus, I think it is harmful to some of the students in the lower grades rather than being helpful."

The Turkish teachers stated that they use keeping a developmental journal and chart practices under the developmental follow-up of the students sub-theme. Some of the opinions of the teachers are shared below.

T5: "... There are charts to be filled, which includes the criteria and features related to the grades."

T6: "We use a behavior and learning outcome observation journal. This enables us to know the students in many ways and obtain various information about them. Thus, we can help the students in every aspect."

T10: "I have charts, I also keep a developmental journal for students."

There are some teachers who stated that they cannot follow the students' development as they wish. The examples of the teachers' statements are listed below.

T8: "I evaluate with my observations and researches. I would like to prepare a student development file. But I couldn't find time to do that because of the restricted time, intensive lessons and some special cases. I think that the methods and techniques can be used more efficiently in the evaluation and teaching of independent classes."

T7: "I use written and verbal methods in the evaluation of the students. The time and environment are not appropriate for using other methods."
Discussion, Conclusion and Implications

When the results of the study are evaluated, it is seen that there are problems that the teachers face in multigrade class practices both in Netherlands and Turkey. While problems such as the fact that teachers have to show excessive effort, high expectations from the students, time problem and not being able to receive support are stated in both two countries, Turkish teacher stated that not being able to reach the targets in the curriculum, not being able to focus on teaching because of the non-teaching roles, not receiving sufficient education for teaching in multigrade classes, insufficient physical conditions and language problem are bigger problems for them.

Some suggestions for eliminating the problems stated by the teachers were made in the study. Dutch teachers suggested that the authorities should state their expectations and how to continue the practices more clearly and an assistant personnel should be present in multigrade classes to help the teacher. Turkish teachers developed some suggestions such as the improvement of the physical conditions, elimination the educational deficiencies with teacher training programs and in-service training, making the curriculum suitable for multigrade classes by regulations and having an assistant in the class like their Dutch colleagues.

When investigating the literature, it is possible to see studies that mentioned this problems and suggestions. Veenman & Raemaekers (1995) evaluated the efficiency of the personnel development program they prepared regarding the multigrade classes and mixed age groups. After this education, an improvement was detected in the completion of the time-based tasks of the students and in teaching and classroom management skills of the teachers. This finding supports the legitimacy of the teachers to receive education regarding the multigrade classes. Another study conducted in Netherlands with multigrade classroom teachers stated that the teachers have problems in effective use of teaching time, designing the teaching effectively, classroom management, organization of the activities that should be done individually, definition of the multigrade classes' purposes (cited by Veenman & Raemaekers, 1995 from Veenman, Lem, Voeten, Winkelmolen & Lassche 1986). It has been seen that the problems stated by Veenman et al. (1986) are similar to the problems stated in this study. Göksoy et al. (2015) stated that one of the most important reasons of stress the multigrade classroom teachers have is the organizational stress which includes problems related to curriculum, problems related to the use of the sources and the time, problems caused by physical conditions, problems resulted from bureaucratic procedures. It is seen that the stress sources stated as organizational stress by Aksoy, Arıcan and Eriş (2015) coincide with the difficulties stated by Turkish multigrade classroom teachers. Uygur & Yelken (2010) indicated the problems the multigrade class students face in Science and Technology class. Program structure, the physical structure of the school and lack of equipment which are stated among the problems indicated by the study resemble this study. Another study whose findings coincide with this study was conducted by Sağ et al. (2009). In their study, Sağ et al. (2009) stated that the problems of the multigrade classroom teachers who participated in the study are concentrated on the school management, educational status and curriculum. They stated that non-teaching roles, lack of material and long organization time for activities during the homework hours are seen as the problems with regard to effective practices in multigrade classes. Korkmaz, Saban & Akbaşlı (2004) stated in their study that the teachers have problems in official correspondence, conducting teaching job, preparing the lesson plans they should decide on and organize as a teacher, choosing and applying the materials and the methods, adapting the school and the environment and teaching some lessons. Kaya & Taşdemirci (2005) stated that the teacher candidates who teach in multigrade classes face more problems in first reading and writing teaching than their colleagues who teach in independent classes. It has been expressed that these problems result from the reasons related to the competency of the teacher candidates as well as the fact that the multigrade classroom teachers don't spare enough time for planning the first reading and writing, have difficulty in following and dealing with the students with different skills, the studying time with teacher is decreased in these classes and the materials are not sufficient. Aybek & Aslan (2014) had results that supported Kaya & Taşdemirci (2005). They stated in their study that some problems occur in the application of the sound-based sentence method and the writing in cursive italic handwriting practice is not readable. It has been seen in the study of
Yıldız & Koksal (2009) that most of the teachers who teach in multigrade classes emphasize that there are not curricula specific to multigrade classes, in other words following the curriculum of independent classes is not suitable, the time is not sufficient, they are not experienced enough, they have too many responsibilities, the opportunities are limited, they are not trained via in-service training or not trained sufficiently. The stated problems were also expressed in this study.

It is possible to see studies which mentioned that the teaching class in undergraduate programs should be supported with practice, teaching practice should be conducted in multigrade classes, curricula should be prepared taking into account the multigrade classes, teachers should be supported via in-service training, physical conditions should be improved, an assistant teacher is needed in the classes in the literature. Taşdemir (2014) has suggested that the teacher candidates can take teaching practice class in the schools which have multigrade classes practically. Şahin (2003) submitted a similar suggestion and said that two hours of practice can be added to the theoretical part of Teaching in Multigrade Classes lesson which is included in classroom teaching the undergraduate program. Sumak et al. (2011) stated in their study that the multigrade classroom teachers have difficulty in giving the learning outcomes to the students in terms of time, there are problems in use the right to spare 10% of the village budget to the multigrade classes in accordance with the law no. 222, the readiness of the children who are educated in these classes is low and suggested that the mobile teaching should be increased and the number of the multigrade classes should be decreased. Besides, they stated that it is necessary to specify the curriculum for the multigrade classes. Sağ & Sezer (2012) stated in their study that the multigrade classroom teachers need professional training. Besides, it is suggested that the curriculum applied in the independent classes can be revised for multigrade classes. They mentioned the problems during the studies with homework, lack of time, problems in preparing the worksheets and other homework, difficulty in managing the homework hours. They stated that the teacher candidates need training in this area. First of all, they suggested a practice-based teaching in multigrade classes’ lesson, and the regulation of the Turkish Education System and School Management parallel to this practice. Besides, it is suggested that the curriculum applied in the independent classes can be revised for multigrade classes. Palavan (2012) has stated that there is a significant difference between the 4th grade independent class students and multigrade class students in favor of independent class student in terms of reaching the learning outcomes of social sciences class. It is suggested to increase the number of the teachers who will be sent to multigrade classes to at least two and increase the number of in-service training. Karakuş (2016) suggested a rearrangement of the teaching in multigrade classes’ lesson, accepting the teacher candidate to the faculties in accordance with their affective feature as well as their cognitive features, training the teachers also in multigrade classes in teaching practice lesson and organizing trips. Kazu & Aslan (2013) discovered that the teachers who work in multigrade classes use ready to use plans in free activity classes, need teacher guidebook and try to complete other lessons in this classes. They suggested to develop guidebooks, to provide material and environment (sports hall etc.) in order to teach these classes efficiently. Kılıç & Abay (2009) stated in their study that the new teachers (1 - 5 years of service time) evaluate negatively the opportunities of the school and the structure of the program compared to more experienced teachers (6-10 and 11-15 years of service time) and the teachers who have more experience show more tolerance to the problems than less experienced teachers do. They suggested that inexperienced teachers should not be appointed to multigrade classes in accordance with this finding. They submitted various suggestions such as the informing the parents about the native language problem, doing internship in multigrade classes during teacher training period, organization of in-service training. Küleçki (2012) suggested the differentiation of the curricula of 3rd and 4th grades in multigrade classes. Kazu & Aslan (2012) stated that the multigrade classroom teachers have problems in teaching social studies lesson. The teachers who participated in the study mentioned that the Social Sciences curriculum should be revised for multigrade classes. İzci et al. (2010) stated in their study that the teachers' level of improvement is not maintained at the desired level in terms of teaching in multigrade classes with the lessons they take during their undergraduate education. Teacher candidates stated that they think this practice will contribute positively to the social development of primary school students. It is suggested that Community Service Practices lesson included in the Classroom Teaching undergraduate programs in Faculty of Education should be evaluated to get experienced in multigrade classes. İzci's study (2008) revealed that teacher candidates think that they cannot prepare to teach in
multigrade classes with the current shape of the teaching in multigrade classes lesson they take in their undergraduate education, their competency is low and can have difficulties when they start teaching. Karci & Akar Vural (2011) stated that multigrade classroom teachers consider compulsory foreign language (English) lesson in multigrade classes as important but they have difficulties because it is not their professional field, the program is similar to that of independent classes and time restriction causes problems in the preparation of the necessary materials for foreign language teaching. Bilir (2008) tried to reveal the truth about teaching and teacher in multigrade classes. It is stated in the study that the teachers who want to increase the academic success in multigrade classes should pay attention to providing student during individual or group studies and choosing and using appropriate teaching materials. It is stated that practice should be included in the Teaching in Multigrade Classes lesson in undergraduate programs for teachers to prepare better for teaching in multigrade classes. It is also suggested that the appointed teachers should always be supported, the schools should be richened in terms of equipment, the cooperation between family, ministry and faculty should be increased. As is seen, literature includes a lot of studies that stated the problems which are stated in the results of this study before. It has seen in the examples of the studies that most of the prominent suggestions of this study were defined in the literature before. It is very significant to define these problems and submit suggestions regarding these problems. However, studies that states what the teachers do in order to make this practice more efficient in the class as well as these external suggestions are needed.

The last finding of this study regards the effective practices in multigrade classes. It has been seen that both the Dutch and Turkish teachers try their best to increase the success of multigrade class practices. For example, it has been seen that although all teachers emphasize increasing the number of the daily activities and keeping students busy with a learning activity, Dutch teachers conduct these practices in a more organized way than Turkish teachers. It has been thought that the practices examples submitted by Dutch teachers will contribute to Turkish teachers significantly and be useful examples. Timer, traffic light, information and tasks boards, weekly homework among the practices introduced above are expected to contribute to the multigrade class practices in Turkey. The literature has not included a study which introduces the in-class practices so far.

When the opinions of the teachers who work in Netherlands and Turkey are compared, it can be seen that the Turkish teachers mentioned the issues such as non-teaching roles, problems in undergraduate education and in-service training, language problem, lack of physical conditions which are never stated by Dutch teachers. When taking into account the low amounts of, even lack of teaching materials of the teachers who try to teach in a class consisting of 4 different grade levels, the difficulties students have in understanding and speaking Turkish, absence of the structures such as sports hall, library, theater etc., Turkish teachers have a higher change of having difficulties in reaching the targets than their Dutch colleagues and this difficulty is understandable. It is not surprising that the teachers in both countries demand an assistant personnel in their classes when thinking of the work load of the multigrade classes. It has been thought that the fact that the Turkish teachers demand the regulation of the curricula in accordance with the multigrade classes is related to that they cannot spare enough time for teaching as they deal with the problems peculiar to Turkey. Like their Dutch colleagues, the multigrade classroom teachers in Turkey conduct various practices in order to increase the productivity of the class. We see that these practices include using the duration of some lessons for other lessons unlike Dutch teachers. The problems peculiar to Turkey we see in the first theme are thought as the basis for this situation. It has been thought that the language differences, non-teaching roles which consume most of the time and energy of the teachers are an important factor. Besides, it has been seen that problems such as support and education are mentioned in both countries. It is remarkable that the Dutch teachers stated that private institutions that provide training regarding multigrade classes demand high prices and that most of them went to multigrade classes for practice during their undergraduate education. No information on the existence of this kind of education provided by the special institutions in Turkey with or without payment has been found. Also, the Turkish teachers find the undergraduate education they take before service to theoretical and suggest that practices related to this subject should be included in the programs.
When the results of this study are taken into account, the suggestions below have been submitted.

1. It is necessary to increase the physical opportunities of the schools with multigrade classes and to remove the disadvantageous learning conditions for the students who are in multigrade classes and to teach them in equal conditions with independent classes.

2. The teacher candidates should be provided with the chance of observation and practice in multigrade classes in their training period.

3. Teacher candidates should be informed about the administrative and directorial acts of the school in the teacher training period and they should be provided with the examples of correspondence.

4. The examples on how the teaching in multigrade classes is conducted in other countries should be shared with teachers.

5. Schools with multigrade classes should have at least two teachers.

6. An official website should be created for teachers to reach the information and teaching materials they need.

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The Culture of the Independent Progressive School

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Abstract

Even in this “Age of Data,” independent progressive schools have shown a remarkable persistence in offering an alternative educational model. As Traditional Public Schools (TPS) become even more committed to a testing model of achievement, there are schools that continue to operate on identified progressive educational principles. This paper uses observations and interviews at two upstate New York progressive schools to identify characteristics that define the resiliency of such institutions. The author’s findings identify four characteristics common to a progressive educational culture: familial grouping, informality, play, and democracy. Four elements that are important to this progressive model of instruction tied to the culture at these schools are present: individualized child-centered instruction, curricular flexibility, and choice/space/time, the nature of and future for non-institutional schools is also considered here.

Keywords: Progressive schools, play, informality, child-centered instruction, educational culture

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Introduction

Many of us share common mental pictures associated with the term “school,” an institution characterized by standardization, alignment, and aggregate treatment of individuals. However, even in this “Age of Data,” the educational landscape continues to include learning collectives that value community, democracy, and children having a say in their education. The history of education includes the history of its progressive alternatives to a mainstream institutional system that is constantly being reformed (Eryaman & Bruce, 2015; Little, 2015; Morrison, 2007, Miller, 2002). Independent Progressive Schools create a culture that is both educationally and socially alternative, one that has to be attractive enough to compel parents to step outside of the mainstream, a vision that needs to be renewed generation after generation as they try to draw enough new families to their school. What that culture is and how it is transmitted to new students and their families is the subject of this study. What values are held in common by these schools? I wanted to see what practices are common to such independent schools and what place their vision and mission occupies in the current educational landscape.

Research Questions

I am interested in how schools that do not have a self-renewing “captive audience” survive. Before investigating how such schools thrived, I sought to understand what these schools were. I wanted to better understand how such schools have wrestled with Russell’s (2012) question, “Can any progressive school transcend the tendency to fall back to… the educational environment pressures of society?” (p.46). For this project, I reviewed the literature on independent progressive schools and studied two such schools to find out what elements were in common, what was at the core of the visions that established these schools, and what made them distinct from their public school counterparts. My research questions that guided this project were:

1) What is the culture of an independent progressive school?

2) What are the elements of instruction at such a school?

As such, I am interested in documenting how progressive schools move forward and continue to thrive in an age when what has come to be seen as “education” is ever more narrowly defined (Kirschner, 2008, Grunzke, 2010).

Progressive Education

The Progressive Education Association established a list of founding principles in 1919 (Little, 2013, p.85) that included “freedom to develop naturally” and “the teacher as a guide, not a task-master.” In 1986, a contemporary version of PEA updated these principles to include, “the student as an active partner in learning, “the school as a humane environment,” and “learning through direct experience.” (Little, 2013, p.85). These are present in the schools that I studied and other often-unaligned, but philosophically similar group of schools that came to be identified as “Progressive Schools.” The subjects of my study share the following characteristics with the progressive tradition: a belief in the paramount importance of Children and their Learning (as opposed to institutions focused on promulgating existing institutional parameters), Curricular and Assessment Flexibility, and the importance of Play.

Children and Learning

By focusing on Children and Learning first, independent progressive schools present a stark contrasting option to standardized education.
Compulsory public education is based on a scarcity model of learning, but some have noted that since “learning is everywhere,” formal educational settings should reflect this in the way they are constructed, (Clouder & Rawson, 2003). In Progressive Schools this often means working with a small number of students and emphasizing a child-centered, democratic, community-building environment (Bruce & Eryaman, 2015; Russell, 2012; Eryaman, 2007, 2009). They allow children to have some influence on what they learn and how they will demonstrate that learning has taken place (Vallberg & Manson, 201) This is done in many schools by making a students’ interests a priority (Labaree, 2005); progressive educators have long believed that children have significant agency to “figure things out” (Manilow, 2009) that constructivist learning is most authentic (Neumann, Marks, & Germain, 1996), and useful for building a true community (Eryaman, 2017).

Curricular and Assessment Flexibility

The Curricular and Assessment Flexibility to found in Progressive Schools is one of the most distinguishing features of this type of learning..

While the curriculum in Progressive Schools varies (Chernetskaya, 2009), there is some evidence that by their very nature these schools favor a flexibility in what is taught (Sherman, 2009, Wagner & Compton, 2012 ). Many such schools have a “democratic curriculum” (McNear, 1978), and while, “progressive education doesn’t lend itself to a single fixed definition, there are enough elements on which most of us agree,” (Kohn, 2008, p. 19) and it has been noted that the more progressive the curriculum, the better the outcomes (Waltras, 2006, Bullough, 2007).

Play

As institutionalized education has become more task- and efficiency-oriented, progressive schools have maintained play as an important feature of their learning day.

Many Progressive Schools are able to use play to help their children grow. Peter Gray’s work in this area (2013) has been very important in identifying the positive elements of learning through play In discussing play, other scholars have noted that the less a learner is being evaluated, the better their performance (Michaels et al., 1982), the higher the incentives (grades, marks) the less creativity there is (Amabile, 1996), while the more there is a “playful mood” present, the greater the creativity (Estrada, Isen, & Young, 1997). Both the progressive schools that I visited allow time for such willful activity that will lead to the formation of new skills (Byers, 1977). Or as the head of one progressive school said to me, “I like to leave time for the accidents in learning to occur.” (Post, 2016).

In considering the often-cited works on Progressive Education (Cremin, 1964, Graham, 1967) and more contemporary descriptions of these schools (Little & Ellison, 2015, Read, 2014), these three characteristics consistently are present.

Theoretical Framework: “The Three Essential Progressive Philosophies”

Jan Russell’s 2012 work on Progressive Education identified the three essential progressive philosophies as, “child-centered learning, community integration, and democratic-decision-making.” Her findings seemed consistent with historical accounts of progressive schools (Pratt, 1948, Reese, 2001) and more contemporary descriptions (Kohn, 2008, Burton, F., Collaros, & Eirich, 2013). These “philosophies” seemed to be rooted in both instructional practices and prevailing attitudes at today’s Independent Progressive schools.

Child-Centered Learning

Allowing the child’s interests and desires to play an important part in their school day has been noted as a characteristic in many studies of progressive schools (Labaree, 2005, Ivie, 2007,
Chernetskaya, 2013). One scholar explained this approach as, “Teaching and learning are not merely an exchange of data; they are a cooperative journey in which the path is laid subtly before the student. It is the student’s duty to recognize and follow the path by his own means.” (Manilow, 2009, 9. 218)

Community Integration

It is important that the school itself functions as a healthy community where individuals learn from, rather than simply compete with each other (Kohn, 2008) and in the process come together to create knowledge (Lieberman, 1994; Eryaman, 2006). There also needs to be a living connection between the school community and the larger community it is located in (McNear, 1978, Ramaley, 2005, Schneider & Garrison, 2008, Saha & Dworkin, 2009).

Democratic-Decision-Making

The most comprehensive examination of what democratic decision-making looks like comes from Ann Angell’s review of the literature on this topic. (Angell, 1991). Angell identified six elements observable in classrooms employing this style of instruction. These include “Democratic Leadership Behavior” where individuals are encouraged to express their views (p.250), “Teacher Verbal Behavior” that used divergent questioning” (p. 251), “Respect For Students” that encouraged tolerance (p. 252), and open discussion of sensitive issues (p. 253).

Dr. Russell’s work was key to my study here. From the existing literature prior to my observations, I read many scholars who also concurred with her findings on child-centered learning (Elliot, Bradbury, & Garner, 2014), community integration (Engel, & Martin, 2005), and democratic decision-making (Chernetskaya, 2013). In formulating both my methodology and research questions, I was influenced by her work and descriptions of what contemporary progressive schools share.

Methodology

I gathered my data for this qualitative project through direct observation of school activities, face-to-face individual and group conversations and interviews and phone interviews. All learning institutions—traditional or otherwise—are social entities and qualitative research with its ability to study social interactions in the process of making meaning is the best choice for the work that I am doing. What I observed was naturalistic, occurring in its native environment, and interpretive on the part of its participants: two hallmarks of qualitative work (Holloway, 1997). Through interviewing I was able to compare individual perceptions and phenomenologies that characterized what goes on at each school (Melterud, 2001). Finally, I attempted to include as many constituent groups as possible in my work, observing students while speaking with a variety of adults in each school community so as to better strengthen my ultimate findings. (Lofland, et al, 2006)

My methodology was characterized by purposeful sampling (Creswell, 2013). In looking for independent progressive schools, numerous individuals pointed me to one of the schools used in this study, certainly the largest such school in this county. They were an obvious choice. In interviewing the founder of that school and asking her about its history, she mentioned the second school that I used in this study as having been helpful in their expansion to educating middle school age children. I need to emphasize that one of the factors in using these two schools was the openness, cooperation, and eagerness of the staff and leaders there to share their experiences. I did briefly consider including a third independent school in another state but traveling and logistics did not permit me to do so.

Prior to beginning this study I met with the founders of each school who approved my work there and informed the parents of my presence. My observations of the students were done while sitting next to them within the classrooms of each school. I interviewed each teacher on one occasion and the founders at both schools—one of them on a single occasion, the other three times. All of these interviews were recorded, transcribed, and categorized on a data grid I created. I directly observed
them working with students a total of fifteen times between the two schools. Three of these observations were for half of the school day, the rest were for the entire day. I followed up what I observed with direct questions during the interviewing process. Trustworthiness has also been strengthened by the anonymity of all who were involved.

Specifically I used purposive sampling in selecting these two schools, which have little connection to each other in terms of location, population, or teachers. In doing so I hoped to increase the dependability of my project. Additionally, the categories that I created and discuss here were based solely on the information provided to me through my interviews and direct observations, in a grounded research effort. My aim was to maximize trustworthiness through this “conformability of findings."

I had no previous contact with progressive schools and I relied on grounded analysis (Glaser 1993, 1996) to inform what I was seeing and ultimately in the formation of categories and themes. This was particularly true in considering my direct observations of students. In laying the groundwork for my coding I relied solely on my interviews with the staff there and my direct observations within the schools. The coding work was a product of my research done at these two schools. It was only after my research there was concluded for this project that I did the coding work. At that point I constructed a “master comments grid” for the adults that I interviewed to aid in my narrative analysis (Herman et al, 2012) of what each was saying about their conceptions of their school. It was only through these two sources of information that I was able to identify recurring themes of democracy and community.

**Schools and Data**

“Apple Tree School” is in a suburban area in a mid-sized Northeast city. I began going there in September 2015 and made many visits there throughout the 2015-16 school year. I had the opportunity to observe portions of and the entire school day at times. I was also able to sit in upon teacher planning sessions and observed the school’s director interact with both students and staff. I watched the students of the school as an entire group and was able to observe each of the three full-time teachers instruct different age-groups of students. I was allowed the freedom to roam throughout each of the schools and was able to see many different configurations of students being instructed, from kindergarteners to eighth-graders. One afternoon, after school was over, I conducted a nearly-hour long interview with the Apple Tree School’s founder. I interviewed all three of the school’s teachers, two of them in person and one over the phone. I was able to speak with five parents who had/are sending their children to the school, some face-to-face, others on the phone. I was also able to interview the Apple Tree’s director on more than one occasion.

“Indian Orchard School” is in rural Central New York State. I was able to visit there on multiple occasions and was able to watch the daily activities of the school, including seeing the two full-time teachers and one part-time instructor at work. I conducted two face-to-face interviews with the school’s founder, who still teaches there and is involved on a daily basis, along with speaking with her on the phone. I was also able to interview all of the school’s teachers face-to-face during one of my visits there.

I visited these two schools 15 times between September 2015 and June 2016. 13 of these visits were for observation purposes only, with 9 of them being full school days and the others for a portion of the school day. My other two visits were primarily for interview purposes. I also conducted interviews after school and on the telephone. All of my interviews with teachers were at least 15 minutes long, with many of them being over thirty minutes. I interviewed the founders of each of the schools for more than 45 minutes. All interviews were tape-recorded, transcribed, and condensed onto a grid. Each interviewee was asked eight common questions during the interview, centering around the culture of the school, their description of their school, and its advantages for the children who attend there. Additionally I regularly reviewed each school’s Facebook and web sites.
Both of the settings that I observed were informal and relaxed. The facilities play a part in the story of these schools and you can’t help but notice how comfortable each of these places are. If part of the mission of Progressive Education is to treat everyone there more as a human being than depending on the role they play, then these places contribute to that as much as the practice having students call teachers by their first names.

“Apple Tree School” is in a building that used to be a Jewish synagogue. It has two levels, with the largest and main one upstairs and a basement level that is divided into classrooms. Both have the look of a Community Center where kids might be dropped off for an after-school program or a Saturday activity with their friends. A large carpet takes up much of the space upstairs. At different times 31 students gather around its perimeter to listen and speak. The remainder of the space includes desks, games, shelves of books, a cramped planning area for the teachers and the director’s office. It is charmingly busy and delightfully cluttered.

“Indian Orchard School” is located in a building that was once used to house the Dean of Students on a college campus. It is a former home so the feeling of warmth and caring that resides there is no surprise. The 24 students enter through the backdoor into a kitchen where they put their lunches into a refrigerator. The morning meeting is held around a rug in the living room, the children eat lunch at tables in the Dining Room, and instruction is done throughout the house, including in bedrooms along the hallway. The academics here are of the highest level, but it has all the familiarity of your grandmother’s house, as one of the teachers there said to me, “The setting tells the story.”

All of my contact with both of these schools was very cooperative, open, and friendly, everyone I talked to was eager to share their experiences and educational views.

Data Analysis

In my Theoretical Framework section, I referred to the work of Jan Russell (2012) and her identifying characteristics of progressive schools as, “child-centered learning, community integration, and democratic-decision-making.” It is with those categories in mind that I considered the data I gathered in my observations and interviews at the two schools. I was not trying to fit what I saw into those exclusive categories nor I was attempting to confirm her findings. In reading over my field notes and interview transcriptions I was attempting, with her work in mind, to consider what were the observable and confirmable elements that I was both seeing in my daily observations and hearing identified as well in individual interviews. I created a grid with the answers to 8 questions that I asked each staff member at the two schools. Each answer was coded for summary descriptions (Strauss & Corbin, 1998) and I performed a similar task with the transcripts of my interviews and with my fieldnotes in my descriptive stage of coding (Saldana, 2009).

In my next analytical coding stage (Jones 2011), I began to categorize my data. From that I was able to identify themes and specific language that occurred repeatedly. Russell’s three characteristics were included in what I discovered, but as the “findings” below reveal, I also found other common categories. It was at this point that I began to see a distinction between those descriptors and sub-categories that were concerned with instructional and learning behaviors and those that were broader, touching on the instructional, but only as one of a number of phenomena that went on at the schools regularly. As my coding continued I was able to group learning and teaching themes separate from these cultural identifiers.

Findings

In discussing what I found at these two schools, I divide my analysis into two parts. In the first one, “A Different Type of School Culture - How These Progressive Schools Are Distinct from Public Schools,” I will consider the specifics of the culture shared by these two schools. I will specifically address four defining characteristics. This first section connects to my first research question and also
connects back to the literature on progressive education and are connected to the beliefs that underpin the philosophy and practices of the school. The cultural facets at both schools were familial grouping, informality, play, and democracy.

My second section of the findings focuses on the instruction that is done at these schools and addresses my second research question. It considers five facets of the learning dynamic that engages the teachers and students at these private progressive schools. The instructional characteristics that I observed were individualized child-centered instruction, curricular flexibility, choice/space/time, and teacher autonomy.

A Different Type of School Culture – Defining Characteristics

The Progressive tradition of education evident in these two schools can be characterized as "pedagogical", rather than "administrative." Its continuance is important for it is extending a view of children and their human nature that runs contrary to the assumptions of an institutionalized factory-like state school system. Rousseau’s view that children are able to naturally educate themselves and Pestalozzi’s belief that the needs of the individual need to be valued over that of the society (Ruddy, 2004) were continued in America with the work of Emerson and Thoreau who sadly saw compulsory school attendance as, “making a straight-cut ditch out of a free meandering brook.” (Fuller, 1992) This was also present in the Temple School of Bronson Alcott who valued students’ personal experiences over rote learning. (Gura, 2007) In an age of standardized education, it is the progressive school that continues these lofty aspirations.

In this section on Culture, I will discuss the cultural elements that I found at the two schools that I observed at. These include Familial, as opposed to classroom grouping of children that is characterized by age-mixing rather than grade levels. Along with that I will describe Informality, Play, and Democracy as indispensable elements of these schools.

Familial Grouping

In reviewing my data, I attempted to focus on the experience of children who attend these schools as people, not students. In particular I was interested in the relational aspects there. What I found between students and with their teachers is unlike the formally educative authoritarian models of Traditional Public Schools (TPS). Unlike TPS that are based on scarcity and competition, these schools are more like a family and a community than a classroom. It is impossible not to compare what is intentionally done in these two progressive schools with reality of life in today’s traditional public school where conformity is the paramount value and standardization and continual assessment affects all that is done there. This is one of the elements that makes these schools distinct from their TPS counterparts.

As part of the project, I asked all of the instructors what the culture of the school was. Half of them used the word “community” in some context. Those who did not used phrases that connected to the notion of community and relating to others, such as “taking care of others,” “a laboratory for how to be a human being,” “home-like,” and “we all work together to learn.”

My observations at the schools show two close-knit groups. The older children regularly took care of the younger ones and the younger children seemed to feel comfortable interacting with older students. Each setting had a feeling of one unified group, rather than being subdivided into smaller units that were distinct from each other. The different academic groups did not seem to lead to a “clique-like” atmosphere of exclusion between different students. At one of the schools when newer students came to visit, the older ones helped them to negotiate this new uncertain environment. Both schools place children at their level of ability in grouping them for academics, instead of a less-flexible grade model. There is a sense of shared responsibility and caring for each other that is present when the children engage with each other in academic and non-academic contexts. In both schools I saw...
children willing to help each other and share what they know with other children. I did not see a sense of hierarchy and exclusivity which would damage this notion of community.

This familial model values collaboration over the competition seen throughout the public school system. Significant research has confirmed the value of mixed-age groupings (Gray, 2013, Vygotsky, 1978) in instructional and social outcomes. The familial model, while not present in TPS, continue to be used in progressive schools.

**Informality – Non Hierarchial Relations and Environment**

There is an intentional informality to both of these schools that contributes to the learning environment, allowing them to exist more as families than institutions, and certainly defines them. As I mentioned previously some of that comes from the settings themselves---one resembles a community center and the other is a house. As you go through the rooms, their shelves and storage areas are filled; cluttered, but not in a disorganized way. The look is certainly non-institutional which is congruent with a progressive approach to learning.

There are many things about these schools that are non-hierarchial. The showiness of dressing for school is not present; the students dress for comfort, like they’re hanging out with their friends. In some ways, there isn’t a lot of difference between the way that the students and teachers look. There is a “leveling” of sorts that is also apparent in the way the adults and children speak with each other. The students call the teachers by their first name. One of the teachers said to me, “We’re all equals, in a sense.” Another teacher who had attended a progressive school when she was young, said that she had never addressed an adult by their last name until she attended a public high school and that formality introduced an unneeded level between teachers and students.

The morning discussions that take place around a rug in both schools have more of the feel of a family talking things over, than a class of students competing for attention. This is all part of a relaxed approach to learning that also characterizes the schools’ instruction where the teachers are not afraid to admit that they don’t know something, strive to bring relevance to lessons as much as possible, and at times turn over instructional responsibilities to the children. At Apple Tree School, students have a chance to present a “Legacy,” where they speak in depth on a topic of their choosing. At Indian Orchard School, two students taught a unit on Physics.

“We don’t start with hierarchies,” one teacher told me. “Traditional school cannot support a collaborative model, based on hierarchies.”

**Play**

Both schools use play in at least two different ways to benefit their students. Educational games are included as a part of learning; at the first school there is an extensive supply of academic games that were made by adults there---some of them are nearly 15 years old. I saw them used on a number of occasions. One morning I watched a group of 5th and 6th Graders discussing a game that they had developed and talking through the rules that they should use, rewards and consequences within the game, and how a winner would be determined.

In a larger sense, these two schools are filled with a playful attitude towards learning. I was reminded of Isen’s finding that an increase in a playful mood sparks an increase in creativity (Isen, Daubman, & Nowicki, 1987). To listen to the students in these schools participate in a discussion, interact with the adults, and ask each other questions is to see young people just starting to understand their creative powers. Unlike public schools and the seriousness with which they address achievement today and the demand for “rigor,” I never saw the adults and students at these progressive schools burdened about what they were doing. These are joyful places, due at least in part, to the degree of
play that is encouraged and shared. The most playful, fun moments were when all the students gathered together for a discussion.

At the top of the stairs leading to the main room of the first school is a quote from Einstein: “Play is the highest form of research.” I asked each of the teachers to tell me what Einstein’s quote meant to them.

“It means everything,” one said. “Learning equals play equals discovery. That’s where the magic happens.” “Play is the foundation of everything,” another said. “Play is exploring. Some tied the notion of play more directly to academics. “Play is problem-solving and negotiation. Kids need to figure out things on their own.” “The best kind of learning happens when you don’t think you’re learning.” “Lots of learning happens through play.” “Students learn in different ways and play creates interest.”

Some of the teachers saw play as an activity that helped nurture positive qualities such as “social interaction.” “pursuing your own goals,” “getting to decide,” and “using your own volition.”

One was very general in her appreciation of it:”Play sets you up for everything.”

**Democracy**

Neither of these schools is a democracy in the sense that the teachers and founder own the authority and make policy decisions. However, there is much about what they do that is democratic. Each of them follows the follows the four characteristics necessary in a classroom climate that lead to citizenship outcomes as defined by Angell (1991). These include peer interaction in cooperative activities, free expression, respect for diverse viewpoints, and student participation in deliberations and decision making.

The adults honor the children’s opinions by being open to including them in regular discussions about issues facing the school. They teach them about their responsibility to act fairly themselves and towards others (Apple Tree School’s rules are: Take care of self, materials, and others). One of the teachers described the school’s culture as, Democratic” and identified one of the advantages of the school as, “learning to be a good citizen.” It is obvious that it is a main goal for each of these schools to produce students who are responsible members of a community. The emphasis on community and democracy makes these places where, “We all work together to learn,” “all have ownership,” “we’ve all got something to learn,” and school, “feels like an extension of home.”

In this section I have shown four aspects of progressive school culture that distinguish them from the TPS model. Familial Grouping and age-mixing leads to positive outcomes both socially and academically. Informality in both relationships and environment create a more relaxed, helpful setting to learn in. Play is used to benefit the students and was identified by many adults as key to the learning that goes on there. Finally, these two schools incorporate the essential elements necessary to advance a sense of democratic citizenship in their students.

**Instructional Characteristics of a Progressive School**

The Progressive vision of education has long featured an emphasis on child-centered education (Cremin, 1961, Graham, 1967) that is rooted in experiences (Dewey, 1956, Pratt, 1948). As Progressive education developed in the 20th century, two competing visions, the “pedagogical” and the “administrative” were put forward (Labaree, 2005) with the former focused on child-centered learning, discovery learning, and learning how to learn.” (p. 277) While it was the “administrative” with its emphasis on social efficiency that has come to dominate the TPS environment, the pedagogical has continued to find a home in the world of progressive schools (Little, 2013) In observing these two schools I was looking for first-hand examples of what instruction in such an
environment was characterized by. I will show that Individualized Child-Centered Instruction continues to have a central place in contemporary progressive schooling. I will also describe how Curricular Flexibility and Assessment distinguish how learning occurs at these schools. The concepts of Choice, Space, and Time are visible here and important to each child’s learning environment.

**Individualized Child-Centered Instruction**

In observing the instruction at both schools it was apparent that an emphasis is placed on meeting each child where they are at. This is reflected in the academic groupings which are not age- or grade-dependent, but are organized by each child’s individual abilities. However, there were some differences between the two schools. “Apple Tree School” has weekly “learning contracts” that it uses to organize each student’s work. Every student has a different contract and the teachers spend a significant amount of time making sure that they are addressing each student’s needs in the different academic areas with the proper materials, activities, and groupings. A teacher there said that while each child did not have their own curriculum, they did have their own “pacing,” a comment that the school’s founder also mentioned. The second school used more general groups and followed a five-year curricular plan that they had put together especially for their school. I noticed teachers there repeatedly making an effort to tailor what they were doing and the activities that they were using to instruct so that each child was “met where they are at.” The school has a main lesson that all of the students get together, but the specific elements for it are expanded on to the students separately, so that they are able to learn at their ability level. In this way, the second school both has a unified learning community and effective child-centered instruction so that each student is able to grow from the point which they individually are at. This ability to balance maintaining community wholeness while treating each student as an individual is certainly a strength of the second school.

In my interviews with the teachers about the advantages a child would have in attending there, I heard two different types of answers, some from each school. Some focused on treating the child as a unique person and included, “they are listened to,” “individualized curriculum,” “individual attention,”: a true sense of self,” “we look at individual choices,” and “it helps shape who you become.” Others focused on the sense of community found there: “a social understanding of being part of a community,” “recognize self and voice and use them with others,” and “there are kids here who don’t fit in the [public school] model.” Again it is obvious that these two progressive schools are able to both effectively create a community and meet individual needs.

**Curricular Flexibility**

One of the most interesting features of both of these schools is their use of traditional curriculum resources for their instruction, albeit in more individualized ways. The founder of the Indian Orchard School referred to what they do as, “The Traditional Progressive Education Model.” A teacher at Apple Tree School described their approach as, “Using traditional materials, but in a non-traditional way.” Another teacher spoke of the importance of knowing parts of speech and grammar. However, these materials are used as a starting point for more individualized work.

Freed from the curricular dictates of a district, these two schools could choose to use a variety of materials or none at all. What I saw at the two schools was that while they have a progressive view of how children should be instructed and like to allow them some degree of choice, it is, “freedom within a structure,” and part of that structure is a traditional curriculum Apple Tree School regularly uses mainstream educational curriculum from established publishers, particularly for their Math instruction. A child’s “contract work” for the day frequently includes worksheet pages .The reading instruction is also very traditional, particularly at the early grades where phonics instruction is heavily emphasized. However, as the children become independent readers, the teachers take considerable time to work their way through novels and stories and spend a great deal of time in discussion and questions about what is being read. In this way, traditional materials are used to yield a deeper literary experience that is not typical for school settings designed to train a student primarily to pass a test. Instructional groups are age-mixed, depending on ability.
Instruction at Indian Orchard School is based on a “rotating curriculum,” first written down by the founder over 20 years ago that they still largely stick to. She compared it to a “college-model” of course offerings that progresses. They also use very time-tested resources with their Math instruction, including a Math book that is more than 15 years old. I saw older students using worksheets to solve quadratic equations and younger students doing “tracings” of coins—both rather dated activities. However, there were also students using an abacus and others discussing world civilizations. Students in both settings have a great deal of freedom in what they write and the time they can take to finish a piece. Truly, there is an eclectic mix of subject matter and activities resulting in an education that is both developmentally appropriate and focused.

Assessment

Both schools eschew school assessments as they are traditionally understood. They measure their students’ learning but not in the way that traditional public schools gauge achievement. As progressive schools, they have identified other methods to see how their students are progressing.

The teachers told me that they do not give paper-to-pencil tests, either to individual students or groups. The founder of Apple Tree School did tell me that they use “reading inventories” and checklists to document reading levels. Neither school gives state assessments, although both will have 8th Graders about to leave their school practice some standardized assessments to prepare them for what lies ahead.

Both schools provide narrative-style report cards twice a year to parents. They do not include reading levels, letter grades, or test scores, but instead are the teachers’ description of a student’s progress to that point. Both founders noted that the report cards that they provide are more extensive now as parents’ expectations have changed in this era of testing.

Choice, Space, Time

As I looked through my notes on what I observed at these two schools, these are the three elements that kept reappearing. Teachers spoke about “working with them where they’re at,” helping children gain, “a true sense of self,” and how, “they feel heard.” Students at these schools don’t seem to be, “on the clock.” In all of months of observation I never once saw an activity that had to be concluded in a rush. There are schedules and things that need to get done, but nearly everything was able to be carried over to tomorrow. Or further. At the first school a girl named Chloe talked to me about a story she had been working on, “since last year.” Physically, even though these are small areas everyone always seemed to have the space they needed to comfortably work.

These elements are also present here for the teachers. In discussing the importance of their collaboration with each other, one of the teachers at Indian Orchard School talked about how she appreciated the freedom she was given in deciding how to instruct. Although there are no “planning periods,” here all of the teachers talked about how their schools were only able to work due to the sharing attitude that they each brought to their work. The founders have intentionally created an environment where, “All of us are completely invested in this non-mainstream effort.” Many of them mentioned proposing teaching units that they had never done before and sharing resources with each other. They are interested in providing each other with the space that they need to do their job comfortably. “We need to be able to work together, even though we have differing ideas,” one said.

In this section I provided the characteristics of a Progressive School learning environment. Structured around a child-centered education, these schools take advantage of the Curricular Flexibility that they have being outside of the TPS landscape and also use alternative methods of Assessments. Latitude in Choice, Space, and Time is extended to each student so as to better accommodate their unique learning needs.
Discussion

“Progressive education only exists in the ways that people bring it to life” (Read, 2014, p. 39)

Progressive Education has been a resilient schooling option for more than a century. Despite operating counter to the educational mainstream, there continues to be a segment of American families that want their children educated in a setting that values community, democracy, and the individual. In a sense they are paradigmatic of these Progressive Educational principles and following in a predictable tradition.

However, I believe that these two schools are also reflective of the contemporary educational scene in this country. No matter how it is perceived, the standards movement, the mandated testing brought about by *No Child Left Behind*, and the adoption of the Common Core have all led to a narrowing of the educational vision in this country. The two schools I studied reflect this with their use of learning contracts, traditional materials, and expanded report cards.

In general, the growth of charter schools and the increase in homeschooling in this country have decreased the private school population (Marcus, 2015). When I spoke with both teachers and founders at these schools a number of them mentioned “financial stability” and “improvements to the facility” or “owning our own building” as goals when they look to the future. The founder of Indian Orchard School said, “We’re all on a short string here.” Progressive Education may be an alternative to the mainstream, but it cannot help but be affected by the forces that are molding what goes on in the public school classroom. While dissatisfaction with public schools may be a constant, any school that charges tuition is going to have a hard time attracting students when other “fee-less” options are available.

What I found at these two schools both confirms what the literature has shown as being common to the progressive tradition and stands in contrast to contemporary schooling as at least a subculture of the educational landscape, if not a counter-culture. The foundation for all that is done there is established by the four elements of the culture that I saw---familial grouping, informality, play, and democracy. Each of these aspects emphasizes the communal, whereas contemporary mainstream education values competition and measures a school’s success by its individual achievement (Anderson, 2009, Sharp, 2006). Whereas tests scores are the bottom line determinant for many institutions, these learning collectives value the more personal aspects of the school day by encouraging a breaking down of the structures of the school day through their use of play (Gray, 2013) and alternative methods of assessing growth (Kohn 2008, Little, 2013). In doing so they are both subverting the accepted schooling model and putting forth a learning paradigm based more on relationships between people than the completion of tasks. This is reflective of the way that people learn for the most part, out of the reach of institutional schooling (Michaels et al., 1982)

A more responsive instructional approach has developed out of this culture. I see the teaching and learning that goes on at these schools better suited to what young learners need. While the literature has focused on the centrality of child-centered learning (Russell, 2012, Labaree, 2005), I believe that what I saw here and what is pointed to, if not necessarily explicitly identified in the literature, are the paramount values of choice, space, and time. All of the other instructional characteristics are reflective of these concepts being prioritized over traditional school practices. Some have identified these as aspects of non-institutional schooling (Zak, 2014) and others have noted their connection to autodidaxy (Wacker, 2009), but here they are present in school settings and produce the curricular and assessment flexibility that give these schools their ability to best respond to their students’ needs. In doing so, they have attracted a certain type of teacher, one who resists turning learning into a business and instead is more interested in focusing on the individual and their potential (Kenny, 2010). The work that is being done here can be compared to the instruction at Mission Hill School in Boston (Chaltain, 2013), with its emphasis on high quality work and learner as an individual as opposed to the standardization that characterizes contemporary public schools.
Both Apple Tree School and Indian Orchard School work, quietly, proudly out of the mainstream, by treating their students as individuals who deserve time, space, and choice to grow into a valued member of a healthy community. John Dewey said it, Francis Parker said it, and hundreds of their disciples have said it as well. But it’s difficult to top the words of one of these school’s founders when she said, “This is a place where they were cared for and cared about.”

Further Research

The future of schools such as the ones I have studied is uncertain. As some research shows, alternative schools have a tendency to go into decline once their founder leaves. Additionally, what constitutes an education is now viewed differently, with data and standardized documentation a regular part of many students’ education. To maintain its emphasis on more humanistic elements of collective learning and still attract enough students to survive will be a challenge. How they do this will require further study.

A limitation of this study if the number of schools I was able to visit and the time I was able to spend on site. The progressive schooling landscape truly is a culture and deserves more of an ethnographic approach than I could take with it due to my teaching responsibilities. A scholar who could observe, interview, participate as a teacher, and more fully engage with families at events outside of the school day over the course of an entire school year would be ideal. The data gathered in such a role would allow the researcher to identify the unique cultural elements of a private progressive school and contrast them with a contemporary public school.

Further research should also be done into the characteristics of the contemporary progressive school. In examining two I found some elements that surprised me, such as a reliance on traditional curriculum. Even the term “Progressive Education” has some confusion about it (Kleibard, 1987, Kaplan, 2013). How it is defined, who fits that definition, and who claims that mantle are all areas for future study. I would like to see consideration of the question of a progressive private school as not only a “subculture” in contemporary America, but also perhaps as a “counter-culture” whose very existence runs contrary to the assumptions on which public education and how children learn have been built.

Outside of the realm of Progressive Education is the larger question of survival of start-up private schools after their original founder leaves. Educational visions can be very personal things and the continuance of a school into a second-generation of leadership needs to be looked at more closely. Finally, a longitudinal study of the graduates of progressive schools and their career and post-secondary choices might reveal some important advantages and limitations of this particular educational path.

Concluding Thoughts

Schools are now seen more as institutions than intentional communal learning communities. Test scores, adopted curriculums, and teaching strategies receive widespread attention as each town’s local school attempts to imitate national trends toward a common accepted curriculum designed to transform students into employees from their first day in kindergarten to their last step on the standardized ladder. Competitiveness is instilled with measurements at each point on the path, Education the product has replaced learning as a joy and standardized schooling now crowds out any other less formal mental pictures of learning, even if they more closely align with a child’s life.

To have the courage to start a school without the funding, facilities and materials, and without the captive audience of a local community expected to routinely send their children to your doors is a noteworthy thing. For more than two decades, these two have by their practices and philosophy continued the progressive tradition of child-centered education aimed at furthering community and democracy. By creating a community of informality, play, and choice they serve as an option for
families who do not feel served by the TPS model. By instructing with the child’s interests in mind, creativity in curriculum, and using assessments that are appropriate rather than dictated, teachers who have seen the limitations of the TPS model are showing that learning may take place outside of the existing standardized system. Intentional learning communities may forego many of the trappings of the formalized system, and produce students with curiosity and wonder who go on to to success in higher education and beyond.

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