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Perceived problems of 4th grade primary school students related to their families and schools

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The purpose of this study was to reveal the problems perceived by fourth grade students in their own lives. The research was carried out with a basic interpretative qualitative research design. This method was used in order to examine in depth the vital problems perceived by fourth grade students. For the study, data were collected in the spring term of 2016-2017 academic year. The appropriate/accidental sampling method was used for data collection. Data were obtained from 206 fourth grade students of a primary school in the province of Ümraniye, İstanbul. The data were analyzed by using the content analysis technique. Within the scope of this research, the findings are grouped under three themes; the problems that the students have had the most in their lives, their families and their schools. From the data obtained, the same quotations were made with descriptive analysis technique. It was found that the students who participated in the study perceived the problem of violence, family relations and communication in relation to their own family life. Concerning the school, the participating students mostly perceive problem with their friends, teachers and least about school management. It was concluded that participant students mostly have difficulty in solving and perceiving problems related to course achievement/mathematics/exams, violence, communication, less about personality traits, and at least education and death problems.

Key words: Student problems, elementary school, fourth grade, problem solving, family.

INTRODUCTION

Life becomes increasingly complex and difficult. Individuals face many problems in their daily lives. Depending on the development periods and the conditions in which they live, the problems of an individual also vary. In today's growing generation, the

sensitivity to problems and the ability to strive for solutions are intensively sought. For problems to be solved, they must first be felt and identified by the individual.

Individuals, from the moment they are born, find

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themselves in a living environment. This environment is often a family environment. The family, which is the smallest unit of society, now consists of parents and children. When the influence of the family on the child is mentioned, the characteristics that first come to mind are hereditary characteristics, but the influence of the family on the child is much wider. The interrelationships among family members and the educational environment created for the child are very important in this field (Oktay, 1997). The attitude of the family plays a decisive role in the relationship with the child. This attitude does not mean giving the child extreme freedom and not applying any disciplinary rules, nor giving any responsibility or preventing his life with emotional demonstrations (Salk, 1995). Parents will need to fine-tune their attitudes in the family setting, as they will find these approaches an important factor in the child's personality development.

As the family is formed by parents and children, the form of communication and relationship that family members establish with each other is determined by the environment of love and respect. In the development of the child, the number of siblings, whether the child is the first child, the parents' approach to each child separately, the separation of the parents, or the death of one parent, one sibling or close relative can also have important effects.

The second institution that the child has after his family, which is an important influence on his education and personality development, is the school. Among children who have just begun to study, some feel very happy at school; and some children are afraid to go to school, fearful, crying, feeling of school phobia can also be observed.

School phobia is the reaction of the child to the fear of separation from the mother on the way to school (Yavuzer, 2000; 220). This can usually be seen in school children between the ages of 6 and 10, and from the first year of school to the end of compulsory education (Yörükoğlu, 1998; 298). According to Eisenberg (1958 as cited in Yörükoğlu, 1998; 298), school phobia, or rather the factors leading to the fear of leaving the home, are largely similar, including the close relationship between the mother and the child; the other is the separation, disease-like conditions that shake this relationship; in other words, the reasons for the fear of losing the mother. Salk (1995) indicated that the reason for the difficulty in adapting to school can be neurological deficiencies, or a condition caused by poor functioning of the glands, and in this case common symptoms; can be the difficulty in achieving reading, bad handwriting, excessive mobility, and a short time of attention. Adler (2014) states that if the child is well prepared for school, the difficulties s/he will face will be less. Yavuzer (2000; 220) stated that the distrust of the child about his life at home might lead to an unconscious fear of going to school. Regardless of the cause, school phobia may be thought to be a factor that

can adversely affect the success of the school. As in the case of school phobia, there are many factors that influence the child in building a successful learning life. Özdoğan (2001) lists the factors that play a role in school success in the following way:

1. Interpersonal relationships within the environment in which the child belongs and the family,
2. The behavior of the parents against the child,
3. Relationships between siblings,
4. Physical conditions of the house,
5. Physical and mental health of the child,
6. Child's relationship with school, teacher and schoolmates and the shape of these relationships affects the child's school achievement positively or negatively.

According to Weiner (1982 as cited in Özabacı and Acat, 2005), the causes of school failure are categorized under three headings:

Socio-cultural factors: Low motivation, effects of gender role, effects of close environment (family, friend, school and teacher),

Psychological factors: Developmental factors and psychopathological factors, and noncompliance with learning,

Disharmony in relationships within the family: Passive or aggressive behavior, fear of failure.

As can be seen, both school success and failure can be due to the child itself, family or school. All of these factors can significantly affect the child's academic success, personality and life. Especially the elementary school period, in terms of development, contains a series of changes based on the coming years. As their age progresses, children become aware of their problems and are attempting to solve them.

The problem is an obstacle. If there is an obstacle between the situation in which the individual is in, and the situation in which he wants to be, and if this creates tension in the individual, there is a problem for that individual (Ülgen, 1997). The problem, with another narrative, is the obstacles or difficulties that arise to the individual during the transition from one environment or situation to the more preferred one. The problem definition, on the other hand, can be used for all real or abstract situations that need improvement (Stevens, 1998). The problem is something that disturbed the person either physically or in terms of thought; it is a difficulty that has the possibility of multiple solutions (Karasar, 2016).

In everyday life, every person is a problem solver. But the important thing is to be able to solve problems effectively. Effective problem-solving process begins with; courage, willingness, self-confidence, and continues and ends with the birth of new ideas, the formation of critical attitudes, the practice of past experiences, impressions

and emotions. This process can also be learned later (Bingham, 1998). In another sense, the problem is the factor that prevents you from achieving goal. Removing them is possible with the solution of the problem. Gaining and developing problem-solving skills can be viewed as one of the most important responsibilities of families and schools.

Problem solving involves the mental explanation of the problem situation. From the moment the person is confronted with the problem situation, he tries to find a solution to the problem and this result triggers the individual to act. In other words, the person continues to make attempts to solve the problem as the result is revealed. However, if the individual does not have any relevant knowledge of the problem, or if s/he has not faced such a problem before, s/he will probably fail in problem solving (Robertson, 2001, s. 22; as cited in Yıldırım, 2014; 2).

Many factors can be a barrier to solving the problems. Some of these may be due to the *psychological state* of the individual, while others may be due to the *circumstances* in which s/he is trying to find a solution. People's view of the world and their reactions to events are generally a result of their experiences. Although individuals do not have all the skills necessary to solve problems, it is possible that they are aware of the factors that prevent them from solving problems (Stevens, 1998). The provision of this awareness at an early age is important and necessary to be able to produce more effective solutions. This can only be achieved with family and school education.

Individuals who are aware of their problems may be able to better explain themselves to the people around them, as well as live a more qualified lifestyle in today's living conditions, where problems are increasingly more and more complex. In no research, the life problems of the students in the primary school period were examined from their own perceptions. The understanding that can be gained from such an inquiry can be useful for parents, schools, teachers and administrators, who have big importance in students' lives, to question themselves in their careers, from the eyes of their students and to make important inferences to understand the problems that primary school students themselves feel. With this need in mind, the purpose of this research is to reveal the problems that primary school fourth graders perceive in their lives.

METHODS

This work was designed according to the basic interpretive qualitative research design. In this widely used pattern of education field, researchers are interested in how people interpret their lives, what meaning they add to their experiences, and how they create their world (Merriam, 2013). The aim of the basic interpretative qualitative research process is to try to understand the participants'

perceptions of the process, their experiences, their own meanings related to their experiences while interacting with the world. The aim of the researcher in the research process is to understand deeply the participants' perception of a process, a phenomenon, a world view, a perspective (Altheide and Johnson, 2011). Through this research, it is aimed to describe the meanings of the participants and to reveal their awareness. In this context, the basic interpretive qualitative research design was used in this study because it was attempted to describe in detail the understanding and awareness of the problems perceived by elementary school fourth grade students in their own lives. In addition, the aim of the study is not to produce general theories or to obtain the findings from a wider sampling, but to reveal the problems perceived by elementary school fourth graders.

Working group

In the study, one of the random sampling methods, appropriate / accidental sampling has been used. The main objective is to prevent loss of time, money and labor in the appropriate sampling method, also called convenient or accidental sampling (Büyükoztürk et al., 2016). 206 fourth grade students studying at a primary school in Ümraniye district of Istanbul province constitute the study group of the research. The reason why this school was chosen for research is that one of the researchers had worked in that school. The characteristics of the participants of the study are: 110 of the participants are males and 96 are females. 159 participants were 10 years old, 34 were 9 years old, 12 were 11 years old and 1 were 8 years old. 89 of the participants are 2 siblings, 75 are 3 siblings, 24 are 4 siblings, 11 are 1 sibling, 5 are 5 siblings and 2 are 6 siblings. 76 of them have 4, 73 of them have 5, 33 of them have 6, 9 of them have 3, 7 of them have 7, 5 of them have 8, 2 of them have 9 people and 1 of them have 11 people in their families.

Collection of data

In the collection of the data, an open-ended form was used which was prepared by the researchers and consulted with the opinions of two field experts. In this form, there are three open-ended questions expected to be answered by the primary school fourth graders:

1. What are the problems that make you think and worry the most about your family?
2. What are the problems that make you think and worry the most in your school?
3. What are your most difficult problems to solve in your family and school?

Before the application of this form to the students, research permits were taken, and an open-ended form application calendar was created. Between 5-10 June 2017, the forms were applied to the students by the second author. Filling of the forms ranged from 5 to 10 min. The collection of data was done at the school where the students were studying.

Analysis of data

In the analysis of the data, content analysis method was used. Content analysis is defined as a systematic, repeatable technique in which certain words of a text are summarized by smaller content categories with certain rules-based coding (Büyükoztürk et al., 2016). The basic process in content analysis is to combine similar data within the framework of specific concepts and themes, and to

Table 1. Problems perceived by students in their lives, about their families.

Problems perceived about their family	f
Violence	44
Relationships	42
Communication	13
Responsibility	9
Health	8
Financial situation	6
Course Failure	4
Death	4
Habit / Bad habit	3
Expectation	1
Total	134

interpret them in a way that the reader can understand (Yıldırım and Şimşek, 2013). The obtained data were coded and categorized. The data were classified under these categories and made meaningful. The researchers made coding and categorization together. Adhering to the problem and purpose of the research, unnecessary coding was removed, and new coding was added to the required parts. In naming the categories, the researchers moved with compromise. Disputes were resolved by discussing and thus a common agreement on coding and category was reached (Tavşancıl and Aslan, 2001). Because of these processes, three main categories of students' life in their families, problems related to their schools and their most difficult problems were identified, and findings were given under these categories. The determined upper and lower categories are modeled by considering the relations between them and frequency and percentage are calculated to quantify qualitative data. Among the two researchers, subjects of "Consensus" and "Difference of opinion" were identified. The reliability of the study using the reliability formula proposed by Miles and Huberman (1994) was found to be 91%, which is the result of consistent categorization.

RESULTS

In this section, findings from the analysis of the data are arranged taking into account the order of the questions in the sub-objectives of the research.

Findings related to students' perceptions about their family members in their lives

The answers given in the first question of the research, "What are the problems that make you think and worry the most about your family?" are mentioned in Table 1.

Most of the participating students stated that violence is a problem that makes them think and worry the most about their families. In the perceptions of violence, they expressed the following: fighting, being angry, shouting, beating, screaming, mocking and nicknaming. Violence behaviors may be directed towards the participating

students by the elders of the family or violence that other family members apply to each other. Among the students there are ones, who is sad for her mother to scream at her from time to time, but whose father, who never shouted, once frowned her and made her cry; who is scolded without deserving; who says his mother is angry with her when her brother is guilty; when the brother gets angry at him, vandalize the objects around him, and makes him afraid; her mother and father are disputing all the time and make him afraid that they are going to divorce. Relationships in the family are also important problems for students. Disagreements among family members and some situations in which family members do not want or are often asked by their parents can also be perceived as problems for the participants. For example; not allowed to go out, not allowed to bring home cats. There are also students who express difficulty in communicating with their parents. The following are the problems that participating students worry and think about communicating with their families: Family pressure, to be forced to study or do any work that one does not want, indifference by the family, elders of the family not keeping the promises, family members sulk each other, unfair behavior within the family.

Some of the responsibilities for participating students are also perceived as problems; including tidying up rooms, looking after siblings, setting and gathering up tables, taking out the trash, being sent to get something by the elders are among the problems that make them very sad and worrying. Students express that while they are doing the chores, they feel sad and do them with difficulty. A student comes home from school. "I cannot do it," she replies to her mother who wants her to go to shopping. Now, the student is very sad because her mother becomes angry at her. Another student says, "My parents want a lot of work from me. I am not a servant".

Some students have stated that they have health problems in their families. These health problems include

Table 2. Students' perceptions of school related problems.

Problems perceived about school		f
Problems with friends	Bullying / Violence	64
	Friendship relationship	11
	Communication/miscommunication play	86
	Personality features / shyness	2
Problems with courses	Failure in courses	20
	Math	12
Self-problems	Habits	6
	Health	4
	School phobia	3
	Social activities	3
	Personality characteristics	2
Problems with the teacher	Teacher's punishment	5
	Class discipline problems	5
	Teacher was appointed elsewhere	2
	Teacher does not come to school	2
	Teacher becomes angry	1
Physical problems	Physical facilities	8
Management issues	Principal's punishment	1
Other issues	Carrying bags	3
	Closure of social clubs	1
Total		169

parental illness or the siblings' inability to speak despite growing up. Some students reported that it was sad that their financial situation was bad. It is also a problem that the family owes money and the father goes to work in another city.

Success in the lessons is also seen as a problem between students and their families. For example; if a student does not receive high scores from his courses, he will be sent to the boarding school. Participating students also point out that smoking is a family problem. In addition, the death of one of the family members for the participating students was also expressed as a very sad event.

Findings on students' perceptions about school related problems

The answers given in the second question of the survey, "What are the problems that make you think and worry the most in your school?" are in Table 2.

When the table is examined, it is seen that the participants mainly report violence they have experienced

with their friends most frequently (64 students) as a problem. When the violent behaviors that they express with their friends are examined, it is noteworthy that the situation is dominated by both verbal (cheating, threatening, teasing, nickname, swearing, debate) and physical (beating / hitting, tripping, squeezing, pushing, dropping).

Participants expressed that they have experienced important situations in their friendship relations, which both upset and thought them. Problems include leaving friends / friends left for another school, do not want to play with friends, forcing friends to do things they do not want, to be complaining to the teacher, forcing friends not to play with, and boys asking to marry their girlfriends. Also, it is among the participants' communication problems to think that no one wants him/her to be in that class and unable to establish friendship. In addition to these, the following problems also disturb, annoy and worry students: Disrespect, jealousy, stubbornness, gossiping, being left halfway, always wanting to be a leader, slandering, being show off.

Participant students stated that they had some problems while playing games with their friends (6

Table 3. The most challenging problems for students to solve.

The most challenging problems	f
Failure in courses/Mathematics/Exam	35
Violence	23
Miscommunication	19
Family relationship	9
Fear	5
Friendship relationship	4
Personality characteristics	3
Theft	3
Environment	3
Health	3
Traffic accidents	3
Inability to decide	2
Education	1
Death	1
Total	132

students). These problems include: not getting into the game / being out of the game because of the inferiority of the hair and clothes, falling on his own / tripped by someone else while playing, and being forced to play a disliked game.

Students expressed the following problems with their teachers: appointment to leave for other school (2 students), teacher's redemption, punishment, difficulty of examination (6 students). Students also expressed the problem that the teachers were not informing them about the day they would not come to the school.

Students see the physical facilities of their schools among their problems (8 students). It is a perceived problem that the school is dirty, there are few classes, there is no sports hall-football field-basket pot and everybody pushes each other while going out on rainy days.

For 12 students there, mathematics is a problem (problems, division, multiplication operations), for 3 students school phobia and for 4 students health (fainting, injuring) is a problem. Some of the students speak of personality (2 students-shyness) and habits (getting up early morning, being late to school-6 students). 3 students feel that it is a problem to carry a bag.

Findings for the most challenging problems for students to solve

The answers to the third question of the research, "What are your most difficult problems to solve in your family and school?" are given in Table 3.

When Table 3 is examined, the most difficult to solve

problems for students are course success, mathematics and exams (35 students). The students also expressed the following problems in their difficulties: Reading books, Turkish language questions, Turkish language examinations, studying for the exams, not understanding the lessons, understanding human rights, not doing homework and unable to get appreciation certificate. Again, mathematics is perceived as a problem that is difficult to solve on its own. Problems in mathematics, multiplication-division and course examination are among the problems that are difficult to solve.

It is seen that the participant students are having difficulty to solving the violence and they perceive this as a problem (23 students). Violence behaviors, which they express difficulty in solving, are often pointed out to be yelling, being angry-verbal violence, fight-physical violence.

The problems that are difficult to solve regarding the communication (19 students): Bad words are spoken, sulking, unable to reconcile, disagreement, failure to separate the fighting people, threats, insistence, The Syrians do not have full knowledge of Turkish.

Problems that are difficult to solve in family relations (9 students): Separation of parents, failure to make sister/brother happy, bored at home, uncle is drinking and beating parents, relocation.

Fear problems that 5 students have difficulty to solve: Stay locked in the masjid, chased by the dog, characters in the horror movies, loneliness, to be lost.

Three students stated that they have difficulty to solve the following personality traits: Shyness, excitement in the reading aloud, shame because of the mistake they made.

Apart from these, theft of belongings (3 students), throwing away garbage (3 students), broken leg (3 students), unable to decide which team he will be in or what clothes to buy (2 students), not going to junior high school (1 student), and death of one of the family members (1 student) are the problems they are having difficulty to solve.

CONCLUSIONS AND RECOMMENDATIONS

The results of problems perceived by primary school fourth graders in their own lives are:

1. Problems perceived by students about their families are: violence (44 students), relationships (42 students), communication (13 students), financial situation (6 students), habits/bad habits (3 students) and expectations (1 student).
2. Problems students perceive about their school: problems with their friends (64 students), problems with their courses (32 students), problems with their teachers (15 students) management problems (1 student), other

problems (4 students).

3. The most difficult problems for students to solve are: course failures (35 students), violence (23 students), personality traits (3 students), theft (3 students), education (1 student), death (1 student).

According to the Dam (2008)'s study titled "The Family Factor in the School Success of the Student", the most common family problems of students are indifference, communication problems, lack of appropriate study environment, mother and/or father's death. In addition, other family problems of the students are the separation of parents, quarrels between parents, poverty, various diseases and separation from family. The communication, debate and fighting problems that arise in that study overlap with the students' most stated violence and relationships/communication problems in the families of this study. Also, in this study, the financial problems and the problem of death are parallel as similar problems.

Alendy (1975) says that family quarrels have a negative impact on the mental health of the child, and that low family income is a difficult problem to solve. This coincides with the finding in our study that students perceive violence and financial situation as a problem.

Adler (2014) states that the children who grow deprived of love lack the feeling of sociality. Since human is a social being, the importance of sociality in the life of the individual is also undeniable. In the present study, the problems of violence, lack of communication, relations between siblings and the problems that students have difficulty in perceiving and solving related to their families and schools are similar to the problem of lack of love environment.

Tabaru-Örnek and Çoban-Sural (2018) in their study named "Investigation of the Relationship Between Self Concepts and Problem-Solving Skills of Fourth Grade Students", found a significant positive correlation between self-perception and problem solving skills of children. As problem solving skills increase, being happy with the sub-dimensions of self-perception, popularity, physical appearance, intelligence and school status scores increased. In addition, it was found that there was a significant difference between self-perception and problem-solving skills according to gender and this difference was in favor of female students. In the present study, the perception of school success as a problem and the expression of other problems in the family reveal the importance of training of individuals who can identify and solve problems.

The study on social and environmental problems reflected by primary school students' caricature drawings made by Ersoy and Türkkän (2010) participant students touched on social problems such as, paying too much attention to the money, family unrest, the intensity of lessons and homework, violence and fighting, television and internet addiction in the caricatures they draw. Again,

in the same study, a student named Ayla talked about the unrest in her caricature. Ayla depicts the cartoon she draws like this: "*There is a wife and husband. The man is eating the woman's head because the guy makes the woman very angry (by talking). People eat each other's flesh and do not like the situation at all.*" Ayla emphasized that most people in her family and her environment behave like this. The findings of that study are like this study: the existence of many problems in the family, unrest, failure in the courses.

In Ersoy and Türkkän (2010)'s study, participant Tuğba handled the issue of violence within the classroom in her caricature. In her caricature, Tuğba drew youths fighting in classroom environment and injuring each other. In this study, the fact that students have "violence" at the beginning of the list of problems they have experienced both in their families and with their friends in the school is remarkable and overlaps as a finding that should be addressed. According to Yavuzer (2000; 61), scolding the children in a hard manner and humiliating them cause the children to learn to scare and reprimand others. Both in the family and in the classroom, violence is a condition that can negatively affect both the mental structure and learning of children. Adler (2014) said that the immediate punishment of the child would give rise to the child's humiliated and neglected feelings; and stated that the sentence was not the way out. In this study, it is noteworthy that there is a problem of violence at the beginning of the problems experienced by both students and their families.

It is necessary for the developing child's mental health that the parents show love, respect and understanding to each other. From the time of birth, a baby in need of his or her parents, needs their attention in the first childhood and even in the age of youth (Oktay, 1997). However, in this study it is a remarkable fact to mention that some of the students have a problem of indifference.

Parents should give little responsibilities to their children. If children overcome these responsibilities, their appreciation, interest and compassion, and the happiness of having achieved a job will encourage and please them (Salk, 1995). It is useful to underline the expression "small" mentioned here. However, participant students perceive the responsibilities such as "tidying rooms up, looking after their siblings, setting up tables, taking garbage out, go somewhere to do the bidding by the elders" as a problem. It is necessary to approach the discussion as to what level of responsibilities is appropriate for children's developmental characteristics. It can also be considered that students may be forced not to fulfill their actual responsibilities while trying to perform these tasks assigned to them, which may lead to academic failure.

In Ersoy and Türkkän (2010) study, two of the participant students talked about the intensity of the lessons and assignments. Yeliz drew a child in his

caricature (Caricature 5), saying, "*My mind is swollen, the information does not fit in my head.*" and she stated that she is that child. Yeliz told that she was tired of studying, "*I live in this problem myself, my head is swollen when I come home from school, my head is getting cluttered, I have drawn it by looking at myself*" (interview). She suggested reducing the number of lessons and studying with a plan to solve this problem. Murat also focused on the intensity of the lessons in his caricature (Caricature 6). Murat stated the purpose of drawing his caricature: "*I did it against the homework because the teachers gave too much homework. I want to tell you that there are too many assignments and that you are squeezing us*" (written opinion). The conclusion of this study on the lessons and assignments and the conclusion in our study overlap about the perception of the problem of course failure after the problems with school and friends.

Akça et al. (2015) in their work titled "Evaluation of the Attitude and Behavior of Mothers Admitted to a Family Health Center on Domestic Violence against Children", they listed the reasons that led to the most conflicts in the home as problems between the siblings, their nutrition, sleep and education. As a result, it was revealed that most of the mothers participating in the research were able to apply physical violence to their children as a method of training and they were not sufficiently aware of the developmental problems that this could create about the children. These results coincide with the findings of the current research on violence, interpersonal communication and relations between siblings.

Derman and Başal (2013) in their work titled "The Relationship Between Behavioral Problems in Preschool Children and Their Parents' Parenting Attitudes", they identified that families of withdrawn, hyperactive, jealous children, have moderate levels of rejection of the housewife attitude; and that the families of children who have a poor appetite are overly stubborn, have tapping behavior and nail-biting issues, have low levels of rejection of the housewife attitude. The fact that families do not have a democratic attitude causes children to have various problems related to themselves and their environment. This coincides with the problems found in the present study on inter-family relations, communication, and relationships between siblings.

Kazak-Ekinci (2016), in the conclusion of her thesis "The Perception of the Mothers of Children Drawn to Crime: Siirt Example", had important findings regarding the phenomenon of recurrent crime in the city. It was found that all of the children who were drawn to crime have multiple siblings; mothers mostly attributed their children's crime tendencies as a result of their friends, social environment, poverty, and lack of education. Another important finding is that children are exposed to physical violence at every moment of their lives (family, school, social environment). Nearly all the mothers who participated in the study have been imprisoned. Most

children were found to have smoking, marijuana and drug habits. Almost all the mothers included in the study stated that their children had failed education and left school. These results coincide with the findings of the current study that students are exposed to violence in the family and at school and that they experience problems in communication and school failure. Kazak-Ekinci (2016)'s findings on multiple siblings, sibling jealousy, violence, school failure, children's misdemeanor, drug addiction; emphasizes the importance of the early analysis of similar problems in the present research.

Adler (2014) states that the youngest child in the family is trying to keep up with the older child, and that jealousy of the older child against younger one, may have a negative effect on the younger child's school success. In the present study, findings on the problem of "not being happy with your brother and sister", which is one of the problems that children perceive regarding their families, coincides with sibling jealousy and school failure. According to Alendy (1975; 163), the secretory glands, sensory organs and mood structure of the children who fail in their classes or who have behaved abnormally should be examined. In addition, Yavuzer (2000) stated that school failure may arise for a variety of reasons and among them, the domestic family life and outside life of the child, developmental characteristics, family and communication errors and inadequacies can be found. Based on the results of this study, the following suggestions can be made:

- (i) Students in the survey perceived the problem of violence the most. From this, family awareness seminars, meetings, conferences and trainings should be held to ensure that children do not have violence within the family so that they can be healthy in development, lesson success and friendship.
- (ii) Similar training should be given to the students about what problems are and how they can solve problems.
- (iii) Awareness training should be given to students so that they can recognize and reinforce learning strategies that can improve their course success.
- (iv) Parents should be given trainings to establish healthy communication with their students.
- (v) Parents and teachers should be given training not to give intensive lessons and home works to the children that may cause problems and training for "correct responsibility giving awareness".

CONFLICT OF INTERESTS

The authors declare that they have no conflict of interest.

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Full Length Research Paper

A lesson plan model for character education in primary education

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The purpose of the study is to design a lesson plan model for character education in primary education, and to elicit the related stakeholders' opinions and suggestions on the proposed lesson plan model. As a qualitative design research, the data in this study were collected through written document analysis and interview. Criterion sampling method was used to determine the participants of the study. The participants were five primary education teachers, two experts from the field of psychological counseling and guidance, and two academicians from the department of elementary education. The data were analyzed using content analysis. The study has two phases: (1) developing lesson plan model on the basis of the affective domain grounded by Krathwohl, Bloom and Masia and eleven principles of effective character education proposed by the Character Education Partnership, and (2) piloting the model. Up till now, the 1st stage has been completed. The results indicated that the participants mostly gave positive feedbacks in terms of fundamentals, parts and steps of the model. Moreover, the assessment and evaluation part of the model might be a weakness. Finally, the results indicated that the suggested model will be a pathway in the application of character education in primary schools. The lesson plan model will be piloted as a follow-up research.

Key words: Character education, lesson plan model, primary education.

INTRODUCTION

In the literature, there have been various definitions of character education. One of them was made by Howard et al. (2004) as an effort to enable individuals to make ethical decisions and to act on them. Another definition made Lickona et al. (2011 as cited in Lee, 2016) defined character education as a purposeful effort to make young people develop universal ethical values and act on them. Despite the various definitions of character education,

almost all indicated same properties namely; its intentionality, ethical thinking and acting, place of school. However, there have been terminological problems related with character education. The problem and its reason were explained by Howard et al. (2004) as follows,

Over the years, educators have given this term different

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names (e.g., *moral education*, *values education*). The most common term at present is *character education*. Terminology can be problematic, because *character education* can refer either to the entire field or to one of three major approaches ...: caring, (traditional) character, and developmental. The caring and developmental approaches tend to use the term *moral education* (189).

On the basis of the explanations made by Howard et al. (2004), it is possible to reach various inferences. One of them, character education is an umbrella term for all education asking for good, appreciating of universal values and aiming to make people internalize being good character and behave in line with good character. Another inference is that character education is not new; it has its origins in moral, value education.

In this regard, Lickona (1993) expressed that character education is not new. Moreover, Lickona (1993) emphasized that education has had two main goals namely; to enable people become smart and good. In this respect, it may be said that education has included character education throughout its history as one of two main goals. In other words character education and education are at the same age.

Lickona (1993) expressed that the Bible was sourcebook for schools and enabled them make instruction both morally and religiously. Then, the second sourcebook was "McGuffey Readers" in the context of which, there were many favorite Biblical stories, poems, exhortations and heroic tales. With this book, children practiced reading and arithmetic and learned about honesty, love of neighbor, kindness to animals, hard work, thriftiness, patriotism, courage. Although the early character education were provided by the Bible and McGuffey Readers through daily school curriculum in the early years, for Lickona (1993) the consensus supporting character education began to decline because of various powerful forces in the 20th century. The powerful forces were; the philosophy of logical positivism, rise in personalism, rapidly intensifying pluralism of American society and the increasing secularization of the public arena. The term "character education" and interest in it has been popular in recent years (Russell and Waters, 2013). Lickona (1993) proposed three causes for explaining rise of character education. The causes were:

- (1) The decline of the family
- (2) Troubling trends in youth character
- (3) 10 troubling trends: rising youth violence; increasing dishonesty (lying, cheating, and stealing); growing disrespect for authority; peer cruelty; a resurgence of bigotry on school campus, from preschool through higher education; a decline in the work ethic; sexual precocity; a growing self-centeredness and declining civic responsibility; an increase in self-destructive behavior; and ethical illiteracy. A recovery of shared, objectively

important ethical issue.

Finally, the causes have been alive since 1993 so it can be stated that character education has been popular and it will be popular if it succeeds. Although character education has become popular, challenges in relation to character education have occurred because matters even definitions in relation to character education may change from country to country and region to region in years (Russell and Waters, 2013). Moreover, they expressed that there has been educators' request and desire about character education implementation. Therefore, there have been various curricula, programs, methods, activities and implementations in order to meet the requests. It is not possible to find solution to character education in terms of approach, curriculum, method, or any other component in realizing character education. In this regard, it is useful to talk about Skaggs and Bodenhorn's research. Skaggs and Bodenhorn (2006) examined various character education programs in 5 different districts of US in their study. They summarized the strategies for character education in the light of the schools' purposes. In this regard, they stated that district 1 program's curricular materials were developed on the basis of Lickona (1993)'s *Educating for Character*. The program used role modeling, creating a caring and democratic classroom community, character based discipline, cooperative learning, ethical reflection, conflict resolution skills, and integrating character throughout academic curricular lessons within the school and the broader community to impact awareness, attitudes, and action. District 2 program's curricular materials were developed by the Character Education Institute of San Antonio, TX and the program used family networks and a variety of school forums in which students are inspired to participate and develop leadership. Moreover, they emphasized that they were a lot of similarities among the programs regardless of variety of Character Education curricula and program administrative structures. The similarities were namely; focus on a particular value or virtue each month, incorporation of the value into regular classroom instruction and materials, sending the materials to parents, actualizing special events, and displays. The District 3 developed its own Character Education program in 1960; however, the district decided to change its program to the *Educating for Character* program. The District 4 initiated the Community of Caring program. The District 5 used the Josephson Institute's Character Counts (Skaggs and Bodenhorn, 2006).

Another example for study on realizing character education was Model for Using Film proposed by Russell. Russell and Waters (2013) said one of the major approaches for implementing character education was using film as the basis for moral dilemma discussions. In this regard, Russell (2004, 2007) proposed Model for Using Film in order to enable teachers, especially

elementary school teachers to effectively use films and conducting moral dilemma discussions (cited in Russell and Waters, 2013). The four stages model has “implementation recommendation” at each stage of the model for elementary teachers using film to develop character of global citizens. The stages are namely; (1) the preparation stage, (2) the pre-viewing stage, (3) watching the film stage, (4) the culminating activity stage.

In this case, the implementation examples can be increased; however it has been obvious that there have not been one route for implementing character education. Besides, this has been normal in practice for character education. As it was stated before, implementation of character education depends on culture and society in which it is actualized. After all, in the field of character education, there has been need in terms of plan and implementation route. In this respect, some initiatives are very useful, for example The Character Education Partnership (CEP- Character.org.) proposed 11 principles in order to guide for curriculum integration, extra-curricular activities, maximizing character education outcomes. The principles are as follows:

- (1) The school community promotes core ethical and performance values as the foundation of good character.
- (2) The school defines ‘character’ comprehensively to include thinking, feeling, and doing.
- (3) The school uses a comprehensive, intentional, and proactive approach to character development.
- (4) The school creates a caring community.
- (5) The school provides students with opportunities for moral action.
- (6) The school offers a meaningful and challenging academic curriculum that respects all learners, develops their character, and helps them to succeed.
- (7) The school fosters students’ self-motivation.
- (8) The school staff is an ethical learning community that shares responsibility for character education and adheres to the same core values that guide the students.
- (9) The school fosters shared leadership and long-range support of the character education initiative.
- (10) The school engages families and community members as partners in the character-building effort.
- (11) The school regularly assesses its culture and climate, the functioning of its staff as character educators, and the extent to which its students manifest good character. (<http://character.org/more-resources/11-principles/>)

Therefore like character.org’s initiative, various curriculum and plan routes should be developed and at the same time flexibility must be provided in terms of cultural differences. In this regard, the purpose of this study has been shaped.

For satisfying such a need in the field of character education, it should be examined general aims of

character education. Tannir and Al-Hroub (2013) stated that character education programs aimed to enable children to learn to be responsible, honest, dependable, problem-solver, to value themselves and others, respect others (Hall et al., 1998 cited in Tannir and Al-Hroub, 2013). It is obvious that the purposes of character education are involved in affective domain in its nature. The affective domain care is about feelings, values, motivations, attitudes (Bloom, 1964 cited in Jagger, 2013). Kratwohl, Bloom and Masia associated the affective domain to learners’ beliefs, attitudes, values, emotions and acceptance or rejection (Savickiene, 2017). Similarly, Allen and Friedman (2010) stated that the affective domain originated from learners’ emotional life, and reveals learners’ attitudes, beliefs, impressions, desires, values, feelings, preferences and interests (Friedman, 2008; Friedman and Neuman, 2001; Picard et al., 2004 as cited in Allen and Friedman, 2010). Moreover, O’Donnell et al. (2009 cited in Green and Batool, 2017) expressed that the affective domain dealt with attitudes, beliefs, temperaments, points of view, impressions and feelings.

In this regard, character education is an education which involves affective domain. Accordingly, teaching in affective domain becomes the main topic of conversation. About teaching in affective domain, Allen and Friedman (2010) expressed that it is possibly the most complicated type of teaching because of cognition, behavior, feelings amalgam. Actually, Allen and Friedman’s view indicates another reason to think character education in teaching affective domain. In another words, like teaching in affective domain, character education also emphasizes cognitive, behavioral and emotional learning because of three main approaches of character education. The three main approaches stated by Howard et al. (2004) to character education namely; (1) the cognitive-developmental approach (often called moral education) gives primacy to “knowing the good,” (2) the caring approach emphasizes “desiring the good,” (3) and traditional character education, which sees “doing the good.” The approaches can reach character education together. Character education requires all three “knowing good,” “desiring good” and “doing good.” When we look at the levels of affective domain, it is possible to see all these approaches.

Kratwohl et al. (1964) divided the affective domain into five levels starting with the lowest simple level and ending with highest complex level (cited in Savickiene, 2017). The levels are receiving/attending, responding, valuing, organization and internalization/characterization (Savickiene 2017; Allen and Friedman, 2010). The definitions and explanations were developed by various authors and they are given below.

Receiving/attending: This level is the simplest level of affective domain. The level refers to individuals’

Table 1. Details about the participants of the study.

Participant name	Code	Field of study	Female	Male	Age	Placement year
Teacher A	TA	Primary Education	X		37	15
Teacher B	TB	Primary Education	X		37	15
Teacher C	TC	Primary Education		x	30	8
Teacher D	TD	Primary Education	X		28	7
Teacher E	TE	Primary Education	X		27	6
Psychological counselor A	PA	Psychological Counseling and Guidance	X		30	6
Psychological counselor B	PB	Psychological Counseling and Guidance	X		27	6
Academician A	AA	Social Studies	X		52	20
Academician B	AB	Primary Education	X		39	12

readiness to concern themselves with some phenomena (Savickiene, 2017). In this level, an individual willingly and attentively take information about and deal with current phenomenon or environment.

Responding: The level refers to individuals' consciously reactions to the environment. In this level, individuals participate in activities and take initiative (Savickiene, 2017).

Valuing: At this level, an individual's attitude moves from a simple acceptance of value to decisive actions (Savickiene, 2017). Students can explain the foundation and rational of the value, defend it and make judgments on the basis of the value (Allen and Friedman, 2010).

Organization: At this level, an individual takes new value/s into her/his existing value system. In other words, Savickiene (2017) said "New or newly perceived values are compared with the former ones, and they attain a respective priority in the value system of a student" (44). The reorganized value system helps her/him solve internal moral conflicts.

Internalization: This level is the final level of affective domain. At this most complex level, an individual represents behaviors depending on his / her value system internalizing newly attained values. The behaviors have become usual and consistent in similar situations (Savickiene, 2017).

Moreover, Allen and Friedman (2010) proposed that comprehending affective domain and its learning processes enabled professional values education to have useful framework. In this regard, a lesson plan model was designed on the basis of the affective domain grounded by Krathwohl et al. and eleven principles of effective character education proposed by the Character Education Partnership for character education in primary education.

METHODS

Design and overall procedure of the study

The design process of the lesson plan model began with reviewing related literature in depth and detail. On the basis of the literature review, fundamentals of the lesson plan comprised five level of affective domain grounded by Krathwohl et al. and eleven principles of character education proposed by the Character Education Partnership. Then the steps of the lesson plan were constructed. After that, the lesson plan model was submitted to the participants. The lesson plan model was reconstructed on the basis of the reviews and then it was submitted to the participants again. Lastly, they expressed positive opinion on the model and so the lesson plan model was put into final form.

Participants of the study

Criterion sampling method was used to determine the participants of the study. The criterion was the participant had experienced character education for least three years in somehow. The participants of the study were five primary education teachers, two experts from the field of psychological counseling and guidance, and two academicians from the department of elementary education. The detail information about the participants was given in Table 1.

Data collection methods and instruments

As a qualitative design research, the data in this study were collected through written document analysis (reviewing the related literature) and interview. The interview instrument was developed by the researcher as semi-structured. The researcher interviewed with the participants after developing the initial form of lesson plan model via the interview instrument.

The main focuses of the interviews were as follows:

- (i) *Fundamentals* [What do you think about the fundamentals (five level of affective domain and eleven principles) of the model? Does that make sense to you? Why?]
- (ii) *Parts and Steps* [What do you think about the main parts and steps? (Are the instructions clear to understand/ easy to follow, applicable, feasible?]
- (iii) *The suggestions* [for making the proposed model better]

Besides, the researcher also interviewed once more some participants who made suggestions on the model in order to make it better.

Data analysis

As a qualitative study, the data gathered through the interviews were subject to content analysis. Firstly, the researcher transcribed the interviews notes without making any change on them. Then, the researcher reviewed the transcripts and determined the codes according to frequentness, emphasis and focuses of the interview questions. After that the researcher reviewed the transcripts once more using the code list and so the last code list was formed. The categories were generated by common features founded among the codes. Last the researcher defined data and arranged quotations and findings in accordance with categories.

FINDINGS

This part begins with the final form of the lesson plan model. The part is followed by the findings related to the fundamentals and parts and steps of the model in terms of their strengths and weaknesses.

The lesson plan model

The final form of the lesson plan model is as follows (Figure 1).

Introduction

The part A is formed from two steps namely; (1) lesson overview, (2) analyzing students.

A1. Lesson overview

In this level, the teacher writes the focus character, age of the target population, suggested time and materials.

A2. Analyzing student

The aim of the part is to conduct needs assessment in terms of students' input level of focus character. In detail, the planner determines the level at which student has the focus character. These levels are the level of affective domain namely; receiving, responding, valuing, organizing and internalization. Teachers make decision of students' input level by using the ultimate aim of the level stated at each step of part B as criteria. After completing phase A, teacher proceeds to phase B level determined by the students' input level of character. For example, if the teacher determines that student has achieved the ultimate aim of the B1 level" the student is aware of focus character" the teacher will proceed to B2 level after

completing the phase A.

Body

The part B was formed from five levels namely; (1) receiving, (2) responding, (3) valuing, (4) organizing, (5) internalizing. Each level has an aim named as "Ultimate aim of the level." The ultimate aims are used for satisfying two needs of the model. First, as it was explained in previous phase, the aims are used to determine the students' input level of character. Second, the aims are used to plan effective and efficient activities in order to get successful learning outcome. Moreover, the teacher using the model does not need to determine or write any aims or objectives because the model presents the aim for each level on the basis of the affective domain. The main task for teacher is to plan activities in order to make the student to achieve the ultimate aims. Teachers must be sure that they prepare activities touching all multiple intelligences, individual differences so use various methods of teaching.

B1 Level: Receiving

In this level, the teacher prepares activities to make the students recognize the importance of focus character. After completing the activities, the student is expected to be aware of the character. For this aim, the activities must direct the students' attention to current character. For example, an activity at this level for the character "animal welfare" may be watching the TV series "Lassie" which was released in 1954-1973, its story was the ongoing life of the Martin family and their beloved dog, Lassie.

B2 Level: Responding

In this level, the teacher prepares activities to provide the student with an opportunity to subscribe to the character. After completing the activities, the students are expected to be comfortable with presence of the character and feel uncomfortable about absence of the character. For example, an activity at this level for the character "animal welfare" may be finding something is not right on the visual cards or video or case story. For the activity, teacher prepares material including more than one wrong and shows the material to the student and asks her or him to find the wrongs. If the student does not find the wrong cases related with the animal welfare, the teacher helps the student out via Socratic Method.

B3 Level: Valuing

In this level, the teacher prepares activities to provide the

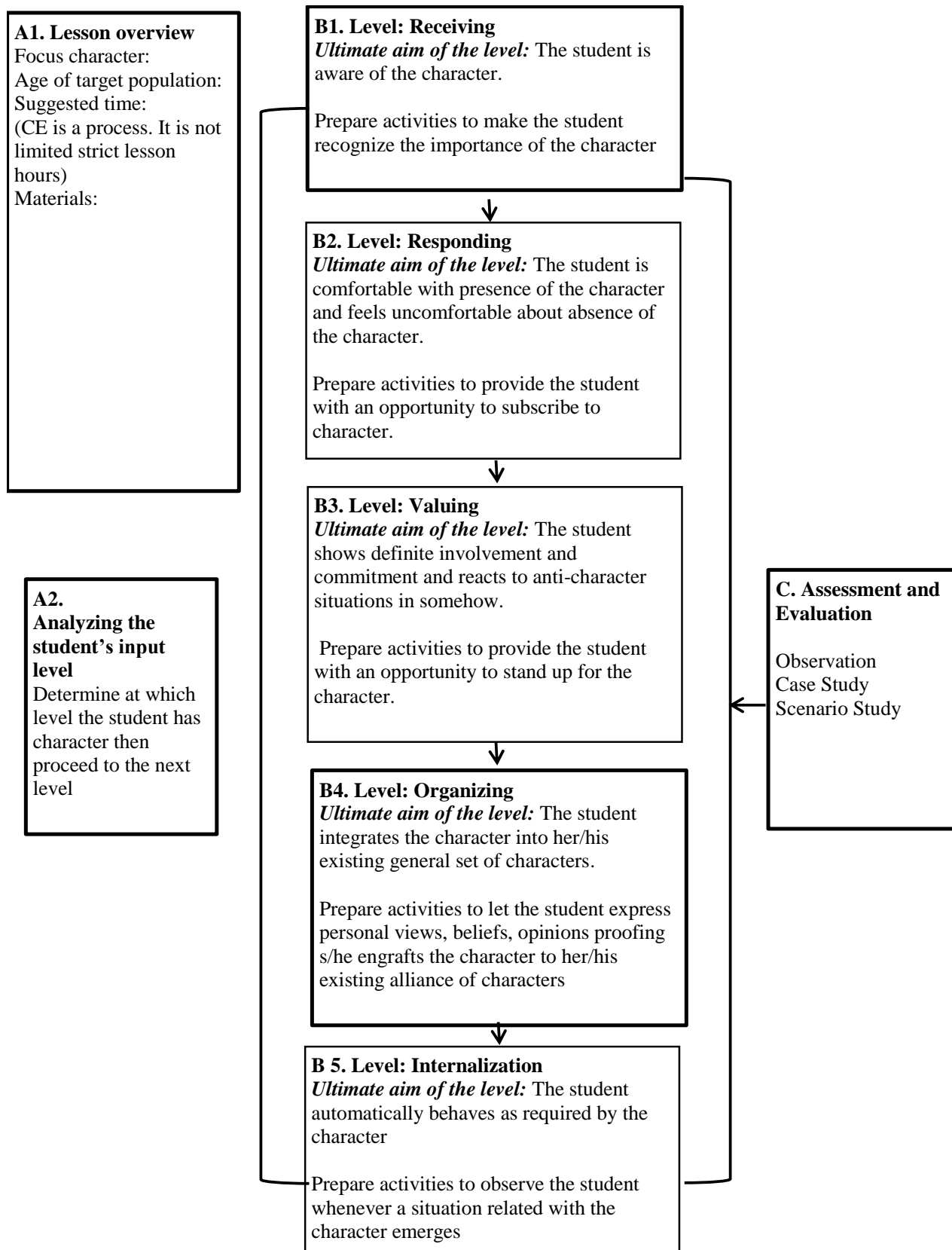


Figure 1. The lesson plan model.

student with an opportunity to stand up for the character. After completing the activities, the student is expected to show definite involvement and commitment and react to anti-character situations in somehow. For example, an activity at this level for the character “animal welfare” may be establishing a club for the prevention of cruelty to animals and being a member of the club.

B4 Level: Organizing

In this level, the teacher prepares activities to let the student express personal views, beliefs, opinions proofing s/he engrafts the value to her/his existing alliance of values. After completing the activities, the student is expected to integrates the value into her/his general set of values. For example, an activity at this level for the character “animal welfare” may be writing personal opinions about possessing the character “animal welfare.”

B5 Level: Internalization

In this level, the teacher prepares activities to be able to observe the student whenever a situation related with the character emerges. At this level, the student is expected to automatically behave as required by the character. Therefore, the teacher prepares the activities for her or him own purpose of observing the student. Actually, this level also serves as formative evaluation in terms of student internalization level of the character. If the student does not behave as required by the character, the student does not internalize the character and so the teacher goes back to previous levels to find what make the student repudiate the character. After finding the gap, the teacher fills the gap related with the student accomplishing character process. Besides, Multiple Intelligences Theory (MIT) is implicated over all the part B. The reason is the positive implications of MIT on teaching and learning.

Assessment and evaluation

Although the part C can be seen as separate and the last part of the model, it is not a separate part of the model, it is actualized as formative evaluation via observation, case sand scenario studies etc. The teachers will observe their students' acquisitions as it happens and monitor and adjust accordingly during and after implementation of the model.

Fundamentals of the model

As it was explained earlier in the text, the fundamentals

of the model are affective domain grounded by Krathwohl et al. and eleven principles of Character Education Partnership. In this regard, the analysis of the answers to the interviews showed that one of the categories was fundamentals of the model because there were common strengths and weaknesses of them. Therefore, related results are under the following subtitles namely; strengths of the fundamentals and weaknesses of the fundamentals.

Strengths of the fundamentals

The analysis of the interviews indicated that the participant teachers conducted character education in social sciences course. Also all of them expressed that they had not seen any lesson plan model specialized for character education before. Because of that they stated it is strength on its own in such a case. In this regard, the following excerpts are taken from the interview transcripts;

I have not seen any lesson plan prepared for only character education before. For me, this attempt is valuable. (TB)

The draft model is a powerful attempt because there is no or rare such a model in field of application. (TE)

Besides, the strengths of the model in terms of its fundamentals stated by the participants were namely; familiarity of the affective domain, opportunity to understand what is happening in the world in terms of character education.

All the participants thought pressing affective domain into service was a good idea because affective domain was familiar to educators, and the domain was like character education, the hearth of the domain was combined attitude, value, belief, emotion. In this respect, the following excerpts are taken from the interviews;

Most of us know affective domain as one of the domains of Bloom Taxonomy although it is developed by Krathwohl et al. Actually, it doesn't matter because the power of the fundamental comes from its familiarness somehow. This is one of the strengths because educators accept and internalize innovation including familiar elements easily than that including strange elements (PB)

It is good idea to use affective domain known as affective domain of Bloom taxonomy because all teachers know the steps of affective domain so they easily use it to make plan (AB)

I think both character education and affective domain have same direction. Both of them concern education of

values, emotions, beliefs, characteristics of being good human being. Thus, the fundamental is one of the strengths of the model (PA).

Eleven principles of Character Education Partnership is one of the fundamentals of the model. I think this enables us to see what is going on in the world in terms of character education (TC).

Weaknesses of the fundamentals

Actually, the analysis of the participants' answers to the interviews indicated that the participants did not think any serious weakness in terms of the fundamentals. However, two teachers worried about the eleven principles because of foreign origin. In this regard, the following excerpts are taken from the interview transcripts,

Actually, I do not know the eleven principles very well. Thus, the principles may be a weakness because they were produced by foreign culture (TA).

We talk about culture factor when character education is at stage, however we do not have our own principles about character education. I do not know the eleven principles fit in with our character education. I am not sure of this issue (TD).

The researcher presented the eleven principles of Character Education Partnership after the teachers expressed the views. Then, the teachers read the principles and stated this reading removed their worries because one of the eleven principles indicated cultural differences and their importance.

Parts and steps of the model

The analysis of the answers to the interview indicated that one of the categories was parts and steps of the model because there were common strengths and weaknesses of them. As it was explained earlier in the text, the parts and steps of the model are namely; (A) Introduction including (A1) Lesson overview, (A2) Analyzing the student's input level, (B) Body including (B1) Receiving, (B2) Responding, (B3) Valuing, (B4) Organizing, (B5) Internalization, and (C) Assessment and Evaluation. Therefore, related results are under the following subtitles namely; strengths of the parts and steps, weaknesses of the parts and steps.

Strengths of the parts and steps

The analysis of the data showed that there were two

views about the A1 step of the part A1. The view about the subtitle "suggested time." The participant teacher TB and academician AA stated that the subtitle was strength because it indicated there could not be a limited and strict time for character education. Also they emphasized that the usage of the word "time" instead of the word "lesson hour" was pertinent choice because the word indicated character education was a process and could not be expressed lesson hours. After the comments, the researcher added the emphasis on the plan model (Figure 1).

For the part A, 2nd level, the analysis of the data displayed that all participant gave positive feedback except one teacher (TC) and one expert from the field of psychological counseling and guidance (PA). The participants giving positive feedback stated that the level gave importance on individual differences and also enabled students to take appropriate education for their character. In another saying the step helped students not to be bored with activities aimed at the potential they have already gained in that character. The following excerpts are taken from the interviews,

Actually, if learning-teaching activities are under the level of students, the students get bored of the activities thus the activities are ineffective. Such an analysis prevents students from being boring. (AB)

We often talk about individual differences; however we could not actualize activities taking the differences into account properly. This step is very well, very good for taking individual differences into account. (PB)

The analysis of the participants' answers to the interviews indicated that all participants gave positive feedback about part B all steps except the last step B5. When conducting deep analysis of the feedbacks for first four step of part B, it was found out that the order of the steps, including ultimate aims and activity instruction were seen as strengths of the model. In this regard, the following excerpts were taken from interview transcripts,

I think the main and most powerful part of the model is part B. First, the steps were ordered according to affective domain which was familiar to us; educators and we have known and accepted the validity of the affective domain for years. For us, it was easy to follow the order. (TA)

I haven't seen such a detail and user-friendly plan before for not only character education, but also all courses. I mean that all the steps of the part B include goal and instruction for activity and it is easy to conduct for any teacher. (TC)

Part B seems to be the brain of the model because the

part guides teachers to make plan step by step. I think the order is good and the instructions are clear to understand and follow. (AA)

Weaknesses of the parts and steps

The analysis of the data displayed that there was one main weakness of the entire model. That was assessment and evaluation part, part C. As it is expected that also 2nd step of part A was seen as weakness a little bit because also the step required assessment and evaluation. In this regard, two participants criticized the A2 step. The teacher TC and the expert from the field of psychological counseling and guidance PA stated that the step A2 might be weakness because conducting assessment and evaluation in affective domain could be more difficult than what was thought. The data analysis showed that for the part C, all participants except teacher TB and academician AB worried about actualization of part C properly. In this regard, the participants worrying about the part C commonly stated that any assessment and evaluation method might be difficult in affective domain. The following excerpts were taken from the answers to the interviews,

I think, affective learning requires alternative assessment and evaluation method and we are not good at these methods as teachers in Turkey. Therefore, I am worrying about the part C (TA).

I am not sure about the part C. It may not work properly. I do not imagine any assessment and evaluation material which can present exact score or result about affective behavior. Therefore, the part C is weak point of the model (TC).

It is difficult to assess affective acquisitions. The quick fix approach is useless for this situation. Affective teaching and learning is a process so an affective acquisition entails assessment and evaluation methods which originated from process approach. I am not sure teachers are patient as it is needed. Moreover, I am not sure they are qualified to use process approach in assessment and evaluation properly (PA).

It is generally difficult to assess and evaluate beliefs, values, and emotions. Therefore, the weak point of the model might be part C (AA).

Conclusion

The related literature review of the study indicated that character education is as old as education because it is a goal of education. In this respect, Young et al. (2013)

expressed that the word character originated from a Greek word “engrave” and character education was old; Aristotle, Plato, and Socrates emphasized the importance of developing morals and values of younger generations in ancient Greece. In this connection, Thambusamy and Elier (2013) said that morals, virtues or character had been taught by all cultures in one or another way since the beginning of the recorded time.

Moreover, the literature review showed that although character education falls from grace time to time because of various causes, it is obvious that character education has been needed from past to present. At this stage, society requires character education and educators need routes, methods for implementing character education. However, there has not been one route for implementing character education because it depends on culture and society in which it is actualized. Therefore, there are more and more routes and methods might be and should be for implementation in the field of character education. In this regard, a lesson plan model was developed on the basis of the affective domain grounded by Kratwohl et al. and eleven principles of effective character education proposed by the Character Education Partnership in this study.

As it was presented in detail, the results displayed that the fundamentals of the model were appreciated by the participants. They expressed that the familiarity of affective domain and opportunity presented by the eleven principles to see what is happening in the world were strengths of the model. The underlying logic of that affective domain, one of the fundamentals, is that character education is an affective teaching-learning process and naturally the character education might be actualized by using affective domain steps. In this respect, Stiff-Williams (2010) stated that character education engaged in constructing “decision filters” defined by him as serving to balance thought processes and behave according to them; therefore character education involved both cognitive and affective process.

Moreover, the results indicated that most of the participants gave positive feedback about the parts and steps of the model. As strengths, they gave emphasis on process approach, giving importance to individual differences, order of the steps, ultimate aims and activity instructions. The process approach which was one of the strengths of the model is also supported by the literature. For example, Anderson (2000) expressed that character education is a part of school life; it is not a quick-fix program. The results displayed the weakness of the model. The weakness was assessment and evaluation part. Most of the participants explained that they worried about the assessment and evaluation of affective acquisitions.

Finally, the lesson plan model for character education in primary education was developed as a route for teachers who can make modifications on the model

according to their teaching environment. The participants' feedbacks mainly were positive; however they also pointed out weakness about the assessment and evaluation part of the model. The weakness is important and will be taken into consideration during the follow up studies for this research. Moreover, Anderson (2000) emphasized that today's effective lesson plan are not yesterday's lesson plan so educators should be in continued improvement for character education. In this respect, educators involved in character education should always seek new approaches, better planning models for better character education.

CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

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Full Length Research Paper

An examination of the relationship between primary school students' environmental awareness and basic science process skills

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The aim of the research was to examine the relationship between primary school students' environmental awareness and basic science process skills based on various variances. Within relational research model, the research was conducted with 332 grade 3 and 4 students. Primary School Environmental Awareness Scale and Basic Skills Scale were used to collect data. Demographic features were employed to determine the students' educational level, gender and class. In light of the results, the significant relationship between their basic science skills and environmental awareness was detected. A significant difference between the total scores of life in nature and environmental awareness scale was observed in favor of female students. Any significant difference was not found between sub-dimensions and total scores of environmental awareness over class level. The type of school significantly impacted their basic science process skills and level of environmental awareness. The differences which were found were in favor of private schools for both scales.

Key words: Environmental awareness, primary school, science process skills.

INTRODUCTION

Individuals need to have certain basic skills to get to know the nature, reach existing information, solve the problems that they have in daily life and comprehend the relationships between the humankind and the environment. These basic skills today are called twenty first century skills and training programs are created to bring these skills to individuals. Twenty first century individuals should think creative and critical, carry out a group work, offer solutions for problems, have high communication skills, know how to reach information and

benefit from the opportunities of technology while reaching information, be open to innovations, be agreeable and responsible, have developed social and cultural skills, have initiative, be productive and have leadership skills to be successful in educational and business life (Uluyol and Eryilmaz, 2015). Twenty First Century Learning Partnership (Partnership for 21st Century Learning) which is known as P21 is an institution that forms collaborative associations among educational, business, community and government leaders. In this

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institution, twenty first century skills are collected under three main headings:

- (1) Learning and innovation skills (creativity and innovativeness, critical thinking and problem solving, communication, collaboration)
- (2) Knowledge, media and technology skills (information literacy, media literacy, technology literacy)
- (3) Life and career skills (flexibility and adaptability, entrepreneurship and self-management, social and intercultural skills, productivity and accountability, leadership and responsibility) (P21, 2007).

To use twenty first century skills in daily life, science process skills are the abilities which should be on the ground and involve almost all of them. Process skills are defined as abilities that are compatible with several science disciplines, reflect the behaviors of scientists and can transfer among each other in general (Padilla, 1990). Science process skills involve basic skills necessary to have to specialize in science (Prayitno et al., 2017). However, if they also have field knowledge, they contribute to the science be formed (Ayas et al., 1997). Individual endowed with a science perception know the stages of science knowledge and are conscious of that technological advances will progress in line with this information and thus social development will occur through the need of the society being met (Kandemir and Yılmaz, 2011). Science process skills follow a hierarchy from the simple to the complex (Padilla et al., 1983). These skills are observation, classification, assessment, forming relationships between numbers and space, prediction, recording, using and interpreting data, setting models, inference, hypothesizing and experimentation abilities (Tan and Temiz, 2003). Especially when the field literature is examined, a great variety of classifications of science process skills which have similar characteristics turns out. The common point of these classifications is that they can be classified as basic process skills and integrated science process skills titles. Basic science process skills are evaluated as the most important part of the mental development and used often in daily life (Aslan et al., 2016). Development of science process skills brings the ability to solve problems in daily life to students (Kazeni, 2005). These skills are seen as skills that are used in preschool educational institutions and primary schools and should be brought to students from this stage. Hence, basic skills form the foundation of high-level skills. Basic science process skills were determined as observation, classification, inference, assessment, prediction, and communication. Integrated science process skills are: controlling variances, defining variances operationally, hypothesizing, interpreting data, experimenting and setting models (Padilla, 1990). The basic science process skills which are among the skills expected from the students to acquire from preschool

and elementary school will form a basis for future complex skills to be acquired. Besides, they will provide individuals with significant advantages to overcome daily life problems. Daily life problems include the problems that individuals can face in themselves or their surroundings at any moment (natural or artificial).

Humankind and environment constantly interact with each other in various ways. Change of the one brings a change of the other. For this reason, several studies on the environment have been recently conducted to ensure the sustainability of the environment. Associating skills that will be acquired with the environment is taken care in order to raise environmental awareness of individuals. P21 (2007) specified the skills that individuals should have in twenty first century as well as it also determined the matters that will be brought to individuals and gave place to environmental literacy in 5 themes. After the importance of environment increased, concepts about the environment also increased and several research fields such as sustainable environment, environmental education, environmental literacy, environmental consciousness, environmental awareness, attitudes and behaviors towards environment came out. Among these concepts, environmental education is the most remarkable one with regard to that it directly affects all of the other concepts. Environmental education changes beliefs, attitudes and most of all behaviors towards the environment and also brings knowledge and experience (Frantz and Mayer, 2014). Although governments have many environmental policies, programs, and rules, the importance of creating environmental awareness has not changed especially for school children. The lack of awareness towards the environment leads to the destruction of the earth and living creatures (Mahajan and Darbari, 2014). United States Environmental Protection Agency (EPA) (2017), stated the components of environmental education as follows: awareness and sensitivity, knowledge and understanding, attitudes, skills, and participation. EPA also expressed that environmental education will develop the thinking skills of individuals (Environmental Protection Agency-EPA, 2017). Awareness is a concept that is associated with consciousness and identified with psychologically developed and mature people (Hisli Şahin and Yeniçeri, 2016). Developed and mature individual on environmental issues means an individual whose environmental awareness formed. Environmental awareness also means helping social groups and individuals to gain awareness and sensitivity towards the same problems they face against their environment (Kang and Grewak, 2015). Environmental awareness is necessary to solve environmental problems and awareness needs to be brought through environmental education to individuals (Cruz and Tantengco, 2017). This is because one of the results of environmental education is to create environmental awareness. For this reason, environmental

Table 1. Demographic characteristics of participants.

Demographic Characteristics		n	%
Gender	Female	159	47.9
	Male	173	52.1
Grade	Grade 3	137	41.3
	Grade 4	195	58.7
School Type	Rural public school	111	33.4
	City center public school	111	33.4
	Private school	110	33.2

awareness will be a global phenomenon in the near future (Badoni, 2017).

Individuals having science process skills will behave correspondingly to environmental science discipline and in a way that reflects behaviors of individuals having high-level of environmental awareness. Individuals having basic process skills in associating basic process skills with environment observe the environment via 5 senses, classify those around based on their similarities and differences, make inferences, measure those around by comparing, make predictions about the future in accordance with those around, make inferences in environmental incidents in accordance with cause and effect relation and will enhance the environmental awareness by communicating with living and non-living creatures around.

It is important that individuals have science process skills and know how the relationship of environmental awareness levels of individuals is, as these skills contribute positively to individuals in many fields in daily life. In this context, when the relevant literature is reviewed, science process skills and environmental awareness studies which have not been conducted before and filling the gap about the primary school students reveal the importance of this study. The aim of the research is to examine the relationship between environmental awareness and basic science process skills of primary school students based on various variances. In accordance with this main objective, the answers to the following questions were searched:

- (1) Is there any significant difference between environmental awareness levels and basic process skills of primary school students?
- (2) At the environmental awareness levels of primary school students, is there any significant difference based on: a) school type, b) class level, and c) gender variances?
- (3) In basic science process skills of primary school students, is there any significant difference based on: a)

school type, b) class level, and c) gender variances?

METHODOLOGY

The research in which the relationship between environmental awareness and the basic science process skills of primary students was examined based on various variances was designed in relational research model. In the relational search model, it is aimed to examine attitudes, tendencies, and opinions towards the population through the studies conducted on the study group selected from the population (Creswell, 2017). In this study, the relational search model aiming at determining the change between environmental awarenesses and basic science process skills as designed is called relational search model (Karasar, 2015).

The sample of the study

The study group of the research was determined through a random cluster sampling method. The study was conducted with 332 studies in 3 schools of grade 3 and 4 and study in primary schools in Konya city center and counties in 2017-2018 education year and participated voluntarily in the study. The reason for choosing different school types is that there are differences in science process skills and environmental awareness. The demographic characteristics of the participants are shown in Table 1.

In Table 1, 47.9% of the students in the study group were female and 52.1% were male. 41.3% of the students are grade 3 and 58.7% of the study at grade 4. When the school types they study are examined, 33.4% of the students study in the rural public school rural public school, 33.4% of them study in the city center public school and 33.2% of them study in private schools.

Data collection

As the tool of collecting data within the scope of the research "Personal Information Form", "Primary School Environmental Awareness Scale" and "Basic Skill Scale" were used.

Personal information form

Demographic information (gender, class and school type) of the students in the study group was acquired through the form

developed by the researcher.

Primary school environment awareness scale

Primary School Environment Awareness Scale was developed by Yıldız and Mentiş (2017). The scale consists of 35 items and as Likert type (completely agree, agree, neutral, disagree, totally disagree). A pool of 50 questions was created for the scale and 1 item was excluded from the expert opinion, 6 items were excluded from the overlapping and 8 items were excluded from the reliability and the scale consisted of 35 items and 4 sub-dimensions. Sub-dimensions were determined as life in nature (15 items), renewable energy resources (12 items), environmental responsibility (5 items) and the continuity of living creatures (3 items). The reliability coefficient of the primary school environmental awareness scale was found to be 0.843 and it was determined that the scale was a valid and reliable assessment tool (Yıldız and Mentiş, 2017). The maximum score that can be got from the scale is 175 and the lowest score is 35. The scale was created with the aim of assessing the awareness of primary school students about life in nature including almost all of the components of the environment, renewable energy resources, environmental responsibility and continuity of living creatures.

Basic science process skills scale

The Basic Skill Scale was developed by Padilla et al. (1983) and adapted to Turkish by Aydoğdu (2006). The original form of the scale comprises 36 multiple-choice questions consisting of six each question about observation, classification, inference, assessment, prediction and communication skills. In the form adapted to Turkish, totally 5 questions as 1 question in observation dimension, 1 question in classification dimension, 1 question in inference dimension, 1 question in scale dimension and 1 question in communication dimension were excluded from the scale because of the low level of distinctiveness and the scale comprised 31 questions. It was found that reliability coefficient (KR-20) of basic skill scale which consists of 31 items was 0.83, average difficulty of it was 0.55 and the scale was determined to be a valid and reliable assessment tool (Aydoğdu and Karakuş, 2015). In addition, the fact that all questions are related to environmental issues and they complete the study in terms of its relationality.

Data collection and analysis

The stage of collecting data for the study was launched by selecting voluntary participant students. The students were provided with necessary explanations about the scales and given an appropriate period of time.

Statistical methods were used in the analysis of the data. As the number of observations was over 30, Kolmogorov-Smirnov test was performed to determine whether the data indicated normal distribution at the first stage of the study's analysis. Significance value was calculated as 0.000 and therefore it was determined that the data did not indicate normal distribution. With the aim of determining the relationship between the two assessments, Spearman Test with the aim of determining whether there was a difference based on school type or not, Kruskal Wallis-H Test with the aim of paired-comparison of sub-dimension and total score average in which a significant difference was found, Mann Whitney U Test and with the aim of determining whether there was a difference about class and gender variances, Mann Whitney U

Test was performed.

RESULTS

Is there any significant difference between environmental awareness levels which are sub-problems and basic process skills of primary school students? The question which is of 1 sub-problem is shown in Table 2.

When Table 2 was examined, it was determined that the students in the study group indicated a significant difference between the total scores of the Basic Skill Scale and the primary school environmental awareness scale. A significant difference was determined between "Observation", "Classification", "Inference", "Communication", the total scores of the Basic Skill Scale and the total scores and all sub-dimensions of the Primary School Environment Awareness Scale ($p < 0.05$). In the "Prediction" sub-dimension of the Basic Skill Scale, there was not found any significant difference between the "Environmental Responsibility" and "Continuity of Living Creatures" sub-dimensions of the Primary School Environment Awareness Scale. There was not found any significant difference between the total scores and sub-dimensions of "Assessment" sub-dimension of the Basic Skill Scale and the Primary School Environment Awareness Scale ($p > 0.05$).

The findings of the question (a): "Is there any significant difference in the levels of environmental awareness among primary school students based on the variance of school type?" which is of 1 sub-problem shown in Table 3.

When Table 3 was examined, it was found that the total scores of the Primary School Students' Environmental Awareness Scale and sub-dimensions of "Life in the Nature", "Renewable Energy Resources", "Environmental Responsibility" and "Continuity of Living Creatures" indicated a significant difference based on school type ($p < 0.05$). When the Kruskal-Wallis H Test results were examined, an average of sub-dimensions and total scores in which a significant difference was found were examined through the Mann Whitney U Test paired-comparison being conducted.

Total score averages of life in nature sub-dimension of primary school environmental awareness scale were determined to indicate a significant difference ($U=3746,500$; $p=0.000$) between the students studying in city center public school and private school, in favor of students studying in private school; ($U=4048,000$; $p=0.000$) between the students studying in rural public school and in private schools in favor of students studying in private school.

Total score averages of renewable energy resources sub-dimension of primary school environmental awareness scale were determined to indicate a significant difference ($U=3208,500$; $p=0.000$) between the students

Table 2. Results of Spearman Correlation analysis on the relationship between environmental awareness levels and basic cognitive process skills of primary school students.

Basic Skill Scale		Primary School Environment Awareness Scale				Total Score
		Life in Nature	Renewable Energy Resources	Environmental Responsibility	Continuity of Living creatures	
Observation	r	0.264	0.195	0.131	0.170	0.206
	p	0.000*	0.000*	0.017*	0.002*	0.000*
	n	332	332	332	332	332
Classification	r	0.225	0.216	0.160	0.136	0.203
	p	0.000*	0.000*	0.004*	0.013*	0.000*
	n	332	332	332	332	332
Inference	r	0.202	0.206	0.173	0.171	0.188
	p	0.000*	0.000*	0.002*	0.002*	0.001*
	n	332	332	332	332	332
Assessment	r	0.004	-0.010	-0.031	0.081	-0.034
	p	0.939	0.850	0.579	0.143	0.532
	n	332	332	332	332	332
Prediction	r	0.126	0.140	0.069	0.052	0.119
	p	0.022*	0.011*	0.211	0.341	0.031*
	n	332	332	332	332	332
Communication	r	0.252	0.228	0.178	0.180	0.218
	p	0.000*	0.000*	0.001*	0.001*	0.000*
	n	332	332	332	332	332
Total Score	r	.260	0.227	0.163	0.188	0.213
	p	0.000*	0.000*	0.003*	0.001*	0.000*
	n	332	332	332	332	332

studying in city center public school and private school in favor of students studying in private school; ($U=3167,000$; $p=0.000$) between the students studying in rural public school and in private schools in favor of students studying in private school.

Total score averages of environmental responsibility sub-dimension of primary school environmental awareness scale were determined to indicate a significant difference ($U=4267,000$; $p=0.000$) between the students studying in city center public school and private school in favor of students studying in private school; ($U=4482,500$; $p=.001$) between the students studying in rural public school rural public school and in private schools in favor of students studying in private schools.

Total score averages of environmental responsibility sub-dimension of primary school environmental

awareness scale were determined to indicate a significant difference ($U=3549,000$; $p=0.000$) between the students studying in city center public school and private school in favor of students studying in private school; ($U=4249,000$; $p=0.000$) between the students studying in rural public school and in private schools in favor of students studying in private school.

Total score averages of environmental responsibility sub-dimension of primary school environmental awareness scale were determined to indicate a significant difference ($U=3950,000$; $p=0.000$) between the students studying in city center public school and private school and in favor of students studying in private school; ($U=4060,000$; $p=0.000$) between the students studying in rural public school and in private schools in favor of students studying in private school.

Table 3. Results of Kruskal Wallis-H Test about environmental awareness levels of primary school students based on school type variance.

Primary School Environment Awareness Scale	Groups	n	\bar{x}_{sira}	χ^2	Sd	p
Life in the Nature	City center public school	111	144.51	28.986	2	0.000*
	Private School	110	206.64			
	Rural public	111	148.71			
Renewable Energy resources	City center public school	111	139.63	51.421	2	0.000*
	Private School	110	219.54			
	Rural public school	111	140.82			
Environmental Responsibility	City center public school	111	148.05	18.169	2	0.000*
	Private School	110	197.96			
	Rural public school	111	153.77			
Continuity of Living Creatures	City center public school	111	137.40	31.532	2	0.000*
	Private School	110	206.61			
	Rural public school	111	155.85			
Total Score	City center public school	111	147.34	26.052	2	0.000*
	Private School	110	204.68			
	Rural public school	111	147.82			

The findings of the question a): "Is there any significant difference in basic science process skills of primary school students based on school type variance?" which is of 1 sub-problem shown in Table 4.

When Table 4 was examined, it was found that the total scores of the Primary School Students' Environmental Awareness Scale and sub-dimensions of "Observation", "Classification", "Inference", "Prediction" and "Communication" indicated a significant difference based on school type ($p < 0.05$). When the Kruskal-Wallis H Test results were examined, an average of sub-dimensions and total scores in which a significant difference was found were examined through the Mann Whitney U Test paired-comparison being conducted.

Score averages of observation sub-dimension of basic skill scale were determined to indicate a significant difference ($U=3414,000$; $p=0.000$) between the students studying in city center public school and private school in favor of students studying in private school; ($U=2788,000$; $p=0.000$) between the students studying in rural public school and in private school in favor of students studying in private school.

Score averages of classification sub-dimension of basic skill scale were determined to indicate a significant difference ($U=3690,000$; $p=0.000$) between the students studying in city center public school and private school in

favor of students studying in private school; ($U=3016,000$; $p=0.000$) between the students studying in rural public school and in private school in favor of students studying in private school.

Score averages of inference sub-dimension of basic skill scale were determined to indicate a significant difference ($U=4153,500$; $p=0.000$) between the students studying in city center public school and private school in favor of students studying in private school; ($U = 3953,500$; $p=0.000$) between the students studying in rural public school and in private school in favor of students studying in private school.

Score averages of assessment sub-dimension of basic skill scale were determined to indicate a significant difference ($U=4684,500$; $p=0.002$) between the students studying in city center public school and private school in favor of students studying in private school; ($U=4902,500$; $p=0.009$) between the students studying in rural public school and in private school in favor of students studying in private school.

Score averages of prediction sub-dimension of basic skill scale were determined to indicate a significant difference ($U=3860,000$; $p=0.000$) between the students studying in city center public school and private school in favor of students studying in private school; ($U=3496,000$; $p=0.000$) between the students studying in rural public

Table 4. Results of Kruskal Wallis-H Test related to school type variance of basic science process skills of primary school students.

Basic Skill Scale	Groups	n	\bar{x}_{sira}	χ^2	Sd	p
Observation	City center public school	111	148.75	57.930	2	0.000*
	Private School	110	221.12			
	Rural public school	111	130.12			
Classification	City center public school	111	151.56	50.064	2	0.000*
	Private School	110	216.54			
	Rural public school	111	131.86			
Inference	City center public school	111	149.50	27.067	2	0.000*
	Private School	110	203.80			
	Rural public school	111	146.54			
Assessment	City center public school	111	152.08	11.093	2	0.000*
	Private School	110	190.35			
	Rural public school	111	157.29			
Prediction	City center public school	111	151.32	37.671	2	0.000*
	Private School	110	210.63			
	Rural public school	111	137.95			
Communication	City center public school	111	152.36	61.684	2	0.000*
	Private School	110	222.00			
	Rural public school	111	125.63			
Total Score	City center public school	111	143.91	77.281	2	0.000*
	Private School	110	231.24			
	Rural public school	111	124.93			

school and in private school in favor of students studying in private school.

Score averages of communication sub-dimension of basic skill scale were determined to indicate a significant difference ($U=3461,500$; $p=0.000$) between the students studying in city center public school and private school in favor of students studying at private school; ($U=5086,000$; $p=0.022$) between the students studying in city center public school and in rural public school in favor of students studying in city center public school; ($U=2643,000$; $p=0.000$) students studying in rural public school and in private school in favor of students studying in private school.

Score averages of basic skill scale were determined to indicate a significant difference ($U=2814,000$; $p=0.000$) between the students studying in city center public school and private school in favor of students studying in private school; ($U=2274,500$; $p=0.000$) between the students studying in rural public school and in private school in

favor of students studying in private school.

The findings of the question a: "Is there any significant difference in the levels of environmental awareness among primary school students based on the variance of school type? which is of 3 sub-problem shown in Table 5.

When Table 5 was examined, according to the results of Mann-Whitney U test which was conducted in the group consisting of 332 people 137 of whom were Grade 3 and 195 of whom were Grade 4 to determine whether there was a significant difference in scores of Primary School Environmental Awareness Scale: Any significant difference was not found between the sub-dimensions and total scores of Primary School Environmental Awareness Scale ($p > 0.05$).

The findings of the question a: "Is there any significant difference in basic science process skills of primary school students based on class level variance?" which is of 1 sub-problem shown in Table 6.

When Table 6 was examined, according to the results

Table 5. Results of Mann-Whitney U test of the level of environmental awareness among primary school students based on the class level.

Primary School Environment Awareness Scale	Grade	N	Mean Rank	Rank Sum	U	z	p
Life in Nature	Grade 3	137	159.94	21911.50	12458.500	-1.046	0.296
	Grade 4	195	171.11	33366.50			
Renewable Energy resources	Grade 3	137	162.73	22294.50	12841.500	-0.606	0.544
	Grade 4	195	169.15	32983.50			
Environmental Responsibility	Grade 3	137	154.31	21141.00	11688.000	-1.955	0.051
	Grade 4	195	175.06	34137.00			
Continuity of Living creatures	Grade 3	137	157.08	21519.50	12066.500	-1.518	0.129
	Grade 4	195	173.12	33758.50			
Total Score	Grade 3	137	161.20	22084.00	12631.000	-0.844	0.399
	Grade 4	195	170.23	33194.00			

Table 6. Results of Mann-Whitney U Test on basic science process skills of primary students based on class level variance.

Basic Skill Scale	Grade	N	Mean Rank	Rank Sum	U	z	p
Observation	Grade 3	137	179.11	24538.00	11630.000	-2.052	0.040*
	Grade 4	195	157.64	30740.00			
Classification	Grade 3	137	180.54	24734.50	11433.500	-2.305	0.021*
	Grade 4	195	156.63	30543.50			
Inference	Grade 3	137	173.08	23712.50	12455.500	-1.092	0.275
	Grade 4	195	161.87	31565.50			
Assessment	Grade 3	137	190.35	26078.00	10090.000	-3.935	0.000*
	Grade 4	195	149.74	29200.00			
Prediction	Grade 3	137	177.61	24333.00	11835.000	-1.813	0.070
	Grade 4	195	158.69	30945.00			
Communication	Grade 3	137	184.94	25337.00	10831.000	-2.992	0.003*
	Grade 4	195	153.54	29941.00			
Total Score	Grade 3	137	186.13	25499.50	10668.500	-3.129	0.002*
	Grade 4	195	152.71	29778.50			

of Mann-Whitney U test which was conducted in the group consisting of 332 people 137 of whom were Grade 3 and 195 of whom were Grade 4 to determine whether there was a significant difference in scores of Basic Process Skill Scale: A significant difference was found between the total score and the scores of "Observation", "Classification", "Assessment", "Communication" sub-

dimensions based on class level ($p < 0.05$). When mean ranks were examined, it was determined that the difference was in favor of Grade 3 classes.

The findings of the question a: "Is there any significant difference in the levels of environmental awareness among primary school students based on gender variance?" which is of 1 sub-problem shown in Table 7.

Table 7. Results of Mann-Whitney U test of the level of environmental awareness among primary school students based on gender variance.

Primary School Environment Awareness Scale	Grade	N	Mean Rank	Rank Sum	U	z	p
Life in Nature	Female	159	179.45	28532.50	11694.500	-2.361	0.018*
	Male	173	154.60	26745.50			
Renewable Energy resources	Female	159	176.89	28125.00	12102.000	-1.912	0.056
	Male	173	156.95	27153.00			
Environmental Responsibility	Female	159	173.92	27653.50	12573.500	-1.362	0.173
	Male	173	159.68	27624.50			
Continuity of Living creatures	Female	159	166.42	26461.50	13741.500	-0.014	0.989
	Male	173	166.57	28816.50			
Total Score	Female	159	179.10	28477.00	11750.000	-2.294	0.022*
	Male	173	154.92	26801.00			

When Table 7 was examined, according to the results of Mann-Whitney U test which was conducted to determine whether there was a significant difference in the level of primary school environmental awareness: A significant difference was found in the total score of Primary School Environmental Awareness Scale and the scores of "Life in the Nature" sub-dimension based on gender ($p < 0.05$). When mean ranks were examined, it was determined that the difference was in favor of the female student.

The findings of the question a: "Is there any significant difference in the levels of basic process skill of primary school students based on gender variance?" which is of 3 sub-problem shown in Table 8.

When Table 8 was examined, according to the results of Mann-Whitney U test which was conducted to determine whether there was a significant difference between basic science process skills: A significant difference was found in the total score of Basic Skill Scale and the scores of "Observation" and "Classification" sub-dimensions based on gender ($p < 0.05$). When mean ranks were examined, it was determined that the difference was in favor of the female student.

DISCUSSION

When the findings of the study were examined, a significant difference was found between the levels of primary school environmental awareness and basic process skills. However, when these findings were examined in terms of sub-dimensions, any significant difference was not found between assessment which is one of the sub-dimensions of basic process skills and

sub-dimensions of primary school environmental awareness scale. Assessment is described as expressing the result of observations via numbers or adjectives after any characteristic is observed (Turgut and Baykul, 2013). Based on this description, students could not express the things they had observed around via numbers or adjectives. When it comes to behaviors for which they are responsible towards environment and continuity of living creatures, students could not predict. Any significant difference was not found between prediction which is one of the sub-dimensions of basic process skills and environmental responsibility and continuity of living creatures which are sub-dimensions of primary school environmental awareness scale. In accordance with these results, it can be concluded that the better science process skills of students are, the better their environmental awareness levels are and the better their environmental awareness levels are, the better their science process skills are.

When examined in terms of the type of school, a significant difference was found between basic process skills and level of environmental awareness at primary school. The differences which were found were in favor of private schools for both scales. In the communication sub-dimension of basic process skills, a significant difference in favor of private school was found between a city center public school and private school. The fact that the difference emerged in science thinking of the students and this difference was in favor of private school could be stated as an indicator that private schools do more studies for developing science process skills. When these results were examined, the remarkable point was private school were higher than the students in the rural

Table 8. Results of Mann-Whitney U test of the level of basic process skills of primary school students based on gender variance.

Basic Skill Scale	Grade	n	Mean Rank	Rank Sum	U	z	p
Observation	Female	159	178.18	28330.50	11896.500	-2.174	0.030*
	Male	173	155.77	26947.50			
Classification	Female	159	181.94	28928.00	11299.000	-2.898	0.004*
	Male	173	152.31	26350.00			
Inference	Female	159	175.19	27855.50	12371.500	-1.649	0.099
	Male	173	158.51	27422.50			
Assessment	Female	159	170.89	27171.50	13055.500	-0.828	0.407
	Male	173	162.47	28106.50			
Prediction	Female	159	171.36	27246.00	12981.000	-0.906	0.365
	Male	173	162.03	28032.00			
Communication	Female	159	176.08	27997.00	12230.000	-1.778	0.075
	Male	173	157.69	27281.00			
Total Score	Female	159	179.49	28539.50	11687.500	-2.369	0.018*
	Male	173	154.56	26738.50			

public school who interacted with nature more. According to the scores of the research on science process skills which was conducted with grade 5 students by Çakar (2008), a significant difference was found between students studying in different schools. In the research by Beaumont-Walters and Soyibo (2001), a strong significant difference was found between school type and science process skill. In the research which was conducted with preschool students by Kuru and Akman (2017), a significant difference in scores of science process skills was found in favor of nursery classes in primary schools between the nursery classes in primary schools and preschools connected to the Ministry of National Education and private preschools. In the environmental awareness research which was conducted with 11 grade students by Alam (2018), a significant difference was found between the schools connected to the government and private schools. In the environmental awareness research which was conducted with 13-15 years old students by Indupalli et al. (2015), they found a significant difference between students in different schools. The results of this study coincide with a limited number of studies.

Any significant difference was not found between the sub-dimensions and total scores of primary school environmental awareness scale based on the class level. A significant difference was found between the basic skill scale's sub-dimensions observation, classification,

assessment, communication and their total scores in favor of grade 3 classes. In the research conducted by Arslan (1995), there was a significant difference in favor of grade 5 classes when the science process skills of grade 4 and 5 students were examined. In the science process skills research which was conducted with high school students by Beaumont-Walters and Soyibo (2001), a significant difference was found based on the class level. In the environmental awareness research which was conducted with grade 8, 10 and 12 students by Mahajan and Darbari (2014), they detected a significant difference between classes and determined that the higher the class level is, the higher the environmental consciousness is. This result does not coincide with the findings of the study, but also contradicts the results of the study. The reason for this may be the selection of school types from different regions.

Between the total scores of life in nature which is one of the sub-dimensions of primary school environmental awareness and environmental awareness scale, a significant difference was found in favor of female students. Between the total scores of observation and classification which are the sub-dimensions of basic skill scale and basic skill scale, a significant difference was found in favor of female students. It could be stated that the level of environmental awareness of female students are higher and they are also more talented to use science

process skills than male students. When the studies conducted were examined, any significant difference was not generally found in science process skills based on gender. In the research conducted with secondary school students by Aydođdu (2006), any significant difference was not found based on gender and it was concluded that arithmetical means of male students were higher. In the research conducted with preschool students by Kuru and Akman (2017), any significant difference could not be found in science process skills based on gender. In the research conducted with 5 grade students by akar (2008), any significant difference could not be found based on gender; but it was determined that the mean scores of female students were higher than male students. This study supported the result of the study that female students have a higher level of science process skills than male students. In the research conducted with secondary school students by Zeidan and Jayosi (2015), a significant difference in science process skills in favor of female students based on gender and this result coincided with the results of this research. In the research of attitude towards the environment conducted with teachers by Ahi and zsoy (2015), it was determined that female teachers had a higher level of a positive attitude than male teachers. In the research of environmental awareness conducted with social service specialists by Dođan and Prutuođlu (2017), a difference was detected in only sub-dimension of comprehension based on gender variance in favor of female specialists. In the research of environmental awareness conducted with high school students by Alam (2018) and Badoni (2017), a significant difference between genders in favor of female students. In the research of environmental awareness conducted with 14-16 year old children by Kang and Grewak (2015), any significant difference between female and male students was not found. In the research of environmental awareness conducted with secondary school students by Altın et al. (2014), a significant difference based on gender variance in favor of female students. The results of the studies and the results of this study are similar. In the research of environmental awareness conducted with 8, 10 and 12 grade students by Mahajan and Darbari (2014), a significant difference was found based on gender in favor of male students and this result did not coincide with the results of this research.

In accordance with the results of the study, the proposals brought forward are as follows:

- (1) Programs can be prepared and activities can be conducted for environmental awareness of students in state schools to be developed.
- (2) Activities which attract male students can be designed for the difference based on gender to be removed and for science process skills and environmental awarenesses of male students to be developed.

(3) As it is particularly thought that accessibility to the nature of students in county schools, their environmental awarenesses can be raised and in addition, they can be provided with acquiring science process skills.

(4) In future studies, researchers may investigate the reasons why students in rural schools are less likely to learn nature awarenesses than in other schools and the reasons for gender differences.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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