Reflections of a Web Based Application Tool on Classroom Management

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Abstract

The purpose of this study is to determine how a web-based assessment tool developed for a social studies course is reflected on classroom management and how much students reflect their learning at school to their lives. In line with this purpose, the study was designed according to the mixed method research where both quantitative and qualitative methods are used. The participants of the study consisted of students who were in the second grade of a primary school with a medium socio-economic environment. The quantitative data of the study were based on the scores the students achieved in the assessment tool. The qualitative data of the study were collected through semi-structured interviews with both the students and the teachers. According to the results obtained from the study, it was observed that using a web-based assessment tool in the learning environment positively affected both the students' motivation and the process of attracting their attention. However, it was observed that the students could not reflect their learning at school to their lives.

Keywords: Primary School, Classroom Management, Social Studies, Web-Based Application.

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INTRODUCTION

When the classrooms are considered to be production places, the classroom management role of the teacher comes to the forefront. Class management is composed of all of the activities which enable the students to interact positively in social aspects and in which the teacher plays an active role to create an effective and motivating environment for learning. Class management is also defined as teachers' organizing and managing students' behaviors and educational activities in the class (Richards and Schmidt, 2010). Soodak and McCarthy (2013) define classroom management as activities that enable teachers to create an academic and social-emotional learning environment. It is very important that a teacher, who is responsible for educating individuals suitable for the purpose, have effective classroom management skills. Class management is defined by American Federation of Teachers (1995) as the management of the physical environment, the management of the educational program, the management of the discipline, and the management of the in-class processes (Cited by Hue and Li, 2008, p. 45). It is also defined as all of the activities related to the systematic and conscious application of principles, concepts, theories, models and techniques in relation to planning, organization, application and evaluation functions in order to achieve the determined educational objectives. Traditionally, classroom management is perceived and practiced as establishing authority over students, taking them under control and establishing the discipline. On the other hand, the contemporary sense of classroom management related to the classrooms where 21st century students are located is considered as the art of establishing a positive classroom climate and managing the education effectively (Hue and Li, 2008, p. 46). From this point of view, classroom management necessitates the provision of a collaborative classroom management with motivation tools, effective communication, democratic classroom environment, and use of technology but not with the culture of fear and the tools, techniques and practices to put the pressure on the students. This expectation requires the multidimensional development of the teacher (Jones, Bailey & Jacob, 2014).

This situation requires the teacher not only to be patient, tolerant, humble, supportive, conscientious and fair but also to be a field specialist, to have the competence to use technology effectively and efficiently, and to operate assessment and evaluation processes properly. Within this context, an effective classroom leader is the person who designs his/her lessons the most effectively, attracts the students' interest and attention, plans interesting lessons, engages the students in the process, uses all his/her authority to observe their views and needs, cooperates with the school members and the parents, and manages the in-class processes in a democratic way. In order to reach these features, the teacher should choose contents that are suitable for the outcomes, prepare education materials and design activities (Hue and Li, 2008, p.45-47; Türnüklü, 2001; Gürkan and Gökçe, 1999: 165). Utilizing technology in the implementation of these activities is a highly attractive, intriguing, and motivating tool for children of the digital age. Technology can offer students an opportunity to explore beyond the classroom with a shared voice and interaction (Crane, 2012). Therefore, integrating technology into lesson plans and using web tools are an effective way for students.

According to the CEO Forum on education and technology (2001), educational technology is the method and material used to achieve an educational objective. It is based on the use of technology by both the student and the teacher and İt depends on many different variables. The International Society for Technology in Education-ISTE has stated that educational data processing and technologies are used for many different purposes such as (1) conveying, developing, improving, and evaluating the instruction, (2) serving as a problem-solving tool, (3) classroom and school management, (4) educational research, (5) access to and exchange of electronic information, (6) personal and professional productivity, (7) computer education (International Society for Technology in Education, 2000).

When researches conducted in the field are examined, it is seen that using technology in the education process increases students' motivation and affects their participation in the course positively (Wenglisnsky, 1998; Middleton and Murray, 1999; Ravizza, Hambrick & Fenn, 2014; Chou&Lee, 2017). In addition, using technology in the education process contributes to the process of students' gathering and sustaining their attention (Fatimah & Santiana, 2017). According to the reports of the

Software & Information Industry Association (1999), technology has a considerable positive effect on success.

Practices aiming high quality and equality of opportunity in education through bringing a technology such as FATİH Project (Fırsat Artırma ve Teknolojiyi İyileştirme Hareketi-The Act of Increasing Opportunities and Improving Technology), carried out in Turkey between 2010 and 2015, into the classroom shows that fairly large budgets have been allocated for the integration of technology into education all over the world as well as in Turkey.

Web environments have undergone various evolutions with the development of technology, and the transformation of the individual from a passive audience to an active participant has taken place especially thanks to Web 2.0 tools. This active participation has enabled the Internet to be perceived as an active and multi-component network based on participation, rather than being a static resource that allows only browsing. The use of this web in the classroom enables students to take part in the network platform as individuals who increase production with technology support, not as individuals limited by technology (Anderson, 2007; Ullrich, Borau, Luo, Tan, Shen ,L. & Shen, R., 2008; Rollett Lux, Strohmaier, Dösingerm & Tochtermann, 2007;). Today, most of the students who are called "digital native" (Prensky, 2007) use Web 2.0 technologies more in their daily lives.

Web 2.0 technologies encourage students to reuse the resources and create new information (An, Aworuwa, Ballard & Williams, 2010). Thanks to Web 2.0 technologies, it is now possible to develop highly interactive, participant-oriented systems and to use them in educational activities. Today, digital tools appear mostly with web-based activities, games and animations. Since these tools include many applications such as web-based activities, games, puzzles and animation, they offer a rich variety of learning methods enabling students to think at a higher level (Eyal, 2012).

Web based tools are used to ensure the realization of activities that cannot be implemented in the classroom or in the real life (Paliç & Akdeniz, 2012; Akça, Barut & Önder, 2014; Çetinkaya & Taş, 2016) and to enrich the learning environment (An, Aworuwa, Ballard, & Williams, 2010; Bingimlas, 2009). In this study, a web-based learning environment was presented to second grade students of a primary school in their social studies lesson, and it was aimed to describe its reflections on classroom management. For this purpose, the outcome of "HB.2.3.2. the student can prepare a list of meals suitable for a balanced diet" (MEB, 2018) in the unit titled Healthy Life for the second-grade curriculum of the Social Studies Course was chosen and a web-based tool was developed based on this outcome. The purpose of this study is to establish the connection between school learning and daily life, to determine how students reflect school learning to their lives, and to describe the reflections of this process on classroom management.

METHOD

The study was designed as an explanatory mixed design by collecting both quantitative and qualitative data in the study. According to Creswell (2008), the basic assumption of the mixed method researches is that the use of qualitative and quantitative research methods together or in a blend provides a better understanding of research problems and questions than using these methods separately. Therefore, mixed design studies are defined as studies in which both quantitative and qualitative methods, concepts or techniques are used together in order to better understand the research problem, and both quantitative and qualitative data are collected, analyzed or combined at some stages of the research (Creswell, 2008; Gay, Mills and Airasian, 2006; Johnson and Christensen, 2008; Johnson and Onwuegbuzie, 2004).

Since the quantitative data are collected before the qualitative data in the study, it was designed as the explanatory mixed model research, which is one of the mixed research models. In explanatory mixed method studies, firstly quantitative data are collected, and then qualitative data are collected to explain the quantitative data (Fırat, Kabakçı Yurdakul, & Ersoy, 2014).

The Study Group

Criterion sampling, one of the purposeful sampling types, was used in determining the study group. Criterion sampling is based on the study of all situations involving various predetermined criteria (Yıldırım & Şimşek, 2013). Because the school does not have a computer laboratory, the residential area is at a medium level socioeconomic level, and the participant students have taken lessons related to the outcome, making a sandwich was determined to be the criterion of the study due to its compatibility with the outcome of "HB.2.3.2. the student can prepare a list of meals suitable for a balanced diet" within the scope of the study. In determining the participants of the study, the fact that their skills of using technology are at a medium level and that there is not a computer lab in the school were deemed important in terms of the data of the study. The semi-structured interviews of the study were carried out with students who had great hesitation and with the ones who did not have any hesitation in the drag and drop operation during the playing process of the web-based assessment tool. In this context, the semi-structured interviews were conducted with 20 students. While 12 of these students were boys, 8 were girls. The other participants of the semi-structured interview were the teachers of the students included in the study. One-to-one interviews were held at different times with a total of six classroom teachers, four of whom were female and two of whom were males. All of the participating teachers had more than 20 years of professional seniority.

Data Collection

The data of the study were collected in April in the spring term of 2018-2019 academic year. The web-based assessment tool was applied to different classes on three different days. The students participated in the application process in groups of two or four through laptops in the meeting room of the school in a way that they could not see each other.

At the end of the application, a semi-structured interview was held with the students. The semi-structured interview form consists of questions that aim to examine how and why the items in the web-based assessment tool are selected by students, the feelings of the students in this process and the technical processes experienced in the use of the tool. In the semi-structured interview form, there are questions for the teachers about the effectiveness of the web-based application on student motivation, control of misbehavior among the students, and time management, which are of vital importance for classroom management.

Development of Web Based Evaluation Tool

The sandwich ingredients used in the development of the web-based assessment tool were determined by taking into consideration the outcome of "HB.2.3.2. the student can prepare a list of meals suitable for a balanced diet". For beverages to be consumed with sandwiches, the researchers determined four most consumed beverage types. Two faculty members from the science teaching department were consulted about which ingredients should be included in the assessment tool and what kind of visuals should be selected. Technologies that can be used for the development of the web-based assessment tool used in the study were researched, and a decision was made on a design that supports drag and drop technology and gamifies the assessment process for the students by considering the age and technological competencies of the target audience.

In the web-based evaluation tool whose screenshot is given in Figure 1, 11 sandwich ingredients are shown at the top and 4 drinks are shown on the right. When approaching the sandwich ingredients with the mouse, the name of the ingredient is seen. The student tries to place each sandwich ingredient between the pieces of sandwich bread that is bordered by the dashed lines below by drag and drop method. The students have the freedom to change the ingredient they choose. Similarly, when they complete preparing the sandwich, they can select any of the 4 different drinks on the right side by dragging and dropping to the Select Beverage field below. Since there is no restriction on the choice of drinks for the students, they can choose all 4 drinks.
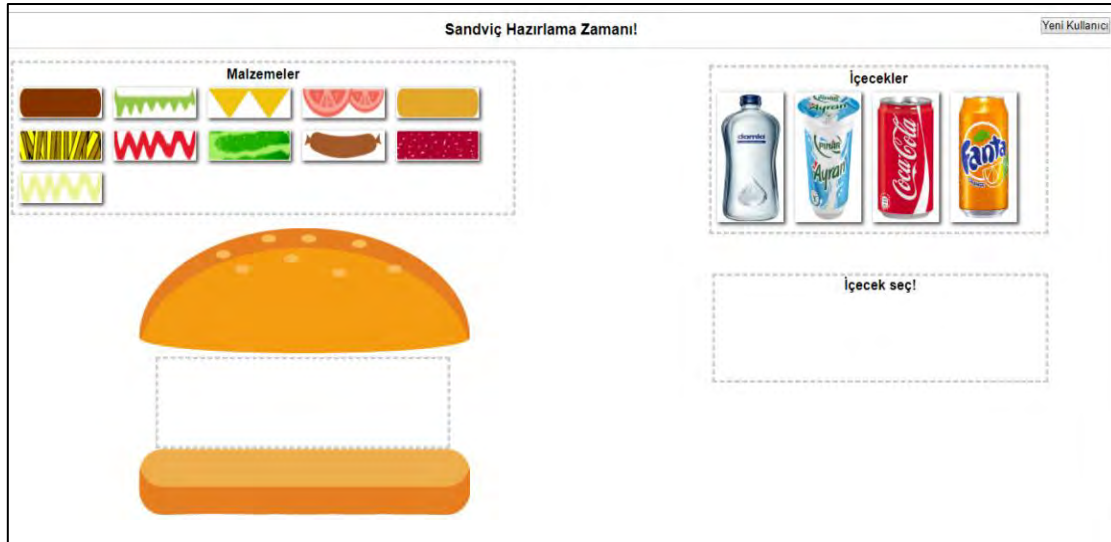
Figure 1: Web Based Assessment Tool

JavaScript libraries that offer drag-and-drop feature were used in order for the students to perform the application on tablets or mobile devices and for the ones who did not have the ability to use a mouse not to experience any difficulty during the process. Additionally, the visual design template was chosen by considering the features of the target age.

Application Environment

139 students used the web-based assessment tool. The students were taken to the computers sometimes in groups of 2 and sometimes in groups of 4 under the guidance of the researchers and the data were collected from 6 different classes. Each student completed the application within an average of 2-3 minutes.

Data Analysis

The qualitative data of the study were analyzed by using the content analysis technique. The purpose of content analysis is to reach concepts and relationships that can explain the data (Yıldırım & Şimşek, 2008). The data obtained through the audio recording were written into the interview form as they were without making any changes, and the data obtained from the study were themed by considering the basic meanings and relationships. The researchers and an expert worked independently of each other in the creation of the themes. The results of the analysis were compared, and the encodings were coded as agreement and disagreement. Fit was achieved (91%) according to Miles and Huberman (1994) reliability formula. In order to support the reliability of the research, the opinions of the participants were presented with direct quotations.

The quantitative data of the study were collected by using the web-based assessment tool applied to the participants. Each ingredient that the participants placed in the sandwich and the drink served with the sandwich were collected in the MySQL database in the background and then they were transferred as Excel data. The data of the research were presented in graphics and tables by frequency.

FINDINGS

In this section, firstly the quantitative data obtained from the web-based assessment tool and qualitative data obtained after semi-structured interviews are presented.

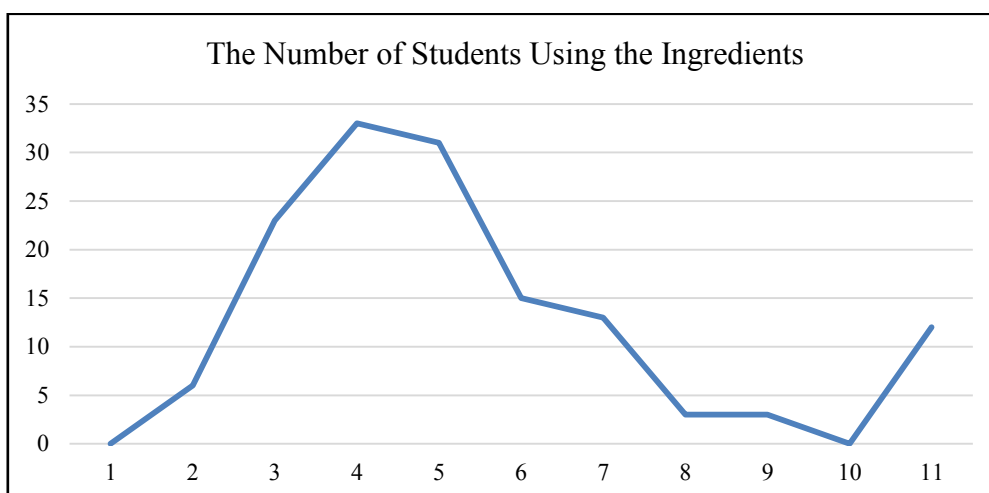**Findings Regarding the Achievement Level of the Outcome**

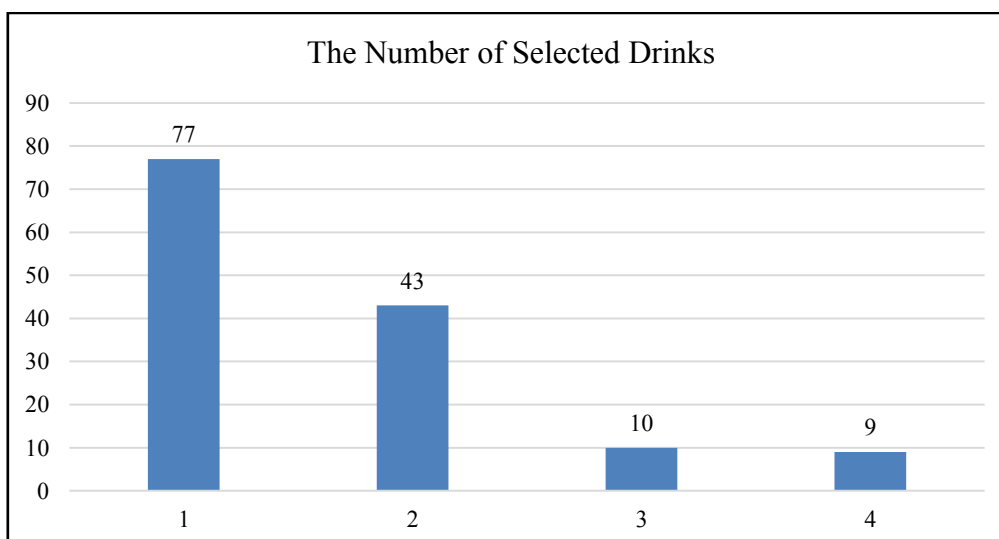**Figure 2. The Total Number of Students Using the Ingredients**

Figure 3. The Number of Selected Drinks

When Figures 2 and 3 are examined, it is seen that the students mostly created their sandwiches with 4 or 5 ingredients and chose only one drink. It was observed that students had high motivation while using the application. Many students made requests to do the practice for the second time. Sample expressions regarding the discourse of the students who expressed their feelings in the interviews are presented below.

"They are like the computer games I play at home. That was so fun. I would love to play again" (Ö 12).

"I got hungry while playing the game. I prepared my sandwich with great enthusiasm. My favorite foods were already in the game" (Ö 9).

"The game lasted very short. I wish we had prepared more sandwiches" (Ö 3).

"I want to play such games in my classes as well. It was very enjoyable "(Ö 10)

The students who chose all the ingredients and drinks at the same time during the application stated their opinions as follows.

"I prepare sandwiches for myself at home like this. I eat them all" (Ö 15).

"I chose all of them because I wanted to taste all of them" (Ö 8)

*"Because I didn't know the taste of mayonnaise, I chose mayonnaise" (*Ö1).

Approximately half of the participant students chose one drink, while nine students chose four drinks. Sample expressions of the students regarding their beverage preference are as follows.

" Because my sandwich is too big, I chose all of them. One drink is not enough for me" (Ö 2).

"I am not allowed to drink acidic beverages at home, but here I can choose whatever I want" (Ö 5)

"I don't have to drink all of them now, I have taken them for tomorrow as well" (T4).

The data regarding the students' preferences on sandwich ingredient in the web application carried out within the scope of the study are given in Table 1.

Table 1. The Use of Ingredients

Ingredient	Number of Use	Rate of Use%	Hesitation
Meatball	65	%9	8
Sausage	62	%8	10
Chicken	38	%5	7
Salami	48	%7	18
Potato	67	%9	8
Ketchup	68	%9	7
Mayonnaise	45	%6	7
Cheese	75	%10	5
Tomato	109	%15	4
Lettuce	63	%9	8
Cucumber	92	%13	20
Total	732	%100	102

When Table 1 is examined, it is seen that students chose a total of 732 ingredients to make their sandwiches. During the application process, it was observed that the students put plenty of ingredients in the sandwiches. The school where the research was conducted has a medium level socio-economic structure. Most of the families work for the minimum wage. This situation may explain why students tend to use all of the ingredients. However, as can be seen in Table 1, tomatoes were mostly preferred in making sandwiches. 109 students out of 139 students made their sandwiches by using tomatoes. Cucumbers were most preferred after tomato. The least preferred ingredient in making sandwich was chicken and mayonnaise. Cucumbers were the most undecided item to choose as an ingredient in sandwich making. The high preference of tomatoes can be explained by the presence of tomatoes in students' lives. In contrast to this, mayonnaise can be interpreted as a taste that is not often found in students' homes and that has no place in their lives. Sample statements regarding the reasons for student preferences in making sandwich are presented below.

"Meatballs, potatoes and tomatoes are my favorites. When I saw these in the game, I immediately put them in my sandwich" (Ö 5).

"I made a very big sandwich. I put what I saw in it" (Ö 6).

"I added sausage, potato, tomato, cucumber and ketchup. I didn't take mayonnaise because I don't know its taste at all, I didn't put it in my sandwich in case I didn't like it" (Ö 7).

"I made my sandwich with meatballs and sausage. I did not put chicken in it, because my mother cooked chicken at home last night" (Ö 11).

"…… I was shocked. I thought the food I chose would arrive at the feeding time. When my teacher learned that this was a game and it was not entered as an order, I got very sad" (Ö 2)

"I prepared my sandwich with such a care, but it wouldn't come. We just made it arbitrarily" (Ö 13)

Table 2. The Use of Ingredients

Ingredient	Number of Use	Rate of Use %	Hesitation
Water	58	25%	4
Ayran	104	45%	7
Fanta	28	12%	6
Cola	39	17%	17
Total	229	100%	34

When Table 2 is examined, it is seen that the students chose a total of 229 drinks. During the application process, it was observed that the students preferred more than one drink. When Table 2, which gives the use of beverages, is examined, it is seen that 104 out of 139 students chose ayran as a drink. Fanta was the least chosen drink. Cola was the drink that the students hesitated the most whether to choose or not. Explanations of the students' beverage preferences are given below.

"I did not choose coke because my mother said there were rat droppings in it, and I disgust it" (Ö 14).

"My mother always makes ayran at home. Also, I love ayran" (Ö 19).

"Since my father always says that ayran is drunk with meatballs, I chose ayran and I also took water" (Ö 18).

"My parents get angry when I drink coke at home, and I chose both cola and fanta here" (Ö 20).

"I chose all of them because it was somehow a game, I liked selecting and dragging, and it was also free" (Ö 10).

"I took all of them because I liked using the mouse" (Ö 7).

The students' socio-economic levels and home lives and their parents' education levels are observed to be effective in students' beverage preferences. However, it is understood from the statements of the students that their families benefit from the culture of fear in child education.

Teachers' Views Regarding Reflections of Web Based Application Tool on Classroom Management

In the study, the teachers' views on the reflections of the web-based application tool on classroom management were gathered under four themes. In the first theme, the reflections of the web-based application tool on student motivation are discussed. The web-based application tool developed according to the opinions of the teachers within the scope of the study supports the motivation of the

students regarding the subject. The statements reflecting the views of the teachers on this theme are below.

"The students liked doing something on the computer. When I bring a different learning tool to the classroom, I can immediately attract the students' attention. And if it is supported by technology, they like it more. They saw this whole process as a game rather than a lesson. I think this situation is reflected on their motivation" (T 4).

"This technological tool is very nice. My students were very excited while playing the game, and they continued to talk about the game during the lessons. It didn't seem like a lesson to them. We also learn new things. Thank you for making this web application available to us" (T 5).

"Actually, it was good for diversity; the students were very pleased, and it was a good example for us. I think there should be these kinds of applications in the lessons. These children are the children of the digital age, so we need to organize activities according to them. If you leave this application to us, we will use it in our lessons" (T 6).

The second theme created from the data obtained through semi-structured interviews with the teachers is the control of misbehavior. Within the scope of this theme, teachers stated that the web-based application tool used in the study was effective in attracting students' attention. On the other hand, they stated that there would be problems during the application in the classroom because the opportunity for individual application could not be created due to some students' lack of a computer. In spite of this, they stated that it can be used via the interactive board, but this situation may lead to difficulties in classroom management due to the impatience and distraction of other students. The teachers' statements regarding the theme of controlling unwanted student behavior are presented below.

"We have an interactive board in our classrooms, we try to reflect technology in our lessons. However, we cannot make the students do individual practices on technological applications. Even the issue of who will do the activity on the interactive whiteboard first creates a problem. Students would not have to wait for each other if they had tablets" (T 3).

"I think technology-supported teaching tools will be effective in controlling unwanted behavior. Especially technological games attract the attention of students a lot. Everyone can play at their own pace and complete the activity, and because there are no bored students, unwanted behaviors do not occur. Nobody is asking permission for toilet, they are not thirsty. I have observed this more in your practice" (T 1).

"Normally, in my opinion games are important tools for teaching rules. Here, the conversion of the lesson into a game also teaches the rules. They tried to obey all the rules you shared with the children before the application. They listened to your statements with all their attention. Normally, it is not easy to get the attention of all children in the classroom" (T 2).

"This kind of digital applications actually save us time. I think such practices should be widespread in the acquisition of the content to be taught, in reinforcing the subject and in the evaluation process as they increase the readiness of the student" (T 1).

"It is important not to spend too much time to attract the attention of the students, and not to spend too much time to maintain their attention. Knowing the students and acting according to their interests is effective in terms of time. Digital age children should be offered digital materials" (T 4)

"Since we will spend less time on unwanted behaviors, technological applications enable us to devote more time to education and training applications" (T 6).

"If I had asked students to verbally prepare a meal list for a balanced diet, they would do so. We focused on all of them in the lesson. They chose more according to their wishes in your application" (T 3).

"Unfortunately, the theoretical knowledge they learned in the lesson did not appear in practice. Their drink preferences were generally correct, but it cannot be said that they chose healthy things when preparing their sandwiches" (T 1).

In the study, the fourth theme created depending on semi-structured interviews with the classroom teachers is the students' accessibility to the outcome of "HB.2.3.2. the student can prepare a list of meals suitable for a balanced diet". In this theme, the teachers stated that the students partially reached the relevant outcome. They stated that the students do not make a choice regarding a balanced diet, but rather act according to their wishes. The sample expressions regarding the theme are as follows.

"Neither we nor the families can set a good example for our students I suppose. What they see around them often does not match with the school. The importance of family-school interaction has once again been revealed" (T 6).

"I am sure that if I had applied this application right after I had taught the subject and if we had discussed about it, they would make much healthier choices." (T 1).

CONCLUSION, DISCUSSION AND SUGGESTIONS

In this study, it was aimed to determine the reflections of the developed web-based application tool on classroom management and how the students reflect their school learning to life. For this purpose, the outcome of "HB.2.3.2. the student can prepare a list of meals suitable for a balanced diet" (MEB, 2018) in the unit titled Healthy Life for the second-grade curriculum of the Social Studies Course was chosen and a web-based tool was developed based on this outcome. The reflections of the web-based application tool on classroom management were examined under three themes.

When the research results were examined in terms of the motivation theme, the first theme, it was concluded that the web-based application tool increased the motivation of the participant students, that the students enjoyed the process, that the application excited them, and that they wanted to try the same application several times. In addition, it was observed that students were excited about the use of laptops and mouse in the classroom. The studies concluding that the use of technological tools in the classroom increases students' motivation to learn support the "motivation themed result of this research (Kay & Lauricella, 2011; Samson, 2010; Mouza, 2008; Barak, Lipson & Lerman, 2006; Trimmel & Bachmann, 2004). Another result related to the theme of "motivation" is that teachers were also convinced in the activity that web 2.0 applications motivated students in the teaching process. The research of Shihab (2008) supports the beliefs of both students and teachers that technological tools support motivation in the classroom. According to the research result of Shihab (2008), web 2.0 applications make the education and training process more efficient. According to another result of the mentioned research, web 2.0 applications were found to be entertaining by both the students and the teachers and they enjoyed the application. Another research supporting the conclusion of this research that using technology in the classroom increases student motivation is the research of Chou &Lee (2017). According to Chou&Lee (2017), web 2.0 applications affect students' success positively. In the same study, it was observed that the students did the applications with pleasure and had a lot of fun.

The second theme obtained in the study is about the students' attention in the learning process. In this theme, the results obtained from the semi-structured interviews with the teachers of the students participating in the application indicate that the students were not distracted during the process, and there was no need for a different strategy to attract their attention. The result regarding the second theme of the study is supported by the studies of Zhao, Pugh, Sheldon, & Byers (2002) and Fatimah

and Santiana (2017). For example, according to the results of the research conducted by Zhao et al. (2002) in experimental design, using technology in the classroom increases student interest and academic success. Özmen, Aküzüm, Çakmak& Baysal (2011) suggested in their study about the functionality of social networks in educational settings that it is important to offer opportunities for effective use of Web 2.0 tools in the classroom.

It was observed that participant students did not exhibit any undesirable behavior during the application process regarding the theme of the control of misbehavior, determined as the third theme in the study. This situation can be explained by the interests of the students and their pleasure from using the application tool. In this context, it was concluded that using the web-based application tool in the learning environment at a primary school level has positive reflections on classroom management.

In line with the data obtained from the research on how school learning, which is another dimension of the study, is reflected on life, it was concluded that the family environment and social environment prevented school learning and that a functional bridge could not be established between what was learned at school and life. It was concluded that the knowledge, skills and habits acquired in the social environment appeared to be more dominant in students' preferences. This situation emphasizes the importance of school-family cooperation, and it reveals the importance of planning activities related to removing the barriers between school and life in the learning environment. In this context, the enrichment of the learning environment and the integration of technology with the lessons transform the classroom into a rich learning environment for students instead of being an environment built with walls on its all four sides. At the same time, web-based applications create connections between life and school for students who use computer technologies in their daily lives, thus providing support for affective elements such as attention and motivation in which students experience difficulties in the learning environment. According to Solomon and Schrum (2007, p.21), through web 2.0 applications, students can develop skills and attitudes in terms of reasoning, analyzing and performing on the subject.

If the general evaluation of the research is made, it can be said that web applications enrich the classroom activities and have an increasing effect on the performance of the course work, and thus affect the students' motivation levels positively. According to the research conducted by Cho, Gay, Davidson & Ingraffe (2007), it was concluded that technological tools significantly affect students' in-class performances, collaborative working levels and effective communication. According to Mayer's (2010) research results, when students use web 2.0 applications, their learning level increases more. In addition, the experimental research conducted by Korucu (2013) supports the conclusion of the research that the use of technology in the classroom has a positive effect on students.

In the light of the results of this research, it is recommended that practitioners use technology in the classroom for effective classroom management and adapt web 2.0 tools to the course contents. It can also be suggested that Web 2.0 tools are frequently used in distance education. Especially during the pandemic period, one of the most effective ways to include students in lessons and attract their attention will be to use web 2.0 applications in the lessons.

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