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Research Article

Views of Academicians, School Administrators, and Teachers Regarding the Use of E-portfolios in Transition from Elementary Education to Secondary Education *

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Abstract

The general purpose of this study is to determine the views of academicians, school administrators, and teachers regarding the effects that can emerge from the use of e-portfolios as alongside the central joint exam in the transition from elementary education to secondary education. This research is a case study type from among the qualitative research designs. Data were obtained through interviews with academicians and school administrators; focus group discussions were carried out with the teachers. As a result, the view that the transition to a system that included e-portfolios would make a contribution to the period before the exam and ease exam anxiety gained importance. Furthermore, students' learning was said to be able to be made more permanent. It was the common view that a transition system which would include e-portfolios would cause bias due to the technological infrastructure differences of schools from socio-economically different places. According to the results of this research, policy makers have been advised to inform all stakeholders in terms of the contributions such a system would make, to technologically adjust the physical infrastructure of schools, and to organize some specific training activities for teachers.

Keywords

E-portfolio • Transition system to secondary education • Central joint exams • Cluster analysis • Performance assessment

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Since the time when attention towards universities began to grow in Turkey in 1970, students have become interested in secondary schools that offer better education in order to be able to study at better universities. With this rising interest, various entrance exams under many names have been initiated for such schools as the Anatolian and the science middle schools that offer quality education, and for the medical and agricultural vocational secondary schools that offer vocation-oriented education. These entrance exams, which had been held separately after primary school for the Anatolian and the science middle schools, were joined into a single exam in 1998 with the implementation of an eight-year compulsory education called the Entrance Exam for Secondary Schools until the 2003-2004 school year. With the renovation of the education system and curricula in 2004 and 2005, the exam was renamed the Secondary Education Institutions Entrance Exam (OKS) and used until the 2007-2008 school year (Aydoğan, 2008).

A new model that could more accurately and multi-directionally measure student performance in compliance with the basic features of education and training and that could provide a basis for a properly guided transition to secondary education was needed. Considering this fact, the Ministry of National Education began to implement the Transition System to Secondary Education (OGES) in the 2007-2008 school year, initially implemented in the 6th and 7th grades (Ocak, Akgül, & Yıldız, 2010). This system was composed of three general sections: the Level Determination Exam (SBS), the year-end success score, and the behavioral score (Ministry of National Education [MEB], 2007 as cited in Ocak et al. 2007). This system was renamed again in 2013 to the Transition System from Elementary Education to Secondary Education (TEOG) for the purposes of strengthening student-teacher-school relations, extending the evaluation of success over a longer time, ensuring the synchronous implementation of curriculum across the country, minimizing student absenteeism, easing exam anxiety by extending it over time, and so on. According to this new system, central exams with open-ended questions are carried out in 8th grade at certain times to assess six basic courses: science and technology, mathematics, Turkish, Revolution History and Kemalism, foreign language, and religion and ethics. Students take the exam in their own schools with a compensation exam performed for those who can't. The final score for student placement in secondary-education institutions comes from 30% of their year-end success scores from the 6th, 7th, and 8th grades, and 70% of a weighted joint-exam score taken in the 8th grade (MEB, 2014).

The Turkish Educational Association (TEDMEM, 2013) stated in their study on the transition between school grade levels that creating a transition process which employed more than one source, as opposed to a single central joint exam, would be a significant contribution. As well as suggesting a specific transition system for each type of secondary school, this study also suggested that to obtain the final score which

qualifies students for such schools as a science high school or social sciences high school, 70% of the score should come from students' central joint exam, 10% from their elementary school weighted yearly grade average, 10% from their elementary school digital portfolio, and 10% from their elementary school teachers' cumulative evaluations. Hill (2010) pointed to the fact that one of the criticisms of the transition systems implemented in Asia-Pacific countries is that the decision is made from a three-hour evaluation that is unable to evaluate certain high-level abilities. Resnick and Berger (2010) suggested an approach for the American education system where certain components such as exams should be periodically conducted and where a comprehensive learning profile through a technological platform be employed in terms of both results and processes.

Upon looking into teaching programs, one can see the effort students make as individuals to acquire high-order skills like communication, empathy, and problem solving. However, it is very difficult if not impossible to determine such behaviors through central joint exams that have multiple-choice questions, such as are used in the transition system to secondary education. For this reason, it would be suitable to use a complementary approach in addition to the central joint exam to be able to check for students' high-level skills and monitor their developmental processes, as acquiring these things is the intention of the teaching programs.

Another important instrument which effectively reflects the developmental process of students is the e-portfolio (Egan, 2012). Using e-portfolios enables one to evaluate and certify students' learning. Moreover, it is effective in planning personal development (Stefani, Mason, & Pegler, 2007). E-portfolios provide information regarding both results and processes. An education portfolio and its evaluation have been widely used for elementary and adult education (Barker, 2005). Thanks to reflections on the efforts recorded in e-portfolios, students can build up their academic and personal identities, make the integration of learning easier, improve their ability to evaluate themselves, and help them plan their own academic paths (Kruger, Holzman, & Dagavarian, 2013; Miller & Morganine, 2009). E-portfolios improve student abilities such as self-regulation, critical thinking, and deep, long-term consideration of their efforts (Jenson, 2011). According to Oblinger (2005), e-portfolios have such functions as planning teaching programs; certifying knowledge, ability, qualifications, and learning; monitoring the development of programs; applying for work; and evaluating and monitoring one's course and performance. Bank (2004) additionally stated that one of the advantages of portfolios is that they provide opportunities for more comprehensive and more inventive ways to evaluate.

As explained above, several systems have been attempted in the transition from elementary education to secondary education. However, these implemented systems,

though curriculum-based, haven't helped determine whether students have actually acquired high-order cognitive abilities, which is the intention of the programs. Furthermore, the implemented exam systems can be said to have so far negatively affected education in the school environment, especially in 8th grade, followed by 7th, 6th and 5th. Besides, when considering the items in these exams, high-order skills cannot be said to provide a substantial evaluation.

Several models which enable the evaluation of high-order skills have been studied, and some recommendations have been made (Eğitim Reformu Girişimi [Education Reform Initiative/ERG], 2013; Resnick & Berger, 2010; TEDMEM, 2013). Studies carried out in this field have only offered a model; related to these models, however, the views of teachers and school administrators who are a part of this system have not been encountered in the studies. For these reasons, this study's researchers obtained the views of teachers and school administrators regarding what e-portfolios should be used for in the transition from elementary to secondary education when added to the central joint exams. Furthermore, the views on the possible effects of this issue were separated through the views of academicians who work in the educational sciences. The overall purpose of this study was to determine what teachers, school administrators, and academicians working on educational sciences thought about the probable effects of using e-portfolios alongside the central joint exams (which already exist) in the transition from elementary to secondary education. In accordance with this overall objective, answers to the following questions were sought:

- What do teachers, school administrators, and academicians think the effects of the transition system to secondary education on *students* would be (academic and social abilities, exam anxiety, etc.) if e-portfolios were used in addition to central joint exams?
- What do teachers, school administrators, and academicians think the effects of the transition system to secondary education on *teachers* would be (workloads, personal development, etc.) if e-portfolios were used in addition to central joint exams?
- What do teachers, school administrators, and academicians think the effects of the transition system to secondary education on *parents* would be (such as getting to know their children) if e-portfolios were used in addition to central joint exams?
- What do teachers, school administrators, and academicians think the effects of the transition system to secondary education on the *school* would be (such as school culture, possibilities) if e-portfolios were used in addition to central joint exams?
- What do teachers, school administrators, and academicians think about the process of implementing and evaluating e-portfolios?

Method

This study used the case study design from among the qualitative research designs because of its appropriateness for studying in detail a possible future transition system to secondary education by obtaining the views of different groups (teachers, school administrators, academicians) on its probable effects. McMillan (2000) defined case studies as a method through which one or more events, environments, programs, social groups, or other interdependent systems are deeply examined (as cited in [Büyüköztürk, Çakmak, Akgün, Karadeniz, & Demirel, 2012, p. 21](#)). The most basic feature of a qualitative case study is that it allows the deep examination of one or more cases. In case studies, cases which have never been studied or observed can be approached. Studying such cases has significant importance for future researchers in terms of uncovering previously unknown facts to provide a basis for future research studies ([Yıldırım & Şimşek, 2011](#)).

Study Group

The study group consisted of five academic members working in three different universities in addition to fifteen elementary school teachers and two school administrators working in five different schools in Ankara. The participants were told the purpose of the study in detail during the formation of the study group and were chosen as volunteers. The participants' ages were between 28 and 50. Their experience in the profession varied from 5 to 20 years. While determining the academicians and administrators for the study group, the criterion sampling method was employed from among the purposeful sampling methods. The criteria used to determine the academicians and administrators involved whether they had worked on e-portfolios before and whether they had experience in the transition system to secondary education (academic studies, project implementations, etc.). The teachers were chosen from schools located in different parts of Ankara so that they could reflect the situation of different socioeconomic environments.

Instruments and Techniques for Collecting Data

The interview method, which is frequently used in qualitative research studies, was employed during the data collection process in this study. It used the participant interview form, which was developed by the researchers as an instrument for collecting data under the guidance of two academic members working in the field of Assessment and Evaluation in Education. The interviews with academic members were carried out in the universities where they worked, and the interviews with the teachers and school administrators were carried out in their respective schools. The interviews with the teachers were carried out as a focus group discussion. The interviews were voice-recorded with the permission of the teachers. After examining the records, interviews were seen to last from 8 to 42 minutes.

A semi-structured interview form was developed by the researchers as an instrument for collecting data. After determining the questions for the interview form, specialists examined them for their suitability. A pilot interview was carried out to find out the clarity of the interview form and average duration of the interviews. The results were evaluated by the researchers, after which the semi-structured interview form took its final shape. This was followed by another examination from the specialists, and then it was applied.

Data Analysis

Data collected in the study were analyzed through content analysis. The main objective of content analysis is to reach the concepts and relations which can explain the collected data (Yıldırım & Şimşek, 2011). Data were examined in line with the study questions through the technique of categorical analysis, a type of content analysis. Cluster analysis was employed to examine in more detail the relations among the themes and categories obtained through content analysis. Cluster analysis aims to separate homogeneous subsets from the data set. Thus, researchers can have access to more detailed information for each subset created (Kayri, 2007). Jaccard's index was used to compare similarities in the cluster analysis. The furthest neighbor method was used as the cluster method for hierarchical cluster analysis. The obtained results were reflected on a dendrogram; each cluster element was regarded as a cluster at first, and the number of clusters was decreased by measuring the longest distant between the two elements (Özdamar, 2013). Jaccard's coefficient is used in cases where the variables are scored as 0 or 1 (binary). This coefficient is handled as a similarity index among the codes or categories obtained through content analysis in qualitative research studies. Jaccard's coefficient is measured as:

$$J(A, B) = \frac{|A \cap B|}{|A \cup B|}, 0 \leq J(A, B) \leq 1$$

If A and B are any two codes or categories;

$A \cap B$: Joint source number between two codes or two categories.

$A \cup B$: Total source number (Levandowsky & Winter, 1971)

The teachers, school administrators, and academic staff who had been interviewed were regarded as sources as the codes and categories provided by content analysis had been obtained through interviews in this research.

Reliability and validity. Content analysis, which examines what has been communicated, must be reliable and valid. The effectiveness of content analysis depends on coding. The clarity and objectivity of the categories formed after coding are quite important for determining their effectiveness. Forming clear, understandable,

and non-repetitive categories through coding is a basic indicator of effective analysis. Two techniques for determining the effectiveness of content analysis are inter-rater reliability and reliability in terms of time. Inter-rater reliability is based on examining the relations among the codes determined by different researchers in line with the rules of coding during analysis. The reliability in terms of time is based on examining the relation between the results of coding after the communicated data have been codified two different times by the same researcher in line with the same coding rules (Tavşancıl & Aslan, 2001).

The findings obtained at the end of the study were confirmed by the researchers to determine the effectiveness of the study. During the analysis process, the percentage of agreement and Krippendorff's alpha were used to determine the reliability between coders. The minimum percentage of agreement measured in pairs among the researchers was found to be 0.80, which indicated that the coding carried out for the study was consistent with each other. Moreover, the minimum Krippendorff's alpha coefficient measured in pairs among the researchers was found to be 0.79, which indicated that the codes were reliable.

Kirk and Miller (1986) stated that researchers must observe the case they are studying as it is, and they must be as unbiased as possible in order for a qualitative research study to be valid (as cited in Yıldırım & Şimşek, 2011). In accordance with this purpose, the researchers meticulously wrote down their record of the interviews without making any changes; they included all the various opinions in the study by means of direct quotations. Furthermore, Yıldırım and Şimşek (2011) stated that being able to have an integrated picture of the research will make a significant contribution to the validity of the study. This can be done with methods like diversification, confirmation from the participants, and confirmation from colleagues. Within this context, in order to increase the validity of knowledge obtained through diversification in methods, both semi-structured interviews were personally carried out and focus group interviews were performed with all of the participants together. In addition, by obtaining the views of different stakeholders related to the topic (academicians, school administrators, and teachers) the validity of the research was increased through participant confirmation.

Findings

The researchers divided data collected within the study into units, and then they gathered these units under 15 categories. By considering the relations among these 15 categories, five general themes were formed. The themes and the categories under these themes are illustrated in Figure 1.

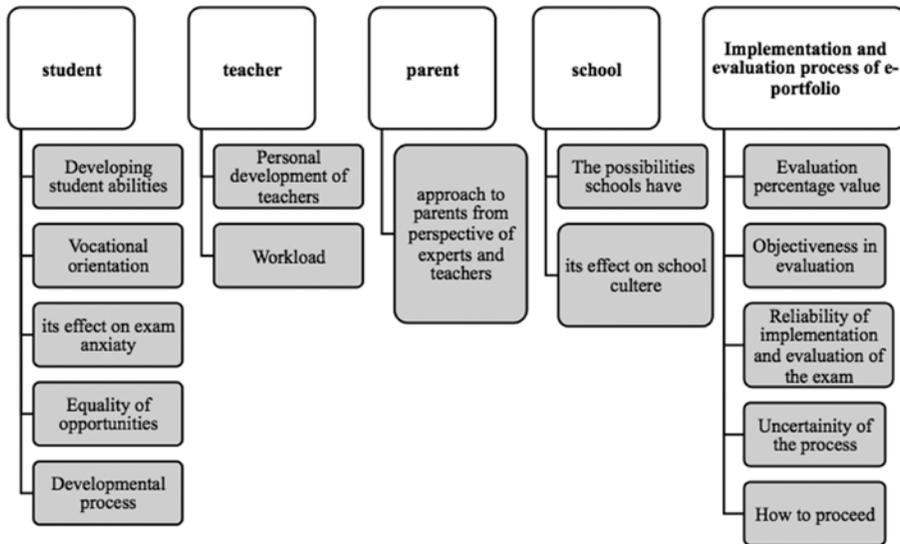


Figure 1. Themes and categories.

The Views of Teachers, School Administrators, and Academicians on the Student Effects of the Transition System to Secondary Education Should E-Portfolios Be Used in Addition to the Central Joint Exams

The categories under the theme of student were equality of opportunities, developmental process, vocational orientation, and developing student abilities. The most stated categories under the theme of student were developmental process and developing student abilities. The categories under the theme of student and the direct quotations from the participants regarding these expressions are illustrated in Table 1.

Considering the category of equal opportunities under the theme of student, the views of teachers, school administrators, and academicians generally favored the fact that students in private schools and those at a higher level of development would have more advantage in such a system. Furthermore, it was stated that not everybody had equal opportunities in terms of both school and home environments (house, social environment, etc.). Aside from this, the necessity of carrying out e-portfolio activities at school was underlined. Otherwise, it would prohibit equal opportunities because of the parental factor involved in them. The academicians and school administrators who paid more attention to the effect of e-portfolios on cognitive and affective developments of children mentioned the category of developmental process. They stated that e-portfolios were an efficient way to monitor the yearly development of students. It was also stressed that the transition to such a system would be an instrument through which students could observe their own development while parents monitored the development of their children. In another category, teachers favored similar opinions that e-portfolios would be effective

Table 1
The Categories under the Theme of Student, Sample Responses from the Participants, and their Frequency of Use by Teachers (T), School Administrators (SA), and Academicians (A)

Category	Sample Answers	Frequency		
		T	SA	A
Equality of opportunities	Focus 1: <i>Not every student has equal opportunities. Some are well trained in certain areas while others are not. One would wish that we could do this through the opportunities offered by National Education. I do think that there is no unity in education any longer.</i>	3	2	3
Developmental process	A4: <i>Reflective thinking occurs to me when I hear “high-order skills cognitive ability”. Because there is an evaluation processes in portfolios, students can store everything they’ve produced in a single place.</i>	2	4	8
Vocational orientation	Focus 1: <i>Vocational orientation can be carried out; we did it too on paper, but the vocational orientations we did weren’t taken into consideration. It might be beneficial in terms of vocational orientation. At least the teacher would have an idea. Students can lead themselves, we wouldn’t be needed. What a child does or doesn’t do is evident.</i>	1	5	1
Developing student abilities	Y2: <i>One of children’s biggest problems, as far as I have noticed, is that they can’t communicate or share with each other. No cooperation, no production together. They cannot even play together. Since they do everything in a virtual environment, everything goes through those rules. They would at least be able to do something together via these digital portfolios, produce something, force themselves, and solve problems. You see what I mean? The portfolios would also help children develop such abilities. As I said they can acquire a lot of skills like working together, group work, team spirit, and helpfulness through portfolios.</i>	4	6	2
Its effect on exam anxiety	Y1: <i>What are we doing to our children? We are preparing them for the exams. What does preparing for exams mean to us? Solving questions in test books. But parents will say that the exam isn’t enough when portfolios are included in the process; they will bring something into the process so that the exam alone can’t shape the decisive score. Then students will say they’ve become a little interested, too. This will not only ease the anxiety of children but also that of parents. In my opinion, it will have a positive effect on exam anxiety. This will also comfort schools. We are now carrying out parental interviews.</i>	6	2	1

in their vocational orientation; vocational orientation was stated to be performed through other instruments; however, their suggestions had not been taken into consideration. The participants said that vocational orientation could be done better through e-portfolios as the students would be able to know themselves better and the teachers and parents could also know them better in this way. They emphasized that portfolios could be an efficient way to select students, especially for the social sciences and the vocational high schools. In the category of developing student abilities, the participants, especially the teachers and school administrators, stated that a regular and continuous application of the e-portfolio system would have positive effects on developing students’ abilities. They focused more on high-order skills regarding this topic. Being aware of the fact that activities done apart from preparing for the exam will be graded and affect the exam results would make students become more interested in their lessons, which would then contribute to promoting their abilities. Furthermore, in addition to these abilities, the system’s effectiveness in the development of students’ abilities such as communication, working together, sharing, and so on was pointed out. In the category of exam anxiety, the teachers, who themselves carried out this process, laid more emphasis on exam anxiety.

Knowing that activities such as projects, homework, and such that are done for school will be graded and make up a certain percentage of the central joint exam was said to be able to have a positive effect on students’ and parents’ exam anxiety. Unlike these opinions, some other participants favored that exam anxiety wouldn’t ease with the integration of e-portfolios into central exams: On the contrary, students may develop additional anxiety about homework, projects, and portfolios.

The Views of Teachers, School Administrators, and Academicians on the Teacher Effects (Workloads, Personal Development, etc.) of the Transition System to Secondary Education Should E-Portfolios Be Used in Addition to Central Joint Exams

When considering the effects on teachers, two views stood out. The first of these was whether it would increase their workload; the second one was whether these applications would contribute to teachers’ personal development. The categories under the theme of teacher and the direct quotations from the participants for these expressions are illustrated in Table 2.

Table 2
The Categories under the Theme of Teacher, Sample Responses from the Participants, and their Frequency of Use

Category	Sample Answers	frequency		
		T	SA	A
Workload	Focus 3: If such a system was implemented and added to the transition to secondary education, we would have an extra workload. Therefore, I cannot plan my year. Only the eager students make one now. If it is added, the children and parents would tell me to do it. Then I will present it and the parents will say “Why hasn’t my child presented it?” The time spent on this will lead me astray. I mean, more will be demanded from us...	3	3	3
Personal development of teachers	Focus 2. We would develop more than the children. This is because we will assume a big responsibility. This has to do with the teacher’s moral conscience. Some may be totally indifferent; some others may become exceedingly interested in it. Teachers in private schools would have to accept this responsibility with good or bad grace. When it’s evaluated, teachers will also be indirectly evaluated according to how the evaluator sees it and its effect, from where I stand. All these may turn into disadvantages.	3	2	3

Considering the category of workload under the theme of teacher, the view was that the workload of teachers would increase if e-portfolios were to be implemented. The teachers stated that they would not have enough time to complete the curriculum. Furthermore, they also pointed out that an exam system that included e-portfolios would increase their workload. They stated this would result from their having to pay more attention to their students than they currently do. However, some teachers expressed that they would be glad to implement this system. They said it wouldn’t bring an extra workload but would instead contribute to their personal development, which leads to another category under this theme: developmental process. From the interviews, the view stood out that this system would make a contribution to the personal development of teachers. It revealed the fact that teachers must have knowledge, especially about

information and communication technologies. The teachers thought that they would have to work harder to promote efficiency if such a system were implemented.

The Views of Teachers, School Administrators, and Academicians on the Parental Effects of the Transition System to Secondary Education on Parents Should E-Portfolios Be Used in Addition to Central Joint Exams

Under the theme of parents, the academic members and school administrators expressed more views than the teachers as to how parents would react to a transition system to second education in which e-portfolios were used alongside central joint exams. The categories under the theme of parents and the direct quotations from the participants for these expressions are illustrated in Table 3.

Table 3
The Categories under the Theme of Parents, Sample Responses from the Participants, and their Frequency of Use

Category	Sample Answers	frequency		
		T	SA	A
Approach to parents from the perspective of experts and teachers	A1: Naturally every parent would like their children to be in a good position in future; however, approaches for saving the day will lead to handicaps, unfortunately, and project performance assignments are generally done by parents. There is no reason to not experience a similar situation regarding these e-portfolios. So I think keeping this under a firm control is very important.	3	7	7

According to the views of the specialists and teachers under the category of parental attitude, the view that parents would help their children prepare their e-portfolios was concluded to be common among the teachers depending on their past experiences and observations. Some precautions were thought needed be taken against this; however, teachers who favored the idea that children should be helped were also encountered. This may result from the fact that the obtained score would be effective in students’ transition scores to high school. The teachers put significant stress on trust between parents and teachers. The teachers said that they would be more helpful to their students once trust was established. Such a system was thought to pose a financial burden on parents without computers at home. The plus side for parents was that they would be able to get a chance to more easily monitor their children’s development.

The Views of Teachers, School Administrators, and Academicians on the Effects of the Transition System to Secondary Education on Schools Should E-portfolios be used in addition to Central Joint Exams

The probable effect of e-portfolio implementation on school culture was examined. Furthermore, whether schools would be able to implement e-portfolios was also discussed. The categories under the theme of school and direct quotations from the participants are illustrated in Table 4.

Table 4
The Categories under the Theme of School, Sample Responses from the Participants, and their Frequency of Use

Category	Sample Answers	frequency		
		T	SA	A
School culture	<i>A4: Of course this would make a contribution to schools and even to parents, for it would provide details as to what subjects the student is lacking in and what aspects must be developed by comparing a student's score from an exam and any deficiency in a particular subject. This would provide success for the school in terms of students. It may help to take precautions for what can be done for students at school. The school may have to support teachers' use of portfolios This will give them detailed information about the students.</i>	3	3	3
Possibilities schools have	<i>Focus 2: There is a big injustice not only among families but also among schools. There are families and schools which can afford this easily, and there are those that can't. There are children who don't own a personal computer. Again the same opinion: They do the preparations at home and upload at school. This is a matter of the child's future, and there is a competition. State schools would have more difficulty. Considering families in financially poor conditions, technological support should be provided.</i>	3	2	3

Schools were stated to also have some responsibilities in a system where e-portfolios were used alongside central joint exams. One of these responsibilities was in-service trainings for teachers. There were thoughts that the implementation of e-portfolios would promote success in schools and that e-portfolios would give clearer information to parents. On this issue, the academicians expressed more ideas than the teachers. The common idea was that this system would make a positive contribution to the promotion of school culture. It was concluded from the interviews that students and teachers would become more organized if e-portfolios were implemented as planned, student anxiety would be eased, and school culture would thus be positively affected. The teachers and the school administrators were seen to be hesitant due to the fact that schools in general differ in terms of their possibilities. The effects of this situation were thought to lead to inequality among students. Due to this difference in schools, some students can access computers easily while others can't. The system was stated to be more advantageous for students who were economically well-situated. The academicians, school administrators, and teachers who were interviewed on this topic all shared the same idea.

What Teachers, School Administrators, and Academicians Think About the Process of Implementing and Evaluating E-Portfolios

There were five categories under the theme of implementation and evaluation process of e-portfolio: evaluation percentage, objectiveness in evaluation, reliability of the exam implementation and evaluation, uncertainty about the exam, and how to proceed. Objectiveness in evaluation and how to proceed were seen to be most often discussed. The categories under the theme of implementation and evaluation process of e-portfolios and participants' direct quotations regarding these expressions are illustrated in Table 5.

Table 5
 Categories under the Theme of Implementation and Evaluation Process of E-portfolios, Sample Responses from the Participants, and Frequency of Use

Category	Sample Answers	frequency		
		T	SA	A
Evaluation percentage	A3: <i>So you'll do e-portfolios. Maybe it'll be applied to lessons. the TEOG score needs to be higher. Supposing you developed such a technological system and adjusted e-portfolios in a way that they could be evaluated objectively, which seems impossible with current technological possibilities; then TEOG must be less as e-portfolios cover the students' long-term studies. But there is no such case now. Even in such a case, the TEOG wouldn't be necessary if e-portfolios were evaluated objectively.</i>	1	4	3
Objectiveness in evaluation	Focus 1: <i>The biggest mistake would be a subjective evaluation; it wouldn't be objective. If it were a subjective evaluation, mistakes can be made. During the evaluation, is the work genuine or did the child get help from outside? Is it his own? All this effects the result.</i>	6	0	10
Trustworthiness of the exam's implementation and evaluation	Focus 2: <i>The most critical point here is that you include the evaluation in the system. I mean whether it is on a piece of paper or in digital form, it is no problem as long as you provide its physical conditions. The main problem here is that children will get points if we manage it physically, and honestly I wonder whether Turkey can succeed at this?</i>	3	0	2
Uncertainty of the process	A3: <i>Now. What is in this thing you call an e-portfolio? Is it something the students store their studies in online which the teacher can access? Can the teacher share some kind of information and comment with the students as in social networking sites? I mean an e-portfolio may be closer to technological development than teachers, but can it make students more sensitive to the environment, people, women rights, etc.? I don't think it relates to these.</i>	3	1	2
How to proceed	A5: <i>In my opinion this should be applied in grades 5-8. It's not suitable for the first four years of education, but it's okay for the next four years. For example, the child passed grade 4 to grade 5. In 5th grade, it can be small, in 6th grade, more, and it can be increased like this. An e-portfolio system in which one can put all one has done in grades 5, 6, 7 and 8 might be useful.</i> Focus 3: <i>In my opinion this should be applied in grades 5-8. It's not suitable for the first four years of education, but it's okay for the next four years. For example, the child passed grade 4 to grade 5. In 5th grade, it can be small, in 6th grade, more, and it can be increased like this. An e-portfolio system in which one can put all one has done in grades 5, 6, 7 and 8 might be useful.</i>	11	4	5

Considering the category of evaluation percentage under this theme, academicians and school administrators were seen to have suggested more views. There wasn't total agreement on the issues discussed here. While some of the participants expressed that e-portfolios should be used only to monitor the developmental process, others stated that its implementation for the purpose of placement may lead to several problems. Another view favoring these participants was that the percentage value of central joint exams, where objective evaluation is the top priority, must be higher if e-portfolios were to be scored. Also, would this score be effective in placement? By contrast, there were other participants who argued that including e-portfolios in the evaluation phase would be correct and that there wouldn't be a need for central exams. Some of the participants had the idea that the percentages for e-portfolios and central joint exams must be the same. Another different view was that e-portfolios could be used as a reference in admission to vocational secondary schools rather than being a grade added to the central exams.

One of the most discussed issues in the theme of implementation and evaluation process of e-portfolio was objectiveness in evaluation. The participants' biggest reservation was the likelihood of a problem during the evaluation phase due to a lack of objectivity. Regarding objectivity, some participants stated that the question of whether tasks had been performed by the students or not could pose a problem. Furthermore, some ideas emerged that teachers might feel under pressure even if rubric were employed to promote objectivity, as there would be some anxiety about placement; for this reason, teachers might not act objectively. Another category under this theme was the reliability of the exam's implementation and evaluation. The participants had anxiety about its trustworthiness, which extended to how e-portfolios would be transferred into a digital environment for evaluation. Furthermore, the participants stated some security issues such as how to inspect what was produced and whether the products uploaded onto an e-portfolio had really been made by that particular student.

As for the category of uncertainty of the process, the participants stated that there were uncertainties in terms of the following issues:

- Which products made by the students themselves must be in an e-portfolio?
- Which courses must the implementation of an e-portfolio cover?
- Should the implementation of e-portfolios cover only courses, or should it cover the social activities of students as well?
- Will an e-portfolio just be a system with no function other than storing students' output, or will it be one that enables an interactive connection between students and teachers?
- How smoothly will this system work, as it was established to provide an opportunity to obtain information about the future?

The last category for which the participants had expressed their opinions was how to proceed; this was seen as the issue on which teachers and school administrators laid the most general emphasis. Within this context, the views were concerned with whether the implementation of e-portfolio would cover both primary and secondary schools. The general idea of the participants on this issue was that e-portfolios should be implemented in 5th, 6th, 7th, and 8th grades. They stated as a rationale that students in primary schools were not ready for this process in terms of their development. Considering the opinion that it should be in secondary schools, now the matter became whether each of the grades (5, 6, 7, 8) should have the same weighted scoring or not. In other words, there was an idea that scoring in grade six should be given more weight than that of grade five. Moreover, some ideas emerged that the prepared products should be evaluated by a supreme board within the process.

Examining the Relations among the Categories Obtained through Content Analysis by means of Cluster Analysis

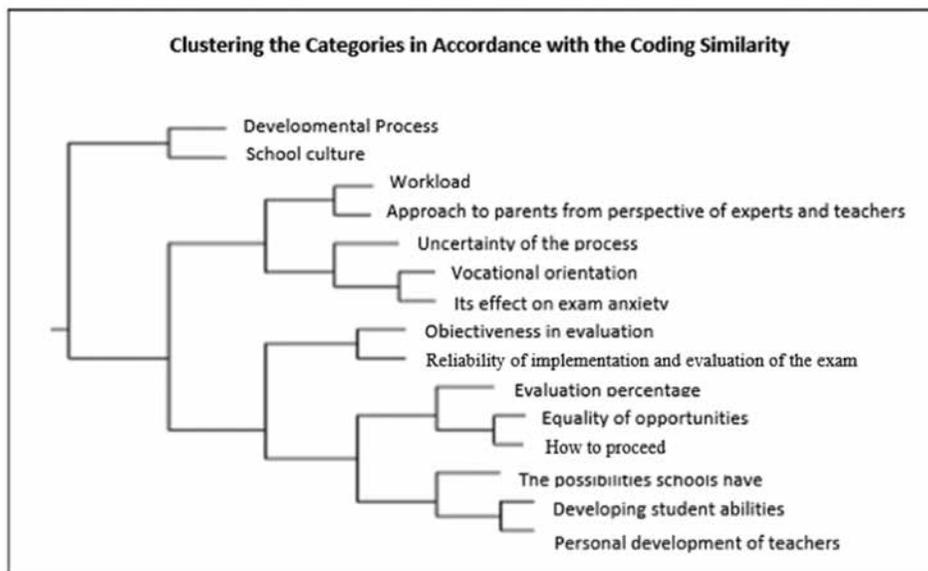


Figure 2. Examining the relations among the categories obtained through content analysis by means of cluster analysis.

The results of cluster analysis, which was carried out by taking into account the coding similarity in accordance with the categories obtained, are illustrated in Figure 2.

As seen in Figure 2, the categories consist of three separate clusters. Accordingly, a relation can be said to exist between students' developmental process and school culture. From this point of view, participants who had referred to the developmental process also laid emphasis on school culture. School culture, which is pervasive in schools, can be said to have effects on the cognitive and affective development of students. From this point of view, the school environment where the focus is only on multiple-choice exams and the school environment where the e-portfolio has been implemented alongside the exam can be thought of differently. While activities like projects, performances, and so on don't have a place in schools that focus only on the exam, an environment where e-portfolio has also been implemented is expected to be effective in decreasing exam pressure and paying more attention to the effects of process and implementation.

Teachers' workloads, parents' attitudes, uncertainty of the process, vocational orientation, and the effect on exam anxiety all met in the same cluster. As understood from the obtained findings, the participants who had generally expressed views in these categories were teachers and school administrators, the ones personally involved in the process. The teachers and school administrators mostly emphasized that teachers

would be overloaded, that parents would play either positive or negative roles in the process, that the process was unclear, and that the scoring and implementation were currently vague.

The objectivity of e-portfolio evaluations and the reliability of the implementation and evaluation of the exam can be thought of as interrelated to each other. The participants generally handled these two categories together. The participants had a certain anxiety about the objective evaluation of e-portfolios. They stated that without an objective evaluation, the trust in student placement exams would generally decrease and the process would not work smoothly.

As seen in Figure 2, the categories of *evaluation percentage of e-portfolios*, *equality of opportunities*, *how to proceed*, *possibilities schools have*, *developing student abilities*, and *personal development of teachers* were in clusters. The categories of equality of opportunities students have and evaluation percentage can be said to be closely interrelated to how to proceed with e-portfolios. The participants frequently pointed to issues such as probable problems or new situations while proceeding, what the percentage value of e-portfolios would be if e-portfolios were used for the central placement exam, and whether students would have the same opportunities or not. Furthermore, the participants who stressed the personal development of teachers also pointed to the development of student abilities. From this point of view, a mutual relation between these two categories can be said to exist. In other words, as the development of the teacher's abilities may positively affect student's abilities, it can be thought that students' abilities may also positively affect the teachers' abilities.

Discussion

The system used in the transition from elementary education to secondary education affects all of the students' stakeholders as a whole (students, teachers, parents, schools). When considering the effects of the transition system examined in this study, especially in terms of students, such titles as equality of opportunities, developmental process, vocational orientation, developing student ability, and exam anxiety stand out. It is thought that such a system may lead to bias in regions with different socioeconomic levels. However, e-portfolios could be employed as a useful instrument in vocational orientation to help determine the process. According to [Campbell and Schmidt \(2005\)](#), students can better discover their strengths and weaknesses by preparing e-portfolios, and this is effective in their career planning. Similarly, [Shaidullina et al. \(2014\)](#) stated that portfolios, when prepared by students during secondary school and higher education, can be used as an effective material in choosing and applying for jobs. According to [Tubaishat \(2015\)](#), e-portfolios are considered to be helpful to certify what students learned as well as to plan their future

career at universities. Moreover, e-portfolios are helpful for people preparing their CV's or for job interviews because e-portfolios include their best academic work.

The fact that students themselves prepare the products to be put in e-portfolios will contribute to the development of their abilities. [Gülbahar and Köse \(2006\)](#), in light of the views they obtained from the prospective teachers in their study, stated that preparing e-portfolios is time-consuming in terms of students; however, they can get feedback regarding their activities over time and added that they have a chance to evaluate and monitor themselves. Similarly, [Chang, Tseng, Liang, and Chen \(2013\)](#) expressed that the implementation of e-portfolios increased self-assessment and teacher feedback about the items that were prepared. In addition to these, e-portfolios are thought to be effective because students can observe their own learning within the process and feel responsible for their own learning ([Tanaka, Suzanne, Ueno, & Ohnishi, 2013](#); [Tavakoli & Amirian 2012](#)).

Another important issue frequently underlined in the interviews that have been carried out was that e-portfolios could be effective at improving students' high-order skills. Turning the activities carried out in or out of a classroom into a grade that affects the exam is thought to make a contribution to increasing students' interest and abilities in these activities. In line with the findings of the study, [Özyenginer \(2006\)](#) concluded in her study that e-portfolios developed student abilities such as researching, learning new things, self-confidence, learning self-assessment, managing time, feeling responsible for activities, and creativeness. The studies carried out in the literature have generally indicated that using e-portfolios was an effective method for the development of student abilities such as reflective thinking, creative writing, self-arrangement, and self and peer assessment, as well as determining high-level cognitive strategies ([Chanpet & Chomsuwan, 2013](#); [Cheng & Chau, 2013](#); [Huang, Yang, Chiang, & Tzeng, 2012](#); [Nicolaidou, 2013](#); [Pitts & Ruggierillo, 2012](#)).

One of the findings revealed within this study was that e-portfolios could ease students' exam anxiety: Instead of a single exam carried out within a short time, employing an evaluation concerned with the process as a whole could ease students' exam anxiety. In line with this finding, [Von der Embse, Barterian, and Segool \(2013\)](#) stated that portfolios, as alternatives to tests, could also be used for evaluation among other methods.

The implementation of e-portfolios alongside the central joint exam has been widely stated to have possible various effects on teachers. Having knowledge about information and communication technologies was especially stressed to contribute to the personal development of teachers. In addition to this, e-portfolios may cause an extra workload for teachers during their preparation and evaluation processes. In line with the obtained findings, [Agustina \(2011\)](#) stated that using e-portfolios may contribute to teachers' getting to know their students and to teachers' personal

development. However, she also concluded that the advantages of portfolios could also lead to extra workloads for teachers and might be hard to implement in classrooms. Similarly, [Gülbahar and Köse \(2006\)](#) got the idea that evaluating e-portfolios would be a long-term process for teachers.

In terms of schools, teachers would assume responsibility for providing the environment and possibilities for implementing e-portfolios. On the other hand, implementing e-portfolios can positively affect school culture because students and teachers will be more organized and exam anxiety will decrease. [Ahn \(2004\)](#) stated that the process of creating portfolios encouraged the entire school population to achieve the objectives of learning and meet the expectations.

Considering the views regarding parents, teachers were especially seen to have assorted anxieties. Teachers in general thought that parents would be involved too much in preparing e-portfolios and stated that precautions must be taken against this. An additional point underlined by the participants was that such a system may cause an economic burden on parents. However, they also stated that e-portfolios could be an effective instrument for parents to get to know their children better and to monitor the development of their children once trust was established between parents and teachers. In the studies that have been carried out, the implementation of e-portfolios was concluded to be beneficial for parents to know their children better, to be more concerned, to monitor their developmental processes, and so on ([Birgin, 2008](#); [Charvade, Jahandar, & Khodabandehlou, 2012](#)).

When examining the implementation and evaluation processes of e-portfolios, the evaluation percentage value, objectivity in evaluation, implementation and evaluation reliability of the exam, uncertainty of the process, and how to proceed should all be addressed. There was no consensus on the evaluation's percentage value. Some participants suggested that the evaluation percentage value of e-portfolios should be small or not included in the overall score, as it couldn't be evaluated objectively; in contrast, others thought that its percentage should be greater or that only the results obtained from the evaluation of e-portfolios should be used, as e-portfolios provide more information about students. [TEDMEM \(2013\)](#) determined the ratio of e-portfolios as 10% and that of the central joint exam as 70% in the model they offered for the transition system to secondary school. In this study carried out by TEDMEM, establishing a transition system based on using not only the central joint exam but also more than one resource was stated as beneficial. This study suggested obtaining the final grade from 70% of the students' central joint exam grade, 10% of their elementary school year-end grade point average, 10% of the elementary school digital portfolio, and 10% of their elementary school teachers' cumulative evaluations for selecting students to enter schools such as science secondary schools and social

sciences secondary schools; they also suggested a specific transition system unique to each type of secondary school.

From the perspective of evaluation percentage, the view that e-portfolios can't be objectively evaluated stands out from among the other views of the participants. The literature has presented the idea that there are some disadvantages to using e-portfolios in decisive evaluations or placements. These studies concluded that portfolios were disadvantageous because of the difficulty in ensuring their security and validity, of not being graded objectively, of its preparation consuming too much time, of its technological efficiency, and of the inability to standardize its scores (Bahar, Nartgün, Durmuş, & Bıçak, 2006; Chang, Tseng, Chou, & Chen, 2011; Hung, 2012).

Because the current study was concerned with the probable results of a system that has yet to be implemented, teachers and school administrators generally had certain anxieties and uncertainties about the process and how it would work. This point focused on what e-portfolio implementation would cover, which courses it would cover, which grade years it would be used on, and what its overall percentage would be. McKenna and Stansfield (2012) stated that there wasn't much information about the evaluation of e-portfolios in most of the studies on e-portfolios, so they prepared an introductory study to develop a strong e-portfolio-evaluation model and framework.

Another important finding obtained was e-portfolios implemented in education would be more appropriate if the developmental process were taken into consideration. Gülbahar and Köse (2006) stated that there had been no consensus on whether the students should be informed about the e-portfolio evaluation session at the beginning or end of a semester; however, the common idea was that it must be at the end of the semester. Their explanations were that being notified at the beginning of a semester would negatively affect students and decrease their motivation. However, researchers think that studies should be carried out on when students should be informed.

In the scope of this research, cluster analysis was carried out in order to study deeply the relations among the categories obtained through content analysis. Accordingly, several relations between certain categories were obtained, such as the relation between school culture and the developmental process of students, teachers' personal development, and the development of student abilities. While some process-oriented activities and applications like projects, performances, and so forth were not emphasized much, the developmental process of students was expected to be affected positively in schools where e-portfolios are implemented because exam anxiety would decrease, thus making the implementation and the process more effective. Similarly, the efficiency and personal development of teachers can be said to possibly affect the development of students' abilities. According to Krippendorff (2012), cluster analysis is an effective way to summarize data collected through content analysis and

to study the relations among themes more deeply. There have been many studies in the literature which have employed cluster analysis using qualitative data (Guest & McLellan, 2003; Tapio, 2003).

In the light of these data studied here, students can be assumed to better discover their strengths and weaknesses, which would be effective in their career planning if e-portfolios were used in the transition to secondary education along with the central joint exams. It is also an outstanding idea that a system using e-portfolios alongside a single exam could have the effect of decreasing students' exam anxiety. Moreover, the implementation of e-portfolios can be said to provide opportunities for assessing the high-order skills of students, which are not evaluated in the current exam system. However, it can be said that the percentage of e-portfolios should be less than that of central joint exams in the evaluation of a transition system to secondary education which also includes e-portfolios because one can generally encounter the problem of objectivity in an evaluation process such as this.

Considering the results of this study, in programs aimed at students' acquiring the living skills of the 21st century, policy makers have been advised to secure the inclusion of these abilities into the transition system to secondary education and to make its importance known by all parties to education. Furthermore, the physical infrastructure of all schools must be ready before launching such a system. Similarly, seminars, workshops, and in-service trainings about the preparation, implementation, and in particular the evaluation of e-portfolios should be organized for teachers as they will be the ones to apply the system in the field. There are also many things for researchers to do in terms of such a transition system to secondary education, of which the teachers, school administrators, and academicians have put some ideas forward in this study. Researchers are advised to carry out studies on such controversial issues as objectivity in evaluation of e-portfolios, reliability of its implementation, and what its percentage value of the overall evaluation score must be. Moreover, the e-portfolio evaluation system, scoring reliability, and effects on vocational orientation could be studied through a pilot implementation.

References

- Agustina, R. (2011). Portfolio as an alternative assessment in language testing. *Eksplanasi*, 6(1), 1–6.
- Ahn, J. (2004). Electronic portfolios: Blending technology, accountability & assessment. *THE Journal (Technological Horizons in Education)*, 31(9), 12–18.
- Aydođan, A. (2008). *Lise giriř sınavları (LGS-OKS) cođrafya sorularının biliřsel alan basamaklarına gre deđerlendirilmesi (2003-2007)* [Assessment of geography questions according to the cognitive field steps in the examination of high school (LGS-OKS) 2003-2007] (Master's thesis, Gazi University Ankara, Turkey). Retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi>

- Bahar, M., Nartgün, Z., Durmuş, S., & Bıçak, B. (2006). *Geleneksel-alternatif: Ölçme ve değerlendirme öğretmen el kitabı* [Traditional-alternative: Measurement and evaluation handbook for teachers]. Ankara, Turkey: Pegem A Yayıncılık.
- Bank, B. (2004). *E-Portfolios: Their use and benefits*. Retrieved from http://archive.excellencegateway.org.uk/media/ferl_and_aclearn/ferl/resources/organisations/fd%20learning/e-portfolioiaper.pdf
- Barker, K. C. (2005). *E-portfolio for the assessment of learning*. Retrieved from <http://www.futured.com/documents/FuturEdePortfolioforAssessmentWhitePaper.pdf>
- Birgin, O. (2008). Alternatif bir değerlendirme yöntemi olarak portfolyo değerlendirme uygulamasına ilişkin öğrenci görüşleri [Students' views about the application of portfolio assessment as an alternative assessment method]. *Türk Eğitim Bilimleri Dergisi*, 6(1), 1–24.
- Büyüköztürk, Ş., Çakmak, K. Ç., Akgün, Ö. E., Karadeniz, Ş., & Demirel, F. (2012). *Bilimsel araştırma yöntemleri* [Scientific research methods] (11st ed.). Ankara, Turkey: Pegem Akademi.
- Campbell, M. I., & Schmidt, K. J. (2005). Polaris: An undergraduate online portfolio system that encourages personal reflection and career planning. *International Journal of Engineering Education*, 21(5), 931–942.
- Chang, C. C., Tseng, K. H., Chou, P. N., & Chen, Y. H. (2011). Reliability and validity of Web-based portfolio peer assessment: A case study for a senior high school's students taking computer course. *Computers & Education*, 57(1), 1306–1316. <http://dx.doi.org/10.1016/j.compedu.2011.01.014>
- Chang, C. C., Tseng, K. H., Liang, C., & Chen, T. Y. (2013). Using e-portfolios to facilitate university students' knowledge management performance: E-portfolio vs. non-portfolio. *Computers & Education*, 69, 216–224.
- Chanpet, P., & Chomsuwan, K. (2013). Development and design: E-Portfolio on project-based learning with assessment system. *International Proceedings of Economics Development and Research*, 60, 168–172.
- Charvade, M. R., Jahandar, S., & Khodabandehlou, M. (2012). The impact of portfolio assessment on EFL learners' reading comprehension ability. *English Language Teaching*, 5(7), 129–139.
- Cheng, G., & Chau, J. (2013). A study of the effects of goal orientation on the reflective ability of electronic portfolio users. *The Internet and Higher Education*, 16, 51–56.
- Egan, J. P. (2012). E-portfolio formative and summative assessment: Reflections and lessons learned. In *Proceedings of Informing Science & IT Education Conference (InSITE)*. Retrieved from <http://proceedings.informingscience.org/InSITE2012/InSITE12p417-422Egan0119.pdf>
- Eğitim Reformu Girişimi. (2013). *Yeni dönemde ortaöğretimin amacı ve yeniden düzenlenmesi*. Retrieved from http://erg.sabanciuniv.edu/sites/erg.sabanciuniv.edu/files/Ortaogretim_BilgiNotu.pdf
- Guest, G., & McLellan, E. (2003). Distinguishing the trees from the forest: Applying cluster analysis to thematic qualitative data. *Field Methods*, 15(2), 186–201.
- Gülbahar, Y., & Köse, F. (2006). Öğretmen adaylarının değerlendirme için elektronik portfolyo kullanımına ilişkin görüşleri [Perceptions of preservice teachers about the use of electronic portfolios for evaluation]. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi*, 39(2), 75–93.
- Hill, P. (2010). *Asia-Pacific secondary education system review series no. 1: Examination systems*. Retrieved from <http://unesdoc.unesco.org/images/0018/001878/187826e.pdf>

- Huang, J. J., Yang, S. J., Chiang, P. Y., & Tzeng, L. S. (2012). Building an e-portfolio learning model: Goal orientation and metacognitive strategies. *Knowledge Management & E-Learning: An International Journal*, 4(1), 16–36.
- Hung, S. T. A. (2012). A wash back study on e-portfolio assessment in an English as a foreign language teacher preparation program. *Computer Assisted Language Learning*, 25(1), 21–36.
- Jenson, J. D. (2011). Promoting self-regulation and critical reflection through writing students' use of electronic portfolio. *International Journal of e-Portfolio*, 1(1), 49–60.
- Kayri, M. (2007). Two-step clustering analysis in researches: A case study. *Eurasian Journal of Educational Research*, 28(1), 88–99.
- Krippendorff, K. (2012). *Content analysis: An introduction to its methodology*. London, UK: Sage.
- Kruger, E. J., Holtzman, D. M., & Dagavarian, D. A. (2013). Comprehensive education portfolio with a career focus. *The Journal of Continuing Higher Education*, 61(1), 46–53.
- Levandowsky, M., & Winter, D. (1971). Distance between sets. *Nature*, 234(5), 34–35. <http://dx.doi.org/10.1038/234034a0>
- McKenna, G. F., & Stansfield, M. (2012). The development of e-portfolio evaluation criteria and application to the Blackboard LMS e-portfolio. *International Journal of Virtual and Personal Learning Environments*, 3(1), 19–36.
- Miller, R., & Morgaine, W. (2009). *The benefits of e-portfolios for students and faculty in their own words*. Retrieved from <http://www.uiowa.edu/~outcomes/documents/Benefits.pdf>
- Milli Eğitim Bakanlığı. (2014). *64 Soruda Ortaöğretime Geçiş Sistemi*. Retrieved from <http://www.meb.gov.tr/>
- Nicolaidou, I. (2013). E-portfolios supporting primary students' writing performance and peer feedback. *Computers & Education*, 68, 404–415.
- Oblinger, D. (2005). *An overview of e-portfolios*. *Educause learning initiative*. Retrieved from <http://net.educause.edu/ir/library/pdf/eli3001.pdf>
- Ocak, G., Akgül, A., & Yıldız, S. Ş. (2010). İlköğretim öğrencilerinin ortaöğretime geçiş sistemi (OGES) ile ilgili düşünceler Afyonkarahisar örneği [The examination of the students, views towards the transition to the secondary school who are at primary school]. *Ahi Evran Üniversitesi Eğitim Fakültesi Dergisi*, 11(1), 37–55.
- Özdamar, K. (2013). *Paket programları ile istatistiksel veri analizi* (Vol. 2) [Statistical data analysis with software packages]. Ankara, Turkey: Nisan Kitabevi.
- Özyenginer, E. (2006). *Bilgisayar dersinde elektronik portfolyo yöntemi kullanımı üzerine bir çalışma* [An investigation on using of method of electronic portfolio in a computer course] (Master's thesis, Dokuz Eylül University, İzmir, Turkey). Retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi>
- Pitts, W., & Ruggierillo, R. (2012). Using the e-portfolio to document and evaluate growth in reflective practice: The development and application of a conceptual framework. *International Journal of ePortfolio*, 1(1), 49–74.
- Resnick, L., & Berger, L. (2010). *An American examination system*. Retrieved from <http://www.k12center.org/publications.html>
- Shaidullina, A. R., Fassakhova, G. R., Valeyeva, G. K., Khasanova, G. B., Komelina, V. A., & Ivanova, T. L. (2014). A comparative research on levels of students' formation skills of their career advancement portfolio in secondary and higher education systems. *Asian Social Science*, 11(1), 375–379.

- Stefani, L., Mason, R., & Pegler, C. (2007). *The educational potential of e-portfolios*. London, UK: Routledge.
- Tanaka, H., Suzanne, M., Ueno, Y., & Ohnishi, A. (2013). *Developing an e-portfolio to enhance sustainable vocabulary learning in English*. Retrieved from https://www.researchgate.net/profile/Hui-Fen_Hsu/publication/251232220_Effects_of_online_gaming_experience_on_English_achievement_in_an_MMORPG_learning_environment/links/0deec51ef324086829000000.pdf#page=347
- Tapio, P. (2003). Disaggregative policy Delphi: Using cluster analysis as a tool for systematic scenario formation. *Technological Forecasting and Social Change*, 70(1), 83–101.
- Tavakoli, M., & Amirian, A. (2012). The effect of portfolio assessment on the development of metadiscourse awareness in EFL learners' writing in the academic context. *Sheikhbahaee EFL Journal*, 1(1), 1–21.
- Tavşancıl, E., & Aslan, E. (2001). İçerik analizi ve uygulama örnekleri [Content analysis and application examples]. *İstanbul, Turkey*. Epsilon Yayıncılık.
- TEDMEM. (2013). *Ortaöğretimde dönüşüm: Bir yol haritası önerisi* [Conversion in secondary education: Proposal for a way map]. Retrieved from http://portal.ted.org.tr/genel/yayinlar/ortaogretimdedonusum_biryolharitasionerisi.pdf
- Tubaishat, A. (2015). Can e-portfolio improve students' readiness to find an IT career? *Issues in Informing Science and Information Technology*, 12, 192–203.
- Von der Embse, N., Barterian, J., & Segool, N. (2013). Test anxiety interventions for children and adolescents: A systematic review of treatment studies from 2000–2010. *Psychology in the Schools*, 50(1), 57–71.
- Yıldırım, A., & Şimşek, H. (2011). *Sosyal bilimlerde nitel araştırma yöntemleri* (8th ed.) [Qualitative research methods in the social sciences]. Ankara, Turkey: Seçkin Yayıncılık.

