TEACHER CANDIDATES' OPINIONS ABOUT COOPERATIVE E-PORTFOLIO ACTIVITIES IN THE BLOG ENVIRONMENT[*]

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Abstract

In this study, it is aimed to reveal the opinions of the pre-service teacher candidates attending the Pedagogical Formation Education Certificate Program in the 2015-2016 academic year, on the e-portfolio activities in cooperative small and large groups in the blog environment during the teaching process. For this purpose, two classes were studied. First class was divided into groups and each group worked on its own blog page, and the second class was divided into groups to allow all groups to work on a single blog page. In the Instructional Technologies and Material Design course, the activities held every week were shared in the blog environment and comments were made. Pre-service teacher candidates' opinions were taken in writing. In this context, the study is a qualitative case study. The findings were analyzed by using content analysis method and presented as themes and supported with visuals. In the large group, it was found that the possibility to see all the works in the same environment, in the small group, to communicate with blogs, to exchange comments and ideas and to work in co-operation. Instead of a traditional portfolio, e-portfolio activities can be preferred in social networks such as blog and Facebook. For qualified and responsible e-portfolio activities, small groups may be preferred instead of large groups.

Keywords: Blog, blogfolio; e-portfolio; pre-service teacher candidate; cooperative learning

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BLOG ORTAMINDA İŞBİRLİKLİ E-PORTFOLYO UYGULAMALARINA İLİŞKİN ÖĞRETMEN ADAYLARININ GÖRÜŞLERİ

Öz

Bu çalışmada, 2015-2016 eğitim-öğretim yılında Pedagojik Formasyon Eğitimi Sertifika Programı'na devam eden öğretmen adaylarının öğretim sürecinde blog ortamında işbirlikli küçük ve büyük grupla e-portfolyo uygulamalarına ilişkin görüşlerini ortaya koymak amaçlanmaktadır. Bu amaçla iki sınıfla çalışılmıştır. İlk sınıf gruplara ayrılarak her bir grubun kendine ait blog sayfasında çalışması, ikinci sınıf da gruplara ayrılarak, tüm grupların tek bir blog sayfasında çalışmaları sağlanmıştır. Öğretim Teknolojileri ve Materyal Tasarımı dersinde her hafta yapılan etkinlikler blog ortamında paylaşılmış ve yorumlar yapılmıştır. Öğrencilerin görüşleri yazılı olarak alınmıştır. Bu bağlamda çalışma, nitel bir durum çalışmasıdır. Bulgular içerik analizi yöntemiyle analiz edilerek temalar halinde kodlanmış ve görsellerle desteklenerek sunulmuştur. Büyük grupta aynı ortamda tüm çalışmaları görebilme imkanının, küçük grupta bloglarla iletişim, yorum ve fikir alışverişi yapma ve işbirlikli çalışma imkanlarının vurgulandığı bulgulanmıştır. Geleneksel portfolyo yerine blog ve facebook gibi sosyal ağlarda e-portfolyo çalışmaları tercih edilebilir. Nitelikli ve sorumluluk yüklenen e-portfolyo çalışmaları için büyük grup yerine küçük grup tercih edilmesi önerilebilir.

Anahtar Kelimeler: Blog; blogfolyo; e-portfolyo; öğretmen adayı; işbirlikli öğrenme

Geniş Özet

Genel olarak web 2.0, bireylerin okuyup yazabildikleri, içeriğin çevrimiçi olarak işbirlikli biçimde oluşturulduğu bir ortamdır (Sharma, 2018). Ek olarak web 2.0 düzenleme, görsel ya da video paylaşımı, yorumlar yazma gibi farklı sistemlerin işlevlerini tek bir ortamda birleştirir. Web 2.0 araçlarından biri olan eğitim blogları edebiyat, güncel olaylar, makaleler veya derslere ilişkin öğrenci sorumluluğunu artırmak, bir portfolyo hazırlama ortamı sağlamak gibi nedenler için kullanılır. Bu çalışmada öğretmen adaylarının görüşlerinden yararlanarak blogların öğretimde işbirlikli e-portfolyo uygulamalarında etkin kullanımına ilişkin bir anlam oluşturmak amaçlanmıştır.

Bu doğrultuda, çalışmada aşağıdaki sorulara yanıt aranmıştır:

(1) Öğretmen adaylarının blog ortamında büyük ve küçük gruplarda işbirlikli e-portfolyo uygulamasına ilişkin olumlu ve olumsuz görüşleri nelerdir?, (2) Büyük ve küçük gruplarda işbirlikli e-portfolyo uygulamalarına katılan öğretmen adaylarının e-portfolyo uygulamasında çevrimiçi ortam tercihleri nelerdir? (3) Büyük ve küçük gruplarda işbirlikli e-portfolyo uygulamalarına katılan öğretmen adaylarının e-portfolyo uygulamasında çevrimiçi ortam tercih nedenleri nelerdir?

Öğretmen adaylarının blog ortamında büyük ve küçük grupta işbirlikli e-portfolyo (blogfolyo) uygulamalarına ilişkin deneyimlerini belirlemek üzere görüşlerini derinlemesine inceleyen olgubilim deseninde nitel bir araştırmadır.

Çalışmada 2015-2016 eğitim-öğretim yılı güz döneminde Pedagojik Formasyon Eğitimi Sertifika Programı kapsamında verilen 'Öğretim Teknolojileri ve Materyal Tasarımı' dersinde iki sınıfla çalışılmıştır. Her iki sınıf farklı alanlardan oldukları için alanlarına göre 4'er kişilik gruplara ayrılmıştır. İlk sınıftan her bir grubun kendine ait blog sayfasında her hafta düzenli olarak sınıf ortamında hazırladıkları ürünleri ve ürünlere ait açıklamaları hafta süresince paylaşmaları ve yine her ürün için paylaşılan hafta süresince materyal tasarım ilkeleri doğrultusunda paylaşımlara yorumlar yapmaları istenmiştir. İkinci sınıftan ise tüm grupların tek bir blog sayfasında çalışmaları ve bu sayfada yorumlarını yapmaları istenmiştir. Blog ortamında işbirlikli e-portfolyo uygulamalarına büyük grupta 73, küçük grupta 80 öğretmen adayı olmak üzere toplam 153 öğretmen adayı katılırken görüşme için her iki gruptan kolay ulaşılabilirlik ve gönüllülük esasına dayalı olarak seçilen 10'ar öğretmen adayı olmak üzere toplam 20 öğretmen adayı katılmıştır.

Veriler yarı yapılandırılmış görüşme formu aracılığıyla odak grup görüşmesi tekniği ile toplanmıştır. Görüşme formunda yarı yapılandırılmış altı araştırma sorusuna yer verilmiştir. Seçilen öğretmen adaylarının genel amaç doğrultusunda belirlenen araştırma sorularına ilişkin görüşleri odak grup tekniği 120 dakikada cep telefonunda yer alan ses kayıt uygulamasıyla alınmıştır. Görüşlerin odak grupta yer almayan bir öğretmen adayı ve araştırmacı olmak üzere iki kişi tarafından yazılması sağlanmıştır. Verilerin çözümlenmesinde içerik analizi yapılmıştır. Araştırmada elde edilen veriler incelenerek ve araştırmanın amacı çerçevesinde önemli olan boyutlar saptanarak, bu boyutlardan kategoriler üretilmiştir. Üretilen kategoriler sınıflandırılarak hangi temalar etrafında toplandıkları tespit edilmiştir. Verileri analiz ederken *kodlama tutarlılığını* sağlamak amacıyla iki araştırmacı birbirinden habersiz olarak kodlamaları yapmıştır. İki kodlayıcı arasında uyum Miles ve Huberman'a (1994) ait olan (Güvenirlik = Görüş birliği/Görüş birliği+Görüş ayrılığı X 100) formülü kullanılarak belirlenmiştir ve hesaplama neticesinde iki kodlayıcı arasındaki uyum oranı .92 olarak tespit edilmiştir. Aykırı kodlama düşünceleri tartışılarak koda karar verilmiştir. Yeni temalar ve kodlar yeniden düzenlenmiştir. Elde edilen bulgular görsellerle desteklenerek öğretmen görüşlerinden doğrudan alıntılar yapılarak sunulmuştur.

Araştırmanın birinci sorusu kapsamında elde edilen bulgular doğrultusunda ulaşılan sonuçlara göre blog ortamında büyük grupta işbirlikli e-portfolyo uygulamasının olumlu yanlarına ilişkin olarak en çok aynı ortamda tüm çalışmaları görebilmeyi sağlaması üzerinde durmuşlardır**.** Araştırmanın ikinci sorusu kapsamında elde edilen bulgular doğrultusunda ulaşılan sonuçlara göre blog ortamında küçük grupta işbirlikli e-portfolyo uygulamasının olumlu yanlarına ilişkin olarak en çok diğer bloglarla iletişimi, yorum ve fikir alışverişi yapmayı ve işbirlikli çalışma imkanlarının olmasını vurgulamışlardır. Araştırmanın üçüncü sorusu kapsamında elde edilen bulgular doğrultusunda ulaşılan sonuçlara göre büyük blog ortamında çalışan katılımcıların çoğunluğu e-portfolyo uygulamaları için uygulama yapmadıkları bir ortam olan facebook kapalı grup ortamının daha uygun olabileceğini düşündüklerini ve olası çalışmalarda bu ortamı tercih edecekleri görüşünü belirtmişlerdir. Araştırmanın dördüncü sorusu kapsamında elde edilen bulgular doğrultusunda ulaşılan sonuçlara göre ise blog ortamında büyük grupta işbirlikli e-portfolyo uygulamalarına katılan öğretmen adayları, e-portfolyo uygulamalarında grup dışından erişime izin vermeyen Facebook (kapalı grup) ortamını kolay değerlendirme, güncel olması, bilinen ortam olması, sosyal, çok kullanılan, kolay ulaşılan, dikkat çekici, güdüleyici olması, kolay kullanılması, akıllı telefonla ulaşımın kolay

olması, kolay dosya ekleme özelliğine sahip olması, görev ve paylaşım takip imkanı sunması gibi özellikleri nedeniyle tercih edeceklerini belirtmişlerdir. Araştırmanın beşinci sorusu kapsamında elde edilen bulgular doğrultusunda ulaşılan sonuçlara göre küçük grupla blog ortamında çalışan öğrenciler büyük grupta blog ortamı haricinde diğer üç ortam olan küçük grupta blog ortamı, Facebook (kapalı grup) ortamı ve geleneksel ortamı eşit düzeyde tercih ettiklerini belirtmişlerdir. Araştırmanın altıncı sorusu kapsamında elde edilen bulgular doğrultusunda ulaşılan sonuçlara göre öğretmen adayları e-portfolyo uygulamalarında çalıştıkları ortam olan küçük grupla blog ortamında e-portfolyo uygulamaları yapmayı, yorum yapma, ürün çeşitliliği, ulaşım kolaylığı, yer kaplamadan ürün paylaşımı, iletişime açıklık, hata düzeltebilme imkanı, öğretim için uygun ortam, Facebook'a kıyasla ciddi ortam, görsellik, linklerle bağlanma, tüm grup sayfalarını görme, yükleme zamanını görme, kolay takip imkanları nedeniyle tercih edeceklerini belirtmişlerdir.

Introduction

The use of instructional technologies has become inevitable in increasing the quality of activities prepared in the context of curriculum recently. Web 2.0 tools such as Flickr, Youtube, BitTorrent, Napster, podcasts, Blogs, and Wikis (O'Reilly, 2010; Sharma, 2018) are prominent technologies in recent years whose effectiveness is evaluated in teaching (Lien & etc., 2018; Jesson & Cockle, 2018; Orhan-Karsak, Fer & Orhan, 2014; Xie & Sharma, 2008). Web 2.0 is an environment in which individuals can read and write, and the content is created online in collaboration (Sharma, 2018). Additionally, web 2.0 integrates the functions of different systems in a single environment, such as visual media or video sharing and comment writing.

Bloom (2008) describes blogs as online diaries where individuals can send their comments and links to related content over the internet via a computer or smart phone. According to Bloom, blog users use this online diary to discuss topics of interest, reach out to the community of readers, and provide links outside to connect to the original story in some way. A training blog is similar to the traditional blog; however, it is used for literature, current events, articles or courses, to increase student responsibility and to provide a portfolio preparation environment. It also allows students and teachers to make links to the original content or related materials and to participate in the conversation by writing comments.

Portfolio is the total collection of student studies, which demonstrates the student's efforts, success and preparation in the process in one or more areas. This collection includes students' participation in selected content, selection criteria, assessment criteria, and self-reflections of students, in other words, their comments on their products. Portfolio stands out in evaluating the learning process and reflects the teaching process for individual learning, for both teachers and students as a feature. In addition, it is an important tool that encourages students to have information about their learning and to think about it. The portfolio allows the student to experience the sense of ownership, which does not allowed in many other learning approaches. Portfolio evaluation requires the student to collect and to make reflective comments on their work. In addition, it provides the possibility of being a teaching component in the application of the curriculum and authentic evaluation opportunity. In this context, portfolios are not merely a means of evaluation or merely an instructional tool; the

combination of both should be considered (Lomask, Crismond & Hacker, 2018; Paulson, Paulson & Meyer, 1991). The Portfolio not only reflects the student's comments on the applicability of the curriculum and the teaching process, but also enables the teacher to reach reflective comments on his or her teaching (Lomask, Crismond & Hacker, 2018).

Different researchers in the literature have found that students and teachers made portfolio applications and also showed the positive effects of these studies (Aybek & Aslan, 2016; Lee, 2017; Lam, 2018; Lomask, Crismond & Hacker, 2018; Sahin & Abali-Ozturk, 2014; Winsor & Ellefson, 1995). Lam (2018) aims to develop the skills of teachers' portfolio studies in order to understand deep conceptual understanding and positive learning of students and emphasizes that portfolio studies links the evaluation with theory for learning practices, thus reviewing the process of writing, self-regulating learning process, student learning, reflecting and observing the effectiveness of their teaching process, in other words, student appraisal and self-evaluation.

Portfolios, previously written on paper in the form of files is now permanently stored on the Internet. Thus, the concept of portfolio has been replaced by the concept of e-portfolio. Portfolios in the form of paper are only for text, image, graphics and so on, while e-portfolios stores information in various formats such as audio, video, animation, presentation etc. In this way, the user's skills, self-confidence and academic success in using hardware and software technologies increase. E-portfolios are very important in the context of skill, success and measurement of knowledge of individuals in other words performance monitoring. Therefore, the number of e-portfolio studies is increasing day by day (Baris & Tosun, 2013).

Different researchers in the literature (Ada et. al., 2016; Baris & Tosun, 2013; Haave, 2016; Kim & Kim, 2018; Venville, Cleak & Bould, 2017; Woo et. al., 2014) have revealed the positive effects of e-portfolio studies. Gugino (2018) mentions that the use of instructional portfolios in teaching education programs has become an accepted practice commonly. He states that online digital e-portfolios help to meet the need for pre-service teachers to evaluate their performance, while encouraging deep reflections using interactive digital technologies. According to Sidebotham et al. (2018), e-portfolios are portable and support lifelong professional development. However, it creates a sense of professional identity in preparing for professional practice. Anagun, Atalay and Kandemir (2018) have found that the e-portfolio is useful for pre-service teachers in preparing lesson plans, gaining practical experience, increasing their awareness and providing personal and professional development. Sidebotham et al. (2018) have revealed that e-portfolios also provide an appropriate framework and real opportunity for pre-service teachers to identify and demonstrate their level of preparation for professional practice, to identify ongoing learning needs and to develop strategies for achieving them. The evaluation article provides the opportunity to develop and express a personal practice philosophy and includes the principles of lifelong learning. Handel, Wimmer and Ziegler (2018) also found that using e-portfolios increased success and higher education students using e-portfolios were more successful in their final exams than their peers.

Doslu (2009), in his study which investigated the effects of using e-portfolio with high-school students, emphasized that e-portfolio studies should be done in collaboration and that students generally need to get help from their friends in order to add pictures to their blog

page, to select design, to edit a blog page such as adding slides. Baston (2005) also explains the relationship between e-portfolio and learning, and links e-portfolios with experimental learning, student-centered learning, online learning, lifelong learning, critical and reflective learning, as well as cooperative learning.

As a portfolio environment, blogs, in other words, the blogfolios which expressed in recent years can be seen as a social community of a learner. The features that make blogfolio distinct from the traditional portfolio are easy to access, easy to publish and allow easy sharing with peers. Thus, the blogfolio shapes the virtual community of students in a virtual environment, but the purpose of this student community is to learn. Learning is guided by a teacher and links to the discipline or interdisciplinary objectives of the curriculum or study program are separated from other community forms of performance in this respect (Henri & Pudelko, 2003). In the literature, different researchers have combined blog and portfolio features to deal students' effects on learning. While Lin and Yuan (2006) using the blog environment as a reflective magazine as part of the portfolio system, Du and Wagner (2007) used it as an environment in which students reflect their learning.

Blogfolio, which integrates the blogs and portfolios, combines the benefits of the blog and the portfolio, allowing the researcher to move away from the limitations of the traditional portfolio. Blogfolio is a purposeful system compared to a traditional portfolio, a blogging offering that offers students the opportunity to present their products, has one of the characteristics of the blog, focus on reflection and responsibility, being a subset of the traditional portfolio and providing equal opportunities with it (Lin, Kuo & Yuan, 2007). As stated by Leicester University Career Development Center (n.d.), blogs are a convenient environment for e-portfolio work because blogs organize and store content in a variety of dynamic ways, including chronology. It has the possibility to present a personal profile to the world like a web page. It also allows individuals to follow the activities related to the topics they are interested in.

Cooperative learning is that students work in groups to help each other learn in order to achieve a specific goal (Acikgoz-Un, 1992). In cooperative learning, groups are formed from the students by working on a subject and group is given a certain time period to work on the subject and the teacher is guided by the group to work as a team (Sonmez, 1994). Cooperative learning is carried out with many techniques. They can be listed as student teams-achievement division (STAD), teams-games-tournament (TGT) technique, team assisted individualization technique, Jigsaw technique, mutual inquiry technique, small-group teaching technique and joining technique, group investigation technique (Guven, 2013). In the group investigation technique, the subject is divided into subgroups and distribute to groups. Group members subdivide their topic into individual tasks and conduct a division of labor. Each group member is associated with the work of other group members. Students form groups of 2-6 people. Here, heterogeneity is considered in terms of gender, effectiveness and ability. Students plan how to start and continue the discussion. Plan implementation process is entered. In this process, the teacher provides information resources inside and outside the school. Finally, students share the products they prepare online or offline face to face in alternative presentation formats such as PowerPoint presentation, verbal presentation in class environment or sharing in blog environment. The teacher is in the guide position.

Activities can be done to improve communication and social skills of students (Arends, 2008; Guven, 2013; Ozer, 2005).

One of the most suitable environments that will enable students to develop their communication and social skills effectively and to make cooperative e-portfolio studies is the environments in which the web 2.0 technologies such as blogs are adapted to the teaching process. These advantages of the blog environment, as stated by Polat and Kose (2013), taking into account the contribution of portfolio studies to training. Thus the superior benefits of e-portfolio compared to the traditional portfolio, advances in instructional technology is not difficult to implement e-portfolios, which will enable them to obtain preliminary information and pre-experience on cooperative e-portfolio application in the blog environment for their students to apply. In addition it is important for the teachers in our education system to move their products to the next teaching process and for other teachers. However, cooperative e-portfolio studies in the blog environment are quite limited (Buzzetto-More, 2010; Gerbic & Maher, 2008; Jimojiannis, Schiza & Tsiotakis, 2018; Lin, Kuo & Yuan, 2007; Lu, 2007).

In this context, it is aimed to reveal the experiences of pre-service teachers' cooperative e-portfolio activities in the blog environment, in other words blogfolio studies. Also it is aimed to make sense of the effective use of blogs in cooperative e-portfolio activities from the web 2.0 tools, which are important components of educational technologies. For this purpose, group investigation technique from cooperative teaching techniques was preferred in terms of suitability for the general purpose of the study.

In this study answers to the following questions were sought:

R1. What are the pre-service teacher candidates' positive and negative opinions on the activities of cooperative e-portfolio in the large and small groups in the blog environment?

R3. What are the online environment preferences of pre-service teacher candidates participating in cooperative e-portfolio activities in the large and small groups?

R4. What are the reasons for preferring online environment in cooperative e-portfolio activities of pre-service teacher candidates participating in cooperative e-portfolio activities in the large and small groups?

Method

In this part, the study group and its features, research model, e-portfolio applications with cooperative large and small groups, the procedures of data collection and analysis, in addition themes are included.

Study Group

In the blog environment, a total of 153 pre-service teacher candidates, 73 pre-service teacher candidates in the large group and 80 pre-service teacher candidates in the small group have participated in the cooperative e-portfolio activities. The two randomly selected classes in Pedagogical Formation Education Certificate Program have participated in e-portfolio activities within the scope of Instructional Technology and Material Design course. After the

activities which all students of two classes at the certificate program have participated, for taking the opinions about activities, on the basis of easy accessibility and volunteerism, a total of 20 female pre-service teacher candidates (10 pre-service teacher candidates from both groups) were selected. Although the majority of the teacher candidates attending the Pedagogical Formation Education Certificate Program are female students, the minority male students did not want to participate in this opinion based on volunteerism. Therefore, the sample of the study consisted of female students. In the pre-service teacher candidates who participated in the study were determined according to the principles of easy accessibility and volunteerism by appropriate sampling method. An easily accessible or convenient sample in qualitative research is a method of choosing the easy one and a method of sampling which saves time, money and effort at the expense of knowledge and reliability (Baltaci, 2018).

Features of the Participants

In the blog environments, features of large group participants presented in Table 1 and small group participants presented in Table 2. In Table 1, participants coded as 'large group teacher 1, 2, etc., briefly LGT1, LGT2, etc. In Table 2, participants coded as 'small group teacher 1, 2, etc., briefly SGT1, SGT2, etc.

Table 1. Features of large group participants in the blog environment

Participants	Gender	Graduation
LGT1	Female	Biology
LGT2	Female	Medical
LGT3	Female	Medical
LGT4	Female	Medical
LGT5	Female	Law
LGT6	Female	Biology
LGT7	Female	Turkish language and literature
LGT8	Female	German language and literature
LGT9	Female	Medical
LGT10	Female	Medical

Table 2. Features of small group participants in the blog environment

Participants	Gender	Graduation
SGT1	Female	Accounting
SGT2	Female	Accounting
SGT3	Female	Turkish language and literature
SGT4	Female	Medical
SGT5	Female	Accounting
SGT6	Female	Law
SGT7	Female	Accommodation Travel
SGT8	Female	Turkish language and literature
SGT9	Female	Math's
SGT10	Female	Law

Research Model

It is a qualitative research in the phenomenology pattern that examined the views of the pre-service teachers in-depth in order to determine their experiences with the cooperative large and small group in the blog environment. In the phenomenology study, the common meaning of a few people or participants 'experiences with a phenomenon or concept is defined together with the common characteristics of the participants, resulting in the achievement of the essence of individuals' lives (Creswell, 2013). Phenomenology research enables an in-depth study of an event or phenomenon by searching for answers to questions of how and why (Yildirim & Simsek, 2008). They are seen in the form of events, experiences, perceptions, orientations, concepts and situations (Yildirim & Simsek, 2008). In this study, phenomenology pattern was chosen to reveal the similarities and differences between e-portfolio experiences of pre-service teachers working with large and small groups in the blog environment. The aim of this study is to examine the experiences of the pre-service teachers in detail. In the study, the opinions of the pre-service teachers were taken after participating in e-portfolio activities with cooperative large and small groups in the blog environment. Therefore, e-portfolio activities are also included in the following section.

E-portfolio Activities in Cooperative Large and Small Groups

In the study, two groups were studied in the "Instructional Technologies and Material Design" course within the scope of the "Pedagogical Formation Education Certificate Program" in the fall semester of 2015-2016 academic years. Both groups are divided into 4 groups according to their fields from different areas. Each group from the first group was asked to share their products and product descriptions regularly in the classroom every week and to make comments on the material design principles for each product during the week. In the second group, all groups were asked to work on a single blog page and to comment on this page. The subjects that the pre-service teachers participated in face-to-face lecture during 14 weeks in the course of 'Instructional Technologies and Material Design' and shared their products in the blog environment were presented below week by week. In the context of the group investigation technique of cooperative learning techniques, the pre-service teachers were given the opportunity to share the theme-specific sub-topics selected from the curriculum related to their field of study. Pre-service teachers made plans within the group on how to collect the information about their subjects, how to start to discuss the final product process on the week subject given by the researcher lecturer and how to sustain the study. They have implemented their plans. In this process, the teacher provided information sources inside and outside the university. Finally, the students presented their products in a classroom environment with a PowerPoint tool or verbally. During the week, in the blog environment, they shared information about their products, the materials prepared according to the material form prepared by the researcher and their comments and comments were made by the pre-service teachers in all groups. In order to reflect the experiences of the pre-service teachers with comments, at least one comment writing rule was introduced during the week.

1st Week: Presentation of blog environment and blog usage,

Pencil-cardboard concept map preparation as Two-dimensional material

2nd Week: Preparing concept map in Inspiration 9.2, Mindmap 8.0

3rd Week: Pencil-cardboard mind map preparation as Two-dimensional material

4th Week: Preparing mind map in Inspiration 9.2, Mindmap 8.0

5th Week: Pencil-cardboard hook and crossword puzzle preparation as Two-dimensional material

6th Week: Puzzle preparation in Crossword program

7th Week: Banner and poster design in Poster designer program

8th Week: Three-dimensional material preparation

9th Week: Three-dimensional material preparation

10th Week: Three-dimensional material preparation

11th Week: Preparing PowerPoint Presentation

12th Week: Preparing animation in Goanimate program

13th Week: Writing and staging drama on communication

14th Week: Writing examples on the use of educational technologies in the field

Data Collection

Data were collected by focus group interview technique via semi-structured interview form. The number of participants should be at least 6 and maximum 12 for the focus group. When the number of participants in the focus group interview is more than 12, the participants may not express their views and observations sufficiently. In addition, due to the high number of participants, it may be difficult for the researcher to guide the interview.

When the number of participants is less than 6, it can be difficult to maintain the discussion process. For these reasons, the number of samples to be determined in the focus group interviews should be as small as each participant can present his / her views, but it should be as large as the different opinions to be gathered (Baskale, 2016).

Six semi-structured research questions are included in the interview form. The opinions of the selected pre-service teachers about the research questions determined in accordance with the general purpose were taken in writing by a group of teachers and a researcher who were not included in the focus group and also 120 minutes voice back up taken by focus group technique. To provide the opinions were not lost, the participant pre-service teachers were given the code number while receiving their opinions.

Data Analysis

Content analysis was performed to analyze the data. Content analysis is a process in which similar data is gathered around certain themes according to the messages and meanings they contain and encoded and interpreted in a layout that the reader can understand (Ozdemir, 2010; Tavsancil & Aslan, 2001). By examining the data obtained in the

study and determining the dimensions that are important within the framework of the purpose of the research, categories from these dimensions were produced. By categorizing the categories produced, it has been determined which themes are gathered around.

Validity and Reliability

For credibility, the researcher himself participated in the focus group interview and took notes during the entire interview. Thus, long-term interaction was provided to ensure credibility. In addition, a pre-service teacher from both groups participating in the interview for this purpose was asked to confirm whether the findings in the study reflect their views correctly.

The opinions of different pre-service teachers on the same subject were taken for reliability.

The purpose of the study, the method, open-ended questions and the records of the study obtained in accordance with the findings of the study, the formation of the findings, in this context, themes, codes and categories, participants' own statements are included for validity.

Sample selection, participants' characteristics and environment are indicated for transferability. The process of research is clearly stated. In addition, the theoretical framework of the study has been tried to be sufficiently given in the introduction part.

When analyzing the data, two researchers did coding unaware from each other in order to ensure coding consistency. Compliance between the two encoders was determined using the formula (Reliability = Consensus / Consensus + Interpretation X100) of Miles and Huberman (1994), and the agreement between the two encoders was determined as a ratio of .92. It was decided to decompile the coding ideas. New themes and codes are reorganized. The findings are supported with visuals and presented with direct quotations from teachers' opinions.

Findings

In the following section, firstly the themes obtained in the context of the research questions and then the findings are included.

Themes

T1. The views of pre-service teachers about the positive aspects of cooperative e-portfolio activities in the large and small groups in the blog environment

T2. The views of pre-service teachers about the negative and limited aspects of cooperative e-portfolio activities in the large and small groups in the blog environment

T3. Online environment preferences of pre-service teachers participating in cooperative e-portfolio activities in the large and small groups in the blog environment

T4. The reasons of preferring online environment for pre-service teachers participating in e-portfolio activities with cooperative large and small groups in the blog environment

T1. Positive aspects of cooperative e-portfolio activities in the large and small groups in the blog environment

Positive aspects of cooperative e-portfolio activities in the large and small groups in the blog environment has presented in Table 4.

Table 3. The views about the positive aspects of the cooperative e-portfolio activities in the large (LGT) and small groups (SGT) in the blog environment

View number	Views	LGTs' views	SGTs' views
1	Motivational	3	
2	Responsibility Enhancer	1	1
3	Creativity	2	
4	Permanent Learning	1	
5	Be able to make comment	3	5
6	The ability to see errors	3	3
7	All works in the same environment	6	
8	Ability to change ideas	3	5
9	Fast Sharing	1	
10	Instant Sharing	1	
11	Saving on time	2	
12	Preventing paper wastage	2	
13	Possibility of liking work	1	
14	Storing and retrieving information	1	2
15	Accessibility	1	1
16	Ease of follow-up for teacher	1	
17	Cooperative Work		4
18	Adding fixed and mobile add-ons		1
19	Regular environment		1
20	Lack of storage and transportation problems		3
21	Communication with other blogs		6
22	Update possibility		2
23	Measuring benefits in reviews and Comments		2
24	Positive comments motivator		1
25	Designing the blog page as the owner		1
26	Funny		1
27	Instructive		1

According to Table 3, pre-service teachers emphasized the ability to see all the works in the same environment as the positive side of the cooperative e-portfolio activities in the large group in the blog environment. Also they emphasize the sides about the activity; being motivational, being able to comment, the ability to see errors and the ability to exchange ideas. The positive points that they emphasize on the least are that the activity is responsibility enhancer, providing permanent learning, sharing fast and instant, storing and retrieving the information, accessibility and ease of follow-up for the teacher.

Additionally, the pre-service teachers mostly talked about the positive aspects of the cooperative e-portfolio activities in the small group in the blog environment is that communicating with other blogs, exchanging comments and ideas and having cooperative work opportunities. The positive points that they emphasize on the least are the ability to add fixed and mobile add-ons, the availability to be accessible by everyone, the ability to design the blog as the owner, being funny, instructive and responsibility enhancer.

While large group focused on the ability to see all works in the same environment, small group focused on to communicate with other small groups' blogs. Both of groups focused on the abilities to enhance responsibility make comments, see errors, change ideas, store and retrieve information and access. Small groups also emphasized working cooperatively, compare to large group.

T2. Negative and limited aspects of cooperative e-portfolio activities in the large and small groups in the blog environment

Negative and limited aspects of cooperative e-portfolio activities in the large and small groups in the blog environment has presented in Table 4.

Table 4. The views about the negative and limited aspects of cooperative e-portfolio activities in the large (LGT) and small groups (SGT) in the blog environment

View Number	Views	LGTs' views	SGTs' views
1	Time consuming	3	
2	Requiring discipline	1	1
3	The difficulty of using blog	2	1
4	The difficulty of writing reviews	1	
5	Single blog usage of all groups	2	
6	Network connection problem	2	1
7	Disruption in file upload to blog	3	
8	Unable to access blog from mobile phones	1	
9	Open-access for everyone in network environment	1	
10	Density and access difficulties on the blog	2	
11	Difficulty in review due to intensive sharing	1	
12	Distraction caused by problems	1	
13	Comments via Facebook	1	1
14	Computer knowledge		1
15	Requirement of opening a new tab for each process		1
16	Obligation to work with the group		1
17	Redundant ads and writings		2
18	Upload problems of video, word, pwp, excel files directly		6

19	Negative comments lowering motivation		1
20	Unable to examine studies by touching		1
21	No negative comments due to note anxiety		1

According to Table 4, pre-service teachers emphasized 'disruption in file upload to blog' and 'time consuming' about the negative and limited aspects of cooperative e-portfolio activities in the large group in the blog environment. In addition, 'the difficulty of using the blog', 'single-blog usage of all groups', and 'density and access difficulties on the blog' have been emphasized. At least the negative and limited aspects of the activities to be disciplinary, the need to write reviews, access blog from mobile phones, open-access for everyone in network environment, the difficulty in review due to intensive sharing, distraction caused by the problems, comments as the requirement of the blog server's feature through Facebook are listed as a necessity.

Additionally, pre-service teachers mostly indicated negative and limited aspects of cooperative e-portfolio activities in the small group in blog environment as video, word, PowerPoint, excel files and redundant ads and writings. Minimally highlighted negative and limited aspects of the use of blogs are the difficulties of using the blog, network connection problem, computer knowledge, the necessity of adding comments via Facebook, uploading problems of video, word, pwp, excel files directly requirement of opening a new tab for each process, obligation to work with the group, discipline problem, negative comments lowering motivation, unable to examine studies by touching and no negative comments due to note anxiety.

While large group emphasized on the difficulty of using single blog for all of the e-portfolio groups, uploading files and accessing the blog, small groups most focused on redundant add and writings, difficulty of uploading files directly. Also large group have based their reasons on the density. In the large group, the fact that all groups work in a single environment has caused density.

T3. Online environment preferences of pre-service teachers participating in cooperative e-portfolio activities in the large and small groups in the blog environment

Online environment preferences of the large and small groups presented in Table 5.

Table 5. Online environment preferences of pre-service teachers participating in cooperative e-portfolio activities in the large and small groups in the blog environment

Preference	Views	Frequency of participants' views / LGTs' views	SGTs' views
1	Facebook closed group	6	3
2	Large group in the blog environment	3	1
3	Small Group in the blog environment	1	3
4	Conventional paper pen		3

According to Table 5, the majority of the participants working in the large group blog environment preferred Facebook closed group environment. Also they partially preferred the

large group in the blog environment which they worked. Participants made the least choice for the small group with respect to the blog environment in the environments where they reported preference.

In addition, according to Table 5, pre-service teachers working with the small group in the blog environment stated that they preferred the other three media except large group in the blog environment. Participants made the least choice for the large group with respect to the blog environment in the environments where they reported preference.

The small group stated that they might prefer the conventional paper pen environment instead of the blog environment, as the group might have experienced the effects more than the large group. The point that attracts attention is that the Facebook closed group environment is one of the most preferred in both the large and small groups.

T4. The reasons of preferring online environment for pre-service teachers participating in cooperative e-portfolio activities in the large and small groups in the blog environment

The reasons of preferring online environment for pre-service teachers participating in cooperative e-portfolio activities in both groups presented in figures.

Large group' reasons for preferring online environment in cooperative e-portfolio activities

In Figure 1, large group' reasons for preferring Facebook closed group environment are presented.
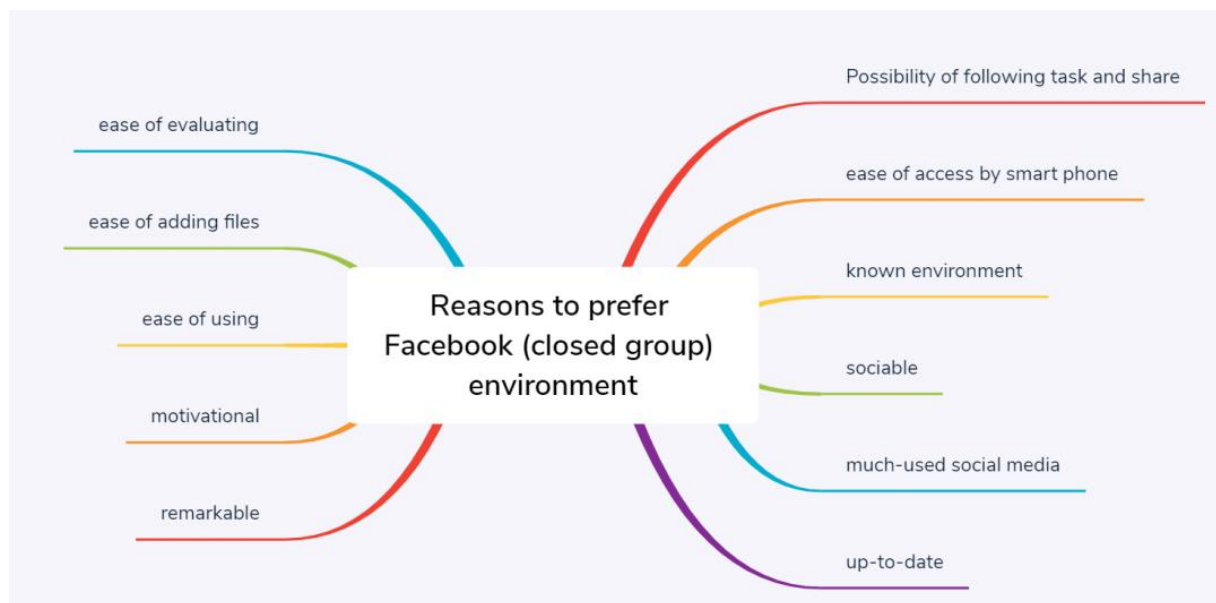
Figure 1. The large group' reasons for preferring Facebook closed group environment

According to Figure 1, pre-service teachers participating in e-portfolio activities with cooperative large groups in the blog environment stated that they will use Facebook (closed group) environment that does not allow access from outside the group as a choice which has easy evaluation [f(3)], being up to date [f(1)], common in society [f(4)], social [f(2)], widely used [f(3)], easy to reach [f(5)], remarkable [f(1)], motivational [f(2)], easy to use [f(4)], easy

to access by smart phone [f(5)], easy to add files [f(7)], the opportunity to follow and share tasks [f(6)].

Figure 2 presents the large group' reasons why the participants preferred the large group in the blog environment.
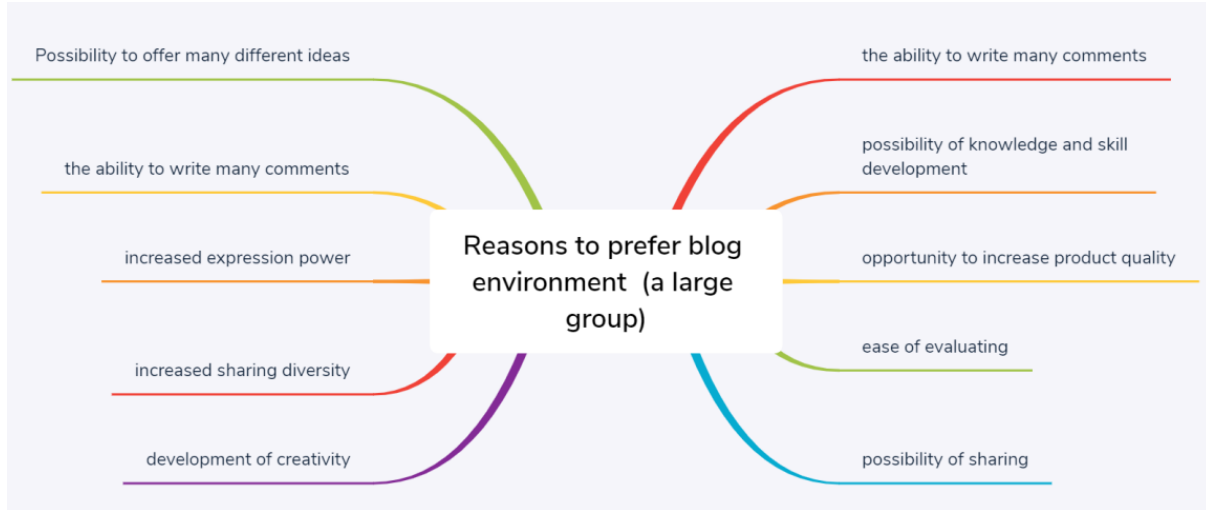
Figure 2. The large group' reasons to prefer a blog environment (large group)

According to Figure 2, pre-service teachers participating in cooperative e-portfolio activities in the large group in the blog environment stated that they would prefer the large group in a blog environment which has easy evaluation [f(2)], increase product qualification[f(4)], knowledge and skill development [f(5)], creativity development[f(3)], sharing [f(5)], the opportunity to present many ideas and comments [f(8)], and increase in expression power [f(2)], and sharing diversity [f(1)].

Figure 3 presents the large group' reasons why participants prefer small groups in the blog environment.

Figure 3. The large group' reasons to prefer a blog environment (small groups)

According to Figure 3, pre-service teachers who participate in e-portfolio activities in cooperative large groups in the blog environment stated that they prefer to use the small group blog environment in e-portfolio activities because of the ease in determining group success [f(6)], providing time saving [f(4)], seeing the many products at the same time [f(7)], and the opportunity to examine the group works separately [f(6)].

Small groups' reasons for preferring online environment in cooperative e-portfolio activities

Figure 4 presents small groups' reasons to prefer blog environment with the small group.
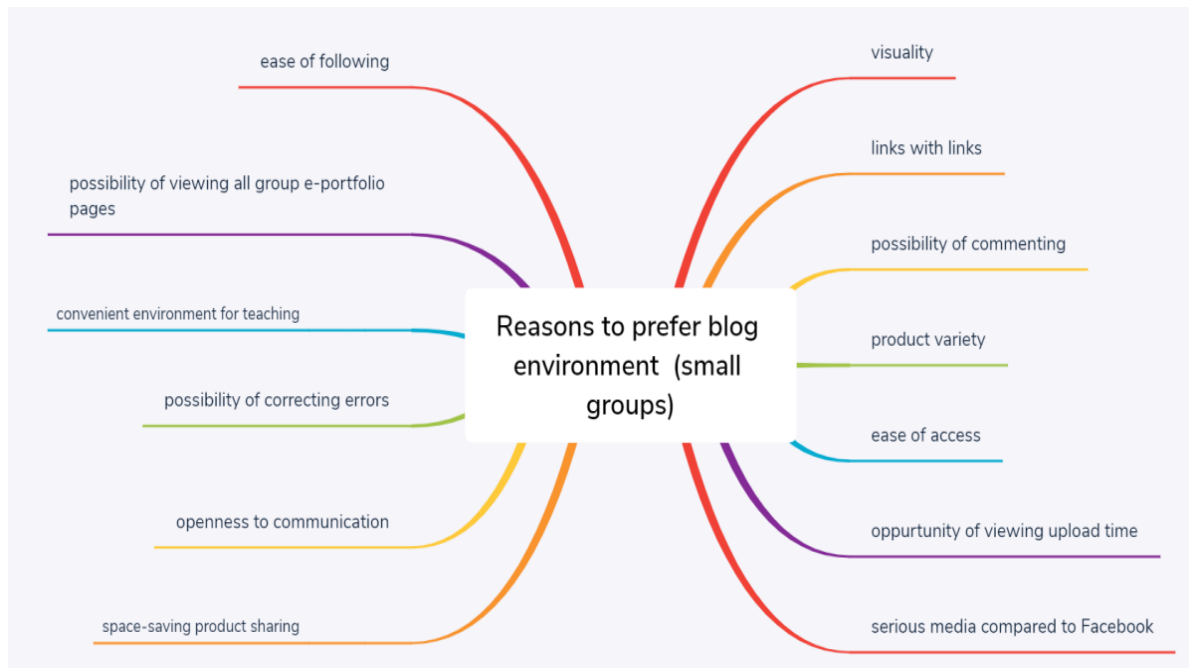
Figure 4. Small groups' reasons to prefer small groups in the blog environment

According to Figure 4, pre-service teachers who participate in e-portfolio activities in cooperative small groups in the blog environment stated that they prefer to use the small group in the blog environment for e-portfolio activities because of commenting [f(2)], product variety [f(6)], easy accessibility [f(6)], space-saving product sharing [f(3)], openness to communication [f(4)], the opportunity to correct errors [f(1)], convenient environment for teaching [f(2)], serious media compared to Facebook [f(3)], visuality [f(2)], connecting with links [f(5)], the opportunity to see all group pages [f(6)], the opportunity to see loading time [f(3)], and the opportunity to follow easily [f(2)].

Small groups' reasons for preferring closed group environment in Facebook are presented in Figure 5.

Figure 5. Small groups' reasons to prefer closed group environment in Facebook

According to Figure 5, pre-service teachers participating in e-portfolio activities with cooperative small groups in the blog environment stated that they prefer to use Facebook (closed group) environment because of easy accessibility [f(5)], ease of adding pictures and videos [f(7)], the ability to comment and see instantly [f(6)], publicity [f(2)], possibility of addressing more people[f(5)], the opportunity to use easily [f(4)], and being interesting [f(2)].

Figure 6 presents small groups' reasons to prefer a conventional media.

Figure 6. Small groups' reasons to prefer a conventional media.

According to Figure 6, pre-service teachers participating in e-portfolio activities with cooperative small groups in the blog environment stated that they prefer conventional media because of being the best known environment [f(6)], document qualification because of paper work [f(2)], no risk of losing data [f(5)], better monitoring of the preparation process [f(3)], better inspection of products [f(5)], the opportunity to better observe [f(6)], and review the spelling rules [f(1)], and the possibility of keeping away from the damages of the technology [f(4)].
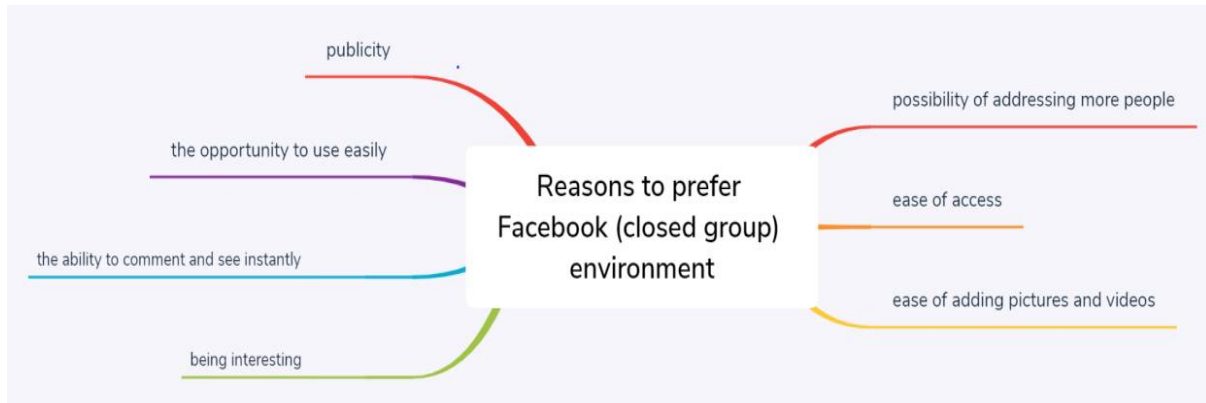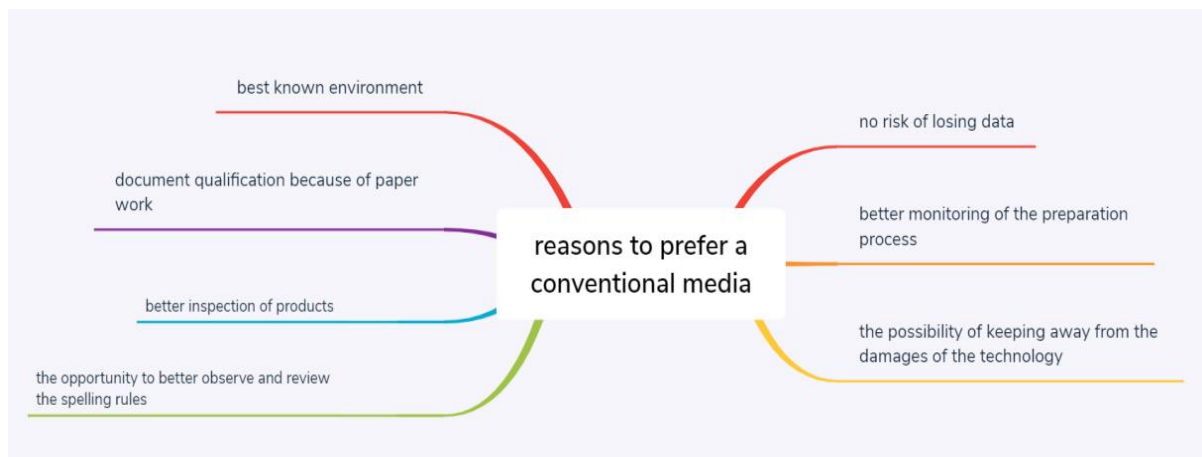
Figure 7 presents small groups' reasons to prefer a blog group with a large group.
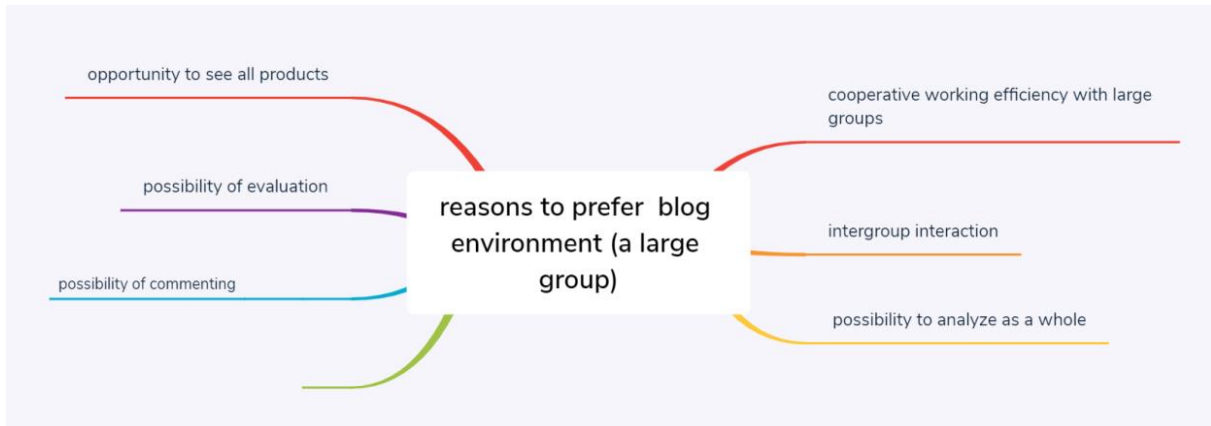
Figure 7. Small groups' reasons to prefer a blog group with a large group.

According to Figure 7, pre-service teachers who participate in e-portfolio activities in cooperative small groups in the blog environment stated that they prefer to use the large group blog environment in e-portfolio activities because of possibility of evaluation [f(3)], the opportunity to comment [f(5)], possibility to analyze as a whole [f(8)], the opportunity to see all products [f(6)], intergroup interaction [f(4)], and the opportunity to work with cooperative large group [f(3)].

Conclusion, Discussion and Recommendations

In this study, it is aimed to reveal the opinions of the pre-service teacher candidates attending the Pedagogical Formation Education Certificate Program in the 2015-2016 academic year, on the e-portfolio activities in cooperative small and large groups in the blog environment during the teaching process. In this context, the participants' positive and negative opinions about e-portfolio activities with cooperative large and small groups in the blog environment, participants' preferences for e-portfolio activities in the blog environment and the reasons of their preferences were examined.

According to the findings obtained in the first question of the study, pre-service teachers emphasized the ability to see all the works in the same environment as the positive side of the e-portfolio activities in the cooperative large group in the blog environment. Also they emphasize being motivational, being able to comment, the ability to see errors and the ability to exchange ideas. The positive points that they emphasize on the least are that the activity is responsibility enhancer, providing permanent learning, sharing fast and instant, storing and retrieving the information, accessibility and ease of follow-up for the teacher.

Similarly, different researchers emphasized the positive sides of the blog environment (Aschenbrenner & Miksch, 2005; Cuhadar & Kuzu, 2010; Deed & Edwards, 2011; Franklin-Matkowski, 2007; Hall & Davison, 2007; Jones, 2006; McGlinn-Manfra & Lee, 2012; Novillo & Pujola, 2019; Rahmi & Darmawan, 2018); in Jones (2006) research, it was found that there were superior aspects such as easy accessibility of activities in the blog environment, text and visual presentation in web page format, providing a critical or noncritical multi-point of view for feedback, providing an easy layout for publication and reading, no face-to-face

communication for peer comments, providing awareness of the fact that the articles were being followed, presenting a solid audience and having content in relation to taking responsibility. Franklin-Matkowski (2007) also found that participants working in the blog environment valued collaboration and felt that the use of blogs improved their thinking skills by achieving higher levels of socialism and comprehension. In addition, it was emphasized that participants used many verbal and visual strategies throughout the process.

While large group focused on the ability to see all works in the same environment, small group focused on to communicate with other small groups' blogs. Both of groups focused on the abilities to enhance responsibility make comments, see errors, change ideas, store and retrieve information and access. Small groups also emphasized working cooperatively, compare to large group.

So the most common point about the positive aspects of the cooperative e-portfolio activities with the small group in the blog environment is that communicating with other small groups' blogs, exchanging comments and ideas and having cooperative work opportunities. The positive points that they emphasize on the least are the ability to add fixed and mobile add-ons, the availability to be accessible by everyone, the ability to design the blog as the owner, being funny, instructive and responsibility enhancer. The results achieved by different researchers support this conclusion regarding the benefits of cooperative e-portfolio applications (Akbari & Erfari, 2018; Blankenship, 2007; Chen et al., 2011; Chretien, Goldman & Phaselis, 2008; Colas-Bravo, Magnoler, Conde-Jimenez, 2018; Kocoglu, 2009; Lawler & Joseph, 2018; Miller, 2011; Jimojiannis & Angelina, 2012). Lawler & Joseph (2018) empasized that cooperative e-portfolio activities facilitated the engagement and the advocacy of the students for mentored people with disabilities. Chen et al. (2011), in their research, stated that the majority of the participants developed their skills in editing their products through the feedback in the blog environment, supporting the ease of communication with the blogs reached in the results of this study. Similarly, Kocoglu (2009) stated that the use of blogs is useful in communicating and sharing thoughts and learning the use of technology in the classroom. In addition, the participants stated that they were satisfied with the opportunity to comment as stated in this study, and that the comments of their peers were really being read. In addition, Miller (2011) stated that the activities in the blog environment, which is one of the results obtained in this study, are responsibility enhancer for participants, have increased their ability to synthesize the materials they are examining and that they become specialized in their evaluation. Again in this study, highlighted the possibility of cooperative work, the Blankenship study (2007) was found out that using blogs both within and outside the classroom provided a dynamic and cooperative learning environment. Similarly, using cooperative blogs, Chretien, Goldman and Phaselis (2008) found that blogs improved reflection skills and enabled professional development by revealing the hidden aspects of the latent program. Jimojiannis and Angelaina (2012), who have been working with cooperative blogs as in this study, have shown that participation in the blog environment increases the interaction of thoughts and structuring of meaning. In addition, students who had not previously used blogs were eager to participate in blog activities, such as content and resource sharing, sharing ideas, and discussion of topics. They collaborated with each other and became social and emotional supporters, encouraging each other to self-manage and motivate by engaging in participation, cooperation and dialogue. In addition, with the small group of

cooperative blogs in the blog environment, they emphasized the negative and limited aspects of the e-portfolio activities not to upload video, word, PowerPoint, excel files directly, and the unnecessary distractions and distortions of redundant ads and writings.

However, participants of the large group pointed out that the most negative and limited aspects of cooperative e-portfolio activities in the large group in the blog environment were disruption in file upload to blog and being time consuming. In addition, 'the difficulty of using the blog', 'single-blog usage of all groups', and 'density and access difficulties on the blog' have been emphasized. At least the negative and limited aspects of the activities to be disciplinary, the need to write reviews, access blog from mobile phones, open-access for everyone in network environment, the difficulty in review due to intensive sharing, distraction caused by the problems, comments as the requirement of the blog server's feature through Facebook are listed as a necessity. In a study similar to the results of this study, Ozkan (2011) states that participants list the negative aspects of the blog environment as technical problems, monotony, abuse of blog environment, the feeling of perturbation, not giving rapid feedback and lack of objective point of view.

Minimally highlighted negative and limited aspects of the use of blogs are the difficulties of using the blog, network connection problem, computer knowledge, the necessity of adding comments via Facebook, requirement of opening a new tab for each process, obligation to work with the group, discipline problem, negative comments lowering motivation, unable to examine studies by touching and no negative comments due to note anxiety. Kim (2008) states that blogs can sometimes be motivated to lower, and that student interaction may be weak. As stated in this study, the blog environment is open to various advertisements and writings, as Ozudogru (2014) states, it may lead to cyber bullying crimes such as internet, so it should be used carefully in the teaching activities and to take into account the negative aspects mentioned.

While large group emphasized on the difficulty of using single blog for all of the e-portfolio groups, uploading files and accessing the blog, small groups most focused on redundant add and writings, difficulty of uploading files directly. Also large group have based their reasons on the density. In the large group, the fact that all groups work in a single environment has caused density.

For all that, small group minimally highlighted negative and limited aspects of the use of blogs are the difficulties of the obligations to work with the grup, comment via Facebook, have qualified computer knowledge.

According to the findings obtained in the third question of the study, the majority of the participants working in the large group blog environment stated that they think that the Facebook closed group environment, which is not an application for e-portfolio activities, would be more appropriate and would prefer this environment in possible studies. Similarly, in the study where Orhan-Karsak (2016) received the opinions of pre-service teachers who participated in the conventional portfolio and in the e-portfolio activities in Facebook (closed group) environment, participants stated that they were able to provide instant feedback, publishing and distribution of Facebook (closed group) environment, instant communication with the teacher, establishing instantaneous and permanent communication with peers, using

the interpretation feature for group meetings, offering interactive group environment and shared products easily, the opportunity of seeing the products by the family and environment and to increase in-group working efficiency in Facebook (closed group) environment. Participants in this study might have thought that cooperative e-portfolio activities in the large blog environment would be more effective compared to the conventional blog environment by considering the characteristics of the Facebook closed group environment.

Pre-service teachers participating in e-portfolio activities with cooperative large groups in the blog environment stated that they will use Facebook (closed group) environment that does not allow access from outside the group as a choice which has easy evaluation, being up to date, common in society, social, widely used, easy to reach, remarkable, motivational, easy to use, easy to access by smart phone, easy to add files, the opportunity to follow and share tasks. They also stated that they would prefer the large group blog environment because of the easy evaluation, increasing product qualification, knowledge and skill development, creativity development, sharing, the opportunity to present many ideas and comments and the increase in expression power and sharing diversity of e-portfolio activities in which they participate in the practices. However, they have made the least choice for the small group blog environment in e-portfolio activities. They stated that they prefer to use the small group blog environment in e-portfolio activities because of the ease in determining group success, providing time saving, seeing the many products at the same time and the opportunity to examine the group works separately. In this study, different studies have been conducted in the literature about the effects of the Facebook environment, which are the environment preferences of the pre-service teachers in the cooperative large group in the blog environment. For example, Cukurbasi and Kiyici (2018) found that the pre-service teachers who took their opinions thought that e-portfolio activities in Facebook environment contributed to improve their performance, had a practical and useful system and allowed them to do group work. Again, different researchers (Baris & Tosun, 2013; Barrot, 2016; Haave, 2016; Kim & Kim, 2018; Ozgur, 2016; Venville, Cleak & Bould, 2017; Woo et. al., 2014) reached the conclusions that the participants had positive attitudes in e-portfolio activities in Facebook environment.

Pre-service teachers working with small groups in the blog environment stated that they preferred the small group blog environment, Facebook (closed group) environment and the conventional paper pen environment on an equal level with the exception of the large group blog environment.

They stated that their reasons to prefer small group as commenting, product variety, easy accessibility, space-saving product sharing, openness to communication, the opportunity to correct errors, convenient environment for teaching, serious media compared to Facebook, visuality, connecting with links, the opportunity to see all group pages, the opportunity to see loading time and the opportunity to follow easily.

In addition pre-service teachers stated that they prefer to use Facebook (closed group) environment because of easy accessibility, ease of adding pictures and videos, the ability to comment and see instantly, publicity, possibility of addressing more people, the opportunity to use easily and being interesting. Also they stated that they prefer conventional media because of being the best known environment, document qualification because of paper

work, no risk of losing data, better monitoring of the preparation process, better inspection of products, the opportunity to better observe and review the spelling rules and the possibility of keeping away from the damages of the technology. On the other hand pre-service teachers who participate in e-portfolio activities in cooperative small groups in the blog environment stated that they prefer to use the large group blog environment in e-portfolio activities because of possibility of evaluation, the opportunity to comment, possibility to analyze as a whole, the opportunity to see all products, intergroup interaction and the opportunity to work with cooperative large group.

The small group stated that they might prefer the conventional paper pen environment instead of the blog environment, as the group might have experienced the effects more than the large group. The point that attracts attention is that the Facebook closed group environment is one of the most preferred in both the large and small groups.

According the conclusions, instead of a large group blog environment, Facebook closed and open group environments can be tried. A small group blog environment in group work may be preferred in tasks that require more qualified and responsible tasks than a large group blog environment. Small peer-to-peer blogging environment can be used for peer review. With a large group blog environment can be compared with the Facebook environment. Use of blogs with large groups and small groups can be tested in smaller age groups. Instead of preparing traditional portfolio, blog and Facebook environments can be used. Pre-service and in-service trainings can be organized for teachers and teacher candidates in order to increase the quality of teaching in the blog and Facebook environments.

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