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Social media and peer feedback: What do students really think about using Wiki and Facebook as platforms for peer feedback?

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Abstract

Web 2.0 tools are becoming increasingly pervasive in higher education, and as a result, there is increasing interest in the use of online feedback activities. This study investigated students' actual experiences and perceptions using social media, Wiki and Facebook, tools to provide peer feedback on students' instructional material projects and to compare students' experiences and perceptions of using Facebook and Wiki environments as a peer feedback tool. A total of 51 students responded to the questionnaire, and 14 students were also interviewed. A combination of quantitative and qualitative methods was employed to analyze the data. Results suggest that students benefited while engaging in the peer feedback process on both Wiki and Facebook. The data also indicated that the incorporation of Wiki and Facebook as a peer feedback tool improved critical thinking skills and improvement of material produced.

Keywords

Facebook, feedback, peer review, social media, student perceptions, Wiki

Peer feedback

Feedback can be defined as "anything that might strengthen the students' capacity to self-regulate their own performance" (Nicol and Macfarlane-Dick, 2006: 205). It is essential for effective learning (Taras, 2003) which offers a chance for self-evaluation in relation to objectives and outcomes of a course. Peer feedback refers to an activity in which students offer each other comments, critiques, and advice about each other's work (Liu and Carless, 2006). The peer-provided feedback may include what has been done well in relation to the success criteria, what still needs to be done in order to achieve the success criteria, and advice on how to achieve that improvement (Ertmer et al., 2007). Students may benefit from both receiving and giving feedback (Lin and Yang, 2011). Peer feedback and assessment may encourage students to pursue reflective and engaged roles in learning, which promotes higher order and critical thinking skills (Liu and Carless, 2006; Richardson et al.,

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2007; Topping, 1998), provides students with the necessary means to self-regulate their own performance (Nicol and Macfarlane-Dick, 2006), and positively affects their attitudes and achievements (De Grez et al., 2012; Ertmer et al., 2007; Kumar et al., 2012; Liu and Carless, 2006; Lynch et al., 2012; Thoirs, 2010; Topping et al., 2000). Giving peer feedback requires students to use their knowledge-based analysis and critical thinking skills to evaluate, review, and correct peers' work (Ballantyne et al., 2002).

Furthermore, peer feedback tasks require deep engagement and relate to real-life roles and competencies such as group work, evaluating one's own work, and the work of others (Topping et al., 2000; Van Den Berg et al., 2006). Feedback is considered to be a crucial part of effective learning (Hattie and Timperley, 2007; Mulder et al., 2014; Taras, 2008). Therefore, ensuring effective feedback to students is a key part in any strategy to improve teaching and learning (Poulos and Mahony, 2008). In order to be productive, feedback may not only come from a teacher but can and should be facilitated by students (Jonsson, 2013). It can, however, be difficult to implement peer feedback using online technologies. The challenge for educators is to find valued, engaging, and efficient technologies to integrate peer feedback into courses. There is a range of technologies that can be used to integrate peer feedback. For example, blogs, Wikis, learning management systems, and social networking tools support peer feedback in different ways.

Project-based learning (PBL) has gained a significant foothold in higher education and is perceived to be a useful pedagogical approach to enhance student learning (ChanLin, 2008). Peer feedback potentially enhances the outcomes of PBL because it can engage students in thinking critically and making judgments about their own works and projects of their peers.

Providing feedback via Web 2.0 tools

Hybrid and online forms of learning are becoming increasingly pervasive, and, as a result, the use of online feedback activities has seen a marked rise (Schworm and Gruber, 2012). Consequently, there is an increasing interest in using social networking tools (e.g. Facebook, Twitter, YouTube) and Wikis in the teaching and learning process, and these can be utilized as peer feedback and collaboration tools. Online peer feedback eliminates the logistical problems and at the same time retains some of the best features of traditional written feedback, including a text-only environment (Guardado and Shi, 2007). There is a need to situate peer feedback within current models of telecollaboration and to assist students in using feedback strategies; however, there is also the need to address specific issues regarding the choice of computer-mediated communication tools for feedback tasks, including training in the use of interactive online tools and the roles of teachers and students (Dippold, 2009).

Wiki and Facebook

With a continual evolution of Web 2.0 technologies, which are new ways of creating, connecting, collaborating, editing, and sharing user-generated content online (Churchill, 2009), Wiki has emerged as one of the major tools in both online and blended learning environments (Wheeler et al., 2008). Wiki comprises a collection of pages that can be edited by member users who can create pages and edit the content of pages, creating links between pages, adding graphics, and embedding videos into pages. This aspect of Wikis seems to lend itself well to peer feedback. It also helps the students to develop a community that can support their development and skills (Cole, 2009; Heafner and Friedman, 2008; Slotter, 2010; Su and Beaumont, 2010). The ideas of feedback, reflection, and creativity are vital, and Wikis seem to provide an environment encapsulating all of these aspects. Therefore, Wikis have significant advantages over guided feedback

and discussions (West and West, 2009). The growth of social networking sites has been extensive and widespread. Facebook is the most popular social networking site among university students (Hargittai, 2008), and there is an interest to explore such tools further (Prescott, 2014). The features of Facebook are appropriate for giving and receiving feedback on narrative, pictures, and videos by writing notes or using the "like" feature. It can be utilized for peer feedback activities.

Given how little is known about the use of Wiki and Facebook, there is a need to better understand actual experiences and perceptions using these tools to provide peer feedback on their work and to compare students' experiences and perceptions of using them as a peer feedback tool. The following research questions are posed. How do students perceive giving and receiving peer feedback using social media? Are there differences in how students perceive Wiki and Facebook as platforms for peer feedback? What are the students' experiences, benefits, issues, and challenges associated with peer feedback activity through Wiki and Facebook?

Methodology

A combination of quantitative and qualitative methods was employed: a quantitative questionnaire followed by a semi-structured interview with qualitative questions. The researcher used open coding and axial coding strategies when analyzing the interview data for the purposes of allowing the categories to emerge from the data (Strauss and Corbin, 1998). The quantitative data were collected using a Likert scale structured questionnaire developed to measure participants' perceptions on perceived benefits of receiving and giving feedback and perceived anxiety using Wiki and Facebook after completing their feedback on their fellow students' projects using assigned Wiki or Facebook. Qualitative data were gathered by means of interviews conducted by a researcher. Following the peer feedback process at the end of the course (weeks 14 and 15), participants were interviewed using a semi-structured method to capture their overall experiences and perceptions (drawbacks/limitations, challenges, benefits, ease of use, and anxiety) toward giving and receiving peer feedback using social media.

Research context

The course for this research was Educational Technology and Material Development (ETMD) which is an obligatory course in the Pedagogical Formation Certificate Program in a large public university in Turkey. The content of the course includes an introduction to features of instructional technologies, their use and place in the teaching process, developing teaching materials by employing educational technologies, and critical evaluation of educational technologies.

Participants

Research was carried out with 60 students during the spring semester of the 2011–2012 academic year. They were randomly divided into two groups as 30 for Facebook and 30 for Wiki to provide peer feedback on projects created by their peers. Students were informed that their participation in the study was voluntary. A total of 51 participants responded to the questionnaire. In all, 7 participants from Facebook peer feedback group and 7 participants from Wiki peer feedback group were randomly selected among 29 students who expressed their willingness to participate for semi-structured interviews. Participants were fully informed about the nature of the research. They were assured of their anonymity and freedom to decide whether to participate in the study. Informed consent was also obtained from all participants.

Research procedure

Participants in the course were required to create material and to provide feedback on the material of their classmates: a course online webpage (formasyonsdu.wikispaces.com) was created using Wikispaces platform. Similarly, a class Facebook group was created. Participants were randomly assigned one of the peer feedback environments to give feedback to their peer's project.

The first lesson of the term was designed to introduce students to Wiki/Facebook, advertise them as a tool for teaching and learning, and raise their interest. Therefore, participants who were assigned to the Wiki environment to provide feedback on their peers' projects were trained on how to upload files and photos as well as edit pages at the beginning of the course. The theoretical part was completed during the first 8 weeks and during the first 3 weeks, where each student was assigned to develop an idea to create material. After the course instructor's approval and review of students' project ideas, students created their materials during a 6-week time period. After 8 weeks of lecturing, students presented their project to the class and uploaded a photo of the material to the assigned peer feedback medium (Facebook or Wiki) during the last 6-week period. Students were randomly assigned to six peers' projects to provide feedback and randomly assigned to one of the online peer feedback medium (Facebook/Wiki).

Participants presented their projects and then uploaded their project photo to the assigned medium to get feedback from randomly assigned peers. Participants were required to supply justifying comments. Peer feedback posts made by the participants included critiques of material developed and comments about their project. The researcher monitored the participants' posts throughout. At the end, students completed a survey to assess the use of Wiki and were interviewed. In total, 5 (17.9%) males and 23 (82.1%) females responded to the questionnaire from the Facebook group, and 5 (21.7%) males and 18 (78.3%) females responded to the questionnaire from the Wiki group.

Research design

Wiki-based system. Wikispaces, was chosen for use in this study on the basis on its free of charge, no programing knowledge required, free from advertisement, easy editing, and user friendly interface features (Qian and Johnston, 2012). Users simply access the site online and register for an account. All a user needs to use Wikispaces is a computer and a Web browser. While Wikis vary in the options they possess, they all offer "read" and "edit" modes. Moving from read to edit is usually accomplished by clicking on the edit tab. When in the "read" mode, as the name implies, the user simply reads or views the content. This can include comments that have been made or changes that have been added to the text. In the "edit" mode, users can alter the content or layout and add photo or video into content. All changes made should also be saved before switching to read mode by clicking on save tab. The Wiki platform's simplicity allowed for easier use by students, instead of learning a new language and a new technology. This allowed them to focus more quickly and easily on the assignment's goals rather than acquiring a new technology skill.

Participants uploaded the project photos to exhibit their projects to get their peers' online feedback. Each project photo was placed on a separate Wiki page and linked to the name of the student who created the project. Students could reach the photos of their peers' projects by clicking on a student name listed in the class Wiki page. Students were randomly assigned to six material projects to provide them with the feedback based on the criteria that were taught during the lecture sessions and post their feedback under the assigned project photo.

Participants were given basic training on how to edit and save a Wiki page after the assigning process. The following instructions were provided to students who were assigned to provide feedback comments on Wiki. The task instructions for Wiki: *For Wiki task, you are asked to write a short*

comment (at least 30 words each) on a Wiki-entry by your assigned peers. Please try to give your feedback, that is, comment on what your peer could do better or improve the project. You might also want to give advice on resources to improve this particular point.

Online social network: Facebook. Facebook allowed students to connect with their peers and instructors by giving each participant photo sharing and feedback opportunities. They could post messages for discussion and photos and links related to the course or topic. Students could also comment on photos, write notes, and use the "like" function (Duffy, 2011). The popularity of Facebook ensured that students were already familiar with its layout and operation and were comfortable utilizing it. A Facebook account and group were created for the class to serve giving and receiving peer-to-peer feedback (http://facebook.com/formasyonsdu.formasyon.2011).

Each student was randomly assigned to provide six projects with feedback based on the criteria provided. Students posted their feedback on the class Facebook group page under the assigned project photo of their peers. The same instructions provided on the Wiki tool were also given to the participants who were assigned the Facebook tool, which states the following. The task instructions for Facebook: *For the Facebook task, you are asked to write a short comment (at least 30 words each) on a Facebook entry by your assigned peers. Please try to give your feedback, that is, comment on what your peer could do better or improve the project. You might also want to give advice on resources to improve this particular point.*

Research instruments

Data collection instruments. A structured questionnaire and semi-structured interview were employed to gather data on participants' perceptions and experiences on using Wiki or Facebook as a tool to provide feedback on peer projects. A 5-point Likert peer feedback questionnaire (5 = *strongly agree*; 4 = *agree*; 3 = *neutral*; 2 = *disagree*; 1 = *strongly disagree*), consisting of demographical information and 16 questions, was developed by the researcher.

In order to obtain more in-depth information and to study students' experiences, opinions, and attitudes toward both Wiki and Facebook, the researcher interviewed volunteered participants using a semi-structured interview form. Data were collected face-to-face at the end of the semester after participants completed the peer feedback activity. Before conducting the interview, the interview questions were reviewed and revised by three professors with extensive experience in interview-based research. Reliability of the peer feedback perceptions questionnaire after a pilot study using Cronbach's alpha test (α=0.81) was obtained.

Data collection. In total, 29 (16 students from Wiki group and 13 students from Facebook group) students expressed their willingness to be interviewed. Among the volunteers, 14 students were randomly selected for interviews (7 students were assigned for Facebook peer feedback and 7 students for Wiki peer feedback). The interviews were semi-structured, lasted approximately 20–35 minutes each, and were tape-recorded. The interview questions focused on participants' views of using Wiki and Facebook as peer feedback tools and their experiences, benefits, and barriers to using Wiki and Facebook.

Data analysis. The primary statistical analysis included descriptive statistics and t-tests to compare students' responses. The data obtained in this study were analyzed using Statistical Package for the Social Sciences (SPSS). The interview data were transcribed verbatim and content-coded using the process described by Creswell (2007). The interview data were analyzed using thematic content analysis method and a bottom-up approach. After the preliminary exploratory analysis

was conducted, data were analyzed per question based on emerging themes. More specifically, participants' views were initially segmented in terms of themes which emerged from the interview data. Thematic content analysis is on thematic content that is identified, categorized, and elaborated on the basis of systematic scrutiny using the following four-phase process: coding the data, developing themes from the data, defining these based on the findings, and connecting and interrelating themes (Boyatzis, 1998). Interview questions were coded for themes independently by two researchers. The resulting analysis was compared, and themes were defined and renegotiated. Furthermore, the transcribed interviews and pattern-matching through coding were discussed with two researchers to improve the validity of the data. Then, data were re-coded using the agreed-upon codes.

T-tests were used to compare students' ratings—on Wiki and Facebook—of their perceptions toward the peer feedback. These were then triangulated with ratings collected during participant interviews conducted after the peer feedback process. Participants' perceptions of the peer feedback process were compared across semi-structured interviews. After standardizing on a set of rating codes, the researcher coded their individual interviews to identify recurring themes and patterns in the data. The results of this analysis were then compared with the emerging themes from the quantitative and qualitative survey data to identify recurring themes and to elucidate new themes.

Findings

In all, 51 of the 60 students from four faculties (Arts and Sciences, Fine Arts, Theology, and Health Sciences) responded to the questionnaire. Of them, 28 students were from the Facebook peer feedback group and 23 students were from the Wiki peer feedback group. The percentages gender-wise were female students 80% and male students 20%. The mean age of the responding sample was $M = 25.85$ (standard deviation (SD) = 3.70) years.

A majority of respondents, 83%, said that they had never used Facebook as a peer feedback activity tool in their courses, while only 17% stated that they had used Facebook to provide feedback, but this was not necessarily for academic purposes. All of the respondents said that they had never engaged with Wiki for the purpose of peer feedback activity.

For the reliability evidence of the scales and their dimensions, Cronbach's α coefficients were calculated for both Wiki and Facebook. The coefficient for the perceived benefits of giving feedback on Facebook (five items) was Cronbach's $\alpha = 0.81$ and for the perceived benefits of receiving peer feedback on Facebook (nine items) was Cronbach's $\alpha = 0.79$. The coefficients for the perceived anxiety of giving feedback on both Facebook and Wiki were (two items) Cronbach's $\alpha = 0.71$. The Cronbach's alpha coefficient was 0.89 for the perceived benefits of giving feedback on Wiki (number of items = 5) .For the perceived benefits of receiving peer feedback on Wiki (number of items = 9), Cronbach's alpha coefficient was 0.81. Participants (N = 28) who provided peer feedback on Facebook and Wiki were compared.

Prior experiences with peer feedback

In order to establish to what degree students were familiar with the concept of peer feedback on Web 2.0 tools (Wiki and Facebook) or had experience in using them for either private or educational purposes, students were asked about their experience. The survey results yield that none of the students had used Wiki before either as a peer feedback tool or any other educational activity tool. The students were novices in using Facebook- and Wiki-based feedback activities in the past. However, the students reported that they were very familiar with social software, especially social

networking sites such as MySpace, Facebook, and Hi-5. Moreover, while they were all familiar with Wikis, Wikipedia for the most part, they had never contributed to Wikis or participated in Wiki-based learning practices. All students reported that they were not even familiar with Wikispaces before taking the course. However, all students reported that they were very familiar with Facebook as a social networking tool. However, as far as students' previous experiences with peer feedback are concerned, six of the students reported having had some experience with peer feedback on Facebook. It is interesting to note that prior experience with Wikis as a learning tool did not significantly impact students' overall perception of this experience with Wiki negatively.

Participants' perceptions toward peer feedback through Facebook and Wiki

Are there any differences in how students perceive Wiki and Facebook as platforms for peer feedback such as perceived benefits of receiving and giving feedback, and perceived anxiety using social media as a peer feedback tool? Descriptive samples t-test was used to determine whether there is a difference between Wiki and Facebook in terms of perceived benefits of giving and receiving feedback, as well as anxiety. Descriptive statistical analysis showed that the participants benefited from receiving peer feedback from both Facebook and Wiki (perceived benefits of giving feedback on Facebook: M = 4.44 and SD = 0.62; perceived benefits of receiving peer feedback on Facebook: M = 4.39 and SD = 0.73; perceived benefits of giving feedback on Wiki: M = 4.59 and SD = 0.58; perceived benefits of receiving peer feedback on Wiki: M = 4.47 and SD = 0.63).

Overall, the students had highly positive perceptions ($M_{Facebook} = 4.44$ and $M_{Wiki} = 4.47$) toward peer feedback in both Wiki and Facebook environments within their ETMD class. However, a lower mean score was recorded on perceived anxiety of giving and receiving peer feedback through Wiki (M = 2.04, SD = 1.17) and Facebook (M = 2.48, SD = 1.25). T-test was conducted to compare students' perceptions toward peer feedback through Wiki and Facebook. The difference between the scores of Wiki's (M = 4.59, SD = 0.46) and Facebook's (M = 4.44, SD = 0.46) perceived benefits of giving feedback variable was not found significant, $t(47.04) = -1.15$, $p = 0.26$. The difference between the scores of Wiki's (M = 4.47, SD = 0.39) and Facebook's (M = 4.39, SD = 0.5) perceived benefits of receiving feedback variable was not found significant, $t(48.85) = -0.65$, $p = 0.52$. The difference between the scores of Wiki's (M = 2.54, SD = 0.99) and Facebook's (M = 2.48, SD = 1.12) perceived anxiety variable was not found significant, $t(48.77) = -0.21$, $p = 0.84$. These results suggest that the students' perceptions of Wiki and Facebook were not different.

In order to examine differences in perceived benefits of giving and receiving feedback between Wiki and Facebook groups, an independent sample t-test was conducted. The result of this test indicated that there was no significant difference in giving and receiving feedback between the two groups, $t(29.98) = -0.401$, $p = -0.691$. These results suggest that neither Wiki nor Facebook affected those participants' perceptions regarding giving or receiving peer feedback. In other words, participants in both groups benefited from receiving and giving on social media. In the questionnaire, students were asked to indicate their level of agreement to the benefits of giving feedback to their peers using Wiki/Facebook. As far as giving feedback to peers is concerned, the degree of agreement with the statement is high (4.65) on Wiki compared with Facebook (4.57).

Students' experiences using Wiki and Facebook

The last research question relates to participants' experiences, benefits, issues, and challenges associated with peer feedback activity through Wiki and Facebook. During the interviews, all participants (n = 14) discussed their experiences in relation to the peer feedback process in both Wiki

and Facebook. Specifically, interview questions focused on aspects of students' experiences on both Wiki and Facebook. Six major types of themes were identified from the student responses. Major themes that occurred in student responses were perceived benefits of giving and receiving feedback, functional drawbacks and limitations, perceived anxiety, and ease of use.

Students on Wiki treatment tended to benefit more from writing feedback to their peers, whereas students on Facebook treatment reported relatively less perceived benefit. Students highlighted the file sharing and collaborative editing features of Wiki as its most beneficial characteristics. They benefited from Wiki in following announcements related to the course and sharing class materials in addition to giving peer feedback. "*I think Wiki is a good tool sharing course related materials such as ppt files, project photos, and posting announcements etc.*" Participants expressed positive experiences about improvement of their critical thinking skills. A participant further elaborated on this by commenting, "*Feeling to oblige to give feedback to my peer forced me to think critically. This will help me to make improvements on the next similar project.*" Furthermore, students also stressed that they liked the advertisement-free nature of Wiki: "*I like the user interface of the Wiki. There is no advertisement around. It is clean ... only course related stuff out there ...*"

On Facebook treatment, positive experiences with peer feedback were also reported, such as the chance to compare one's own work with the work of peers:

> Having a Facebook group page was good idea … Members are only your classmates … It is a good feeling looking at my material project photo and to see how many likes I got and read comments written by my peers …

Students generally agreed that engaging in the peer feedback had provided them with the opportunities to use Wiki and Facebook as a feedback tool. They also expressed their willingness to use these tools in their teaching practices when they become a teacher.

Moreover, students enjoyed doing their tasks on Facebook due to the ease of access it offered compared to ways of writing comments on Wiki and accessing it. They also unanimously commented positively on the intrinsic motivation provided by the computer-mediated environment:

> It is useful that students work together and comment on each other as well as see photos of the material developed. For example, my hearing is impaired; I can barely to hear voices in the classroom. But on the Wiki page, I can read my friends comments. It is really exciting!

Students appreciated in particular the fact that the feedback enabled them to find out for themselves where improvements could be made on their material projects. "*It is always good to receive comments to see where I could improve my material. It is helpful especially when I became a teacher I would definitely benefit from these feedbacks ...*"

Participants reported that Wiki and Facebook enabled them to start interacting with peers outside class as a direct result of the peer feedback activity. Furthermore, the majority of participants explained that the peer feedback they received impacted their next project development ideas.

Perceived benefits of receiving peer feedback on Wiki versus Facebook

The analysis indicates that receiving feedback may allow students to learn and improve their material development skills remarkably. As one participant revealed in the interview, "*... with these feedbacks, now the material development rules and elements are more clear in my mind ... What they mean? And how they work in real life implementation ...*" Most of the participants regarded Facebook as a widely used social networking tool. One participant claimed that Facebook was not

originally developed as a peer feedback activity, but it was good idea to use it to get peer feedback on the developed material project by sharing photos of the projects. For example, a participant said,

> … for me, using Facebook for peer feedback helped me to know more about my friends and their work. During my feedback activity, I also chat with my online peers. Our products' photos is still there … Even one year later, you see your material project photos and read your friends comments. I really liked this …

Students highlighted classmate interaction and staying connected as beneficial characteristics of Facebook and Wiki. One student commented that "*It is good to best to stay connected with your friends and see their project photos and writing my thoughts on them.*" Participants expressed their positive experience with the process. For instance, a participant reported that "*It is a good idea to incorporate social media to comment on our classmates' project to engage them in a nice way.*"

Perceived functional drawbacks

Despite the above-mentioned benefits, peer feedback students also reported drawbacks and limitations to using Wiki and Facebook for peer feedback. For example, the comments provided by some of their peers were vague and less helpful. As one student pointed out that "*... written comments from my peers were not always clear. You would hardly understand what was being said.*" Some students experienced challenges using the tool. Functional challenges included difficulty using Wiki tool, unfamiliarity with the Wiki editing interface, no auto-saving feature during the editing process, difficulties uploading photos, and adjusting the format. The editing interface language of Wiki was also reported as a challenge to give feedback, although the editing interface was translated and explained to students during the initial training about how to use Wiki tool. A student reported, "*... editing interface of the Wiki is English. I am not good at in English therefore I feel confused at the beginning ....*" Other student expressed challenge for editing, "*... especially in the initial period of using, I spend lots of time on the editing format of Wiki ...*" Furthermore, the same participants found Wiki to be demanding, both in terms of time and effort. They expressed that Wiki required more time and effort as far as uploading the project photo and editing the feedback page were concerned. This was reflected in some student comments: "*I am a novice user of social media especially Wikispaces. At the beginning it was hard to me to understand how to upload my project photo and write comments of my peers' projects.*" One reported, "*To learn how Facebook works took time. Especially learning how to post a photo was challenge at the beginning ...*" Some shared project photos whose quality was not good enough. One student reported, "*I encountered some project photos that are lacking in quality. It is very hard to see and understand what the material project was about.*"

Perceived anxiety

Worries with regard to providing and receiving feedback were frequent. In the interviews, students brought up issues in relation to peer feedback such as providing or receiving negative feedback, status, and disqualification. Students said that they worried about giving negative feedback because their peers would know who made the comment:

> It was ok … it would be good to having a solution to hide the name of peer who made the comment … I do not feel comfortable to give a negative comment on the material project, because my peer knows that who made the comment. May be it is a cultural thing …

Students also reported indirect comments on Facebook. One reported, "*... most of the peers try not to critique directly ... They are trying to give their comment another way.*" Elaborating on reasons

for anxiety of peer feedback, one student said, "*... I was trying to be more polite on my comments ... I am afraid of hurting the feelings of my classmates.*" "*I feel shy and nervous when writing comments on Facebook. It feels like everybody will see and read your comments. Therefore I was trying to be polite ...*" One participant commented on the challenging aspect of receiving different feedback: "*Comments on my project was useful but some of them a bit confusing. While, one was saying good on the other hand another was saying that it needs more work.*" Another interviewee alluded to the notion of not having the feedback expected: "*I was expecting much more detailed comments from my friends. But, I received much of my comments consisted of single line sentences such as good work, well-done etc. I was actually expecting more critical comments.*"

Perceived ease of use

When asked to give specific comments on ease of use of Wiki/Facebook online feedback environments, students expressed that because of their familiarity with Facebook they found it easier to use. Because they spent a lot of their personal time on Facebook, the feedback-giving activity via Facebook tool was not considered as a burden. There was a tendency for students who perceived themselves as being competent in using Facebook to provide feedback. Some of their reflections are shown in the following excerpts: "*Facebook is the most famous social networking site in Turkey. Almost every student is the member of Facebook. Everybody knows how to use it. Therefore, it is good idea to use Facebook for peer feedback ....*" A few respondents also suggested at the beginning of the peer feedback process that they found the Wiki environment hard to use. They stated that without receiving Wiki training, it would be difficult for them to provide feedback on Wiki at the beginning. Over time, their ability to use Wiki improved. As one respondent indicated,

> I had heard of Wiki from my friends before taking this class but I had never used it. At first I was concerned about the use of the Wiki for peer feedback. Then I felt comfortable using it after the initial Wiki training.

Discussions and conclusion

Responses demonstrate that students benefited while engaging in the peer feedback process on both Wiki and Facebook. Perceived benefits included sharing photos of their projects and class materials, reaching course announcements anytime online, collaborative editing features of Wiki, improvement of critical thinking skills, improvement of material projects, and online interaction with peers. The use of both Wiki and Facebook allows students to access class materials, announcements and project photos on the go, quickly, at the same time giving them the option of sharing information regarding the course with their peers, while Wiki is providing them with educational material in a nondistracting way and making them feel safer with their personal data. Moreover, the peer feedback encouraged the sharing of ideas and knowledge. Facebook has proven to be a fun, interactive medium for representing themselves and sharing project photos. These findings confirm similar studies, which discovered that students also benefit from feedback-giving exercise (Ertmer, 2010; Ertmer et al., 2007; Lin and Yang, 2011; Thoirs, 2010).

The results reveal that when Wiki and Facebook were compared in terms of perceived benefits of giving, receiving feedback, and perceived anxiety, no significant differences were found. The results showed that students felt positively about Wiki and Facebook, and they found both platforms useful regarding giving and receiving peer feedback. Students addressed the flexibility of the Wiki environment such as editing the content, sharing class documents, fixing errors, creating their own pages, and uploading pictures and other class-related files. This is similar to what Avci

and Askar (2012) found on their comparison study between blog and Wiki. Flexibility and on the go reach features of both platforms contributed to positive perceptions toward the peer feedback process. The findings of the study show the potential benefits of using Wiki and Facebook as a platform for peer feedback on student developed material. As the students in this study noted during the interviews and class observations, reviewing peer projects and providing feedback improve student critical thinking and understanding the basics of material development concepts. Similar results were also addressed in Richardson et al. (2007), Lin and Yang (2011), and Kumar et al. (2012).

The greatest potential benefit of the peer feedback activity using both Wiki and Facebook lies in the constructive aspect of justifying and configuring. Most of the students expressed their perception about the benefits of providing peer and receiving peer feedback. Through this activity, they reflected critically on the posted photos of projects for which they were providing feedback, as well as on their own projects and how they could be improved in a similar manner. This process involved learners in thinking about rules, quality, design elements, and criteria that students use to evaluate others' projects, which helps them become critical thinkers and reflective learners. These findings are consistent with studies that have suggested this type of reflection, and feedback contributes to the assessor's understanding of the topic by critically analyzing the project and thinking about what constitutes high-quality project development (Ertmer, 2010; Ertmer et al., 2007; Liu and Carless, 2006; Richardson et al., 2007). The process of giving feedback to peers' work can help students articulate and reflect on their own learning and understanding, eventually improving their own project. Moreover, there is some evidence that Wiki and Facebook had a positive impact on online class interaction. Guardado and Shi (2007) also reported similar findings. This study has demonstrated that, in line with other studies, peer feedback could be an effective strategy (Cole, 2009; Ertmer, 2010; Jonsson, 2013; Mulder et al., 2014). However, instructors should be careful about their assumptions that students are familiar with social media acceptable use policy. Even when social media is used for an instructional purpose, it could be incorporated into learners' daily lives in a way that may differ from the aims of educators.

Students found Facebook easier to use than Wiki. There were several reasons reported. First, because of the pervasiveness of Facebook, students were more familiar with Facebook and its interface. Second, there were few students who reported that they had heard about Wiki from Wikipedia, but they had never used Wiki as a learning tool. Furthermore, students expressed challenges they faced during the peer feedback activity due to unclear comments, unfamiliarity of Wiki environments, lack of auto-saving feature of Wiki, lack of shared project photo quality, and technical language used in the Wiki editing interface. However, using Wiki or Facebook for peer feedback process can be an effective way to improve student–student interaction and to improve student learning in the instructional material development process. Combining Wiki and Facebook could have allowed students to retain a sense of ownership of their feedback and projects. For example, regular updates on postings by their peers through Really Simple Syndication (RSS) feeds could make it easier for students to track postings and comments and eventually contribute to more complex dialogue and interaction between students.

There are also potential barriers to the use of Wikis as a peer feedback activity tool. Results reveal that students sometimes feel uncomfortable to give or receive negative feedback. Overcoming such reluctance and raising students' comfort levels to give feedback to peers should be taken into consideration when teachers plan peer feedback activities. It would be much better to allow students to use pseudonyms instead of real names in peer feedback activity to ensure anonymity. Explaining the value of collaborative peer feedback, describing the procedures, establishing a supportive context, and creating a scaffolding framework may contribute to student development of important attitudes and skills. The findings show that even students who

are relatively inexperienced with online peer feedback can, over the course of a single semester, become relatively comfortable with this approach. Moreover, initial discomforts some students experience with the use of new technology, technical issues that may arise with the use of some Wiki tools, and time constraints and platforms that are viewed as difficult or not user friendly are other barriers reported by students. Training students about how to create and edit Wiki pages before starting the activity is needed to alleviate some of these barriers. Moreover, training users is necessary, not only on how to use these tools from a technological point of view but also on the rules and strategies of online communication.

This study was conducted against the background of some limitations. First, the gender ratio of participants was biased toward females. Second, the study was conducted within just one university. Future research should investigate views from students in other institutions and in other countries/cultures as this may affect generalizability. Third, the sample size was small. Research in the area would benefit from a much larger sample of students. Fourth, the questions used to obtain students' perceptions and experiences on using Wiki or Facebook as a tool to provide feedback on peer projects were devised from other studies investigating peer feedback and need more reliability and validity testing. Future research examining the peer feedback process might include a more diverse set of courses and students, as well as other models of Web 2.0 learning environments. In addition, further studies should examine the role that novice and expert users of information and communication technologies play in student's perceptions and acceptance of peer feedback. Additional research would need to be conducted to determine whether the results obtained from this study would remain consistent with those obtained from a larger sample. Furthermore, longitudinal research with a rating scale that allows for greater improvement could result in a measurable difference in the quality of student postings. Moreover, further study should examine the effectiveness of social media in different tasks (e.g. structured or ill-structured) and various assessment tools (e.g. summative or formative).

With the pervasiveness of Web 2.0 tools, students in most higher education institutions have access to online learning environments and student collaboration; peer feedback is likely to become ever more widespread. The findings suggest that the examination of the student perspectives can help highlight learner experiences and perceptions on peer feedback practices with Wiki and Facebook and may shed light into future implementations.

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