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Educational Potential of Facebook Use in Higher Education: Last Decade Research Trend

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In the last decade, social media gradually increased their popularity on daily routines since people have accustomed to the new information and communication technologies. In terms of university students, the popularity of the internet is obvious, with the fact that their intense mood for searching adventures usually end up in social media. This study examined social media, particularly Facebook's use in higher education as a Learning Management System (LMS). The method employed in this research is meta-synthesis pattern in which 205 articles from SCI-Expanded and SSCI indexes were reviewed. According to the inclusion-exclusion criteria, 175 articles were eliminated and only 30 articles were deeply reviewed under three main themes, which are "learning, interaction, transition and adaptation." Descriptive results did not reveal that any research study before the year of 2009 dealing with these three main themes. In addition to this, the remarkable number of studies (n=6) were conducted in 2015 and 2016. All the examined studies were conducted in 16 different countries and quantitative methods and small sample sizes were generally preferred in those research studies. Considering the findings of those examined studies, Facebook as social media tool can be one of the best LMS option for higher education.

Keywords: higher education, educational use, Facebook, social media, research trends, lms

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The popularity of the mobile devices and internet are incontrovertible development in the Information and Communication Technologies (ICT) because they present a wide range of contextual solutions to the users by applications. Mobile devices or computers are common since they correctly optimize websites and applications which also refer to social media in general, designed to allow users to share content quickly, efficiently and real-time. These social media applications are now indispensable parts of our daily routines. In social media as a part of Web 2.0, people who were once internet browsers have become content builders as broadcasters due to the widespread use of mobile devices.

Despite certain age restrictions for the memberships in all social media, students from early ages are actively using those sites. These individuals who have not yet gained the moral values can develop either different sharing habits or lifestyles which can cause serious problems like nomophobia (Yildirim & Correia, 2015), FoMO (Przybylski, Murayama et al., 2013), and phubbing (Chotpitayasunondh & Douglas, 2016). Beside this, the individuals who want to increase their popularity and number of followers in social environment can lead them to face with self-disclosure problems (Taddicken, 2014).

In addition, all other media are directing the internet traffic to the social media and mobile applications generally. As is known, all technological advancements involve their own benefits and drawbacks. One of the undeniable positive features of social media is that it is an alternative solution for higher education to support the courses (Selwyn, 2012), student-to-student or student-to-teacher interaction, and it empowers the students' campus life (Tynes et al., 2013). In this paper, social media applications, specifically Facebook's benefits as an alternative solution to Learning Management System (LMS), which is an application that holds information about users, courses and content on the internet, will be discussed.

In this context, the aim of this study is to examine the academic studies on Facebook use in higher education, which has gained popularity in educational platforms. To this end, the articles published from 2009 to 2018 are included and analyzed in meta synthesis to project for further use and academic studies.

LITERATURE REVIEW

Social Media, Facebook and Education

Social media has mostly emerged and improved rapidly with interactive Web 2.0 technologies. Web 2.0 technologies have many types of social media varieties like Facebook, YouTube, Twitter, WordPress, Feedly and Del.icio.us, which are totally different from each other (Veletsianos, 2012). Based on the definitions in the literature, a website or application to be considered as social media has to have these features below;

- Allows the user to customize a profile page,
- Offers the possibility to follow / be followed with friends / followers,
- Includes interaction elements such as liking, commenting, sharing,

・Uploads media items such as photos, videos

In this context, social media can be summarized as “a network of personal profiles where users produce and / or share content, where they can communicate and interact with each other.”

Facebook is the most popular social media network site with 2.45 billion active users (Clement, 2020). For this reason, Facebook gained a popular place in academic studies. There are three main reasons why academia prefers Facebook in their research studies: Facebook is concrete, observable and tremendously popular. Secondly, it has many new advantages, and thirdly, it has also some hazards (Wilson et al., 2012).

The reason doing research on Facebook is that it includes all social media features in itself. Those features are status updating, text-photo-video sharing, following-ups, liking, commenting, instant written-audio-video communication, live broadcasting, group creation, page creation, event creation, game play features i.e., individuals can use this network for different purposes due to the rich structure of Facebook. Hew (2011) sorted out the reasons why people use Facebook: to maintain existing relationships, to meet new people, to be cool, to increase popularity, to spend time, to self-express, to learn new objectives, to use as a task management tool, and to use for activism. Although Facebook is popularly used for different purposes, the scope of our study focuses on the educational use and research trends of Facebook, so the next section discusses these matters in detail.

In recent years, the rapid growth of web technologies and the high use of the internet have made teaching and learning more viable via the internet (Goi & Ng, 2008). Accessibility of social media at any time changes students' communication, collaborative ways of working and learning styles, and this is mostly observed in university-level students (Tess, 2013). However, it is not unexpected that social media networks develop and maintain academic and professional interaction methods. It is clear that social media changes interpersonal and intra-group communication and minimizes the needs for face-to-face interviews and discussions in the teaching-learning process (Okoro, 2012).

The vast majority of university students use networks such as Facebook and Twitter quite freely for social purposes (Lau, 2017). Samuels-Peretzet et al. (2017) indicate that most of the students feel comfortable (50% very comfortable, 37% comfortable) while using social media for their lessons. Recently, significant progress has been made in

explaining the role of Facebook on the learning and on teaching process and a number of studies have been conducted to examine the effects of Facebook in the educational context (Escobar-Rodrguez et al., 2014). Instructors and students have been increasingly using social media networks both inside and outside the classroom to support education (Lau, 2017). Moreover, when the literature surveys or systematic survey results are examined, it is observed that educators in the higher education sector have increased their interest in using social media sites such as Facebook as a means of learning and teaching (Manca & Ranieri, 2016). Even though Facebook, which is now widespread among public, was not created for academic purposes, many academics have adapted to the new environment and use it in their professional lives. Facebook is an effective teaching tool since it is easy for students to establish new and fast connections and collaborate with peers (Gruzd et al., 2012).

On one hand, one of the important problems regarding university students in education is related to concentration and attention. In a study conducted with university students, the focus of students' attention on another task while performing a computer task was 85.9% for American students and 72.5% for European students (Karpinski et al., 2013). Junco and Cotten (2012) found that 51% of students text messages, 33% of students browse Facebook, and 21% of the students write emails while doing their homework. In the same study, it is also mentioned that the use of social media or doing internet search that is not related to their homework while studying has negative effects on students' overall grades at school (Junco & Cotten, 2012). Beside these findings, Ravizza et al. (2014) state that using the internet for extracurricular purposes reduces academic performance. On the other hand, Rambe (2012) found that the messages used for the purposes of the course did not have a deep and meaningful impact on the course success. And also, Coleman et al. (2018) emphasize that social media helps to manage courses and improves communications.

Çoklar (2012) suggested that educational use of Facebook in higher education has some advantages like the dissemination of information, piquantness and motivation, interaction chance, ease of access to information and entertainment into education. It has also some disadvantages like being nested with entertainment, doubt for accuracy of shared information, problem of control mechanism and informational convergence.

During the education process, three different interactions can be mentioned as student-student interaction, student-teacher interaction and student-content interaction (Bernard et al., 2009). Social media sites are considered as the most important element that increases student-student interaction and maximizes students' satisfaction in the courses. At the same time, administrators, teachers and students state that the use of digital technologies by teachers is the key to social interaction (Manca & Ranieri, 2016). Legaree (2015) emphasized in his study that social media positively increases student-teacher interaction; affects student-student collaboration; enriches data, develops ideas, and provides alternative learning environments such as learning management systems (LMS) outside the school. Also, Sweeney et al. (2017), emphasize that social media as assessment tools and LMS is good and increases student-teacher and student-student interaction. Using social media and LMS increases collaboration, self-assessment, peer-assessment and quality of feedback.

Facebook as a LMS

A learning management system (LMS) is an application that holds information about users, courses and content on internet. This application is used in any kind of educational platform such as schools and distance learning tools to organize the educational environment. Educational organizations may have to deal with time-consuming procedures and may have difficulty in choosing the suitable LMS applications to fulfill the needs and requirements (Sharma & Vatta, 2013). Therefore, it is of great importance to do the detailed investigation in order to make the right LMS selection.

Developments in technology and science affect society in many ways and one of the most affected social groups is naturally the new generation. Therefore, teaching and education need to adjust their systems to the students. The new millennium learners project published by OECD in 2006 mentioned that the students are called as millennials, digital natives, net generation and cyberkids (Pedro, 2006). In this sense, school administrations should be aware of the life of millennium in a cyber environment where all students spend most of their time by having tolerable or intolerable experiences. Keeping students from the negative sides of it is impossible; however, it is possible to promote a liable experience by adjusting the school system to their favor. On the other hand, students' interest in school lessons decreases day by day and one of the reasons of

this situation is boring school environment. It is necessary to reach students in order to save schools from being boring places with the help of the internet where they spend most of their time. The places where they hang out in this environment are generally social media and this also explains why students find LMS boring.

Arabacioglu and Akar-Vural's study in 2014 stated that there was no significant difference between information and communication tools used in educational platforms, which are Adobe Connect as a formal and Facebook as an informal tool. While developing the basis of the formal learning environment on an online platform, LMS does not sufficiently correspond with the needs of learner and teachers, but the needs of academics. Students rarely visit formal LMS unless they have to. On the other hand, they publicize any kind of private experiences on Facebook platform. In this manner, the educational institutions should decide whether to teach on a dull LMS environment, to teach on Facebook or together. Social media could cause too much distraction because of the vast information on the Internet itself, yet immediate feedback at e-learning settings have a positive effect on students' academic success. In addition to that, socializing in Facebook has a higher potential for teaching and could also offer economic and effective solutions to educational needs. Thus, higher education institutions have to decide on the suitable platforms for their school systems since teachers or instructors individually prefer network sites like Facebook to get connected with their students even if it is an additional workload to them.

Formal or traditional learning is less free and has strict rules where all learning processes are in a linear setting, as in the LMS models. On the other hand, Facebook, as of web-based environment setting, offers freedom, interaction and flexibility with the materials, but when the course content flows, the learner could get interrupted with the off-duty interactions, which is a side effect of it (Chugh & Ruhi, 2018). The use of Facebook as an after-class discussion venue has showed that it could be a valuable platform to promote student engagement, collaboration, and sharing of ideas outside face-to-face interaction.

The aims of this study are to reveal research trends about Facebook in SSCI and SCI-Expanded database in higher education and to discuss the potential use of Facebook

for educational purposes. For these purposes, articles from 2009 to the end of 2018 were included in the study and following research questions were posed:

1) What is the distribution of the studies published in SSCI and SCI-Expanded databases on Facebook conducted in higher education between the years 2009-2018?

2) What is the frequency of the countries that published studies in SSCI and SCI-Expanded databases on using Facebook in higher education between the years 2009-2018?

3) Which research methods were frequently used in the studies conducted in higher education about Facebook use that were published in SSCI and SCI-Expanded databases between the years 2009-2018?

4) What are the results of all the studies conducted in higher education about Facebook use that were published in SSCI and SCI-Expanded databases between the years 2009-2018?

METHODS

In this study, the articles in SSCI and SCI-Expanded databases scanned by Web of Science (WoS) were examined by meta-synthesis (thematic content analysis) method. Meta-synthesis is an in-depth research study on the same topic by creating themes or templates, synthesizing and interpreting them from a critical point of view (Au, 2007; Çalık & Sözbilir, 2014). Rather than reducing quantitative data to a single unit as in meta-analysis, it allows in-depth analysis by qualitatively interpreting the data and comparing the original findings (Zimmer, 2006). Compared with meta-analysis and descriptive content analysis, the number of studies examined through meta-synthesis is limited (Çalık & Sözbilir, 2014).

Data Collection Process

The scope of the research was limited to Facebook because it was the most popular social media network among higher education students in the years studied (Ciampa et al., 2016; Raacke & Bonds-Raacke, 2015). The international and peer-reviewed articles published in English language until 2019 in SSCI and SCI-Expanded indexes in the Web of Science database were scanned as Boolean ("social media" AND "facebook" AND "higher education") without any lower time limit, in order to avoid data loss. The reason that SSCI

and SCI-Expanded databases were preferred was the assumption that the articles published in the indexes would be evaluated at international standards and would provide more reliable results (Acar Güvendir & Özer Özkan, 2015). The frequency and percentage values related to the journals that are included in the study are given in Table 1.

Table 1
Percentage and Frequency Values of Journals with Articles Included in the Research

Journal	*f*	%
Computers & Education	3	10.00
Computers in Human Behavior	3	10.00
Australasian Journal of Educational Technology	2	6.67
International Review of Research in Open and Distance Learning	2	6.67
Higher Education	2	6.67
Telematics and Informatics	2	6.67
Learning, Media & Technology	2	6.67
Journal of Medical Internet Research	2	6.67
American Journal of Pharmaceutical Education	1	3.33
Journal of Food Protection	1	3.33
Comunicar	1	3.33
Journal of Dental Education	1	3.33
Eurasia Journal of Mathematics Science and Technology Education	1	3.33

Nurse Education Today	1	3.33
Anthropologist	1	3.33
Contemporary Nurse	1	3.33
Computer Assisted Language Learning	1	3.33
Journal of Documentation	1	3.33
Journal of the College of Physicians and Surgeons Pakistan	1	3.33
Technology, Pedagogy and Education	1	3.33
Overall	30	100

Inclusion/Exclusion Criteria

All journals that are classified are in English and international journals, conference papers, web site examinations, reviews, content analysis, scale developments and other social media sites with or without Facebook (ex: Twitter, YouTube, etc.). Also, the research sample excluded the studies that are not related with higher education and research subjects (Facebook). From the 210 articles obtained, 205 were available online. The articles were reviewed by two researchers and 175 were excluded from the research and 30 of them were included as research articles. The process is summarized in Figure 1.

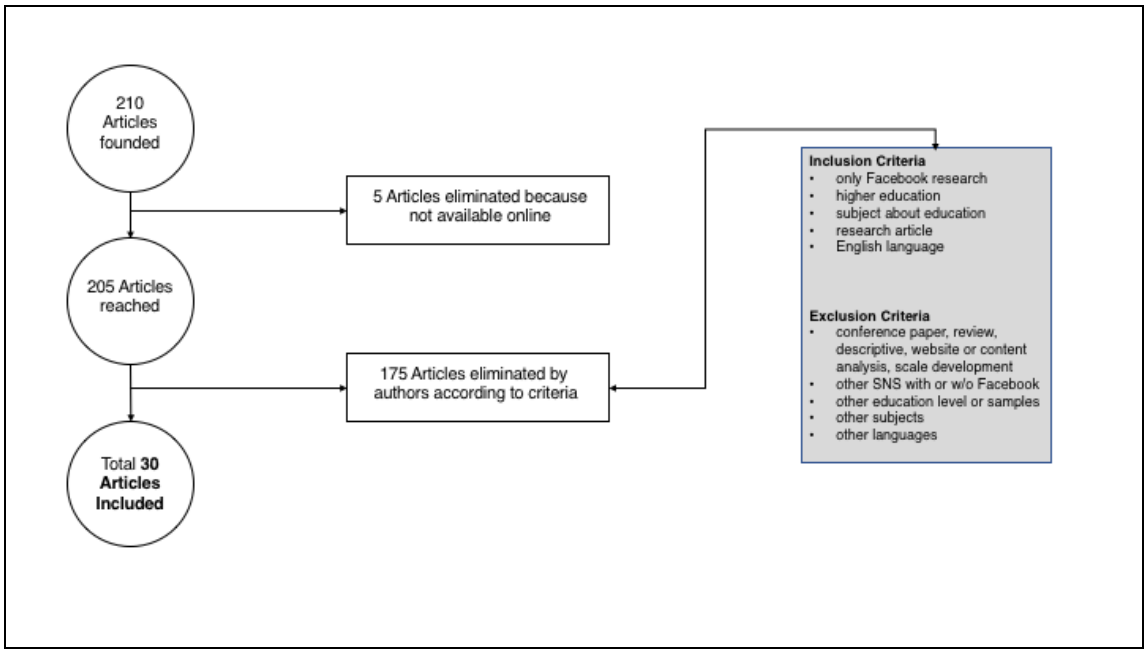

Figure 1. Article Selection Process.

Data Collection Tools and Analysis

The descriptive data of the articles included in the study were collected through the article classification form, which was developed by Gul and Sozbilir (2015) and adapted for this study. The data obtained from the articles were recorded in the database and analyzed. Afterwards, 14 articles were examined by the first researcher and 15 articles were examined by the second researcher. One article was examined by both researchers independently and the coding was compared. No significant differences were observed in this comparison. The codes were examined together by the two researchers and the themes were decided jointly.

Trustworthiness

In qualitative research, triangulation is often used to provide trustworthiness. Triangulation enables completeness and cohesiveness (Greene, 2007). Denzin (1978) identified four types of triangulations: data sources, theories, methods and different researchers. In this study, we use investigator triangulation (IT) strategy. IT refers to collecting and analyzing data by two or more skilled researchers (Denzin, 1989). For this purpose, in the article selection, coding and analyzing processes, the first and second author worked independently. In addition to this, an article was selected randomly, and

the coding was conducted independently. Then it was compared for inter-rater consistency. The two researchers jointly evaluated the dispute and agreed on a joint decision.

FINDINGS

Descriptive

The distribution of the articles in the study sample (N=30) by years is given in Figure 2. Despite the years of studies that do not put a lower limit (default lower limit of the Web of Science 1975), no studies before 2009 were observed. For this reason, the study included the last decade. When the distribution was examined, there was a decrease after 2013 and 2016. The most probable reason behind this would be the change on social media use of teenagers since they turned their face to Instagram, YouTube, Snapchat, e.g. (Anderson, & Jiang, 2019).

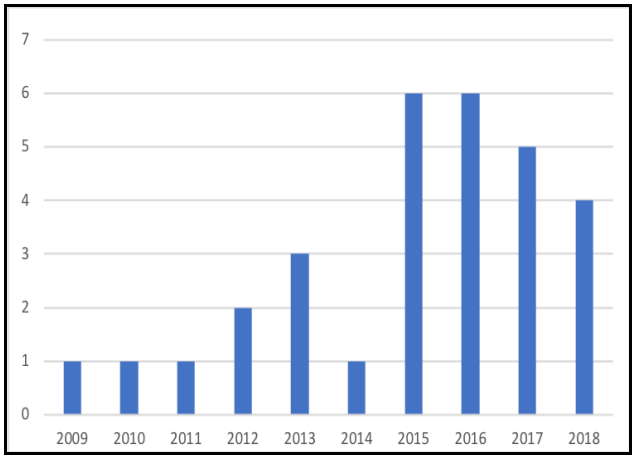

Figure 2. Distribution of Examined Studies According to Years 2009-2018.

This study shows that examined studies were conducted at 16 different countries although twenty percent of them were conducted in the USA with 6 articles. Also, Turkey with 5 articles (16.67%) and Australia with 4 articles (13.33%) follow USA respectively. Canada and Sweden follow they with 2 articles (6.67%). UK, Germany, Japan, Spain, Hungary, Taiwan, Serbia, Cyprus, Oman, Pakistan and India have only one article (3.33%). Statista's (2020) worldwide Facebook use statistics are generally parallel to our results except India. India has the greatest number of Facebook users, but we reached only one study about Facebook and education from there.

The findings show that the quantitative methods are dominant among research methods and 18 of 30 (60%) researches have quantitative approach. The most commonly

used method for quantitative methods is the survey model with 9 of 18 (50%). Qualitative methods follow the quantitative methods according to 11 of 30 with the use frequency (36.77%). The most common type of the qualitative methods is the case studies as 6 of 30 (20%). Only one mixed design was found (3,33%). There have been no studies found using research methods like comparative, correlational, ex-post facto, secondary data analysis and concept analysis, etc.

Research shows that the examined studies' sample size varies between 6 to over 3000. In addition to this, many of them have sample sizes under 300. There are less than one hundred, one hundred to three hundred, three hundred to one thousand, above one thousand sample size frequencies 9,9,6,6 respectively. Considering that the majority of the studies are quantitative research, it may be said that there are problems in the external validity of the studies (Creswell, 2012).

The coding process of the articles examined revealed three different themes: "learning", "interaction" and "transition and adaptation".

Learning

Facebook's educational use grew up and spread between 2009-2013 in university communities. This situation shows that in addition to real classroom environment, Facebook also takes place for teacher-student connection (Pilli, 2015). Milošević and colleagues' (2015) research suggests that the purposes of students to use Facebook as a virtual classroom are to improve communication with friends and teachers, discuss with others, post about lectures, exams and activities, perform tasks, improve educational process and develop current knowledge. Keles's (2018) work shows that Facebook provides teachers with opportunities to teach for students and also it gives responsibilities for both teachers and students in teaching. Furthermore, Facebook groups directly contribute to social presence. In addition to this, while Facebook increased students' social awareness and social sensitivity, irrelevant discussions and poor-quality shares affected the learning environment negatively. Facebook use in itself does not have negative effects on academic outcomes and it can be a useful and advantageous opportunity for teachers (Junco, 2012).

Participation to create study groups in Facebook led to an increased understanding of what it means to study at university. Students became more aware of their own roles, they were active participants in discussions and conversations, they had a better

understanding of subjects, contents and rules connected to academic requirements with creating an inclusive and relaxed atmosphere (Cuesta et al., 2015). Social media networks like Facebook may enhance students' self-efficacy with peer-learning. Tower et al.'s (2015) study showed that students decreased their anxiety and stress level and enhanced their self-efficacy by experience sharing. Shakoori et al.'s (2017) study suggests that Facebook groups are new and exciting opportunities by improving students' self-study, research and collaboration skills and also improve attendance to courses. It provided easy communication with the teacher. But high achiever students and students who are used to a classical didactic learning environment were less receptive to collaborative learning. Poellhuber et al.'s (2011) findings show that collaborating with peers increases by age and similarly older students show more interest in learning with social media in distance learning. Nicolai et al (2017) suggest that Facebook groups are self-organized and can adapt to challenges that are subject-related or related to curriculum. When the responses and comments of Facebook groups are analyzed, they show these three categories: learning tips and strategies, material sharing, and course content discussions. Moreover, there are many organization-related topics.

Mobile Facebook provides observational learning with real life posts and others' works. Online social media is incitement for observational modelling. Teachers not only provide learning content and example works but also may encourage students with useful Facebook features (Chen, 2015). Demir's (2018) study suggests that Facebook may be used for peer assessment as a complementary educational tool. In terms of making learning more inclusive, Facebook can be considered as an effective way to increase students' awareness and motivation levels and to increase learning pleasure. Celik et al.'s (2015) generated model in their study shows that variables of GPA, time spent on Facebook, the number of friends on Facebook, and frequency of Facebook use are important predictors of the purposes of Facebook use and variables that have direct and also indirect effects on educational use of Facebook. More successful students use Facebook for educational aims and they use it more frequently, spending less time with friends. Sun et al. (2017) suggest that safer sex training that was peer-led and delivered on social media was effective for improving condom use attitude and also behavior. In addition to this, Facebook shows better impact on process evaluation than a sexual health website does. Besides, Mayer and

Harrison (2012) state that Facebook is appropriate and effective for food safety education. On the other hand, Dizon's (2016) findings suggest that Facebook supported writing fluency better than paper-pencil but did not result in lexical richness. Additionally, Facebook did not show any significance in terms of grammatical accuracy. Besides, Dyson, et al.'s (2014) research shows that integration of Facebook into the classroom seems to be hard. If we intend to see basic effects, the integration of Facebook and no-technology use comparison may be critical.

Articles that were examined in learning themes are given in Table 2 with author, article name, research methods and data collection tools.

Table 2
Articles in Learning Theme

Author(s)	Article Name	Method	Data Collection
Poellhuber, et al. (2011)	Distance Students' Readiness for Social Media and Collaboration	Survey	Questionnaire
Junco (2012)	The relationship between frequency of Facebook use, participation in Facebook activities, and student engagement	Survey	Questionnaire
Mayer & Harrison (2012)	Safe eats: an evaluation of the use of social media for food safety education	Survey	Questionnaire
Dyson et al. (2015)	Evaluating the use of Facebook to increase student engagement and understanding in lecture-based classes	Survey	Questionnaire
Chen (2015)	Linking Learning Styles and Learning on Mobile Facebook	Quasi-Experimental	Questionnaire - Interview
Celik et al. (2015)	A Model for Understanding Educational Facebook Use	Survey	Questionnaire
Milosevic et al. (2015)	Facebook as virtual classroom - Social networking in learning and teaching among Serbian students	Survey	Questionnaire
Tower et al. (2015)	Using social media as a strategy to address	Case Study	Facebook

	'sophomore slump' in second year nursing students: A qualitative study		
Pilli (2015)	The Changes in Social Media Usage: Students' Perspective	Survey	Questionnaire
Dizon (2016)	A comparative study of Facebook vs. paper-and-pencil writing to improve L2 writing skills	Quasi-Experimental	Test
Cuesta et al. (2016)	Using Facebook as a co-learning community in higher education	Online Ethnography	Facebook
Shakoori et al. (2017)	Impact of a Social Media Group Page on Undergraduate Medical Physiology Learning	Qualitative Interpretivist Study	Interview
Sun et al. (2017)	A Peer-Led, Social Media-Delivered, Safer Sex Intervention for Chinese College Students: Randomized Controlled Trial	Experimental	Questionnaire
Nicolai et al. (2017)	Facebook Groups as a Powerful and Dynamic Tool in Medical Education: Mixed-Method Study	Mixed	Interview - Focus Group - Facebook
Keles (2018)	Use of Facebook for the Community Services Practices course	(Holistic) Case Study	Questionnaire - Facebook
Demir (2018)	Using online peer assessment in an Instructional Technology and Material Design course through social media	Case Study	Interview - Facebook

Interaction

Students' way of using Facebook and behaviors show differences. Stirling's (2015) research tells us two different stories. One of them is always connected to Facebook and the other one is sometimes connected. It shows that students' behaviors change with the connecting times. Dhir et al. (2017) suggest that adolescents think that Facebook is an appropriate form of media for discussing, sharing and exchanging ideas and for other

academic interests with friends and also teachers. Therefore, it drives intensive Facebook use. On the other hand, along with the process and technology, social uses and gratifications are also the important predictor of the adolescents' intensive Facebook use, but their results show otherwise. Dhir et al.'s (2017) findings clearly mean that educational affordances are not the major predictors of intensive Facebook use. Students who are active Facebook users generally want to have close relationships with their teachers. Especially after ending the educational network, students more likely want to have professional network connections online with their teachers (Wang & Yu, 2018).

Students' intention to use Facebook for learning and teaching processes can be explained with perceived advantages and perceived relevance. These two outcomes are positively related to intentional acts in using social media platforms (Escobar-Rodríguez et al., 2014). Traditional learning environments involve some barriers like language for interaction with international students, but Facebook learning groups involve easy and enjoyable environments in terms of sharing different perspectives and opinions. Also, online assessment and academic interactions are enjoyable and a face-to-face environment becomes meaningful thanks to Facebook's virtual interaction (McCarthy, 2010).

Student-created learning communities are not formal but this type of underground groups support learning. Facebook as a student-initiated personal learning environment has a big potential, yet it has some major risks on issues such as rant, as well (Charteris et al., 2018). Besides, academic administrators should encourage students to use Facebook for more academic purposes. Over and above, Facebook might be used as an e-learning tool by academy. Sharma et al.'s (2016) study shows that students are more concerned with perceived usefulness and perceived enjoyment. For this reason, Facebook can be a good learning management system for higher education.

On the other hand, some students do not use Facebook. Turan et al. (2013) suggests that the reason for non-use of Facebook might be the technology's failure to capture attention and curiosity. Students' preferences of different communication forms except Facebook might be related to problematic events such as cyber-bullying or bad news about Facebook. In addition to this, another reason for non-use of Facebook according to students' reports is that online self-disclosure is worrying. Students are also afraid of becoming addicted to the internet. Additionally, the majority of students who are non-

users of Facebook do not rely on virtual friendships because they think it is dangerous or fake and therefore, they consider Facebook as an unimportant source for friendship.

Articles that were examined in this theme are given in Table 3 with authors, article name, research methods and data collection tools.

Table 3
Articles in Interaction Theme

Author(s)	Article Name	Method	Data Collection
McCarthy (2010)	Blended learning environments: Using social networking sites to enhance the first-year experience	Survey	Questionnaire
Turan et al. (2013)	The Reasons for Non-Use of Social Networking Websites by University Students	Case Study	Interview
Escobar-Rodrguez et al. (2014)	Factors that influence the perceived advantages and relevance of Facebook as a learning tool: An extension of the UTAUT	Survey	Questionnaire
Stirling (2016)	Technology, time and transition in higher education – two different realities of everyday Facebook use in the first year of university in the UK	Connective Ethnography	Questionnaire - Interview - Facebook
Sharma et al. (2016)	A multi-analytical approach to predict the Facebook usage in higher education	Survey	Questionnaire
Dhir et al. (2017)	Do educational affordances and gratifications drive intensive Facebook use among adolescents?	Survey	Questionnaire
Charteris et al. (2018)	Student-initiated Facebook sites: nurturing personal learning environments or a place for the disenfranchised?	Case Study	Telephone Interview
Wang & Yu (2018)	Friending instructors on Facebook: Exploring the role of privacy on student- instructor connection on cyberspace	Survey	Questionnaire

Transition and adaptation

In education, it is important for students to get used to the school and gain student identity. Nevzat et al.'s (2016) generated model suggests that loyalty is related with trust and more trust is associated with student identification with school. Social media may be a stronger link between people and university brands. Universities have different types of students. Hanell's (2017) study shows that students who are information sharers can be categorized into three types; discussion-oriented, goal-oriented and customer-oriented learners. Furthermore, information sharing in Facebook is a method of construction and positioning of identity. In this context, information sharing in Facebook is powerful for students' identity development. Moreover, social media like Facebook can help students feel more engaged with school and provide significant support to transition in students' school life (Gray et al., 2013) and informal peer to peer learning. Facebook also supports and enriches online and offline relationships and builds professional identity (Ferguson et al., 2016).

Socialization is an important element of education, especially education of health professionals as to professional behaviors (Cain et al., 2009). In this context, E-professionalism and policies are important, but Henry and Molnar's (2013) school (shown in Table 4) does not have any policy about social media. A feasible social media policy can increase students' awareness about e-professionalism. In this topic, other studies support that student, especially males, have the opposite view about accountability for information posting on Facebook. Lack of awareness with inappropriate behaviors may affect their e-professionalism (Cain et al., 2009).

Articles that were examined in transition and adaptation theme are given in Table 4 with authors, article name, research methods and data collection tools.

Table 4
Articles in Transition and Adaptation Theme

Author(s)	Article Name	Method	Data Collection
Cain et al. (2009)	Pharmacy Students' Facebook Activity and Opinions Regarding Accountability and E-Professionalism	Survey	Questionnaire
Gray et al. (2013)	Examining social adjustment to college in the age of social media: Factors influencing successful transitions and persistence	Survey	Questionnaire
Henry & Molnar (2013)	Examination of Social Networking Professionalism Among Dental and Dental Hygiene Students	Case Study	Facebook
Ferguson et al. (2016)	First year nursing students' experiences of social media during the transition to university: a focus group study	Qualitative	Focus Group
Nevzat et al. (2016)	Role of social media community in strengthening trust and loyalty for a university	Survey	Questionnaire
Hanell (2017)	Teacher trainees' information sharing activities and identity positioning on Facebook	Ethnography	Interview - Field Notes - Facebook

LIMITATIONS, FUTURE DIRECTIONS AND CONCLUSIONS

This study based on Web of Science (WoS) database is one of the top indexes in educational studies area since to be chosen. Meantime, another limitation of the study is limited between 2009-2018. In future studies, additional articles can be included from indexed different databases and published after 2018. Especially, Covid-19 pandemic increases requirements about online education. For this reason, last three years could be examined from wide point of view. Additionally, future studies might be investigated with mixed design perspective because there is rarely mixed study in this area. Generally,

significant studies which focused on this research reflect teachers' perspective. Hence students' experiences and perspectives could be examined with qualitative approach likewise phenomenological project.

Facebook is a social media platform used for social purposes, but it has a big potential for educational use. First of all, it can increase student-student communication and also student-teacher connection. For this reason, it may improve students' social awareness, relations and self-efficacy. It can motivate students to enjoy learning with self-study. In Facebook groups, discussions through peer-learning can expand knowledge and also develop students' collaborative learning skills. A relaxed and easy atmosphere might decrease students' anxiety levels. Even if Facebook's integration into a real classroom environment can be difficult, it can be used for extending the course environment, tasking like homework, peer-evaluation and making the knowledge learned and university life meaningful. Secondly, schools have a variety of communication barriers especially for international students and non-social people. Some students are always connected, some students are sometimes connected, and some of them are not connected to Facebook. Also, some students are active, and some students are passive. Students who are active Facebook users develop close connections with their instructors and Facebook make their communication easy and enjoyable. Therefore, unsocial students can also build links and improve relationships with not only peers but also teachers. Facebook groups support learning even though they have potential risks and threats because student-created groups are uncontrolled. If university-led or teacher-led groups are created, it should be safer. In this way, some rules and policies can be determined, and this might provide a kind of control mechanism by the teacher or university. Finally, studies show that Facebook can help students' smooth transition and adaptation to higher education. Students create identity; however, there is no rule or policy about their sharing and online behaviors. Thus, increasing students' awareness about student identity and e-professional development may be effective for healthy student life. Considering all this, Facebook can be the best LMS for higher education. All over world, distance education and e-learning have gained more importance with Covid-19 epidemic. Especially in higher education, Facebook will be a good opportunity for colleges and universities.

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