The Analysis of Purposes of Science Teacher Candidates in Using Social Media

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Abstract

Problem Statement: With the Internet becoming an inseperable part of our lives, the role of social media in daily life is rapidly increasing with each passing day. In this respect, it is important to identify the purposes of teacher candidates in using social media tools that rapidly improve and become widespread in teacher training institutions.

Purpose of the Study: In this study, it is intended to identify the variables by which the purposes of science teacher candidates in using social media vary and their opinions about the use of social media in education.

Methodology: For this purpose, a scale on the use of social media by teacher candidates has been applied to a sample group of 255 people. The data was evaluated quantitatively with SPSS 17.00 software. In order to identify the views of science teacher candidates on the use of social media in education, five open-ended questions were asked to five people who were randomly selected from the sample group.

Findings and interpretation: The research results show that the purposes of science teacher candidates in using social media vary according to demographic characteristics (sex, grade level, family income) and to variables related to Internet usage (frequency of Internet usage, the time spent on the Internet, blog ownership, the purpose of using the Internet, the frequently used social media tools). It is found that science teaching students generally have a positive attitude towards the use of social media in education.

Conclusion and Discussion: It is possible to create educational settings for scientific discussions and for sharing ideas on social media. With the use of these settings in education, a lot of activities that will be time-

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consuming in the class environment can be carried out on social media and science teaching students can be offered many opportunities and tools such as enjoyable homework assignments, complementary videos etc. For example, after the lesson on the subject of cell is completed in the class environment, a video about the structures forming the cell can be shared with the group on the Facebook and a related discussion can be initiated between students where the teacher can also contribute with comments. Or the followers of the teacher can share the stages of an experiment on Twitter and everybody can contribute to the design of a new experiment.

Keywords: Social media, Education, Science Teacher Candidates, Science education.

Introduction

In recent years, with the Internet rapidly becoming an important part of social life, a new communication media that is alternative to mass media has developed. The Internet not only incorporates the properties of mass media, but also changes users' attitudes towards social life and preferences of socialization. The use of social media environment and tools has a significant role in this change and it is being more widely used with each passing day.

The concept of social media is a new concept. Compared to traditional communication tools, it is ahead of the game with the innovations it brings into the field of communication and the opportunities it offers to users. According to Byrne (2011) the term social media has come to be used in many ways, but generally it refers to websites that allow their users to share information about themselves. Social media includes various online networking activities through videos, pictures and messages.

Social networking sites provide new venues for young adults to express themselves and to interact with one another (Pempek, Yermolayeva and Calvert, 2009). The top 10 social networking sites by market share for May of 2012 were reported in Table 1 by Experian Hitwise (2012):

Table 1

Top 10 Social Networking Sites by Market Share Reported for May of 2012

Rank	Websites	Total Visits	Visits Share (%)
1.	Facebook	1,629,131,213	62.84
2.	YouTube	526,221,436	20.30
3.	Twitter	44,863,643	1.73
4.	Yahoo!	25,012,731	0.96
5.	Pinterest	22,871,143	0.88
6.	Linkedin	20,285,607	0.78
7.	Tagged	16,742,417	0.65
8.	Google+	16,360,262	0.63
9.	MySpace	10,584,902	0.41

Since education has always been about exposing people to new ideas, it's not surprising that the impact of social media is being felt in the education sector. Here

are some specific ways in which social media is changing the education system for both students and educators (Power, 2012). The primary function of social networking sites is to provide ways for an individual to make connections with others (Berzyet all, n.d.).

Preparing today's students for the unknown and quickly changing cultural and economic climates, must include the new ways we are communicating. Creating stimulating learning environments, allowing students to express knowledge through their creative means can be achieved by integrating Social Media technologies. Communication modalities are changing our lives, and we must adapt our teaching methods to work with emerging technologies (Robinson, 2012). However according to Junco, Heiberger and Loken (2011) while there is little research focusing on the relationship between social media and student engagement in higher education, a number of studies have found relationships between technology use and engagement.

The Use of Social Media in Education

The social media world is a teacher's oyster. Especially since most students are already deeply engaged in social networking sites, there's an instant buy-in when teachers offer the use of Facebook, Twitter, and YouTube for class purposes. Want to create a Facebook page for a character in a novel for language arts class? How about a Twitter treasure hunt? Facebook can also be a great way to showcase student projects -Stanford University's Facebook page is a great example. The possibilities are truly endless (Bernard, 2010).

Though there are both negative and positive aspects of using social media in various environments, technology is slowly becoming more and more integrated into society's norms. Facebook, Skype, and other social media platforms are rapidly expanding from solely entertainment purposes to educational environments. Whether students are willing to embrace the change or not, they will eventually play a huge role in determining exactly where this new direction leads (Thielman, Rogers and Stein, 2011). Analysis of survey results revealed that most students believed that they learned more because of using the group page and thought it was helpful in achieving their goals for their project and for the group. In addition, most students would like to use social networking for educational purposes and were interested in using social networking in school. Students reported that they liked seeing how other students responded to their posts on the Facebook. However, they believed their relationship with their mentors and with other students was not positively impacted by the use of the page. Students initially expressed difficulty in accessing the page, but believed the benefits of using the Facebook page were worth the extra time and effort (Pollara and Zhu, 2011).

Educational networking has the potential to improve student learning. Studies examining blogging, micro-blogging, and wiki initiatives indicate that social networking enriches the learning environment in the following ways (Goldfarb, Pregibon, Shrem and Zyko, 2011). According to O'Hanlon (2007) teachers are "using the site's blogging feature to engage their students in various academic topics ranging from science and literature" (Qut. Roblyer, McDaniel, Webb, Herman and Witty, 2010).

Social media as a teaching tool has a natural collaborative element. Students critique and comment on each other's assignments, work in teams to create content, and can easily access each other and the teacher with questions or to start a discussion (Kessler, 2010). At the very least, sites such as Twitter, Facebook and even MySpace can be used to create discussion in the classroom. Teachers can pull news stories from any of those sources. Students can ask questions and facilitate deeper discussion after reading something. Professors can institute peer reviews on writing projects (Prillo, 2011).

The biggest advantage of social media is bringing together of students of varying age groups to assist them in assignments of various types, from homework to various research. It needs to be clearly understood that geo-tagging has a very important role to play in education. Social media enables students to be in close communication with instructors to maintain their study process properly (Moumenine, 2012). Social media has a hugely positive potential for the education system to help engage and develop students (Russell, 2011). Dunn (2011) inticated that the negative and positive effect of the social media on studens in Table 2 such as:

Table 2

The Negative and Positive Effect of Social Media

Negatif	Positive
1. Many students rely on the accessibility of information on social media specifically and the web in general to provide answers. That means a reduced focus on learning.	1. Social networking has increased the rate and quality of collaboration for students. They are better able to communicate meeting times or share information quickly.
2. Students who attempt to multi-task, checking social media sites while studying, show reduced academic performance.	2. Social networking teaches students skills they'll need to survive in the business world.
3. The more time students spend on social sites, the less time they spend socializing in person. Because of the lack of body signals and other nonverbal cues, like tone and inflection.	3. By spending so much time working with new technologies, students develop more familiarity with computers and other electronic devices.
4. The popularity of social media, and the speed at which information is published, has created a lax attitude towards proper spelling and grammar.	4. The ease with which a student can customize their profile makes them more aware of basic aspects of design and layout that are not often taught in schools.
5. The degree to which private information is available online and the anonymity the internet seems to provide has made students forget the need to filter the information they post.	5. The ease and speed with which users can upload pictures, videos or stories has resulted in a greater amount of sharing of creative works.

Students from almost every level of education use social media frequently in their daily lives. As indicated in the literature, since students spend most of their time us-

ing social media,it is important to use it as an effective tool for education. To be able to use social media in education, the factors that affect it must be known. It is also important to identify the students' views toward social media for students from different levels of education. This study has sought the views of undergraduate science teacher candidates.

The problem sentence of this study is: "What are the variables that affect the purposes of science teacher candidates in using social media?" In this context, demographic characteristics influencing the purposes of science teacher candidates in using social media and different variables affecting the use of social media will be discussed. To identify the views of students on the use of social media in education is another purpose of the study. The questions shaping the sub-problems of study are:

1. Are there any significant differences between the purposes of the science teaching students in using social media with respect to demographic characteristics?

2. Are there any significant differences between the purposes of the science teaching students in using social media with respect to variables related to Internet usage?

3. What are the views of science teaching students on the use of social media in education?

Method

Research Design

This research was executed in a survey model that aims to determine whether the purposes of science teaching students in using social media vary according to demographic characteristics and to variables related to Internet usage and to identify the views of the students on the use of social media in education. According to Creswell (2008) survey research designs are procedures in quantitative research in which investigators administer a survey to a sample or to the entire population of people to describe the attitudes, opinions, behaviors, or characteristics of the population.

Participations

The sample group of the research consists of the 1st, 2nd, 3rd and 4th grade students from a science teaching department of a university in Istanbul. The characteristics of students in the sample group are given in table 1 below. The population of the study is all students from the departments of science teaching a tall universities in Istanbul.

Table 3

Demografic Informations about the Research Sapmple

	Girls		Boys		N
	n	*%*	*n*	*%*	
1stgrade	40	78	11	22	51
2ndgrade	40	89	5	11	45
3rdgrade	72	82	16	18	88
4thgrade	48	68	23	32	71
N	200	78	55	22	255

Data Collection Instruments

In the research, the "Social Media Usage Survey (SMKA)", developed by Bostancı (2010) was used for the collection of quantitative data. The SMKA survey consists of 8 close-ended questions aiming to identify the demographic characteristics of under-graduate students (sex, grade level, and family income), and the variables related to Internet usage (Internet usage frequency, time spent on the Internet, blog ownership, purpose of Internet usage and frequently used social media), and 14 items in 5 point likert type that allows the students to specify their purposes in using social media. To obtain students' views on the use of social media in education, five open-ended questions, prepared by the researcher and validated by two experts, were used. The experts, they are in educational sciences, examined the open-ended questions for validity to determinate undergraduate students' views on social media in education.

The Analysis of Data

In line with the purposes of this study, SPSS 17.00 (Statistical Package for Social Science) software was used in order to identify the variables by which the purposes of the students in using social media vary. For the determination of the tests, the Kolmogorov-Smirnov test was used to examine the normal distribution of data. Since the data didn't show a normal distribution, the Mann-Whitney U test was used for the comparison of two groups (sex, blog ownership), and the Kruskal-Wallis tests were used for the comparison of three or more groups. The Mann-Whitney U test was applied between two groups in order to identify which groups showed significant difference in Kruskal-Wallis tests (Büyüköztürk, 2007). On the other hand, the data obtained from the views of five students were analyzed qualitatively with descriptive analysis.

Results

Comparison of the Purposes in Using Social Media According to Demographic Characteristics

This section examines whether the purposes of the sample group in using social media show a significant difference according to their demographic characteristics of sex, grade level and family income in order to find an answer to the first sub-problem. Outcomes are illustrated separately for each variable that constitutes the demographic characteristics in a table format.

The findings on whether the purposes of the students in using social media vary significantly according to demographic characteristics are given in Tables 3, 4 and 5.

Table 4

Comparison of the Purposes in Using Social Media With Respect to the Sex

	Girls (n=200) M(SD)	Boys (n=55) M(SD)	u	p
Making new friends	1,95(1,04)	2,53(1,26)	4045,0	0,002*
Communication	4,10(0,87)	3,94(1,06)	5164,5	0,437
Sharing academic information	4,09(0,80)	3,64(1,09)	4208,5	0,003*
Sharing photos	3,14(1,13)	2,85(1,18)	4678,0	0,078
Sharing videos	3,03(1,10)	2,93(1,21)	5229,0	0,562
Sharing music	3,23(1,09)	2,93(1,26)	4753,5	0,109
Sharing status updates	2,91(1,14)	2,76(1,22)	5123,0	0,422
Sharing ideas	3,76(0,97)	3,47(1,12)	4754,5	0,093
Determining shopping preferences	2,75(1,24)	2,44(1,28)	4718,0	0,098
Finding solutions to problems	3,16(1,18)	2,85(1,39)	4784,0	0,127
Self-expression	2,91(1,15)	2,87(1,31)	5442,0	0,902
Access to information	4,24(0,81)	3,74(1,25)	4403,5	0,013*
Contribution to self-development	3,79(0,98)	3,29(1,33)	4396,5	0,016*
Following individuals and organizations	3,62(1,01)	3,54(1,51)	5368,0	0,765

*Notes. *p<.05.*

As seen in Table 3, among the purposes of science teaching students in using social media; making new friends, sharing academic information, access to information and contribution to self-development items show significant difference with respect to sex. The variation of average scores shows that while male students use social me-

dia for making new friends, females use it for sharing academic information, accessing information and contribution to self development. However, there are no significant differences between the other purposes of using social media with respect to sex.

The findings on whether the purposes of the students in using social media vary significantly according to students' grade level are given in Table 4.

Table 5

Comparison of the Purposes in Using Social Media with Respect to Grade Level

	1st grade (n=51)	2nd grade (n=45)	3rd grade (n=88)	4th grade (n=71)	x^2	p
	M(SD)	M(SD)	M(SD)	M(SD)		
Making new friends	2,27(1,13)	1,93(0,84)	1,98(1,17)	2,14(1,19)	3,62	0,306
Communication	3,82(1,10)	4,18(0,88)	4,27(0,74)	3,91(0,92)	10,89	0,012*
Sharing academic information	3,90(0,96)	3,96(0,67)	4,02(0,97)	4,04(0,86)	2,23	0,527
Sharing photos	2,88(1,24)	2,96(1,02)	3,28(1,07)	3,06(1,12)	5,09	0,165
Sharing videos	2,82(1,23)	2,84(0,97)	3,28(1,07)	2,90(1,16)	8,43	0,038*
Sharing music	3,09(1,20)	3,29(1,01)	3,29(1,09)	2,97(1,18)	3,48	0,323
Sharing status updates	2,84(1,19)	2,82(1,11)	3,12(1,14)	2,64(1,13)	7,11	0,069
Sharing ideas	3,56(1,17)	3,73(0,86)	3,86(0,98)	3,54(0,99)	6,11	0,106
Determining shopping preferences	2,50(1,29)	2,69(1,16)	2,82(1,29)	2,61(1,24)	2,54	0,468
Finding solutions to problems	2,92(1,23)	2,69(1,18)	3,39(1,16)	3,09(1,27)	10,63	0,014*
Self-expression	2,78(1,12)	2,82(1,17)	3,12(1,17)	2,76(1,23)	4,93	0,177
Access to information	4,08(1,11)	4,27(0,58)	4,20(0,94)	3,98(0,99)	2,67	0,412
Contribution to self-development	3,61(1,13)	3,69(0,97)	3,79(1,07)	3,59(1,12)	1,60	0,658
Following individuals and organizations	3,45(1,17)	3,58(0,99)	3,77(1,01)	3,51(0,99)	4,78	0,189

Notes. *p<.05.

The analysis of the Table 4 shows that the average scores of students using social media to find solutions to daily problems, to share videos and to communicate with others show a significant difference with respect to the grade level, but other purposes of using social media do not show a significant difference with respect to the class level. When we look at the average scores of the students, this difference is in favor of the 3rd grade students.

The findings on whether the purposes of the students in using social media vary significantly according to level of income of their families' are given in Table 5.

Table 6

Comparison of the Purposes in Using Social Media with Respect to Family Income

	<1000 TL (n=54) M(SD)	1001-1500 TL (n=77) M(SD)	1501-2000 TL (n=58) M(SD)	2001 TL< (n=66) M(SD)	χ^2	p
Making new friends	2,29(1,22)	1,99(1,08)	1,98(1,13)	2,08(1,05)	2,87	0,412
Communication	3,75(1,13)	4,12(0,82)	4,20(0,77)	4,12(0,90)	5,55	0,136
Sharing academic information	3,81(1,10)	3,96(0,88)	4,03(0,70)	4,14(0,86)	3,06	0,382
Sharing photos	2,88(1,14)	3,05(1,05)	3,05(1,11)	3,30(1,26)	5,41	0,144
Sharing videos	2,75(1,16)	3,01(1,07)	3,08(1,03)	3,14(1,23)	3,82	0,282
Sharing music	3,01(1,14)	3,35(1,06)	3,17(1,11)	3,06(1,21)	3,21	0,361
Sharing status updates	2,70(1,27)	2,83(1,08)	2,74(1,15)	3,21(1,10)	8,13	0,043*
Sharing ideas	3,53(1,11)	3,70(0,99)	3,57(0,96)	3,92(0,98)	7,47	0,058
Determining shopping preferences	2,37(1,24)	2,82(1,22)	2,57(1,26)	2,88(1,27)	6,31	0,097
Finding solutions to problems	2,75(1,33)	3,10(1,14)	3,19(1,09)	3,27(1,33)	4,75	0,191
Self-expression	2,62(1,20)	2,91(1,15)	2,67(1,08)	3,32(1,20)	12,86	0,005*
Access to information	3,92(1,18)	4,23(0,78)	4,26(0,83)	4,06(0,99)	2,62	0,454
Contribution to self-development	3,52(1,38)	3,74(0,96)	3,64(0,93)	3,79(1,06)	1,24	0,743
Following individuals and organizations	3,44(1,14)	3,73(0,98)	3,62(0,97)	3,56(1,08)	2,57	0,463

*Notes. *p<.05.*

As seen in Table 5, the purposes of sharing status updates and self-expression show a significant difference among students using social media with respect to their family incomes. This finding shows that the students with family income above 2001 TRY use social media more frequently for sharing status updates and self-expression (compared to the students with lower family incomes).

Comparison of the Purposes in Using Social Media According to the Variables Related to Internet Usage

This section examines whether the purposes of the sample group in using the Internet show a significant difference according to Internet usage variables of the frequency of Internet usage, the time spent on the Internet, blog ownership, the purpose of using the Internet and the frequently used social media tools, in order to find an answer to the second sub-problem. The findings are given separately for each variable related to Internet usage in a table format.

The first examined variable related to Internet usage of the students is the frequency of Internet usage. The findings on whether the purposes of the students in using social media usage show a significant difference with respect to the variables related to Internet usage are given in Tables 6, 7, 8, 9 and 10.

Table 7

Comparison of the Purposes in Using Social Media with Respect to the Frequency of Internet Usage

	Every day (n=161) M(SD)	*3-5 days in a week (n=44)* M(SD)	*Less than 2 days in a week (n=50)* M(SD)	x^2	*p*
Making new friends	2,05(1,12)	2,16(1,09)	2,08(1,16)	0,52	0,770
Communication	4,25(0,71)	3,84(1,03)	3,68(1,20)	12,85	0,002*
Sharing academic information	4,02(0,87)	4,09(0,71)	3,80(1,07)	1,75	0,418
Sharing photos	3,26(1,09)	2,45(1,25)	3,08(1,05)	16,29	0,000*
Sharing videos	3,17(1,09)	2,52(1,21)	2,92(1,03)	10,55	0,005*
Sharing music	3,34(1,08)	2,70(1,27)	3,00(1,05)	10,65	0,005*
Sharing status updates	3,08(1,12)	2,48(1,19)	2,60(1,11)	12,81	0,002*
Sharing ideas	3,71(0,96)	3,66(1,16)	3,66(1,06)	0,06	0,972
Determining shopping preferences	2,75(1,32)	2,66(1,16)	2,48(1,13)	1,59	0,452
Finding solutions to problems	3,16(1,25)	2,98(1,23)	2,98(1,19)	1,29	0,525
Self-expression	3,04(1,18)	2,61(1,14)	2,70(1,16)	6,67	0,036*
Access to information	4,22(0,84)	3,93(1,09)	4,00(1,09)	3,09	0,214
Contribution to self-development	3,74(1,02)	3,39(1,22)	3,74(1,10)	2,72	0,257
Following individuals and organizations	3,78(0,93)	3,43(1,04)	3,16(1,22)	13,69	0,001*

Notes. *p<.05.

Table 6 shows that the average scores for students who use social media to communicate with others, to share photos, videos, music and status updates; and for students who use social media to express themselves and to follow individuals and organizations show a significant difference with respect to the frequency of Internet usage. This difference, which is found in all social media usage purposes which show a significant difference in Internet usage frequency, is in favor of students who use the Internet most frequently, as seen in Table 6.

Table 8

Comparison of the Purposes in Using Social Media with Respect to the Time Spent on the Internet.

	Less than 30 minutes (n=25) M(SD)	30 min.-1 hour (n=79) M(SD)	1-2 hours (n=94) M(SD)	More than 3 hours (n=57) M(SD)	χ^2	p
Making new friends	2,08(1,26)	2,06(1,09)	1,96(1,05)	2,26(1,20)	2,22	0,528
Communication	3,80(1,29)	3,98(1,02)	4,03(0,75)	4,35(0,74)	8,79	0,032*
Sharing academic information	3,92(1,22)	4,08(0,78)	4,07(0,71)	3,77(1,10)	2,32	0,508
Sharing photos	3,00(1,32)	2,84(1,18)	3,07(1,15)	3,45(0,93)	8,82	0,032*
Sharing videos	3,00(1,38)	2,74(1,11)	3,00(1,12)	3,39(0,94)	9,96	0,019*
Sharing music	3,32(1,28)	3,00(1,19)	3,07(1,15)	3,47(0,98)	6,73	0,081
Sharing status updates	2,88(1,36)	2,75(1,17)	2,88(1,13)	3,07(1,07)	2,47	0,481
Sharing ideas	3,56(1,29)	3,59(1,08)	3,69(0,96)	3,89(0,84)	2,63	0,452
Determining shopping preferences	2,84(1,31)	2,61(1,25)	2,66(1,27)	2,75(1,23)	0,94	0,816
Finding solutions to problems	3,40(1,26)	3,06(1,27)	2,97(1,20)	3,19(1,22)	2,71	0,438
Self-expression	2,76(1,09)	2,67(1,16)	2,94(1,18)	3,21(1,22)	7,19	0,066
Access to information	4,08(1,26)	4,25(0,89)	4,14(0,78)	3,96(1,08)	3,59	0,310
Contribution to self-development	3,52(1,29)	3,61(1,07)	3,71(1,02)	3,81(1,11)	1,89	0,595
Following individuals and organizations	3,80(1,08)	3,46(1,05)	3,66(1,04)	3,61(1,01)	3,59	0,308

*Notes. *p<.05.*

As seen in Table 7, among the purposes of using social media; communication and sharing photos and videos show a significant difference according to the time spent on the Internet. Based on average scores, it is seen that the group with the students spending more than three hours a day on the Internet has a significantly higher average compared to other groups. Among other purposes of using social media, no significant difference with respect to the time spent on the Internet could be found.

Table 9

Comparison of the Purposes in Using Social Media with Respect to Blog Ownership

	Yes (n=107)	No (n=148)	u	p
	M(SD)	M(SD)		
Making new friends	2,00(1,17)	2,13(1,08)	7153,0	0,167
Communication	4,12(0,93)	4,03(0,90)	7311,0	0,241
Sharing academic information	4,05(0,92)	3,95(0,87)	7309,5	0,244
Sharing photos	3,18(1,16)	3,01(1,14)	7211,0	0,207
Sharing videos	3,17(1,10)	2,89(1,13)	6798,5	0,046*
Sharing music	3,11(1,10)	3,20(1,15)	7522,0	0,478
Sharing status updates	2,93(1,18)	2,84(1,13)	7546,5	0,510
Sharing ideas	3,78(1,04)	3,62(0,99)	7059,0	0,107
Determining shopping prefer-ences	2,70(1,30)	2,67(1,22)	7787,0	0,817
Finding solutions to problems	3,31(1,30)	2,93(1,16)	6434,0	0,008*
Self-expression	2,92(1,21)	2,88(1,16)	7745,0	0,759
Access to information	4,15(1,01)	4,10(0,89)	7372,0	0,304
Contribution to self-development	3,71(1,08)	3,66(1,08)	7710,5	0,705
Following individuals and organi-zations	3,74(0,96)	3,50(1,08)	6988,0	0,079

*Notes. *p<.05.*

As seen in Table 8, among the purposes of using social media, sharing videos and finding solutions to daily problems show a significant difference according to blog ownership. Based on average scores, it is seen that the significant difference between these two purposes is in favor of students who have blogs. No difference was found among other purposes.

The following table compares the purposes of using social media with respect to the purposes of using the Internet. Here, among the purposes of the students in using the Internet, three variables with the highest frequency were chosen and comparison was performed accordingly.

Table 10

Comparison of the Purposes in Using Social Media with Respect to the Purpose of Using the Internet

	Research (n=136) M(SD)	Social media (n=45) M(SD)	Communication (n=32) M(SD)	Other (game..) (n=42) M(SD)	χ^2	p
Making new friends	1,99(1,07)	2,02(0,94)	2,28(1,22)	2,24(1,32)	1,83	0,609
Communication	4,02(0,95)	4,40(0,54)	4,06(0,75)	3,86(1,12)	7,33	0,062
Sharing academic information	4,12(0,80)	4,02(0,78)	3,93(0,91)	3,57(1,13)	10,23	0,017*
Sharing photos	2,99(1,18)	3,49(0,89)	3,19(0,99)	2,86(1,28)	7,51	0,057
Sharing videos	2,93(1,14)	3,35(0,93)	3,03(1,06)	2,86(1,28)	5,69	0,127
Sharing music	3,02(1,16)	3,60(0,91)	3,44(0,95)	2,95(1,23)	11,13	0,011*
Sharing status updates	2,71(1,18)	3,35(0,93)	2,88(1,04)	2,93(1,24)	11,01	0,012*
Sharing ideas	3,71(1,05)	3,91(0,82)	3,62(0,98)	3,45(1,06)	4,45	0,217
Determining shopping preferences	2,47(1,19)	3,04(1,29)	3,12(1,24)	2,64(1,28)	11,94	0,008*
Finding solutions to problems	3,11(1,30)	3,20(1,12)	3,19(0,99)	2,86(1,28)	1,96	0,580
Self-expression	2,83(1,16)	3,15(1,22)	3,03(1,09)	2,76(1,26)	3,58	0,311
Access to information	4,26(0,87)	4,13(0,66)	4,09(0,93)	3,71(1,29)	8,58	0,035*
Contribution to self-development	3,72(1,13)	3,71(0,89)	3,72(0,86)	3,50(1,27)	1,34	0,720
Following individuals and organizations	3,52(1,05)	3,73(0,91)	3,75(1,04)	3,59(1,15)	2,82	0,420

Notes. *p<.05.

Table 9 shows that using the Internet with the purposes of sharing academic information, sharing music, determining shopping preferences and accessing information shows a significant difference according to the purpose of using the Internet. As seen in average scores, those who use the Internet to share academic information and access knowledge have a purpose of research with high scores, while those who use the Internet to share music and status updates have a purpose of social media with high scores, and those who use social media to determine shopping preferences have a purpose of communication with mediocre scores.

Table 11

Comparison of the Purposes in Using Social Media with Respect to the Frequently Used Social Media Tools

	Facebook (n=154) M(SD)	Youtube (n=29) M(SD)	Twitter (n=25) M(SD)	The others (n=47) M(SD)	χ^2	p
Making new friends	2,18(1,12)	2,07(1,19)	2,00(1,04)	1,79(1,10)	6,14	0,105
Communication	4,25(0,69)	3,44(1,12)	4,40(0,50)	3,68(1,23)	25,30	0,000*
Sharing academic information	4,00(0,84)	3,79(0,90)	3,96(0,93)	4,08(1,01)	3,51	0,320
Sharing photos	3,31(1,01)	2,62(1,18)	3,24(1,20)	2,53(1,25)	20,85	0,000*
Sharing videos	3,18(1,04)	2,69(1,14)	3,20(1,12)	2,53(1,23)	13,86	0,003*
Sharing music	3,35(1,03)	2,83(1,10)	3,40(1,12)	2,64(1,29)	15,99	0,001*
Sharing status updates	3,02(1,12)	2,59(1,01)	3,48(0,96)	2,29(1,39)	23,84	0,000*
Sharing ideas	3,71(0,95)	3,14(1,33)	4,08(0,64)	3,77(1,16)	9,85	0,020*
Determining shopping preferences	2,77(1,19)	2,59(1,24)	2,96(1,31)	2,29(1,39)	6,86	0,077
Finding solutions to problems	3,09(1,19)	2,89(1,23)	3,28(1,17)	3,10(1,39)	1,19	0,755
Self-expression	2,97(1,12)	2,62(1,35)	3,60(1,00)	2,49(1,21)	17,55	0,001*
Access to information	4,13(0,93)	3,93(1,07)	4,36(0,56)	4,13(1,07)	1,92	0,589
Contribution to self-development	3,65(1,04)	3,76(0,99)	3,88(0,93)	3,61(1,33)	0,81	0,847
Following individuals and organizations	3,68(0,92)	3,21(1,18)	4,16(0,75)	3,28(1,28)	15,57	0,001*

*Notes. *p<.05.*

As seen in Table 10; among the purposes of students in using social media; communicating, sharing photos, sharing videos, sharing music, sharing status updates, sharing ideas, self-expression and following individuals & organizations show a significant difference with respect to the most frequently used social media tool. Considering average scores, the significant difference found in all four usage purposes is in favor of students who use twitter and Facebook as the social media tool. Youtube and other social media sites have lower scores compared to Twitter and Facebook.

The views of the science teacher candidates on using social media in education

Below are the findings of the interviews aimed at answering the third sub-problem.

Table 12

The Results of Pre-service Science Teachers' Views on Using Social Media in Education

Open-ended questions	Quotations from Students	Themes	n
Do you use, or want to use social media for educational purposes?	*The teachers may not really use it but we use social media to share assignments, possible exam questions, teachers' announcements etc. on Facebook among friend* (PST4.2).	Social media is used in education	3
	No. I think it must be used because we use it for different things already (PST2).	Social media is wanted to use in education	2
How can social media be used for educational purposes? Explain with an example.	*Assignments can be given on Facebook. Discussions on specific topics or announcements can be made on Facebook* (PST3). *Important scientists can create their own pages and share their studies. They can start discussions with these posts and get ideas from lots of people* (PST4.1).	Social media is used for discussing scientific topics or assignments	3
	It is hard for students to follow announcements on the pinboard. This is where Facebook comes in handy (PST4.2).	Social media is used for following announcements	1
Do you think that education through social media will be useful? If yes, what do you think it will contribute to?	*Yes. Communication with teachers will increase. It will be hard to say 'we didn't know that' in the lessons* (PST1). *It enables improved relationships among friends and gives us the ability to ask anything to instantly our teachers, saving us time* (PST3).	Social Media is useful for communication between teachers and students as well as students	3
	I can follow social organizations related to education. I get notified of planned seminars (PST4.2).	Social Media is useful for following some educational or scientific organizations.	2
What could be the positive and negative aspects of using social media?	*Acquiring knowledge, communicating and using technology are the positive aspects* (PST3). *It helps you see lots of ideas on a topic you are interested from several lecturers on the same window* (PST4.2).	Social media can be used positively	5
	The negative aspect is that not everyone has access to the Internet all the time (PST1). *As for the negative aspects, anyone can share anything which would cause disorganized and possibly erroneous knowledge* (PST4.1).	Social media can be used negatively	4
What are the effects of social media in your university life?	*I made friends and acquired knowledge* (PST3).	Through social media is obtained many friends.	2
	I think it is useful for my university education (PST2).	Social media is useful in university life.	2
	I generally use social media in order to be aware of culture & art activities (PST4.1).	Cultural activities are monitored through social media.	1

Notes. PST1= Preservice Science Teacher is in 1st grade, PST2= Preservice Science Teacher is in 2nd grade, PST3= Preservice Science Teacher is in 3rd grade, PST4.1= First Preservice Science Teacher is in 4th grade, PST4.2= Second Preservice Science Teacher is in 4th grade.

It is clear from their answers science teacher students want to use social media in education. one of their lessons. 4th grade students said that they use social media among themselves for educational purposes. The students' answers suggest that they have a positive opinion about the use of social media in education. Social media can be used by students to carry out a discussion on a topic, to share ideas about education and to follow the latest announcements.

All the students attending the survey stated that education on social media will be useful. Students express the benefits especially in the context of developing communication skills, acquiring knowledge, eliminating erroneous notioning, benefiting from the experiences of other people and following social activities. Science teaching students express the positive aspects of the using social media on education as acquiring knowledge, communicating and using technology, while they state that wasting time is a negative aspect. Also they state that social media is useful for their undergraduate studies, expressing that attending the social activities is beneficial for making friends and acquiring knowledge.

Conclusion and Discussion

The purposes of the students in using social media vary according to their demographic characteristics. Male students mostly use social media with the purpose of making new friends, while female students mostly use it with the purposes of sharing academic information, accessing information and contributing to personal development. Science teaching department 3rd grade students use social media more frequently with the purposes of communication, sharing videos and finding solutions to daily problems compared to students from the other grades. The students with higher levels of income mostly use social media with the purposes of sharing status updates and self-expression compared to the students with lower levels of income.

The purposes of students in using social media also vary according to the variables related to Internet usage. The students who access Internet everyday use social media more frequently with the purposes of communication, sharing videos, photos and music, sharing status updates, self-expression and following individuals and organizations compared to the students who can't access the Internet everyday. The students using the Internet for more than 3 hours use social media more frequently with the purposes of communication, sharing photos and videos compared to the students using the Internet less than for 3 hours. Berigel, Kokoç and Karal (2012) also found that pre-service teachers spent a considerable time on Social Networking Sites especially communication and entertainment activities over total internet usage. It is found that the students who have blogs use social media more frequently for the purposes of sharing videos and finding solutions to the problems compared to the students that do not have blogs. The students accessing the Internet for research pur-

poses use social media most frequently for sharing academic information and accessing information; the students accessing the Internet with social media purposes use social media most frequently for sharing music and status updates; and the students accessing the Internet with the purpose of communication use social media most frequently for determining shopping preferences. Taking the last variable related to Internet usage, the most frequently used social media type, into account; it is also found that the purposes of using social media vary. Accordingly, it is found that the students using social media with the purposes of communication, sharing photos, videos and music, sharing status updates and sharing the ideas prefer Twitter and Facebook more frequently. While, the students using social media with the purposes of accessing information and following individuals and organizations prefer Twitter more frequently.

It is found that science teaching students generally have a positive attitude towards the use of social media in education. The use of social media has increased rapidly all over the world in recent years, and it became an important mass media tool (Hazar, 2011; Experian Hitwise, 2012). Considering the benefits this effective communication tool offers for use in education (Bernard 2010; Pollara and Zhu 2011; Goldfarb, Pregibon, Shrem and Zyko 2011; Moumenine 2012), the positive attitudes of students set an important step towards the use of social media in education.

At the same time, getting the students' views about these practices can provide their teachers feedback very quickly and then teachers can shape their lessons accordingly. Thus, it would become possible to extend the borders of in-class education and create continuity in education with different information and settings that is not bound to class environment. In this context, this research shows that activities on social media would be possible in the future by showing the students' level of social media usage as well as their attitude towards an education through social media.

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Fen Bilgisi Öğretmen Adaylarının Sosyal Medyayı Kullanım Amaçlarının İncelenmesi

Atıf:

Özet

Problem Durumu: Son yıllarda internetin hızla sosyal hayatın önemli bir parçası haline gelmesiyle birlikte kitle iletişim araçlarına alternatif bir iletişim ortamı oluşmuştur. Kitle iletişim araçlarının özelliklerini bünyesinde toplayan internet, kullanıcılarının sosyal hayata bakış açılarında ve sosyalleşme tercihlerinde de değişiklikler meydana getirmiştir. Bu değişimde önemli bir yeri olan sosyal medya ortam ve araçlarının kullanımı da her geçen gün daha da yaygınlaşmaktadır.

Sosyal medya eğitimin hemen hemen her seviyesindeki öğrencilerin günlük hayatlarında sıklıkla kullandıkları bir araçtır. Öğrencilerin zamanlarının çoğunu geçirdikleri sosyal medyayı, eğitim için de etkili bir araç olarak kullanmak literatürde de belirtildiği gibi önemlidir. Sosyal medyanın eğitimde kullanılması için nelerden etkilendiğinin bilinmesi gerekmektedir. Aynı zamanda eğitimin hangi seviyesinde uygulanacaksa bu seviyedeki öğrencilerin sosyal medyaya karşı görüşlerinin belirlenmesi de önem arz etmektedir. Bu çalışmada eğitimin lisans seviyesinde bulunan fen bilgisi öğretmen adaylarının görüşleri alınmıştır.Bu çalışmanın problem cümlesini "Fen bilgisi öğretmenliği öğrencilerinin sosyal medyayı kullanım amaçlarını etkileyen değişkenler nelerdir?" sorusu oluşturmaktadır.

Araştırmanın Amacı: Bu araştırma, fen bilgisi öğretmenliği öğrencilerinin sosyal medyayı kullanım amaçlarının demografik özelliklere ve internet kullanımıyla ilgili değişkenlere göre değişip değişmediğini tespit etme ve öğrencilerin sosyal medyanın eğitimde kullanımıyla ilgili görüşlerini belirleme amacıyla yapılmıştır.

Araştırmanın Yöntemi: Çalışmada tarama modeli kullanılmıştır. Fen bilgisi öğretmenliği anabilim dalında öğrenim gören 1, 2, 3 ve 4. sınıf öğrencileri çalışmanın örneklem grubunu oluşturmaktadır. Çalışmada veriler Bostancı (2010) tarafından geliştirilen Sosyal Medya Kullanım Anketi (SMKA)" anketi ile toplanmıştır. Verilerin değerlendirilmesinde SPSS 17.00 programı kullanılmıştır. Sosyal medyanın eğitimde kullanımıyla ilgili öğrenci görüşlerinin elde edilmesinde ise araştırmacı tarafından hazırlanan ve geçerliği iki uzman tarafından yapılan beş açık uçlu soru kullanılmıştır. Açık uçlu sorular betimsel analiz ile çözümlenmiştir.

Araştırmanın Bulguları: Çalışmada Fen bilgisi öğretmen adaylarının sosyal medyayı kullanım amaçlarından yeni arkadaş edinme, akademik bilgi paylaşımı, bilgiye erişme ve kişisel gelişime katkı amacıyla kullanımının cinsiyete göre; iletişim kurma, video paylaşımı ve problemlere çözüm bulma amacıyla kullanımının sınıf düzeyine göre; anlık durum paylaşımı ve kendini ifade etmek amacıyla kullanımının ise aile gelirine göre değiştiği tespit edilmiştir.

Bununla birlikte öğrencilerin internet kullanımlarıyla ilgili değişkenlere göre sosyal medyayı kullanım amaçları değişmektedir: Her gün internete giren öğrenciler daha az sıklıkla internete giren öğrencilere göre sosyal medyayı iletişim kurma, fotoğraf paylaşımı, video paylaşımı, müzik paylaşımı, anlık durum paylaşımı, kendini ifade etme ve kişi ve organizasyonları takip amaçlarıyla daha fazla kullanmaktadırlar. İnternette üç saatten fazla kalan öğrenciler daha az kalan öğrencilere göre sosyal medyayı iletişim kurma, fotoğraf ve video paylaşımı amaçlarıyla daha fazla kullanmaktadırlar. Blog sahibi olanların olmayanlara göre sosyal medyayı video paylaşımı ve problemlere çözüm bulma amacıyla daha fazla kullandıkları tespit edilmiştir. İnternete araştırma amacıyla giren öğrenciler sosyal medyayı daha çok akademik bilgi paylaşımı ve bilgiye erişme amaçlarıyla, sosyal medya için internete giren öğrenciler ise sosyal medyayı müzik paylaşımı ve anlık durum paylaşımı amaçlarıyla, iletişim için internete giren öğrenciler ise sosyal medyayı alışveriş tercihlerini belirlemek amacıyla kullanmaktadırlar. İnternetle ilgili son değişken olan en sık kullanılan sosyal medya türüne göre ise sosyal medyanın kullanım amaçlarının da farklılık gösterdiği tespit edilmiştir. Buna göre sosyal medyayı iletişim kurma, fotoğraf paylaşımı, video paylaşımı, müzik paylaşımı, anlık durum paylaşımı ve fikir paylaşımı amaçlarıyla kullanan öğrencilerin sosyal medya türlerinden daha çok twitter ve facebook'u tercih ettikleri tespit edilmiştir. Sosyal medyayı bilgiye erişme ve kişi ve organizasyonları takip için kullanan öğrenciler ise twitter'ı tercih etmişlerdir.

Ayrıca fen bilgisi öğretmenliği öğrencileri sosyal medyanın eğitimde kullanımıyla ilgili olumlu görüşler belirtmişlerdir.

Araştırmanın Sonuçları ve Önerileri: Bu çalışmada fen bilgisi öğretmenliği öğrencilerinin sosyal medyayı kullanım amaçlarının demografik özelliklerine ve internet kullanımıyla ilgili değişkenlere göre değiştiği tespit edilmiştir. Bununla birlikte eğitimde

sosyal medyanın kullanımıyla ilgili öğrenci görüşlerinde fen bilgisi öğretmenliği öğrencilerinin genelde olumlu bir görüş içinde oldukları bulunmuştur. Sosyal medya kullanımı son yıllarda dünyada hızlı bir şekilde artmış ve sosyal medya önemli bir kitle iletişim aracı haline gelmiştir (Hazar 2011; Experian Hitwise, 2012). Bu etkili iletişim aracının eğitimde kullanımına yönelik faydalar (Bernard 2010; Pollara ve Zhu 2011; Goldfarb, Pregibon, Shrem ve Zyko 2011; Moumenine 2012) göz önüne alındığında öğrencilerin olumlu bakış açılarının eğitimde sosyal medyanın kullanımına yönelik önemli bir adım olduğu düşünülmektedir.

Sosyal medya üzerinden bilimsel tartışmaların ve fikir paylaşımının yapılabileceği bir eğitim ortamı hazırlanarak fen eğitimi ile ilgili hem ödev niteliğinde keyifli etkinlikler yapılabilecekken hem de sınıf ortamında uygulaması ve izlemesi zaman alıcı bir çok görsel video gibi araçlar ile dersi tamamlayıcı uygulamalar yapılabilir. Örneğin, hücre konusu derste işlendikten sonra bu konuyla ilgili hücreyi oluşturan yapılarla (organeller, hücre zarı gibi) ilgili video facebook üzerinden grupla paylaşılır ve sonrasında öğrencilerin kendi aralarında tartışmaları istenebilir ve yer yer öğretmen de yorumlarla katkıda bulunabilir. Twitter üzerinden yapılacak bir paylaşımla ise öğretmenin takipçileri bir deneyin oluşum aşamalarını tek tek verebilir, yeni bir deney tasarımına herkes katkıda bulunma fırsatı bulabilir.

Anahtar kelimeler: Sosyal medya, Eğitim, Fen Bilgisi Öğretmen Adayları, Fen eğitimi.