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Chapter 2

Facebook Tools and Digital Learning Achievements

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Additional information is available at the end of the chapter

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Abstract

During recent years, there has been a significant increase in the usage of technological tools in general and in academic teaching in particular. Many programs have been developed, including online teaching and online courses, at educational institutions. In this chapter, we discuss the Facebook social network and its use at the University. The research shows that Facebook groups are used to facilitate communication between students, to foster a positive social climate, to create dialog, and to share learning material among group members. This chapter examines students' achievements and their satisfaction with the impact of the Facebook group on the academic course, in order to examine whether the use of Facebook groups in academic courses can improve course quality and students' achievements.

Keywords: Facebook, information resources, online courses, higher education, structural analysis, digital learning

1. Introduction

It is evident that there is a new generation of students known as members of the "digital and network generation," who are surrounded by information and communication technologies that include Internet, smartphones, and mass media. Course Facebook groups are used to facilitate communications among students to foster a positive social climate in the classroom, to create dialog, to engage students, and to serve as a learning tool. This chapter examines the level of achievements of students and their satisfaction as part of an educational Facebook group.

The changes created by the technological age have had a great impact on universities. Many students now come to class equipped with laptops that offer great access to the Internet at any time, including during lectures. These mobile devices support students' active learning

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and serve as substitutes for traditional classmates, creating a personal learning environment in the classroom and outside. The use of laptops allows students to be connected to learning resources even when they are not at the university, creating a learning continuum independent of time or place. In other words, even at home, students can continue learning continuously. The contribution of online instruction is reflected not only in the effective learning of students but also provides faculty with a rich and knowledgeable approach to the transfer of lesson content [1, 2]. It has been shown that lecturers who refer students to real and relevant information during class produce interesting and diverse learning experiences for their students [3].

2. Problem statement

The use of technological tools during class has positive effects, both on the quality of learning and on students' motivation for learning. However, despite many advantages that technological tools produce, there are also negative effects on students, such as distraction caused by surfing websites that are not related to the lesson, checking and sending e-mail, social networking, and playing attractive games [4, 5].

3. Facebook

Facebook was created in February 2004 by Mark Zuckerberg at Harvard University. The network was initially limited to students and later became a global phenomenon, accessible by anyone with an e-mail address. Facebook has become one of the seven most popular sites in the United States, with users around the world [6].

Facebook is also one of the most popular social networks in in Israel. According to a ComScore survey, penetration of Facebook among Internet users aged 15 and over is 89.8%. This is the second highest penetration rate in the world, after the Philippines. Israel is leading in duration of use, reaching about 10.5 h a month per user (Comscore.com).

4. Facebook and its applications at Ariel University

With the emergence of Facebook groups that do not require members to be "friends" or expose their lives to one another, the option of creating a "study group" with students and lecturers is on the rise, and the effects of using Facebook groups as an alternative learning management system (LMS) has become increasingly relevant.

Any Facebook user can set up a Facebook group. After the group is established, the group founder can invite other Facebook users to register for the group. Groups can choose to restrict membership to specific individuals or open the group for access by anyone. Unlike other Facebook activity, a closed learning group does not appear in any user's activity records and is published only among the members of the group [3].

The main uses of Facebook learning groups include posing questions about homework, test material, exams, and assignments, and sharing summaries uploaded by students [7].

As a tool of learning, Facebook has also reached universities. The ability of higher education to utilize social media to advance professional development, to expand institutional development, and to increase students' success is no less than revolutionary. A few decades ago, most students came from society's elite classes, but today, the student population has changed and students come from all levels of the population, increasing cultural diversity among students, with all the implications. In addition, today's students are digital natives: they have grown up into a reality with sophisticated technology, availability, and intensive use of mobile and social media. Despite the development of technology and the fact that every student now has a mobile device and a laptop, teaching methods in most academic courses have retained a traditional form. The students' learning environment must be updated to include classroom teaching and home tasks that utilize the capabilities of mobile media and social media [8].

Motivation refers to the process in which goal-oriented activities are energetic, directed, and sustained. A student's motivation was found to be a major factor in learning achievements. Other studies have explored basic questions such as how and why some students succeed in the learning process, while other students struggle to develop knowledge and cognitive resources necessary for academic success. Therefore, in designing a new learning environment that makes use of new technologies, the role of motivation must be taken into account. Researchers and educators have focused on new design projects, curriculum reforms, and innovative technological tools to raise motivation [9].

5. The learning process model

The penetration of social networks into everyday life has attracted the interest of many organizations and researchers to explore the influence of social networks on teaching and learning and has triggered efforts to use social networks for teaching and learning purposes. According to a learning process model developed by Biggs and Moore [10], the learning process contains four key components that influence learning outputs:

1. A well-structured knowledge base: The quality of the knowledge base is assessed by three characteristics: the quantity of knowledge, the quality of the organization of knowledge, and the accessibility of the knowledge. Anything that helps the student know more, organize the material in their minds or increases its accessibility, will improve the quality of students' knowledge base.
2. Motivational context: Certain conditions encourage students' intrinsic motivation. Two key conditions are clear goals and instructions, and a warm, positive climate that the teacher creates.
3. Interactions: Learning comprises three main interactions: teacher-student, student-student, and content-student, with an emphasis on the essential role of the teacher-student interaction in the teaching process.

4. Active learning.

Another model of interaction analysis was suggested by Hodges [11], who distinguished between four types of interactions: social, cognitive, procedural, and explanatory.

- Social interaction refers to a dialog of a friend-like nature: the teacher encourages students to express feelings. Oren [12] found that in these forums, almost no interaction is created.
- Cognitive interaction entails investigation into the depth of a topic, linking it to other subjects, raising questions, critiquing and analyzing it. Doron [13] found this kind of interaction in social network forums: the more involved the student, the more active and the more applied to his learning.

In general, Biggs and Moore's message to the teacher is: Do not do it, let the students do it. Based on this model, the following five research questions were formulated:

1. Do Facebook groups enhance students' knowledge base?
2. Do Facebook groups increase students' motivation for learning and their active participation in the learning process?
3. Do Facebook groups encourage student-student interactions?
4. Do Facebook groups encourage social and cognitive interactions?
5. Do Facebook groups encourage active learning by students?

The results of our study show that Facebook plays a constructive role in all four components of the model, including motivation and climate. Facebook groups contribute to students' motivation for learning, especially in a situation where students and teachers have good communications. In addition, Facebook groups contribute to a positive course climate and to students' motivation for their self-development [14]. A pioneering study in which Facebook was presented to graduate students as an alternative learning management system found that students expressed satisfaction with the Facebook-based learning method and a desire to use similar study groups in other courses as well.

Findings of a recent study offer evidence of students' positive attitudes and satisfaction with their learning experience using Facebook groups. Most students agreed that the collaborative work on Facebook was interesting, informative, and effective. Positive attitudes toward learning in the Facebook environment were not, however, associated with students' academic achievements on their final test [15].

6. The impact of technological tools in Academic Institutions

Today, many students come to class with laptops that provide great accessibility to the Internet at any time. These mobile devices support students' active learning and offer a substitute for traditional study tools. With these devices, students bring with them a personal

learning environment to the classroom and outside. The contribution of online instruction is reflected not only in effective student learning but also enables the faculty to have a knowledgeable approach to the transfer of lesson content [1, 16, 5, 2]. It can be seen that lecturers who refer students to real and relevant information during the lesson produce interesting and broad learning experiences for their students [3].

Technological tools in and outside class lessons have positive effects, both on the quality of learning and on students' motivation for learning, but there are also negative effects on learners, such as distractions caused by browsing websites that are not related to the topic, and engagement in social networking [4, 5].

7. The teacher's role in digital learning

Online courses in general and the role of lecturers in online teaching, in particular, are topics of extensive research in institutions of higher education around the world [17–19]. Teaching and digital learning enable and require changes to traditional teaching methods or looking for new ways to adapt to the transition from the teacher's role in traditional learning and her role in online learning environments. E-learning is different from traditional teaching in several respects, including in the roles of facilitator and students, models of communication, interactions, and learning flexibility [20]. Researchers and educators are introducing new insights into online learning. In their opinion, to ensure that the transition to electronic courses is not merely technological, online instruction must be based on constructivist and cooperative approaches, which go beyond presenting information that is passively absorbed by students.

The usage of constructivist theories as a rationale and a fundamental principle of instruction is adapted to network technology. The goal is to ensure that students in computerized courses will not function as passive learners who receive the material from the lecturer but will become active learners who construct knowledge themselves. Students are therefore expected to seek information, create meaningful connections between different content, and build new knowledge in the field. In the opinion of these researchers and others, the teacher is the most important component in this process to ensure successful e-learning. It is not the technology itself, but the way it is implemented by the teacher that determines the effectiveness of learning.

A review of the professional literature [21] in the field reveals the following key characteristics expected of the teacher-facilitator in digital learning environments:

- Conducting a dialog that includes three features: academic interaction, interaction of cooperation, and interpersonal interaction. The mentor-facilitator's management influences these interactions.
- Active construction of knowledge, when the role of the teacher changes from the transfer of knowledge to mentor, counselor, and colleague who accompanies and directs the student, assists her, and enables her to construct knowledge. For this purpose, students need active guidance from the teacher rather than passive guidance.

- Awareness and consideration of students' individual learning needs. Students differ in their needs, learning styles, and quality preferences. Therefore, high-quality e-learning must also be directed at each student's individual needs. It is no longer possible to be satisfied with a general model for everyone, but rather the teacher must provide individualized learning services that support each student's subjective preference profile.
- Creating social learning and encouraging interaction in the course. There is an emphasis on the lecturer's need to improve communication skills with the students in order to create a community of learners. Quick responses to learners' questions increase their confidence and motivation for learning.

8. Nira Hativa's cognitive-emotional model of learning

A study based on classroom observations found that the main behaviors of effective teaching were enthusiasm, clarity of explanations, and interactions and positive relationships with students. Hativa's model of good teaching and key teaching behaviors [22] suggests that, in general, a good teacher has teaching capacity in two dimensions:

The cognitive dimension represents the teacher's skills in channeling the material to the students. This dimension consists of three types of teaching behaviors:

Organization of the course and lesson—The student is well placed in the framework of the course and the lesson, he knows at every stage of the course what lessons they have learned so far, what they are learning now, and what they will learn in the next stages. Also, lesson time is well spent on learning.

Clarity of the lesson—The teacher clearly explains the course and content of the lesson so that the students can understand and implement their understanding and perform the assignments and homework.

Interest/promotion of concentration and attention, intellectual challenge—The lesson is interesting and strengthens concentration and attention among the students. The teacher manages to keep the students engaged throughout the lesson so that they will be focused.

The emotional-affective dimension represents the teacher's skills in creating a pleasant and positive classroom atmosphere that promotes openness, promotion, and a desire for learning. This dimension comprises two types of teaching behaviors:

Respect for the students, a warm and sympathetic attitude, empathy for their difficulties in learning, caring and helping them succeed in learning.

Maintaining positive and beneficial interactions with students, such as encouraging questions and providing good, useful answers to their questions.

In such circumstances, students are satisfied with the teaching, organization, clarity, interest, and challenge of the studies, and the lecturer's approach is favorable to them. This is equally applicable in different content domains such as engineering and the humanities. To be perceived by students as an outstanding teacher, the teacher must excel in creating clarity,

organizing the lesson, and creating a positive classroom atmosphere. Outstanding teaching has a unique and personal aspect: outstanding teachers are like artists who know how to help their students grow and develop with great skill. Good teaching involves a number of factors that interact with one another and affect student learning effectively [8].

In digital teaching, we find similar principles. Students express satisfaction with two main aspects of the digital means at their disposal: the cognitive dimension, which includes organization, clarity, interest, and challenge, and the emotional dimension, which represents atmosphere, student encouragement, and positive classroom interactions. The research hypothesis is that there will be a positive correlation between achievements and satisfaction of students who participate in an educational Facebook group.

9. Method

The sample included 150 students studying at Ariel University of Samaria, between age 20 and 30, enrolled in BA programs.

9.1. Research tools

We developed an online questionnaire that examines the relationship between participation in an educational Facebook group and students' achievements and satisfactions. The questionnaire examines two main issues: the first is the effectiveness of the group and the student's achievements (cognitive) (e.g., Do collaborative Facebook groups allow students to be involved in all stages of learning in the course?). The second topic examined satisfaction and atmosphere among students (emotional aspect) (e.g., Do Facebook collaborative groups create a positive atmosphere that fosters openness among students and a desire for learning?).

9.2. Procedure

Participants were sampled on a voluntary basis and recruited throughout the Ariel University campus. Participants were informed that participation in the study was not mandatory, and they were permitted to terminate their participation at any stage of the study if they felt that their privacy was violated. Participants completed a consent form before receiving a questionnaire, confirming that they were participants of their own free will. The questionnaire was distributed throughout the university at convenient times for participants. A series of demographic questions was followed by a questionnaire on satisfaction with the emotional and cognitive aspects of their Facebook groups.

10. Analysis

Dependent variable: level of achievement and satisfaction.

Independent variable: participation in an educational Facebook group.

Based on the data transferred to the statistical analysis, descriptive statistics were presented. Various analyses were conducted on the variables: Facebook group use for learning purposes, level of achievements, and level of satisfaction. To rule out alternative explanations, gender differences, differences between academic years, and other differences were also examined.

11. Findings

To test the hypothesis regarding a positive correlation between the level of achievement of Facebook group members and their satisfaction, a Pearson test was conducted. A strong positive correlation was found ($rp = 0.863$, $p < .01$), indicating that students who were more satisfied with the Facebook group also had higher achievements in the course and vice versa (**Tables 1** and **2**, **Figure 1**).

In conclusion, the present study examined the relationship between success and achievements of students at Ariel University, and their satisfaction with the contribution of a collaborative

Variable		N	%
Sex	Male	56	37.3
	Female	94	62.7
Family status	Single	92	61.7
	Married	51	34.2
	Divorcee	7	4.1
Religion	Secular	45	30.2
	Traditional	19	12.8
	Religious	85	57
Year of studies	A	35	23.3
	B	31	20.7
	C	50	33.3
	D	17	11.3
	Other	17	11.3

Table 1. Socio-demographic variables.

Variable	N	Range	Average	Standard deviation
Age	150	18–35	24.44	2.78
Religiosity	150	1–4	2.72	0.933
Satisfaction	150	1–4	2.72	0.937

Table 2. Descriptive statistical data of the research variables.

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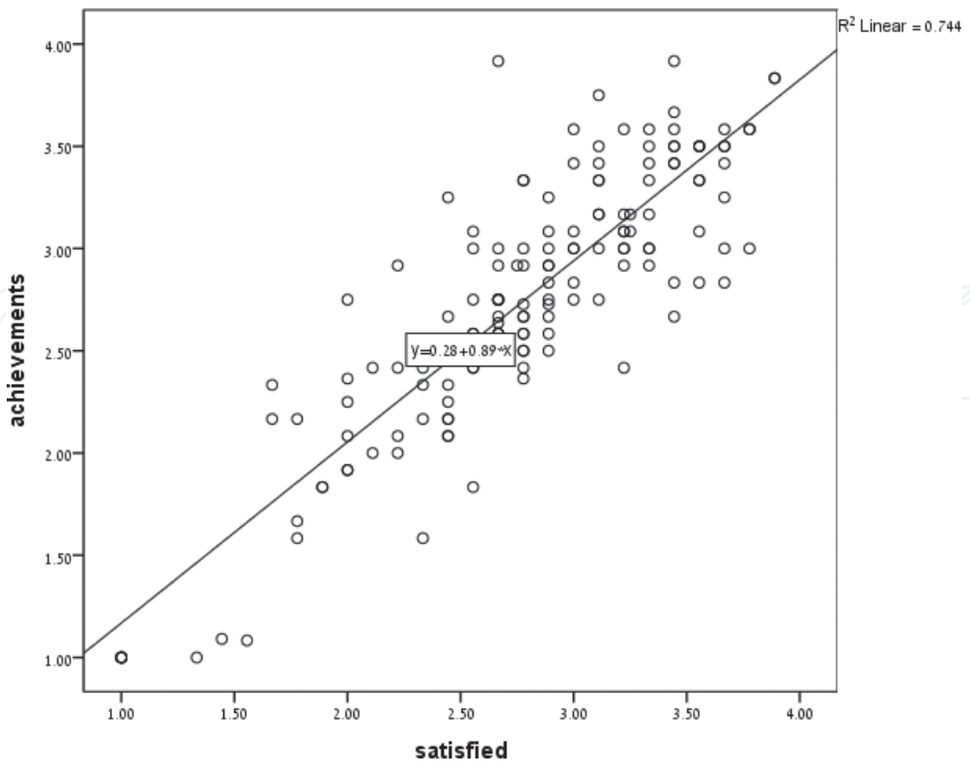


Figure 1. Pearson correlations between achievement and satisfaction among Facebook group members.

educational Facebook group. This digital process can be said to have significantly contributed to the students' success and satisfaction, and the Facebook group can certainly serve as an additional tool to supplement traditional frontal instruction. Therefore, the research's recommendation is to integrate Facebook groups into academic courses to facilitate the transition of academic material beyond academic walls, expand study hours, strengthen the connection between students, and create a comfortable learning atmosphere.

12. Conclusion

This chapter examined satisfaction among students taking part in a collaborative Facebook learning group and how collaborative Facebook groups influence students' achievements. The findings suggest that there is a strong correlation between these variables, which may help raise awareness of the potential of using the Facebook group platform for educational purposes.

13. Research contributions

The current study may help raise awareness of the potential use of Facebook groups for educational purposes. Using the Facebook groups for study purposes expands students' study hours beyond the hours of frontal study in the classroom, and takes the study material out

of the university. Moreover, the use of collaborative Facebook groups may enhance students' achievements as a result of positive interactions among group members, including mutual assistance, sharing of educational materials, and other learning-related activities. To overcome the limitations of the study, additional studies should explore this issue with an equal number of men and women.

The Facebook network has great potential that expands the hours of study beyond the frontal hours at the University, yet this advantage may be offset by the loss of a face-to-face learning experience. Does technology help the social aspects of frontal teaching? Is there any point in frontal teaching? Is this tool still relevant for our times? What is the image of the classroom or of the University today? Do lecturers make effective use of the digital platforms at their disposal? All these questions are necessary in order to identify the lecturers' role in the learning process and whether they will disappear in the future in which teaching becomes digital.

Confirming the research hypothesis, a positive correlation was found between Facebook users' level of achievement and their satisfaction. The findings of the study can be explained on the basis of Arieh and Rimor's [15] study, which reports students' positive attitudes and satisfaction with their learning experience on Facebook. Notably, participation in a Facebook group allows students to examine the material at home and bring additional knowledge beyond the hours of frontal study. Moreover, students can help each other clarify a subject or discover new knowledge, correct each other's errors, and offer comments. The contribution of the Facebook network should also be examined using additional means and variables that potentially affect its contribution to higher education.

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