Research Article

ON TECHNOLOGY AND STUDENTS READING HABITS– AND THEIR PEDAGOGICAL SIGNIFICANCE

Nitza Davidovitch*[1] and Yael Yossel-Eisenbach[2]

[1]Ariel University
[2]Israel College of Applied Science (ICA)

ARTICLE INFO	ABSTRACT
	This year (2017) Google is celebrating its 20th anniversary. Twenty years of myriad changes in the accessibility of information and the availability of reading sources in all educational systems and in higher education in particular. With an eye to these changes, the current study explores the learning and reading habits of students and factors that shape these habits: social background, high school study record, academic studies, and the influence of teachers and parents. The questionnaire was completed by 772 undergraduate students from 37 academic institutions and 14 disciplines. The research findings indicate four patterns of learning habits: online technology-assisted study patterns, patterns that combine online-technological aspects with traditional study patterns, study patterns that tend towards the traditional, and an orientation that rejects technology. The shaping of each of the learning habits was found to be significantly linked to environmental influences of parents, teachers, and lecturers. In an era of social and technological change, the experience of academic studies will be different than that known from the traditional university. We must plan and prepare in order to maintain a competitive advantage in a market that is picking up momentum from year to year. Maintaining an advantage in a technologically-based market requires much more than simply "planting" materials in a website or transferring materials from a regular learning environment to a distance learning environment. The role of lecturers was found to have a stable and independent effect on the shaping of all learning patterns. Students report lecturers' influence on shaping their learning and reading habits. In light of these findings, we recommend acting to enhance the teaching work of faculty members, with the aim of working with students on improving their reading skills in their disciplinary field, enhancing academic and critical reading (judgment and evaluation skills) as well as academic writing, strengthening students' awareness of ethical and disciplinary rules – intellectual property, quoting rules, and maintaining a balance between online teaching technologies and traditional reading. Providing accessibility to academic texts through information systems at academic institutions is an efficient way of maintaining an active learning continuity between the lecturer and the students.

INTRODUCTION

This paper is the first in a series aimed at dealing with the reading and learning patterns of students in the digital era. The purpose of this research was to examine the factors shaping these patterns and attempting to utilize the findings to inform the act of teaching and the image of faculty members in the 21st century (Davidovitch, 2016).

The concept of this study and of those to follow is based on a previous study in this field, conducted by Davidovitch, Yavich, & Druckman (2016), which showed that pen and paper should not be hastily abandoned and that the complexities involved in academic studies must be thoroughly grasped. Hence, the current study seeks to expand existing knowledge and to attempt to explore the issue with a view to a wide sample of students from varied disciplines and academic institution. The assumption underlying the generalization of these variables is that with the expansion of higher education and the entrance of new and diverse populations to the system, the expectations made of the faculty may change and different learning patterns may have to be devised.

The syllabus – the learning contract between lecturer and students

One of the purposes of academic studies is to train students to critically read scientific texts while raising questions and attempting to find answers in the research. Students are normally exposed to the discipline and to its main issues at the beginning of their academic studies by the lecturer, as reflected in the syllabus. When further progressing in the hierarchy of studies, students are expected to display intellectual inquisitiveness and to be capable of discovering recent research in their field of interest.

Hence, in undergraduate studies, the syllabus is primarily a contract between the teacher and students, reflecting the teacher's expectations with regard to the academic studies – the syllabus includes the course program, assignments to be completed by the student, expectations concerning attendance of class, participation, and student evaluation. The syllabus is usually written by the course lecturer. Although the syllabus is posted before the course begins the lecturer often devotes part of the first class to explaining the syllabus and coordinating expectations as to the course, its goals, expected learning

Corresponding author: **Nitza Davidovitch**
Ariel University

outcomes, and reading requirements – mandatory and elective (CHE website).The challenge encountered by academic faculty members is to train students who have a critical thinking ability to stimulate and develop their curiosity with the purpose of raising the next generation of researchers. This task involves several skills that the lecturer must impart to the students, including exposing them to the philosophy of the science, its various traditions and directions, instilling the principles of scientific thought and language, and customary techniques of carrying out academic research. Based on these philosophical principles faculty members impart to students a set of research tools that facilitate the various empirical analyses that arise from the research field, such as research methods, statistics, computer usages, academic reading and writing.

Academic reading habits – significance and goals

One of the fundamentals for instilling basic development of academic research abilities among the next generation involves knowledge of the research field and of the existing knowledge in a certain discipline. The required in-depth knowledge is associated with academic reading skills, while developing critical thinking and raising questions regarding findings and conclusions. Therefore, instilling this type of reading habits in students has several goals. The first, as stated, is that reading is the basis for new research and therefore, in order to expand knowledge in the discipline it is first and foremost necessary to become familiar with the academic knowledge base in this discipline and with the innovations in the front line of research. Such familiarity facilitates the development of academic imagination, inquisitiveness, and desire to contribute and to add to missing knowledge. Moreover, familiarity with major theories in the discipline enables the student to structure knowledge in the discipline and to become familiar with theoretical concepts. Understanding the theoretical foundations, helps promote research innovation by focusing the research questions that the student will wish to explore, where theory will help with interpretation of the findings and with attempts to predict phenomena. Furthermore, academic reading helps structure one's manner of thinking – exposes the student to knowledge, to theoretical concepts that organize thinking systematically, analytically, and develops the ability to identify links between phenomena. In this way, students develop the ability to analyze complex questions regarding observed phenomena (Parlette, 2010).

In addition, the extensive knowledge accumulated in various disciplines obliges the lecturer to select reading material and knowledge, choices that involve forgoing knowledge. Moreover, the lecturer normally cannot present all the research knowledge chosen in class. Thus, developing reading abilities is all the more important. It enables the student to study the field more thoroughly and to select the knowledge that arouses his curiosity, beyond the teacher's choice, and maybe even challenge this choice as well as filling in the missing knowledge not presented in class. Accordingly, reading is a major and inseparable part of academic studies. It is the basis for good academic training and is thus necessary and obligatory, including primarily reading in English. This is because the front line of research knowledge is in English. For this purpose, it is necessary to make English accessible to students and to find ways of imparting learning habits and reading skills to students. Thus, the question is: what are the characteristics of reading habits and skills.

Factors that affect the shaping of reading habits

Reading habits appear to have different definitions in the literature review. For example, reading habits are how one organizes reading and they are acquired from a young age, in pre-school and elementary school. This is a gradual process of learning letters, words, sentences, paragraphs, chapters, culminating with a full text (Parlette, 2010). In order for reading to be assimilated and become habitual, it must be encouraged. In fact, reading accompanies the child throughout life, in the understanding that reading is a tool for development of the personality, shaping of imagination, and fulfills an essential role that lets one achieve command of language and function within society (Knoester, 2010).

A study that examined the reading habits of freshmen found that encouragement by parents and teachers is an important part of assimilating and encouraging reading (Parlette, 2010). According to (Parlette, 2010)the customary measures for examining one's reading habits are reading frequency, reading quantity, and reading content.

In fact, the individual's reading habits are acquired at a young age, related to one's social background, and have implications for academic learning at later stages. Researchers have found an association between the reading habits of students and demographic variables, academic performance, and professional growth (Owusu-Acheaw, 2014). Also found was that reading efficacy is not correlated with reading quantity. Researchers found that students with higher reading efficacy do not read more than students with a lower level of reading efficacy (Parlette, 2010). According to Parlette (2010), reading for pleasure is an important part of developing one's sense of self and can fulfill a considerable need for pleasure and calm among students in the transition from high school to university and to adulthood. Furthermore, high reading efficacy was found to increase with more positive feelings toward reading ability (Owusu-Acheaw, 2014). It may be said that students who do not read willingly may be exposed to a negative impact on their academic performance.

The conclusions of a study conducted in Bangladesh (Akanda, Hoq & Hasan, 2013) show that reading is associated with learning while learning leads to mental, professional, and overall human development. Annamalai and Muniandy (2013), who described the reading habits and reading approach of a group of students in a Technion in Malaysia, found that the students did not enjoy reading study material, claimed that it is difficult and causes reading anxiety, and thought that the reading was boring and does not motivate learning. Studies found that positive attitudes toward reading arouse positive reading experiences. These positive attitudes are acquired through the support and encouragement of motivational factors over the years, which create the possibility of encouraging higher academic performance (Annamalai & Muniandy, 2013). Even students who are not fans of reading, however, find the necessary motivation to prepare for exams and to read all the required material (Akanda, Hoq & Hasan, 2013). The reading skills of students with high grades were found to produce better feelings about their reading ability that among readers with lower grades (Sheorey & Mokhtari, 1994).

Considering the considerable significance of reading habits among students and the need to try and develop ways of helping students improve their reading habits, it is necessary to examine and understand students' reading barriers.

Barriers to assimilating reading habits

Almog and Almog (2016) have written extensively about the reading and learning habits of Israeli students. The research indicates that the time component is a barrier. In order for students to successfully pass the various courses they must invest at least three hours a week in each course, but students were found to invest less. Reading is perceived as a luxury. Short messages prevail ("too long; didn't read"). There is no time to read and the book is too slow (Sheorey & Mokhtari, 1994). Another barrier is related to lack of proficiency in organizing texts – little academic reading affects students' ability to achieve meaningful learning, which might lead to a lack of self-realization and a lack of professionalism in the studied discipline (Pundak, Hershkowitz & Shacham, 2010). There is a lack of designated writing courses, students use shadow writers. Students find it hard to analyze a text and to deal with written comprehension. They are unable to formulate texts and the academic faculty have reduced their writing requirements ("please circle"). A lack of proficiency in time management when entering the academic setting, together with the many demands as a result of multiple courses, mean that they have difficulty dividing their time between the various academic assignments. Students have been found (Parlette, 2010) to read first and foremost for utilitarian reasons. Students spend more time fulfilling academic requirements than with non-academic reading material. Namely, when they read – they do so mainly to pass their exams (Owusu-Acheaw, 2014).

The technological changes and increasing access to information through varied technological means raise questions as to the role of the textbook as a major learning tool. At present, students are offered a wide variety of learning channels and most courses are accompanied by the required course materials available on the school's website, which include articles, presentations, videos, sample tests, and more. The computer has replaced the book – students live their entire life on the computer. Online sources are the main learning sources – and do not always include judgment of the material's standards (Yaakov & Shor, 2010).

Pundak, Hershkowitz and Shacham (2010), who examined the characteristics of reading, indicate that students in basic science courses at college and university engage in little reading of textbooks in preparation for lectures. Students find it hard to maneuver between all their academic duties. The study found that most students are not interested in textbooks to better understand the theory underlying their studies; rather these are utilized to help solve exercises and problems.

It appears that the lack of a reading experience among students is detrimental to assimilation of reading(Owusu-Acheaw, 2014). Studies show that most students do not like to read for pleasure, they prefer to do other things such as watch television, surf the web, and more (Sheorey & Mokhtari, 1994;Annamalai & Muniandy, 2014). Akanda, Hoq & Hasan (2013) showed that students prefer to watch television, play games on the computer, Tablet, and X-box, surf the web and social networks, than read. The change is significant and is affecting an entire generation, who find most their entertainment on the screen (Almog & Almog, 2016).

Furthermore, the lack of a reading culture is also a barrier to internalizing reading habits. A study in Pakistan (Dilshad, Adnan & Akram, 2013) found that female students have a more positive attitude to reading than male students. Moreover, female students read more than male students because they enjoy reading and improve their knowledge. As for the reading culture, it may be said that when there is a reading culture at home there is a higher chance that when growing up a child will not abandon reading. The home must be part of the modeling of reading, therefore when parents read themselves and encourage their children to develop the habit of reading from infancy; reading will be an inseparable part of their life(Owusu-Acheaw, 2014).

Modes of reading – reading from a screen versus reading from paper

With the entrance of laptops and electronic sources of information to academia, and the accessibility of technology and its use by students, it was only reasonable to expect that students would prefer reading from a screen to paper. This does not seem to be true and researchers have found a preference for reading from printed material (Vandenhoek, 2013). Another study found that students reported the main problem with reading as lack of time to read (Leff & Harper, 2006). In light of these findings, students may prefer to read easily available rapid information over lengthy searches for academic texts in a library (Davidovitch, Yavich & Druckman, 2016). There have been attempts to uncover the root of the difference between learning from a screen and learning from a printed text. The technological differences themselves are not the answer; rather the learning process operated by the reader is the main difference. Indeed, achievements on exams were found to be lower following reading from a screen than following reading from paper. It appears that the media does not affect the actual learning; rather what counts is the management efficacy of the learning process (Ackerman, 2012).

Palani (2012) presents a concern that technology will take control of our life and a concern of its effect on reading habits. The claim is that losing interest in reading is associated with the wide range of programs offered by the mass media. A study conducted at the Ataturk University (Akarsu & Daryemez, 2014) found that students developed reading habits that mainly involved magazines, news, fashion, and sales, and that the internet was the heart of students' reading. Thus, they claim that it is necessary to maintain a balance between traditional reading that provides different knowledge and experiences than technological reading, and use of new technology. It appears (Owusu-Acheaw, 2014) that students who integrate non-academic and academic reading in their life are at an advantage; students who read magazines and leisure books learned how to be calmer.

As part of the technological developments and the growing accessibility of study texts, universities provide academic texts through their information systems. These systems are an efficient way of maintaining an active learning continuity between the lecturers and the students. It appears that students from a low socioeconomic cross-section prefer reading from a screen to printing articles. Students who used electronic books were satisfied with this method and even said that they would like more courses that utilize this new medium and that its inclusion might affect their choice of track. Moreover, they were willing to pay $200 to purchase the sample model (Simon, 2001).

Digital study materials in higher education

Use of digital books and other online materials in the system of higher education is greater than among the wide public and they

are used pervasively for teaching and research. A survey held in early 2015 at Tel Aviv University showed, among other things, that the large majority of students, over 90%, had used at least one type of electronic resource over the year preceding the study – books, databases, or electronic journals. The higher the level of studies the more students use electronic books, as do faculty members. Most students read electronic books directly from the screen, using a computer, Tablet, or smartphone (58%), while the rest print the material before reading it. Most of the respondents – 82% of students and 87% of faculty – mentioned the ability to download files to their personal device as the greatest advantage of using electronic resources, side by side with search tools, tools for working with the text, andthe possibility of printing. Sixteen percent of students and 24% of faculty stated that the reading experience from electronic books is difficult, unpleasant, uncomfortable, tiring, slow, and makes it hard to concentrate (Rosenblat-Porat & Cohen-Raz, 2015). The most advanced academic institution in Israel with regard to use of digital books in the curriculum is the Open University.

In the 2005/6 school year students also received digital versions of the printed textbooks in 200 of the 700 courses taught at the Open University. At the same time, the university has published to date three books in a format that includes both a digital and printed version, with links to online video clips through a QR code. The university is continuing to produce printed books, among other things following inspections showing that this is the study method most preferred by students.

In summary, it is evident that technology has changed the reading habits of the younger generation. Many students prefer to use their free time to watch television and surf the web than to read books. The extensive online information provides students, in addition to pleasure, also with news from around the world and accessible help in the academic field. Digital resources help students by providing access to a full content world in any subject they seek to study and in a short time. There have been attempts to understand the difference between learning from a screen and learning from a printed text. The technological differences themselves are not the answer, rather the major issue is the learning process operated by the reader. Findings indicate that the media does not affect learning per se rather the management efficacy of the learning process. Due to these changes, the current study will seek to explore the learning and reading habits of Israeli students in a variety of academic institutions and disciplines and what social and institutional factors shape these habits.

Research questions

Considering the changes that have occurred in the accessibility of information, availability of reading sources and online teaching methods following the technological developments, and also considering the expansion of Israel's system of higher education as regards the number of students, institutions and disciplines, the current study seeks to explore several research questions:

1. What are the learning habits of students in Israel's system of higher education?
2. What are the reading habits of students in Israel's system of higher education?
3. Which variables shape students' learning habits? Are students' learning habits shaped by social background features: gender, average parent education, religiosity (higher rather than low); high school study record: number of study units in English and mathematics; features of academic studies: discipline –quantitative versus non-quantitative orientation, academic institutions – university versus college, and/or the influence of teachers, parents, lecturers?
4. Which variables shape students reading habits? Are students' reading habits shaped by social background features: gender, mean parent education; religiosity (higher rather than lower);high school study record: number of study units in English and mathematics; features of academic studies: discipline –quantitative versus non-quantitative orientation, academic institutions – university versus college; and/or the influence of teachers, parents, lecturers?

METHOD

Research population

The study focused on undergraduate students during the 2016-2017 school year. The sample included a total of 772 students from 37 institutions and 14 disciplines and consisted of approximately 66% women and 34% men. The median age was 25, about 43% from the Faculty of Social Sciences and the Humanities and teaching studies, 7% from medicine and health professions and paramedical professions, 3.3% from the arts, 20.3% from business administration, economics, accounting, and law, 3.4% from the natural and exact sciences, and 23% from the computer sciences and engineering. About 19% were studying at universities, 25.4% at non-funded colleges, 54.4% at funded colleges that are not universities, and 1.3% at teacher seminars. Of all participants, 92.2% had their own laptop computer.

Data and Sample

The data were gathered by means of a questionnaire circulated by seminar students on the social networks by means of a designated computer program in the 2016-2017 school year. In this way, the distribution reached included a wide group of students and the response rate was high (80%). The questionnaire was anonymous. It comprised four parts.the first part - demographics, the second part - information on previous studies (high school), the third part - questions on current studies, and the fourth part - questions on reading habits.

Data Analysis

In order to examine the combined effect of the social background features, high school study record, academic studies, and influence of the environment (parents, teachers, and lecturers) on shaping each of the four learning styles as revealed in the factor analysis, as well as their effect on shaping each of the two reading patterns revealed, we used six models of Linear regression. Secondary analysis aimed at reducing multiple variables to a small number of variables that represent a shared content world in order to enter them in the various analyses. The method chosen is confirmatory factor analysis in the principal component method with Varimax rotation. The variables were constructed through a weighted mean of all the relevant statements and their unification to form a single variable designating a shared world of meaning.

Table 1 Loading items from the learning habits questionnaire on four factors

Item	Learning habits with an online-technological orientation	Combined learning habits: traditional and online-technological	Traditional orientation	Orientation that rejects technology
I prefer to study alone at the library			0.518	
I prefer to study at the library with friends			0.633	
I work on problems / assignments at the computer		0.627		
As I see it, online information is a reliable source for academic assignments		0.617		
The library is a reliable source for academic assignments		0.567		
I use free internet programs for help in solving problems and assignments	0.628			
I use digital books for help in solving problems and assignments	0.451			
I use programs purchased online for help in solving problems and assignments	0.647			
I use books for help in solving problems and assignments			0.456	
I watch video courses	0.762			
Devoting time to homework is hampered by spending a great deal of time on the internet on topics that interest me				0.656
I can't succeed without help from the internet	0.452			
I think that social networks have a negative effect on academic achievements				0.825
Learning online is better and on a higher standard than studying in class at a university / school	0.589			
A combination of technologies and internet in the learning process is essential		0.555		
Iprefer to study at home			0.840	

Variables

Dependent variables

The study includes six dependent variables.

Students' learning habits and reading habits

A grouping of statements that represent perceptions regarding students' reading and learning habits. The ranking was made alone a continuity of five categories ranging from "not at all important" (1) to "extremely important" (5), joined to form a single variable in light of the factor analysis, by weighted mean of the statements that collapse into that world of meaning.

The study has four variables that represent four learning habits formed in the factor analysis

Learning habits with an online-technological orientation

A variable that includes the six following statements: "I use free internet programs for help in solving problems and assignments", "I use digital books for help in solving problems and assignments", "I use programs purchased online for help in solving problems and assignments", "I watch video courses",". I can't succeed without help from the internet", "Learning online is better and on a higher standard than studying in class at a university / school".

Combined learning habits

A combination of traditional and online-technological orientation. This variable includes the four following statements: "I work on problems / assignments on the computer", "As I see it, online information is a reliable source for academic assignments", "The library is a reliable source for academic assignments", "A combination of technologies and internet in the learning process is essential."

A study pattern that tends towards the traditional,

A variable that includes the following three statements: "I prefer to study alone at the library", "I prefer to study at the library with friends", "I prefer to study at home."

An orientation that rejects technology

A variable that includes two statements indicating that social networks are detrimental to learning: "Devoting time to homework is hampered by spending a great deal of time on the internet on topics that interest me", "I think that social networks have a negative effect on academic achievements."

Reading habits: Two dependent variables that represent students' reading habits as uncovered in the factor analysis (Table 2).

Traditional reading habits: A variable that includes three statements that collapse into the content world representing traditional reading habits, as follows: "I read literature", "I read newspapers", "Prefer reading to watching television / video / computer games."

Online reading habits: A variable that includes two statements that collapse into the content world representing online reading habits, as follows: "I read study material on the computer", "I don't print study material before reading it."

Table 2 Loading of questionnaire items on reading habits on two factors

	Traditional reading	Online reading
I read study material on the computer		0.850
I don't print study material before reading it		0.837
I read literature	0.827	
I read newspapers	0.623	
I prefer reading to watching television / videos / computer games	0.719	

Independentvariables

Social background variables – status

Gender: female (0) or male (1).

Religiosity: Level of religiosity, a categorical variable – low level of religiosity, including the traditional and secular categories (1), or high level of religiosity, including the category of religious (0), examined by means of the question: "Are you (1) religious; (2) traditional; or (3) secular?"

Average education of parents: Eight categories, each translated into an approximation of mean years of education, as follows: No education (4), elementary education (8), partial secondary (10), full secondary (12), non-academic tertiary (13.5), Bachelor's degree (15), Master's degree (17), PhD (20). Then, the average education for mother and father was calculated.

Social environment

Influence of parents, teachers, and lecturers: Grouping of statements representing perceptions of the influence of parents, teachers, and lecturers on learning habits, ranked on a continuity of five categories ranging from "not at all important" (1) to "extremely important" (5), merged to form one variable in light of the factor analysis by weighted mean of the statements collapsed into the same content world.

Table 3 Loading of questionnaire items on influence of parents, teachers, and lecturers on learning habits, one factor

	Social environment – influence of parents, teachers, and lecturers
My parents influenced my reading habits	0.635
My school teachers or a certain teacher influenced my reading habits	0.797
University lecturers	0.683
Friends, acquaintances	0.644

High school study record

Number of study units in mathematics and English:

Constructed by joining the two variables: number of study units in mathematics and number of study units in English. The logic underlying use of this variable involves the claim of horizontal differences in the quality of the matriculation diploma between high school graduates. A high standard matriculation diploma is associated with increased studies of English and Mathematics, therefore this variable might serve as an indication of academic capabilities in high school (Ayalon & Yogev, 1997).

Academic studies

Discipline: Disciplines were grouped into two categories, with the guiding logic being disciplines that have a more quantitative versus non-quantitative orientation: (1) Engineering and the natural and life sciences; (0) Social sciences and the humanities, including teaching, law, medicine, and health sciences.

Academic institution: (1) University (0) College.

Findings

Students' learning habits

The findings indicate four patterns of learning habits: two that tend towards learning that utilizes digital technological means, technological learning habits, and learning habits that combine technological aspects and traditional learning patterns, and two that tend towards the traditional direction, of which one is a pattern that reflects traditional learning and the other is a pattern that rejects technology and sees it as interfering with learning. The findings reveal (Table 4) that the learning pattern that has the highest mean level of preference as judged by students, M=365, is the fourth pattern, indicating that technology and social networks interfere with learning. Students expressed high agreement that social networks disrupt learning and that digital-computer learning patterns are the least preferred relative to traditional learning patterns. Namely, students show relatively low preference for digital learning.

Table 4 Distribution of learning patterns(std. deviation)

Learning pattern	Mean	N
Learning habits with an online-technological orientation	2.21 (0.912)	439
Learning habits with a combined orientation: traditional and online-technological	2.406 (0.971)	431
Traditional learning habits	2.955 (1.135)	444
Orientation that rejects technology	3.645 (0.753)	444

In light of these findings, the question is what shapes each of these learning habits. Thus, Table 5 below presents the combined effect of social background features, high school study record, academic studies, and the influence of parents, teachers, and lecturers on shaping each of the students' learning habits.

Shaping students' learning habits

Variables	Online-technological learning habits	Combined learning habits: traditional and online-technological	Traditional learning habits	Orientation that rejects technology
Gender (male)	0.508*** (0.1)	0.094 (0.078)	0.180 (0.106)	0.249* (0.120)
Average education of parents	0.001 (0.021)	0.053* (0.016)	-0.020 (0.022)	0.048* (0.024)
Religiosity (low)	-0.115 (0.156)	-0.081 (0.129)	-0.089 (0.103)	0.111 (0.201)
Units of English and mathematics	0.030 (0.034)	-0.008 (0.028)	-0.026 (0.038)	0.071 (0.043)
Discipline (quantitative orientation)	-0.097 (0.199)	0.304 (0.169)	0.018 (0.222)	0.121 (0.254)
Academic institution(university)	0.165 (0.098)	0.217* (0.081)	0.075 (0.110)	-0.062 (0.126)
Influence of environment – parents, teachers, and lecturers	0.162** (0.051)	0.119* (0.043)	0.240*** (0.058)	0.266*** (0.065)
Constant	1.435* (0.423)	2.659*** (0.350)	2.292*** (0.432)	.8680 (0.540)
R square	0.113	0.077	0.056	0.069
N	394	398	388	397

*P<0.05 **P<0.01 ***P<0.001

The findings regarding shaping students' online-technological learning habits show that the environment – teachers and parents – has a significant independent effect on shaping this learning pattern, beyond social background features, high school study record, and academic studies. The higher the influence of teachers and parents the greater the chance that the student will embrace a technological learning pattern in his or her academic studies. Moreover, gender was found to have an independent effect on shaping online-technological learning habits beyond the features of social background, academic studies, and influence of the environment. It seems that male more than female students tend to embrace a technological

learning pattern. The findings with regard to the combined effect of social background, academic background, and environmental features on shaping a learning pattern that represents a combination of learning habits reveal that each of the variables: average education of the student's parents, type of higher education institution, and teachers and lecturers, has an independent significant influence on shaping the tendency towards a combined learning pattern. University students tend to embrace a learning pattern that combines traditional and technological learning more than do college students. The higher the level of the student's Average education of parents the greater the likelihood that the student will embrace this learning pattern, and likewise, the greater the influence of teachers and lecturers the greater students' tendency to embrace a combined pattern.

With regard to shaping a traditional learning pattern among students, this seems to be significantly associated only with the influence of parents, lecturers, and teachers. Namely, the features of academic studies and gender have no significant effect on shaping a traditional learning pattern. The findings with regard to a learning pattern representing an approach to learning whereby technology interferes with learning show that gender, average parent education, and the influence of parents, lecturers, and teachers, each have an independent significant effect on shaping a learning pattern favoring rejection of technology in learning. Men more than women are inclined to embrace this pattern, and the higher the parents' average education and the influence of teachers and parents – the greater the likelihood of embracing this learning pattern. In conclusion, the shaping of each one of the learning habits may be said to be significantly associated with the influence of the environment – parents, teachers, lecturers. Gender appears to affect the shaping of two learning patterns that seem conflicting, the technological pattern and the technology-rejecting learning pattern, where male more than female students are inclined to embrace both learning patterns. It also appears that academic studies, type of higher education institution, and discipline have only a limited effect on the shaping of learning patterns. With regard to the combined learning pattern, an independent effect of the type of higher education institution was uncovered, where university students tend to embrace a combined learning pattern more than college students. With regard to the rest of the learning patterns, discipline and type of higher education institution have no effect on shaping students' manner of learning.

Students' reading habits

The study revealed two reading habits characteristic of students – traditional and online. The findings show (Table 6) that the most preferred pattern is online reading, which reached a mean of 3.02, i.e., students' mean inclination is to read online.

Table 6 Distribution of patterns of reading habits(std.Deviation)

	Mean	N
Traditional reading	2.541 (0.948)	452
Online reading	(1.14) 3.02	455

Now the question is which factors shape students' reading habits. Findings with regard to this question are presented in Table 7 below.

Table 7: Combined effect of social background features, high school study record, academic studies, and influence of the environment (parents, teachers, lecturers) on shaping students' reading habits Regression coefficient (SE)

Variables	Traditional reading	Online reading
Gender (Male)	-0.001	***0.496
	(0.103)	(0.129)
Average education of parents	0.032	0.036
	(0.021)	(0.027)
Religiosity (low)	-0.619*	0.3
	(0.277)	(0.348)
Units of English and mathematics	-0.040	0.024
	(0.037)	(0.046)
Discipline (quantitative orientation)	-0.074	0.085
	(0.207)	(0.261)
Academic Institution(university)	0.203	0.316*
	(0.106)	(0.133)
Influence of the environment – parents, teachers, and lecturers	0.325***	0.099
	(0.056)	(0.071)
Constant	2.159***	1.477*
	(0.482)	(0.605)
R square	11.8	7.3
N	356	358

The findings in Table 7 show that traditional reading patterns are associated with a high level of religiosity and influence of the environment – parents, teachers, and lecturers. The higher the influence of the environment the greater the tendency to embrace a traditional reading pattern. It appears that this pattern is associated neither with academic studies nor with social background features of gender and parents' Average education. The shaping of online reading patterns, in contrast, is significantly associated with gender and academic studies – type of higher education institution. It appears that male students and university students tend to embrace an online reading pattern more than female students and college students, respectively. Unlike the traditional pattern, it appears that this pattern is associated neither with the influence of parents, teachers, and lecturers nor with the effect of religiosity.

CONCLUSION AND DISCUSSION

This year (2017), Google's 20th anniversary marks 20 years of myriad changes in the accessibility of information and the availability of reading sources in all educational systems and in higher education in particular. This is in addition to the revolution in higher education (Davidovitch, 2016). With an eye to these changes, the current study explored students' learning and reading habits as well as the factors that shape these habits: social background, high school study record, features of academic studies, and the influence of teachers, parents, and lecturers – all factors that might shape students' learning habits. The study focused on undergraduate students in the 2016-2017 school year and included 772 students from 37 schools and 14 disciplines. Approximately 66% of the students were women and 34% men. The mean age was 25. About 19% were studying at universities, 25.4% at non-funded colleges, 54.4% at funded institutions that are not universities, and 1.3% at teacher's seminars.

The research findings indicate four patterns of learning habits: two that tend towards learning utilizing digital technological means, technological learning habits, and learning habits that combine technological aspects and traditional learning patterns, and two that tend towards the traditional direction - one a pattern reflecting traditional learning and the other a pattern that rejects technology. The learning pattern with the highest mean

significance as perceived by students, M=3.65, appears to be the one indicating that technology and social networks interfere with learning. Students showed high agreement that social networks interfere with learning and that digital-computer learning patterns have a low preference relative to traditional learning patterns. Namely, students attribute relatively low preference to digital learning.

The findings with regard to shaping students' technological learning habits indicate a significant independent effect of the environment – teachers and parents- on shaping this learning pattern, beyond social background features of mean parents' education, high school study units, and academic studies. The higher the influence of teachers, lecturers, and parents, the higher the chance that students will embrace a technological learning pattern in their academic studies.

Gender too was found to have an independent effect on shaping technological learning habits beyond the social background and academic features and the influence of teachers and parents. It seems that male more than female students tend to embrace a technological learning pattern. The findings with regard to the combined effect of the social, academic, and environmental background features on shaping a learning pattern representing combined learning habits, show that the student's parents' education, type of higher education institution, and environment – teachers, parents, and lecturers – have an independent significant effect on shaping the tendency to combined learning. University students tend to embrace a combined learning pattern of traditional and technological learning more than college students. The higher the education level of the student's parents the higher the likelihood that he or she will embrace this learning pattern and, similarly, the higher the influence of the environment – teachers and lecturers – the higher students' inclination to embrace a combined pattern.

With regard to shaping a traditional learning pattern among students, it appears that only social environment (parents, teachers) has an effect on shaping traditional learning habits. Namely, features of academic studies and gender have no significant effect on shaping a traditional learning pattern.

The findings with regard to the learning pattern representing an orientation that rejects technology show that gender, parents' education, and the influence of parents, lecturers, and teachers, all have an independent significant effect on shaping an orientation that rejects technology in learning. Men are more inclined to embrace this pattern then women, and the higher the parents' education and the influence of the environment – the greater the likelihood of embracing this learning pattern.
In conclusion, the shaping of all learning habits, with no exception, is significantly associated with the effect of the environment – parents, teachers, lecturers.

Gender has an effect on the shaping of two learning patterns that appear to be conflicting – learning habits with an online-technological orientation and the orientation that rejects technology, where in both learning patterns male students tend to embrace them more than female students. It appears that academic studies have only a limited effect on shaping learning patterns. With regard to the combined learning habits pattern, an independent effect of institutions type was revealed; while with regard to the other learning patterns academic discipline and type of institution have no effect on shaping students' manner of learning.

The study found two reading habits characteristic of students: traditional reading habits and online reading habits. The findings show that the most preferred reading pattern is that of online reading, i.e., students' tendency to read online. Further, the shaping of traditional reading patterns was found to be associated with high religiosity and with the influence of the environment – parents, teachers, and lecturers. It appears that this pattern is related neither to academic studies nor to social background features of gender and parents' education. However, the shaping of online reading patterns is significantly associated with gender and academic studies(type of institution). Male students and university students tend towards an online reading pattern more than do female students and college students, respectively. Unlike the traditional pattern, this pattern does not seem to be associated with the influence of parents and teachers nor with the effect of religiosity.

In light of the great significance of lecturers, as found, on shaping the reading habits of students, the question is how can lecturers and teachers encourage reading, which is an important component of academic learning? How can they prepare to enhance reading – as no academic research can be carried out without knowledge and familiarity with past research, theories on the subject, leaders of research on the subject – on both the global and local level?

Following the research findings, which show that lecturers have a large impact on shaping students' learning and reading patterns, the question of how students perceive the teacher's role was explored. This question was examined in light of the distribution of students' answers with regard to each of the statements on their perception of the lecturer's role (Appendix 1 Table 1)

Appendices

Appendix **1***: Student perceptions of the lecturer's role*

Table 1 Distribution of students' perceptions of the lecturer's roles, means (and standard deviations)

	Mean	N
Class attendance is essential for success in the course	3.33 (1.381)	447
Presentation of all study materials in class by the lecturer – is essential for success	3.636 (1.279)	446
The lecturer must focus on his role as conveyor of knowledge	3.9 (1.048)	445

and according to the variable of traditional perception of the lecturer, a variable designed in light of a confirmatory factor analysis that revealed the three statements that were merged and that reflect a traditional perception of the lecturer's role: " class attendance is necessary for success in the course", "presentation of all the study material to students in the lecture is necessary for the student's success in the course", "the lecturer must focus on his role as a lecturer who conveys knowledge" (Appendix 1, Table 2).

Table 2 Loading of questionnaire items on the lecturer's role – traditional perception of the lecturer

Item	
Class attendance is essential for success in the course	0.766
Presentation of all study materials in class is essential for students' success in the course	0.829
The lecturer must focus on his role as a lecturer who conveys knowledge	0.647

Table 3: Combined effect of: social background features, high school study record, academic background, and influence of the environment (parents, teachers, lecturers) on shaping the traditional perception of the lecturer's role

Variables	Traditional perception of the lecturer's role
Gender (male) b	0.104
S.E.	0.109
Parents' education b	-0.039
S.E.	0.022
Religiosity (low)b	-0.171
S.E.	0.292
Units of English and mathematics	0.020
	0.039
Discipline (non-verbal)b	0.396
S.E.	0.219
Type of school (university)	-0.285**
	0.111
Influence of environment – parents, teachers, and lecturers	0.071
	0.059
Constant b	***3.989
S.E.	0.509
R square	0.047
	356

It appears that the students think that the lecturer's role is to convey knowledge. This statement received the highest mean of M=3.9, and following the same logic they also thought that frontal conveying of material in class is important for academic success. This statement reached a mean of 3.63.Moreover, when the combined effect of all the independent variables on shaping the traditional perception of the lecturer (Appendix 1, Table 3)

was revealed, it appeared that of all the explanatory variables, the type of the higher education institution is the only one that has an independent significant effect on shaping the traditional perception of the teacher, beyond the characteristics of discipline, high school performance (units of English and mathematics), Influence of the environment – parents, teachers, and lecturers, and social background. Namely, college students have a more traditional perception of the lecturer's role than their university peers. If so, the question is whether there is room to develop unique learning and teaching methods for college and university students. This finding joins others uncovered, showing that university students embrace learning habits with an online-technological orientation (Table 7) and combined learning habits (Table 5) more than do college students. Furthermore, it appears that the lecturer's role is more significant as perceived by college students (Appendix 1, Table 3). Hence, college faculty have a considerable challenge before them, which is to develop teaching and communication techniques with the students that will shape their learning methods. At the same time, college students may arrive at colleges in the expectation of a personal approach and inclusive and supportive teaching. Hence, college faculty must develop personal and inclusive teaching methods in order to meet students' expectations.

With regard to universities, the findings show that students tend to develop more independent reading patterns and learning habits (Tables 5 and 7) and that their perception of lecturers is less traditional than that of college students. In any case, the academic faculty appears to influence the shaping of reading and learning habits. Considered together with the finding indicating differences in these perceptions between college and university students, there is need to think about empowering lecturers and training them to design students' learning patterns and to develop differential teaching and learning methods for

college and university students that will meet different educational requirements and goals.

It seems that specifically in the digital era, when we appear to have attempted to create "teacher-proof" learning methods; the most influential factor on learning is not technology but rather the study technique. Technology is only the means**.** The most efficient learning means is the teachers, who guide, instruct, focus, and mediate between the students and the learning materials that are abundant in a knowledge-flooded world. They are those who have the power to influence and guide the way to collaborative learning, where people listen, identify, object, ask, argue, agree, and reach decisions together. This is important both for the professional need to assimilate the material and for the human need to create a discourse between the students.The research findings also constitute a warning, according to students' reports, that use of technology sometimes gives a false sense of "high tech". Not everything that is technologically advanced is also pedagogically suitable. The new technologies may be a means of leading change. **Rational use** of technologies will help academic institutions retain their advantage as leading academic institutions in their personal approach to students.

We are living in an era of social and technological change – the experience of academic studies will evolve into one that differs from that familiar to us from traditional universities, so we must plan and prepare in order to maintain a competitive advantage in a market that is picking up momentum from year to year. Maintaining an advantage in a computer-assisted market requires much more than "planting" materials in a website or transferring materials from a regular learning environment to a distance-learning environment.

It is necessary to examine pedagogically

What? To assimilate and assess different methods of learning with computer-assisted means.

Where? On campus and far from it.

Why? Effectiveness in achieving the learning goals, efficiency in utilizing resources, convenience for students, and accessibility for a wide array of students.

For whom? Segmentation of students on campus and beyond.

The meaning of the findings for academic teaching: The lecturer's role was found to have a stable independent effect on all learning patterns. It was also found to have a great deal of significance for all students. Hence, lecturers appear to have an effect on shaping students' learning habits and must see reading as a challenge and as an inseparable part of their academic work in imparting research skills to students.

Lecturers must know that students are not yet ready to stop using paper, although most students prefer to read from a screen than to print articles – and they must be prepared for this when planning the course: its goals, learning techniques, and methods of evaluation. It is desirable to focus the reading materials on which references are mandatory and which are optional.

We recommend acting to enhance the teaching work of the faculty, so that they will work with students on improving reading skills in their discipline, strengthen academic and critical reading (judgment and evaluation skills) and academic writing, boost students' awareness of ethics and discipline rules – intellectual property, quoting rules, and maintaining a balance between using traditional reading and new technology. Making

academic texts more accessible through the information systems of the academic institutions is an efficient way of maintaining an active learning continuity between lecturers and students.

References

Ackerman, R. (2012). Learning on screen versus on paper: Which media enables more efficient learning and why? *Gadish: Bulletin for Adult Education,* 13, 107-114. [Hebrew]

Akanda, A. K. M. E. A., Hoq, K. M. G., & Hasan, N. (2013). Reading habit of students in social sciences and arts: A case study of Rajshahi University. *Chinese Librarianship: an International Electronic Journal*, 35, 60-71.

Akarsu, O., & Darıyemez, T. (2014). The reading habits of university students studying English language and literature in the digital age. *Journal of Language and Linguistic Studies*, 10(2), 85-99.

Almog, T. & Almog, O. (2016). *As if there is no tomorrow– How Generation Y is changing the face of Israel*. Modan Publication. [Hebrew]

Annamalai, S., & Muniandy, B. (2013). Reading habit and attitude among Malaysian polytechnic students. *International Online Journal of Educational Sciences*, 5(1), 32-41.

Ayalon, H., & Yogev, A. (1997). Students, schools, and enrollment in science and humanity courses in Israeli secondary education. *Educational Evaluation and Policy Analysis*, 19(4),339-353.

Davidovitch, N. (2016). *The descent from the ivory tower: On higher education's contribution to reducing social disparities - The case of Israel*. Third ISA Forum of Sociology. Vienna, Austria. July10-14. https://isaconf.confex.com/isaconf/forum2016/webprogram/Paper74824.html

Davidovitch, N., Yavich, R., & Druckman, E. (2016). Don't throw out paper and pens yet: On the reading habits of students. *Journal of International Education Research*, 12(4), 129-144.

Dilshad, M., Adnan, A., & Akram, A. (2013). Gender differences in reading habits of university students: An evidence from Pakistan. *Pakistan Journal of Social Sciences (PJSS)*, 33(2), 311-320.

Knoester, M. (2010). Independent reading and the "Social Turn:" How adolescent reading habits and motivation relate to cultivating social relationships. *Networks: An Online Journal for Teacher Research*, 12(1), 1-13.

Owusu-Acheaw, M. (2014). Reading habits among students and its effect on academic performance: A study of students of Koforidua Polytechnic. *Library Philosophy and Practice* (e-journal). Paper 1130. http://digitalcommons.unl.edu/libphilprac/1130. Accessed: 21 November 2015.

Palani, K.K. (2012). Promoting reading habits and creating literate society. *Journal of Arts, Science & Commerce*, 3(2), 90-94. http://www.researchersworld.com/vol3/issue2/vol3_issue2_1/Paper_10.pdf.

Parlette, M. (2010). *Personal growth, habits, and understanding: Pleasure reading among first-year university students*. (Master's thesis). http://ariel.summon.serialssolutions.com.mgs-ariel.macam.ac.il/he-HE/search?s.q=Personal+Growth%2C+Habits%2C+And+Understanding.

Pundak, D., Hershkowitz, A. & Shacham, M. (2010). Characteristics of reading online materials and textbooks among college and university students. *Al Hagova,* 9, 20-25. [Hebrew]

Rosenblatt-Porat, T. & Cohen-Raz, M. (2015). Survey of electronic books in the main library. *Blog of the Tel Aviv University libraries*. 23 June. http://libraries-blog.tau.ac.il/?p=11692 [Hebrew]

Sheorey, R., & Mokhtari, K. (1994). The reading habits of developmental college students at different levels of reading proficiency. *Reading Improvement*, 31, 156-158.

Yaakov, T. & Schor, P. (2010). Reading habits of physiotherapy students at the Ariel University Center of Samaria. *Physiotherapy Journal,* 12(1), 9-17. [Hebrew]

****