Perceived Digital Competence among Haredi and Non-Haredi Preservice Teachers

Alona Forkosh Baruch
Levinsky College of Education,
Tel Aviv University
alonabar@levinsky.ac.il

Lilach Alon
Tel Aviv University
lilachalon@mail.tau.ac.il

Rivka Gadot
Open University, Tel Aviv University,
Levinsky College of Education
rivkaga@openu.ac.il

תפיסת כישורים דיגיטליים בקרב סטודנטים להוראה חרדים ולא-חרדים

אלונה פורקוש ברוך
מכללת לוינסקי לחינוך,
אוניברסיטת תל אביב
alonabar@levinsky.ac.il

לילך אלון
אוניברסיטת תל אביב
lilachalon@mail.tau.ac.il

רבקה גדות
האוניברסיטה הפתוחה, אוניברסיטת תל אביב,
מכללת לוינסקי לחינוך
rivkaga@openu.ac.il

Abstract

Israeli higher education institutes have been challenged by the growing number of Haredi students, including colleges of education. It requires sensitivity to aspects unfamiliar to these students, including coping with technology as students, and regarding the education system – utilizing information technologies as a lever for empowering teaching and learning. This study examines perceived digital competence among Haredi and Non-Haredi preservice teachers that studies the course "Information Technologies" in an Israeli college of education. Differences between the two groups were identifies in perceived proficiency in using ICT before and after the course within and between groups. Regarding their technological and pedagogical self-efficacy, differences were also identified. We also found correlation between age and perceived importance of studying the course in the Haredi group. Haredi participants also perceived the importance of the course their role as students and as future teachers as higher than their peers in the non-Haredi group. Findings

Proceedings of the 14th Chais Conference for the Study of Innovation and Learning Technologies: Learning in the Technological Era
Y. Eshet-Alkalai, I. Blau, A. Caspi, N. Geri, Y. Kalman, S. Etgar (Eds.), Raanana: The Open University of Israel

show a fundamental impact of the course among Haredi participants in technological as well as pedagogical aspects.

Keywords: Perceived Digital Competencies, Haredi, Non-Haredi, Preservice Teachers, Information Technologies.

Introduction

The recent couple of decades have posed a challenge for the Israeli higher education institutes, due to the penetration of the Haredi population to the academic scene, and their drive to broaden their academic capabilities (Bowman & Smedley, 2013; Novis Deutsch & Rubin, 2018). The women specifically perceive themselves as gatekeepers and agents of change and progressivism. However, a recent survey found that only about 50% of Haredi women had used the Internet for general purposes (Neriya Ben-Shahar, 2017).

In the field of education, Haredi educational institutes do not cope with technological progress in ways similar to that of non-Haredi institutes, bound by restrictions bestowed upon them by the rabbinic authorities (Cohen, 2017). The main notions portrayed by information technologies (e.g., individualism, personalization, collaboration, accessibility – to name a few) pose fundamental challenges to core values of Haredi institutes, which depend on preservation of tradition, communal identity, complying with authority and censorship (Kalagy & Braun-Lewensohn, 2018; Neriya Ben-Shahar, 2017). Hence, attention is allocated to linking between Haredi teachers and preservice teachers, and the digital world around us, saturated by information technologies, which promote teaching and learning in other sectors in Israel (Forkosh-Baruch, 2018).

Training Haredi Teachers in Higher Education

Cultural changes in the knowledge society includes the attainment of an academic degree in a recognized higher education institute, as a prerequisite for entering into the labor market with the required professional demands. Therefore, education is perceived as a means of upgrading one's status in terms of social mobility and economic opportunities (Genut & Kolikant, 2017). Academic degrees have become significant for individuals also in Israel, especially for those who aim to take part in the labor market. These trends have also entered the Haredi population, in which academic degrees may be a necessity for gaining a better socioeconomic status. This is particularly relevant to Haredi women, which are in some families the sole working force of the family (Kalagy & Braun-Lewensohn, 2018).

Haredi women are key to this transformation that is taking place, the situation in higher education currently being that Haredi female students outnumber on a 2:1 ration the Haredi male students. Religious women apparently assume the role of change agents in their community (Novis Deutsch & Rubin, 2018). The fact that their studies in some instances assume a traditional path, such as acquiring a bachelor of education (B.Ed.) degree does may seem a conservative choice for progress; however, the field of education in itself is poses countless opportunities for change.

Digital Competencies of Preservice Teachers

Students in the field of education are expected during their training to cope with complex problems and situations that usually do not have one simple and straightforward answer. They are also expected to plan and conduct research as part of their professional identity (O'Sullivan &

Dallas, 2017). As a result, in several countries worldwide have provided programs and frameworks for the training of preservice, addressing information and communication (ICT) literacies, and including ICT skills and competencies; these provide the ability to utilize information technologies as students and as teachers in the education system of the information era (Tondeur et al., 2017).

Hence, utilizing information technology skills and competencies for their training and teaching is a necessity and an obvious outcome of their training and practice. This may be achieved through several modes of training, including a course dealing with 21st century skills and competencies, that focuses on the requirements from a teacher in the digital era.

Consequently, the goal of the current study is to examine the digital competencies of Haredi and non-Haredi preservice teachers studying in a 1-semester course titled "Information Technologies" during their first year of training. The research questions are as follows:

1. What were the Haredi and non-Haredi students' perceived digital competencies for teaching and learning prior to their training?
2. What were the Haredi and non-Haredi students' perceived digital competencies for teaching and learning following their training?
3. What were differences within each of the two groups – Haredi and non-Haredi – in the perceived digital competencies for teaching and learning before and after the course?
4. What were the perceptions of Haredi and non-Haredi students regarding the importance of the course “Information Technologies” for their training and future position as teachers?

Methodology

Participants

Participants included 161 students, students, of them 117 non-Haredi and 44 Haredi students. Non-Haredi students included 5 male and 112 female participants; all Haredi students were female. In the non-Haredi group, ages ranges from 19 to 58 ($\bar{x}$=24.59, SD=5.2), while in the Haredi group, ages ranges from 20 to 48 ($\bar{x}$=28.5, SD=6.99). This gender distribution is typical in teacher training colleges. All participants studied a course titled “Information Technologies” during their first year of training towards their B.Ed. degree in a college of education in Israel. Altogether, the participants studied the course in 5 different groups, separating between Haredi students (2 groups) and non-Haredi students (4 groups).

Tools

The tool developed for this study included a questionnaire composed of a demographic section, a section dealing with perceived proficiency in using ICT before and after the course (regarding 6 platforms on a 1-5 Likert scale); a section addressing their technological and pedagogical self-efficacy (regarding 6 platforms and additional unfamiliar platforms, on a 1-5 Likert scale); and a section referring to their perceived importance of the course for their role as students and as future teachers (on a 1-5 Likert scale). The digital platforms referred to in the questionnaire were those who were practiced in the course, and were chosen due to their relevance for teaching; these platforms are extensively utilized in the education system, as they encourage collaboration and active learning. The tool was content-validated by experts in the field of ICT in education, who are acquainted with the target populations. While attitudes customarily refer to three aspects, i.e.

cognitive, affective and behavioral, we focused in this article on participants' perceived competencies with reference to behavioral aspects.

Procedure and Data Analysis

The questionnaire was distributed at the end of the course "Information Technologies", in which the students expanded their theoretical and practical knowledge regarding 6 digital platforms that were meticulously chosen as central and fundamental for their function as students and future teachers in the digital era. Questionnaires were filled anonymously and based on preservice teachers' free will.

Data analysis included descriptive statistics as well as explanatory procedures using IBM-SPSS statistical software. These included correlations and t-tests to examine differences within and between the Haredi and non-Haredi groups.

Findings

The first question deals with Haredi and non –Haredi students' perceptions regarding their digital competencies for teaching and learning prior to their training. Results are presented in table 1.

Table 1. Mean and SD of participants perceived digital proficiency prior to the course and differences between groups (N=161)

Groups / **Proficiency using Plat-forms**	**non-Haredi (n=117)**		**Haredi (n=44)**		
	$\bar{x}$	SD	$\bar{x}$	SD	T-test
GoogleDocs	3.20	1.64	1.89	1.47	t=4.64**
GoogleForms	2.99	1.68	1.99	1.50	t=3.51**
GoogleDrive	3.41	1.57	2.20	1.49	t=4.41**
Ed. Apps	2.96	1.64	1.86	1.30	t=4.41**
PowerPoint	4.07	1.26	3.16	1.48	t=3.64**
Word	4.29	0.97	4.07	1.09	t=1.25

** p<.01

Altogether, proficiency was significantly higher in 5 of 6 platforms among the non-Haredi group. Proficiency using Word was the highest, and the only platform in which no significant differences were identified.

We examined correlation between proficiency and preservice teachers' age in both groups prior to the course. Results are presented in table 2.

Table 2. Pearson correlation between age and perceived digital proficiency of participants prior to the course, by groups (N=161)

	Age	
	non-Haredi	Haredi
GoogleDocs	-.12	-.49**
GoogleForms	-.09	-.46**
GoogleDrive	-.16	-.43**
Ed. Apps	-.11	-.45**
PowerPoint	-.09	-.47**
Word	-.14	-.38*

* p<.05 ** p<.01

As shown in the above table, in the Haredi group correlations were significant between age and proficiency using all digital platforms, i.e., the older the participants – the less proficient they perceived themselves prior to the course.

The second question deals with Haredi and non –Haredi students' perceptions regarding their digital competencies for teaching and learning after their course training. Results are presented in table 3.

Table 3. Mean and SD of participants perceived digital proficiency after the course and differences between groups (N=161)

Groups / **Proficiency using Plat-forms**	**non-Haredi (n=117)**		**Haredi (n=44)**		
	$\bar{x}$	SD	$\bar{x}$	SD	T-test
GoogleDocs	4.28	1.01	4.41	0.92	t=-0.73
GoogleForms	4.19	1.11	4.25	1.10	t=-0.32
GoogleDrive	4.15	1.19	4.41	0.95	t=-1.28
Ed. Apps	3.97	1.18	4.1	1.03	t=-0.58
PowerPoint	4.08	1.24	4.13	1.37	t=-0.26
Word	4.06	1.31	4.41	1.19	t=-1.54

Following the course, perceived proficiency was higher in almost all platforms in both groups. It seems that there are no differences between the Haredi and non-Haredi groups in their perceptions regarding their proficiency in using the platforms studied in the course at the end of the course.

In addition, students were asked regarding their sense of confidence in their ability to cope with digital platforms unfamiliar to them. In both groups average was high: for the Haredi group $\bar{x}$=3.77 (SD=1.09); for the non- Haredi group $\bar{x}$=3.52 (SD=0.95). No differences were found between groups ($t_{(159)}$=1.32).

We examined correlation between proficiency and preservice teachers' age in both groups after to the course. Results are presented in table 4.

Table 4. Pearson correlation between age and perceived digital proficiency of participants after to the course, by groups (N=161)

	Age	
	non-Haredi	Haredi
GoogleDocs	-.01	.26
GoogleForms	.02	.11
GoogleDrive	-.03	.21
Ed. Apps	0	.13
PowerPoint	.04	0
Word	.01	-.14

There were no correlations between age and proficiency using digital platforms neither in the Haredi nor the non-Haredi groups after the course.

The third question deals with the differences in students' perceptions regarding their digital competencies for teaching and learning before and after their course training, in each group, i.e., Haredi and non –Haredi students, separately. Results are presented in table 5.

Table 5. Differences in students' perceptions regarding their digital competencies for teaching and learning before and after the course in Haredi and non – Haredi students (N=161)

Platforms	**Differences in Proficiency in using Platforms before and after the Course**	
	non-Haredi (n=117)	Haredi (n=44)
GoogleDocs	=t-6.58**	=t -10.1**
GoogleForms	=t -7.07**	=t -8.71**
GoogleDrive	=t -4.44**	=t -8.50**
Ed. Apps	=t -5.81**	=t -9.33**
PowerPoint	=t -0.06	=t -3.27**
Word	t=1.71	=t -1.51

** p<.01

The data analysis shows that there is a significant improvement in students' perceptions in both the Haredi and non-Haredi groups regarding their proficiency in using the platforms utilized in the course. The improvement is significant in the Haredi group in 5 of the 6 platforms, and in the non-Haredi group – in 4 of the 6 platforms. The only platform in which no differences were identified was Word.

The fourth question focused on perceptions of Haredi and non-Haredi students regarding the importance of the course "Information Technologies" for their training and future position as teachers. Results are presented in table 6.

Table 6. Perceptions of Haredi and non-Haredi Students Regarding the Importance of the Course "Information Technologies" for their Training and Teaching (N=161)

Groups / **Perceived Importance**	**non-Haredi (n=117)**		**Haredi (n=44)**		
	$\bar{x}$	SD	$\bar{x}$	SD	T-test
For training	4.14	0.97	4.59	0.87	t=-2.71**
For teaching	4.13	1.03	4.61	0.84	t=-3.06**

** p<.01

According to the data analysis, average was high for both groups regarding their perceptions of the importance of the course for their training as students as well as for their teaching as teachers. However, there were significant differences between the Haredi and non-Haredi students,

according to which the Haredi students perceived the importance of the course as higher than their peers in the non-Haredi group.

We also examined the correlation between age and perceived importance of the course "Information Technologies" for Haredi and non-Haredi students' training and teaching. Results show a correlation between age and perceived importance of studying the course in the Haredi group, i.e., the older the students, the higher was their perceived importance of the course for training: $r= .32^*$ ($p<.05$).

Discussion

The goal of the current study was to examine perceived digital competence among Haredi and Non-Haredi preservice teachers that studies the course "Information Technologies" in an Israeli college of education. We attempted to study the development of their perceptions during the course, as reported by them. We were interested in the differences between groups of Haredi and non – Haredi participants in the course, which aim was to train then to utilize information technologies in their studies as well as in their practice as future teachers.

Findings of our study indicate that participants of the study perceived their digital competencies prior to the course as lower that following the course. Their perceptions of the ability to utilize information technologies for pedagogical purposes was low before studying the course. The only platform they felt comfortable in using was the Word processing tool. Utilization of online platforms that allow collaboration, knowledge construction and inquiry was perceived by preservice teachers as more complex and complicated, to a degree that they were not used prior to the course. This indicates a tendency to use information technologies in a basic manner, exhibiting traditional pedagogy, rather using information technology as a lever for pedagogical change and transformation (Baran, Canbazoglu Bilici, Albayrak Sari, & Tondeur, 2017).

Haredi students' starting point was significantly lower than that of non-Haredi students, as perceived by participants when grading their digital competencies. This was especially evident in older participants of the Haredi group. Findings support the literature, which indicates relatively low digital literacy among the Haredi population, where the utilization of digital platforms and specifically the Internet is infrequent (Neriya-Ben Shahar, 2017). In addition to the factors hindering Haredi students from integrating into general higher education institutes, findings reflect some of the challenges which these institutes face when including Haredi students into their programs, e.g., adaptation of curricula (Haron & Azuri, 2016; Novis Deutsch & Rubin, 2018).

We examined how students perceived the process they had undergone within the course regarding their digital skills. Findings show that the significant gaps between Haredi and non – Haredi participants prior to the course had disappeared at the end of the course. Perceptions regarding participants' digital competencies following the course were high regarding all platforms, regardless of their belonging to the Haredi vs. the non-Haredi groups or their age. These findings indicate a learning process of all participants as well as a decrease in the gap between the Haredi and the non-Haredi groups, especially the older Haredi participants. This means that in spite of a lower and more complicated starting point, Haredi students in higher education institutes are motivated and feel capable of blending with the general population, can assimilate into the general culture – under certain religious restrictions – and feel a sense of challenge in pursuing yet further knowledge on their own; this is supported by their willingness

to cope with unfamiliar platforms in the future, as well as their confidence in their ability to use digital platforms for teaching and learning (Genut & Kolikant, 2017).

The contribution of the course to strengthen participants' digital competencies was also evident from the comparison between perceived competencies for using digital platforms before and after the course. Significant differences were identified between the perceived competencies before and after the course, among Haredi as well as non-Haredi participants regarding utilization of these platforms for teaching and learning. Participants also reported regarding the importance of the course for their training and for their teaching.

We conclude from our findings that the course had a major contribution to the higher ratings of preservice teachers in general, and Haredi participants in particular, of their sense of ability to utilize information technologies for their teaching and learning (Baturay, Gokcearslan, & Ke, 2017; Tondeur et al., 2017). The Haredi participants whose starting point was lower seemed to benefit from the course to an extent that had caught up with the non-Haredi group. This allows us to continue to strive for equal opportunities for all group members in the field of education, and for the Haredi K12 student population, whose teachers are currently more ICT literate.

References

Baran, E., Canbazoglu Bilici, S., Albayrak Sari, A., & Tondeur, J. (2017). Investigating the impact of teacher education strategies on preservice teachers' TPACK. *British Journal of Educational Technology*, 1-15. DOI:10.1111/bjet.12565.

Baturay, M. H., Gokcearslan, S., & Ke, F. (2017). The relationship among pre-service teachers' computer competence, attitude towards computer-assisted education, and intention of technology acceptance. *International Journal of Technology Enhanced Learning, 9*(1), 1–13.

Bowman, N. A., & Smedley, C. T. (2013). The forgotten minority: Examining religious affiliation and university satisfaction. *Higher Education, 65*(6), 745–760.

Cohen, Y. (2017). The media challenge to Haredi rabbinic authority in Israel. *ESSACHESS – Journal for Communication Studies, 10*(2), 113–128.

Forkosh-Baruch, A. (2018). Preparing pre-service teachers to transform education with Information and Communication Technologies (ICT). In, J. Voogt, G. Knezek, R. Christensen, & K.W., Lai (Eds), *Handbook of Information Technology in Primary and Secondary Education (2nd Edition)* (pp. 415–432). Switzerland: Springer Cham.

Genut, S., & Kolikant, Y. B. D. (2017). Undergraduate Haredi students studying computer science: Is their prior education merely a barrier? *Interdisciplinary Journal of e-Skills and Lifelong Learning, 13*, 197–214.

Kalagy, T., & Braun-Lewensohn, O. (2018). Agency of preservation or change: Ultra-Orthodox educated women in the field of employment. Community, *Work & Family*. DOI: 10.1080/13668803.2018.1428175

Neriya-Ben Shahar, R. (2017). Negotiating agency: Amish and ultra-Orthodox women's responses to the Internet. *New Media & Society, 19*(1), 81-95.

Novis Deutsch, N., & Rubin, O. (2018). Ultra-Orthodox women pursuing higher education: Motivations and challenges. *Studies in Higher Education*.
DOI: 10.1080/03075079.2018.1453792

O'Sullivan, M. K., & Dallas, K. B. (2017). A collaborative approach to implementing 21st century skills in a high school senior research class. *Education Libraries, 33*(1), 3–9.

Tondeur, J., Aesaert, K., Pynoo, B., van Braak, J., Fraeyman, N., & Erstad, O. (2017). Developing a validated instrument to measure preservice teachers' ICT competencies: Meeting the demands of the 21st century. *British Journal of Educational Technology, 48*(2), 462–472.