



Teaching and Learning in the Digital Age

We each carry a picture of school in our head. Children of the 1930's, 40's or 50's probably picture a room with similar-aged students seated in desks neatly in rows, a teacher directing the learning. Those schooled in the 60's—80's more likely have broader visions of the "classroom," which may include modular furniture and perhaps creative lessons and student projects. Students learning at the turn of the millennium would likely describe classrooms as being well-equipped with various forms of technology, including computers and smartboards.

It is natural to believe that technology is radically rewriting education, drastically altering the teaching and learning we engage in. In fact, teaching and schools have undergone multiple significant changes over history, and none of the above snapshots of the "typical" learning environment would be an accurate representation of teaching and learning in a colonial American classroom, or an ancient Greek seminar. Jewish teaching and learning has also undergone monumental changes, from the approach in the days of the Gemara, to the European cheder, to modern yeshivot. Although Jewish learning is steeped in tradition, it is subject



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to the same forces and approaches that impact secular education. This article will focus on one such force: technology, and the ways in which it impacts Jewish education in the overlapping spheres of context, text, learner, and teacher, creating both challenges and opportunities for Jewish education.

The Context

Educational revolutions significantly predate the advent of technology. Before the introduction of the written word, learning and scholarship demanded significant verbal memorization. Even after written language was introduced, it was generations before the invention of the printing press again revolutionized

learning, changing forever the role of memorization and reliance on oral skills in scholarship.

For today's learners, both children and adults, technology is ever-present in their lives. They engage with technology in the doctor's office, in the supermarket, in their cars and with their home appliances, and in their conversations with family and friends via cell phone or email. A 2013 report found that 44% of cell phone users have slept with their phone so that they didn't miss a notification (Hepburn, 2013). This highlights how connected we are to our devices and social media. To expect that learners would leave technology behind when they enter the classroom would be absurd. The issue, therefore, is not whether technology will play



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a role in learning, but rather which technology(ies) will apply and what role will they play.

On the one hand, the context of omnipresent technology may create great comfort in applying technology to learning. As we discuss the impact of technology on text, below, great advantages become apparent. However, given the rapid rate with which new technologies are introduced, teachers and learners may be constantly challenged to adapt to new devices, applications, and methods. This is a process that will be easier for some than others (Goode, 2010; Heemskerck, ten Dam, Volman, & Admiraal, 2009).

The Text

Text has always been central in Jewish learning. In ancient times, with no mass printing available, the transmission of the holy Text was accomplished through verbal, communal means (e.g. *Hakhel*, weekly reading of the Torah). Even as the printed word allowed codification of the Oral traditions and distribution of texts, their use of ancient languages and archaic grammatical constructions resulted in limited access for “ordinary” learners. As a result, in order to allow learners to access text, a great deal of time and effort needed to be invested in developing language skills.

Technology can greatly increase a learner’s access to text, through translation programs or open-source archives (Sefaria.org, for example). Text previously available to scholars and in archives can be found with a few clicks on the internet. At the turn of the millennium, universities, archives, and other sources were

investing significant resources to make Judaica-related materials available digitally. Beyond allowing learners to obtain materials, technology provides additional access to individuals who might otherwise struggle with the text in its original presentation. Physical attributes of text can be manipulated by changing fonts, or color coding and highlighting segments. While all these changes were possible with the “old” technology of scissors and markers, their digital iterations can be accomplished with such ease that learners and teachers can readily personalize the texts they study.

This ability to alter text is no small issue, given that Talmud, a text that is the subject of study in *battei midrash* worldwide, is an example of “unfriendly” text. Text is considered unfriendly when it places extensive demands on the reader, failing to follow accepted rules of structure and language. Interestingly, a page of Talmud has been compared to an internet page, with central material surrounded by tangential distractions pulling at one’s attention. As Jonathan Rosen writes “. . . when I look at a page of Talmud and see all those texts tucked intimately and intrusively onto the same page, . . . I do think of the interrupting, jumbled culture of the Internet.” (Rosen, 2000)

Research over the past decades has explored the benefits and challenges of reading online as compared to on paper. The hypertext potential of online reading “fosters a flexible pattern of discovery which promotes greater cognitive effort on the part of readers, who must develop frameworks based on personally selected paths” (Uso-Juan & Ruiz-Madrid, 2002). These benefits are, however, balanced against findings

that on-screen reading correlates with information overload and distraction, and decreases in in-depth processing (Wieczorek, et al., 2014).

To date, the research has focused largely on considerations of reading comprehension, attention, and other cognitive phenomenon. Jewish learning aims to engage us affectively and spiritually as well. More sophisticated research is needed to explore how reading via technology *feels* and *inspires*. Our image and experience of a scholar’s *beit medrash* lined with *sefarim*, and our drive to acquire and learn from *sefarim*, certainly biases us toward supposing that others will feel the same way. In fact, Rashi comments on the Mishna in *Pirkei Avot*, *kenei l’cha chaver*, that the word *chaver*, or friend, should be understood as *sefer*, since books are the best companions. Will current and future generations of learners see computer-learned texts as their companions? Will they hold the same reverence for their Kindles, e-readers, and virtual text collections as earlier generations held for *sefarim*?

The Learner

Nicholas Carr, in his landmark book *The Shallows*, argued that technology is changing how our brains process information. In the past, Carr explains, we were scuba divers, interested and able to dive deeply into complex areas. Now, however, we have become jet skiers, skimming the surface. Research on the introduction of “older” technologies such as television had already documented decreases in children’s attention and imaginative skills (Taylor, 2012). Psychologists worry about further declines, as with the internet, “distraction is the norm, consistent attention is impossible,

imagination is unnecessary, and memory is inhibited” (Taylor, 2012).

Another concern in this age of connectivity is the lack of self-awareness regarding one’s own attainment of knowledge. It appears that with internet availability, the difference between what people think they know and what they actually know is often blurred. In a series of studies at Yale University, participants who had access to internet searches repeatedly reported having acquired more knowledge than they actually did (Fisher, Goddu, & Kiel, 2015). This false sense of knowledge attainment surprised the researchers and highlights the need to assess learners’ attainment of knowledge that is core to any discipline, but that may be even more critical when learning is via online modalities.

The impact of technology in this area may not be completely negative. There is some evidence that frequent use of internet search engines, while decreasing the memory of details, increases memory for how to locate information. Additionally, it may be that as our brains are required to retain fewer facts, they may be developing greater higher-order processing skills, such as contemplation, critical thinking, and problem solving (Taylor, 2012). These higher-order skills are particularly relevant for Jewish learning, which has never considered simple memorization as the end-goal of study.

That today’s learners are, to a large degree, technologically comfortable and competent, presents enormous opportunities for enriched learning facilitated by technological advances. Current concerns regarding technology transience (Muilenburg & Berge, 2015), that is, the rapidity

with which new technologies are introduced, presents a challenge for learners, and to an even larger degree, for teachers.

The Teacher

The internet age challenges us to reconsider the very nature and definition of teaching. What can we teach when a world of information is available to students without the teacher’s interference? What do students need to learn when apps, websites, and Google searches provide all the needed information? With this challenge comes an opportunity to envision knowledge attainment in a much deeper way. With such ready access to content, teaching can become more about guiding students in manipulating content, thinking critically about it, and exercising discernment of available data. The ability to reflect, extract, and criticize — traits characteristic of true learners and scholars — can become the student’s natural manner of demonstrating understanding. In this new reality, teachers are actually more important than ever, notes Dr. Michael Patrick Lynch, professor of philosophy at the University of Connecticut. It is flesh-and-blood teachers alone who can guide students in thinking critically and evaluating web-accessed information.

It is not a new challenge that teachers must master both the content area they teach *and* the pedagogy that allows that content to be communicated to learners. In the current environment, teachers must also develop comfort with, and skill in, the application of technology. Educational initiatives and funding often focus on providing technology (Bennett & Oliver, 2011). But

Jewish law obligates honoring one’s teachers. The Gemara, *Kiddushin* 33a, notes that while one must honor all of one’s teachers, one must show greater honor toward one’s primary teacher (*rebbe muvhak*). Traditionally, the teacher-student relationship was formed inside the classroom or the study hall (beit midrash). However, since the proliferation of Jewish books (*sefarim*), a number of halachic authorities have entertained a broader definition of a teacher that extends beyond the walls of the beit midrash. For example, R. Yaakov Etlinger, *Binyan Tziyon* no. 83, notes that nowadays, when most of knowledge comes from *sefarim*, the laws relating to a *rebbe muvhak* do not apply. In a similar vein, R. Yehonatan Woliner, *Margenita Tava* no. 35, writes that we must honor the authors of *sefarim* that we learn from as if they were our teachers. Both of these authorities do not require the teacher and the student to have a live interaction in order to establish a teacher-student relationship.

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without skillful use by competent and creative educators, technology will fail learners. As Christensen, Johnson & Horn (2012) argue, computers have not yet altered the standard means in which education is delivered.

Teachers cannot be expected to integrate technology in ways that improve learning without proper preparation. Simply demonstrating a technological tool is insufficient (Muilenburg & Berge, 2015); rather technology integration is a complex skill and process in which teachers

will need on-going support. Such support may be afforded through built-in professional development and preparation time in public schools. In Jewish day schools, where time is always in short supply and Jewish studies teachers are often tasked with creating their own curricular materials, this can present a challenge.

There are Jewish studies teachers who are rising to the challenge. Azrieli students and alumni often share with us their innovative use of blogs, simulations, 3D printers, classroom clickers, and other tools to engage their students and deepen the learning. Such innovations not only connect students to their learning, but narrow the gap between teacher and student — technically and technologically, a generation apart.

The Piaseczna Rebbe, Rabbi Kalonymus Shapira (2011), an educator, scholar, and Chassidic Rebbe, in his work *Chovat Hatalmidim*, cites the Gemara (*Shabbat 30b*) which records the practice of Rabbah, who would begin his shiur with a comment to make his students laugh. The Shechinah rests only on those who are happy and Rabbah creates this happiness in his learners:

את המילתא דבדיחותא אמר מקודם כדי שיהיו בשמחה כי אין השכינה שורה אלא מתוך שמחה ... ולדורנו מרמזת הגמרא עוד איזה דרך להרב והמלמד, שכדי לרפא את פצע ההתרחקות שנעשה בין התלמיד להמלמד, צריך המלמד להשתדל לקנות את לב התלמיד ולשוב לקרבהו אליו.

This Gemara is also offering a hint to the educators of our generation. In order to bridge the chasm that has opened between our children and their teachers, it is incumbent upon the teacher to make an effort to win the hearts of his students

so that they will want to become close to him.

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Teachers who integrate technology certainly create a bridge to their students' world.

Conclusion

Technology has changed, and will no doubt continue to change, how we learn and how we teach. It will challenge us, even as it opens worlds of knowledge and resources. It is clear that 21st century Jewish learners benefit from wedding their traditional text skills with competence in newer fields such as computer annotation and search engines. As we consider Jewish education and Jewish learners in this time of technological advancement, parents and educators can focus on the challenges. Or we can work to develop a generation of sophisticated consumers and responsible users of technology who are masters of their own learning. The words of the Piaseczna Rebbe are both relevant and timeless:

העיקר הוא להכניס בלבנו דעה זו, שידע שהוא, הנער בעצמו הוא עיקר המחקר, לא קטן ונער הוא, רק נצר מטע ד' בכרם ישראל הוא, ועליו הטיל ד' חוב זה לגדל ולחנך נצר זה, את עצמו לעץ גדול עץ החיים ולעשותו לעבד ד' צדיק וגדול בתורה.

The most important thing is to teach them that they are their own educators. They are not small children; rather, they are the seedlings that Hashem has planted in the vineyard of Klal Yisrael, and they alone bear the responsibility for their development into towering atzei chayim, trees of life — righteous and deeply learned servants of Hashem.

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