Experiential Learning, Technology, The Neuroscience of Caine and Caine, and the Amphibious Jew , by Jeffrey Schein

With Peter Eckstein, Lynne Lieberman, and Robyn Hurvitz

Over the last year I have--with the help of my teaching and planning partner Peter Eckstein of the Friedman Commision on Jewish Education of West Palm Beach-- I had the privilege of helping “marry”the understanding of technology embedded in Liz Kolb’s *Learning First , Technology Second* with the pedagogic insights about brain -friendly learning of Caine and Caine’s *Natural Learning in a Connected World.*__ This has been part of a professional development initiative of the West Palm Beach Friedman Commision for Jewish education.

Underlying the confluence of both these texts is a deep appreciation for the value of immersive, water like quality of the initial stages of curious and engaged learning. In an article by Velvet Green, “Curiosity and the Desire for Truth”, she links this “curiosity” to the primal experience of birth:

I’ve often marveled at the basic miracle of birth. Every one of us, in our mother’s womb, was a real aquatic creature before we were born. We were surrounded by water; . . . our lungs were folded up like a fan, not in use but getting ready. . . . When the child is born, no matter how long the mother labors, “birth” is practically instantaneous. Once the child’s head emerges, it must take its first breath; it’s now a land creature, not an aquatic one. . . . How does it happen? A most amazing chemical miracle takes place, starting during the labor of the mother.

In the second iteration of this article and these ideas I will pursue these ideas further by connecting it to an epigram of Adin Steinsaltz about marine, mamallian, and amphibious Jewish life.

For now it is important to set the stage for understanding this initiative. Jeffrey Schein had written in the Journal of Jewish Education (Technology: So Present in Jewish Life, so Absent in Jewish Education, winter 2016) about seven different areas of needed research about Jewish education and technology. One of those arenas was generating new frameworks for finding Jewish learning that brought together contemporary neuroscience with best practices in technology and education. This project has been one such pilot towards that goal.

The professionals in West Palm had launched several initiatives in technological enhancement for Jewish teachers. Jeffrey Schein served as a scholar in residence in the winter of 2016 sharing a half dozen dozen different workshops coming out of his *Text Me: Ancient Jewish Wisdom Meet Contemporary Technology,* originally a Covenant seeded project. The interest in continued collaboration point to the project being described.

It is worthy of note that all three of the professionals and three of the five field-based educators had participated in the Mandel Teacher Educators Initiative. This provided a very useful set of concepts (particularly the examination of student work and understanding the complexity of subject matter) for the work. Differently frame this paper is also a study of the way in which professional development initiatives build off one another in sometimes unplanned and surprising ways.

The CJE team opened up registration for the course to all the educators in the community. In addition to casting a wide net, they also targeted specific educators in the community. These were people who worked in different aspects of Jewish education (Day school, Early Childhood, Special Needs and Supplementary schools). Some were teachers, some were school and program directors. Seven individuals indicated that they wanted to

participate in the class. However, due to time conflicts and family obligations (the class was offered in the early evening) three of these participants bowed out. In the end the class consisted of a Director of an Early Childhood program, a Director of a Special Needs program and two supplementary school teachers.

Their assessment of the needs of the community in relationship to technology

The CJE has long promoted the integration of Education Technology into Jewish educational programs. A part time Technology Integration Educator professional was engaged in 2013. Onsite coaching, workshops and conferences have been offered regularly to help teachers learn how to infuse the use of digital technology to enhance Jewish education. A website called CJEilearn.org was created to curate digital resources and tools that can be integrated into a Jewish classroom. Recently, the CJE entered into a partnership with ShalomLearning. ShalomLearning is a values-based Jewish studies and Hebrew curriculum program for synagogue schools that is implemented via a blended platform allowing schools to use technology in a synchronous and or asynchronous manner.

The CJE team feels digital tools introduced into learning environments via coaching, on site mentoring, workshops and webinars or tutorials help teachers learn how EdTech can be successfully implemented. The Being Connected class was seen as one way to make this happen. Offering the opportunity to dive deeply into the role of brain science in learning to different types of educators, our hope was that this would provide the foundations for a higher level of tech integration in their teaching environments.

As mentioned earlier two of the participants, (as well as both instructors) were graduates of the Mandel Teacher Educator Institute. One of the teachers graduated a similar program that was developed in West Palm Beach and was based on the MTEI model. The primary goal of this program is “to develop leaders – ‘teachers of teachers’ – who can produce significant change in teaching and learning through planning and implementing improved and creative professional development for teachers in their institutions, in their communities, and at the national level.” Most of the MTEI graduates felt that their experience in that program informed how they would participate in the Being Connected class. One participant said that it ”gave me a different idea of what learning about teaching means. So this course was interesting because what I learned about how stepping back and thinking about teaching can do to change what is possible in the classroom.” Another said that it “reminded me how important it is to study with peers. I was also excited to use some of my MTEI knowledge during this process.”

We will begin with the vibrant framework developed for the effective use of technology by Liz Kolb. The wise use of technology has to pass a triple test of the criterion of engagement, enhancement and extension, or it can be deemed frivolous. There is no technology for technology sake in this framework. It is all about the learning.

To determine if a tech tool promotes student engagement, we should ask if it allows the students to focus on the assignment or activity with less distraction. Does it motivate the student to learn more, and does it shift the student’s behavior from being a passive to active social learner?

Enhancement answers these questions: What learning opportunities not normally accessible will be created using a specific digital tool? What is the

value added to the learning experience when technology is used? Does using the tool promote higher-order thinking skills?

Extension means that the technology creates opportunities for the student to continue to learn, or to apply what is learned in class outside the formal school setting. It links school learning with everyday life experiences, and empowers students to build skills that can be used in their everyday lives.

Deeply congruent with this framework are the insights of Caine and Caine about brain-friendly learning. We know the brain moves along a perception-action continuum, always looking for information and connections to process, always threatened by the demon of abstraction stripped of sensory experience. The three stages of the unfolding model are

Relaxed Alertness

Orchestrated Immersion in Complex Experience

Active Processing and Reflection

Before examining each of the three steps, we take a look at the gestalt of the teaching. Perhaps the parade example of utilizing this approach is the contrast Caine and Caine offer between traditional ways of teaching nutrition (learning a pre-established vocabulary and set of concepts) and the launch of their unit on nutrition. Caine and Caine begin by having their students experience new foods and record the tastes and smells of the food. Eventually curiosity leads them down the esophageal passage way into their stomachs where their learning is then scaffolded by an exploration

of various digital spaces and a set of guiding questions generated by the students.

Each of the three phrases also helps provide elegant midrash on the current emphasis on Jewish experiential learning. Relaxed alertness reminds us that educational experience cannot effectively occur in a a neurological vacuum. Students can't or shouldn't be simply be thrown into new experiences. A culture and atmosphere of trust and engaged exploration needs to be created in the classroom. Any hint of "fight or flight" will undermine the process.

The next phase--- orchestrated immersion in complex experience-- is demanding as well. Orchestration already hints that the role of the teacher has been shifted from pedagogue to the orchestrator oo educational experience, the guide on the side as it were. Immersion is also critical. There is no direct transfer of knowledge along a corridor of teaching. The content always needs to be richer and deeper than the product the learner will ultimately develop. Access to digital resources and new educational technologies of the kind described by Kolb is one of the best ways to initiate such orchestrated immersion.

Further, the experience needs to be richly complex. Here is where ideas and concepts drawn from disciplined knowledge is critical. Once immersed and engaged, the mind of the learner will beg to be stretched by new ideas and values. No single experience will do. Even the proverbial experience of being slaves in Egypt will need to have dimensions of nuance and challenge included in the learning challenge. The brains attraction to paradox, challenge, and complexity needs to be honored.

Here we can draw an example from one of our classes. In preparation for developing a brain-friendly, technologically sophisticated project for our group Peter leads us in a study of the arbah banim, the four children. Certainly, we could have generated a good dialogue by looking at the

“traditional” four children found in most Haggadot. It turns out, however, that the “traditional” four children is something of a remake. An older talmudic version “complexifies” our categories and even inverts them by attributing some similarities between the hacham, wise child, and the tam, the “simple”. The media for dialogue , in this case the text, needs to be complex and challenging.

Finally, as Joe Riemer so aptly noted, the experience itself is something like the *peirotehem*, the immediate fruit, in the famous Mishnah from tractate Peah. only the seeds of our educational endeavor. The *keren kayemet,* the enduring value of the experience , can only come when dialogue and evaluation transform the experience.

It turns out that Kolb and Caine and Caine together provide an effective grid for both planning lists and evaluating them. After several sessions devoted to exploring some central texts from *Natural Learning in a Connected World (Caine and Caine)* and *Learning First, Technology Second (Kolb).* The class generated the following grid

Perception-Action Dynamic & 3E's rubric

Create doorways (immersive environment or digital breakout) related to pesach to help

them to retell the story in their own way

Educational Goals of the project	
(Kolb)..Learning first technology second... Explain your intended use of technology	• Visual images can be more intense/impactful • Using tech to put my students’ faces onto/into the image/creating avatars (comics) • Music • Each classroom experiences in a unique way
(Kolb) *Tech contribution to Engagement* How will this digital form of connection	• The tech gets their attention - but can’t be the point. The tech is the hook

provide deeper engagement.	
(Kolb) *Tech contribution to enhancement.* What learning opportunities not normally accessible will be created	• Use tech to create virtual/immersive environment • Providing resources that are not always available
(Kolb) *Tech contribution to extension.* What real life connections and applications are provided	• Some documentation of experience at home for kids' seder • And it's sometimes the kids the created. • Mitzvah element that comes out of experience
(Caine and Caine) *Perception-Action Continuum* How will learners utilize their senses; what will they later do with the learning.	• Tactile (sand/heat/fans) • Images • Lifting heavy rocks • Taste • Provocation - visual walking through door - other senses behind each door
(Caine and Caine) *Relaxed Alertness.* What kind of confidence building preliminaries can be created	• Perform action that builds confidence/remind them that they already know alot about the story • Review-retell the story
(Caine and Caine) *Deep immersion in complex experience* where are their digital sites that will invite the learners to jump right in and guide themselves through interesting data and ideas	• Games • Needs to be personalized • Sites linked to ability • Thematic • Collaboration • Whatsapp (with Israeli school) • Area of provocation Banquet of the senses • Shared experience

(Caine and Caine) Active Processing of Experience. Opportunities for learners to reflect on what, how, and why they have learned this material	• Taking something home to tell the story themselves • Create their own haggadah (artwork, visual representation, like photos with comments) • Make a celebration of new ideas that came to class because of the process of learning and experience

The group of five participants in the class experimented with these rubrics as they thought through their own teaching as well as work directing their faculty and engaging parents. The focus of the initial brainstorming was a digital Tu B'shevat simulation generated by Peter. After "practicing" Tu B'Shevat the group began to "do" Pesach in earnest. The doing included study of the four questions and the experiential roots of the Pesach experience in chapter twelve of Exodus. This helped the group focus on "narrative" and the personalization of the Pesach narrative as the doorway through which they would begin their collegial design work. Presently they are about to customize the products of their brainstorming and lesson planning to their five different settings.

Several professional development comments are valuable here. The role of study and engagement , familiar to most primarily but not exclusively through their MTEI experience, in generating content helped them walk the narrow ridge of Shulman's pedagogical content knowledge and the teacher stance towards new knowledge. Equally, the group walked a second tightrope. Harry Broudy talks about the tension between "applicative" and "interpretive" uses of new paradigms. Applicative approaches encourages a tight fit of a new framework to guide learning. Interpretive approaches encourage a wider and more flexible use of the same set of concepts. Both approaches were important to the mastery of the new paradigms for our students.

The Huppah Above the the Marriage of Experiential and Content Based Jewish Learning : A Fresh Conceptualization

Exploring Adin Steinsaltz, Renate and Geoffrey Caine and the Amphibious Jew

In this article I will be linking the understanding of the implications of the research in neuroscience for education explored by Caine and Caine with an insight adopted and amplified given to me by colleague Rabbi Barbara Penzner speaking b'shem (int he name) of Talmud and Kabbalah scholar Adin Steinsaltz, a conceptualization I call the amphibious Jew. Underlying the confluence of both these texts is a deep appreciation for the value of immersive, water like quality of the initial stages of curious and engaged learning. In an article by Velvet Green, "Curiosity and the Desire for Truth", she links this "curiosity" to the primal experience of birth:

I've often marveled at the basic miracle of birth. Every one of us, in our mother's womb, was a real aquatic creature before we were born. We were surrounded by water; . . . our lungs were folded up like a fan, not in use but getting ready. . . . When the child is born, no matter how long the mother labors, "birth" is practically instantaneous. Once the child's head emerges, it must take its first breath; it's now a land creature, not an aquatic one. . . . How does it happen? A most amazing chemical miracle takes place, starting during the labor of the mother.

Caine and Caine and the Brain

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Adin Steinsaltz and the Amphibious Jew

Adin Steinsaltz, a revered scholar of Talmud and Jewish mysticism but importantly a person with some background in biology. Steinsaltz once observed in a lecture given in Jerusalem in 1993:

All creatures live in water. The difference between sea creatures and land creatures is that land animals draw the water into themselves.

Undoubtedly, Rabbi Steinsaltz is aware as he writes this of a classical Jewish midrash told by Rabbi Akiva. The story begins with a conversation between a fish and a fox. The plot is clear. The fox would love for the fish to jump out of the pond becomes the fox's supper. Why does the fish refuse? Like the Jew in relationship to the living waters of Torah, the fish cannot exist outside of the water.

Returning to Steinsaltz's epigram, there are two vital dimensions to all educational experience. One is marine. Engagement is the major trope of this work. It points to the importance of immersive venues where one

can experience Judaism naturally and organically. It is aligned with much of what we have learned works in Jewish education in venues such as camp, Israel trips, retreats and some forms of early childhood education. Perhaps preeminently it is present in homes where Judaism is practiced from birth.

The other mode is mammalian where Jews consciously journey to the house of their friends, their synagogues and communities to experience a very mindful Judaism that can guide them in creating spiritual connections as well as applying Jewish values to contemporary ethical dilemmas. Meaning making is its major trope.

These two modes will remind many readers of two important voices in contemporary dialogues about experiential learning.. The first is Mihály Csíkszentmihályi's notion of "flow". Initially our richest educational experience has a marine-like quality of moving naturally through the medium that educates. When "rich complexity" is available and "well-orchestrated" the learner is so engaged with the learning that it is entirely focused and gripping. It feels a little like the chorus of the broadway song from Annie Get Your Gun "doing what comes naturally."

Eventually the orchestration of these experiences will begin to borrow more from the work of Lev Vygotsky. As Kolb reminds us, it is the richer and more complex understanding of subject matter that matter most. The notions of scaffolds is the tool of choice for projects as we move from spontaneous to scientific concepts and create the cognitive and valuational structures that give substance and form to the educational flow initiated in a marine fashion. Wisely used, technology provides extraordinary tools for such extension and deepening of the learning. In a way this mirrors Vygotsky's insights about the relationship between spontaneous and scientific concepts. While in theory it is possible to precede top down from the scientific to the spontaneous use of concepts the process works best in the other direction, from bottom up.

In working its slow way upward, an everyday concept clears a path for the scientific concept and its downward development. It creates a series of structures necessary for the evolution of a concept's more primitive, elementary aspects, which give it body and vitality. Scientific concepts, in turn, supply structures for the upward development of the child's spontaneous concepts toward consciousness and deliberate use. (Vygotsky, 1986, p. 194)

Below is a picture that is linked to a question Jewish educators might ask as we create Jewish experiences for children:

Since each of these modes of Jewish existence has deep value and importance it is critical that Jews have access to each. Neither the mammalian, self-guiding Jew nor the marine Jew for whom Judaism is as natural as a fish swimming in water can stand alone. We need to guide

the next generation in becoming amphibious creatures who can alternately live in both land and water Jewish environments. Just like froggy

I believe Caine and Caine suggest the kind of conditions that must be created for students as they move back and forth between marine and mamallian life and become both marine Jews who move naturally through Jewish environments and mammals who use their analytic powers to process complex Jewish experience. Further, there are implications for curriculum designers, funders, and educational entrepeneurs who want to create the conditions for effective Jewish learning and experience.

To further that exploration I formulate the following existence proofs of what it means to take Froggy Seriously;

You know you are an educator embracing the concept of the amphibious Jew when_____

--- you are as comfortable carefully creating a learning plan for yourself as jumping into an interesting possibility offered in your community;

---- as a Jewish educator, you quite naturally think about the opportunities in your school year to offer immersive Jewish experiences (summer ulpanim, retreats, etc).

--- you appreciate the experience of Jewish naturalness and normality in Israel and the kavana/intentionality required to make Jewish time and space in your North American Jewish life

-- you make sure that the learning experiences you are creating of some element of marine and mamallian Jewish life in them

--- has examined the Jewish life-cycle for its natural rhythms of marine and mamallian possibilities (when do learners move into stages where the amphibious or mamallian mode is the best pathway to rich learning for this age /stage learner)

--- you can reflect on your own biography as a Jewish learner and see both the marine andmamallian influences

----appreciates the learning of Hebrew as itself an example of the amphibious cycles (first being surrounded by the language , then learning its sructures and tools, … speaking and acting, hearing , reading, and writing

--- understand Mordecai Kaplan's efforts to create an organic Jewish community and new forms of Jewish education as coming from an awareness of the amphibious jew

Lastly, the final exam for blossoming amphibious Jewish educator looks like this They read the famous Talmudic story contrasting the learning styles of Rabbi Hiya and Rabbi Hanina with creative indifference rather than sharp advocacy. In the tale Hanina is said to have restored the whole Torah through the power of his analytic and dialectic powers. Hiya's claim is that he would make sure the Torah is not forgotten in the first place by making his learning hands on and empowering and linked to the rhythms of Jewish living.

Resisting our impulse to lionize Hiya because Jewish education seems so impossibly dry and analytic we would insist in the name of froggy that both modes are critical and our job is to create creative synergy between them.