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Tim Thomasma

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ENGAGING THE LEARNING COMMUNITY WITH AN INTEGRATED E-LEARNING, GAMING AND SOCIAL NETWORKING PLATFORM

by Tim Thomasma

Abstract

Our view is that an e-learning platform based on user-created content, gamification, and with an integrated social network, will create a content-dense environment in which all of the stakeholders can maximize their outcomes and in which the best teachers, students, lessons, and organizations will rise to the top. The elements of such an integrated e-learning platform would include: Wizards to enable instructors to quickly create engaging multi-media lessons; Capability to automatically transform lesson content into additional activities, games, and quizzes; The ability for students to take lessons in the form they prefer, including lessons presented as games; Reports and monitoring to enable instructors to track student engagement and outcomes; A safe internal social network to allow teachers, students, administrators, parents, and the community to participate in the discussion; Capability to enable user translation of lessons, allowing for truly global sharing. In order to test this hypothesis we are engaging with educators to build a platform called Memarden. The Memarden platform is designed to be a safe, easily accessible on-line environment where teachers, students, and those who support and encourage them meet. Memarden enables teachers to create interactive lessons quickly that can be offered to anyone on the platform. Students have profiles and pages where they organize their lessons and interact with other students, teachers, parents, mentors, and even future employers. As students use the lessons, Memarden collects data which they can keep private to assess their own progress, or share with teachers or parents who are guiding them.

Purpose - Can Technology Improve Outcomes for Everyone Involved in Learning?

People learn all their lives, for school, for fun and to keep up at work; but many people find that learning can be inconvenient, boring and not relevant or customized for their

learning style and interests. They may have a difficult time finding lessons and study groups to motivate them. Teachers find that canned content sometimes does not work for their classes, and they can't quickly create online lessons and games.

For adults and university students, personalized learning environments and social media have been helpful technological solutions for these problems, but there are drawbacks.

Students build personalized learning environments for themselves by drawing together resources that are suggested by professors, students and others in the university community. Building oneself an environment like this requires skills to organize things and pull resources together. It also requires an overall information fluency and ability to critically evaluate items that not all students have.

Facebook has been used as a way to organize and make available course materials (Irwin, Ball, Desbrow & Leverett, 2012). This can produce some positive outcomes for those who are involved with the class:

- Increased communication among students
- Greater access to course materials
- Improved logistical management of the course
- Earlier visibility to difficulties students were having

More generally, Facebook and other social media can be used for rewarding academic discussions, and to foster global academic relationships. They can enable mentoring across international boundaries. However, there are risks associated with Facebook. It has been used as a vector for cyber-bullying and there are concerns about privacy, integrity of the information provided on it, and content ownership. Since Facebook is primarily used for social interaction, it can be a distraction in educational settings.

Perspective – Enabling Differentiated Instruction Within a Global Educational Community

Our view is that an e-learning platform based on user-created content, gamification, and with an integrated social network, will create a content-dense environment in which all of the stakeholders can maximize their outcomes and in which the best teachers, students, lessons, and organizations will rise to the top. The elements of such an integrated e-learning platform would include:

- Wizards to enable instructors to quickly create engaging multi-media lessons

- Capability to automatically transform lesson content into additional activities, games, and quizzes
- The ability for students to take lessons in the form they prefer, including lessons presented as games
- Reports and monitoring to enable instructors to track student engagement and outcomes
- A safe internal social network to allow teachers, students, administrators, parents and the community to all participate in the discussion
- Capability to enable user translation of lessons, allowing for truly global sharing

Technology like this enables students to work individually and privately to get practice opportunities, feedback, error correction and assessment. Research indicated that easy-to-use technology interventions that accomplish these elements can be used to achieve several benefits (Taylor, Skinner, McCallum, Poncy, & Orsega, 2013):

- Increased spelling performance
- Increased math-fact fluency
- Gains in reading accuracy and fluency

Software can provide reading comprehension lessons, vocabulary practice, assessment, and opportunities for extended discussion of text meaning and interpretation. This has been found to produce both increased fluency in reading science textbooks, and interest and enjoyment of science (Wolff, Isecke, Rhoads & Madura, 2013).

Research has also shown that multimedia (sound, graphics, and video) produces better learning results and creates a more positive impression of the material that is taught than use of text only (Ioannou, Brown, Hannafin & Boyer, 2009). Gamification provides an additional dimension of engagement and interactivity to the rich communication that multimedia provides. Use of points, awards, leader boards and games with the teaching activities produces increased engagement, understanding, and interest in the subject matter being taught (Hickey & Filsecker, 2013). Furthermore, test scores have been improved using private on-line assessments that give immediate feedback about activity results and the difficulty levels of the learning challenges that are presented improve test scores (Economides, 2009).

Although small children primarily need human interaction and freedom to explore the physical world, technology can be helpful for children three to six-years-old. Rich, fun, interactive experiences can foster learning, cognitive development, skill building, social interaction, physical activity, and healthy behavior. Negative results from some kinds of

on-line games can include fear, hostility, desensitization, aggressive behavior, and stereotyping. Another risk is that time would be spent with electronic media that would be better spent interacting with the real world. In order to ensure children are beneficially using technology, data collection is essential to ensure that positive results are achieved (Lieberman, Chesley Fisk, & Biely, 2009).

Computer use outside school can lead to increased computer literacy, linguistic and thinking skills, and academic achievement. It tends to produce positive social-emotional, academic and technical attitudes, creativity, expression, diversity, exposure to multiple perspectives, and fosters exploration of sense of self and future opportunities. In a leisure setting, adolescents may choose educational experiences when they are afforded free expression and virtually full autonomy (Cilesiz, 2009).

Method – Build an Internet Startup

We want to learn how the elements of electronic learning can be most beneficially used by teachers and students. We think that an excellent way to do this is to create an Internet startup and a community of teachers and learners around our startup. Many recently formed Internet companies have rapidly created large global communities. Examples include Facebook, LinkedIn, Twitter, Elance, and Etsy. We want to continue in the same fashion by building a global community that is focused on learning and teaching; therefore, we are engaging with educators to build a platform called Memarden. The Memarden platform is designed to be a safe, easily accessible on-line environment where teachers, students, and those who support and encourage them meet. Memarden enables teachers to create interactive lessons quickly that can be offered to anyone on the platform. Students have profiles and pages where they organize their lessons and interact with other students, teachers, parents, mentors, and even future employers. As students use the lessons, Memarden collects data which they can keep private to assess their own progress, or share with teachers or parents who are guiding them.

Like many entrepreneurs, we are building our product because we want to see something new and helpful exist in the world. Memarden is something we want to use ourselves and with our children, and something that we think other people will want to use. A startup is an experiment to test whether our concept is actually as helpful to people as we think it might be. This requires engagement with others in the educational community so that as the platform grows it offers capabilities that truly are of value in teaching and learning. Ries (2011) offered a best practice for startups as they develop their products: begin working with prospective uses as early as possible and observe what is effective and what is not. If the product is valuable, people will use it on a continuing basis, and they will talk about it both electronically and in person. It is possible to objectively measure this activity, and Ries pointed out that this is what the most successful companies do.

Results – Learning From Early Adopters and Prospective Users

As of this writing, Memarden is in use by several schools and some additional individual instructors. One teacher built mathematics lessons in French around themes from the 2014 Winter Olympics. She presented them in class using a smart-board device. Students then practiced on their own using their tablets. Once she mastered the user interface, the instructor found it interesting to create the lesson, and the students liked it.

We also meet with school boards and other organizations to talk about Memarden. These have been instructive experiences as well. We knew we needed to provide a way to structure groups of lessons. Our discussions gave us direction: enable teachers to compose lessons plans that aggregate selections of lessons offered on Memarden into daily lesson plans for the teacher to use, weekly plans to hand out to students, and broader month/year curriculum plans.

We also found that there may be high value in helping teachers administer and assess progress on Individualized Education Plans (IEPs). At first we thought of this as another type of curriculum aggregation, but we found that most schools already have a way of placing IEPs on line using the school's servers. What they do not have is a means of providing the right interventions, additional activities, and progress assessment that the IEPs call for, and the capability to keep track of the data about progress for each of the students who have IEPs.

We are planning to add more games and other types of activities, including some that address higher order learning. We thought of doing this using a narrative role-playing type of game that would include increasingly complex intellectual activities to unlock portions of the game world. While this may be useful, some teachers told us that they could address higher order cognition using combinations of the lesson types that Memarden already supports. Others are telling us they want a collaborative on-line work space for student teams who are working on projects. These spaces would provide a multifaceted approach where student work can be developed and reviewed: blogs, documents, videos, links, and games that the students create. This would work as a type of 'pinboard,' much like Pinterest. It could be used to bring students along step by step in a creative project, or students could add resources to something they want to present.

Predictions

We expect that we will learn a great deal more as additional schools, teachers, students, and even businesses make use of Memarden. There are many possibilities. We think that types of educational experiences typically offered only on computers will

be more broadly available at affordable cost. Memarden will be accessible by anyone anywhere who has a smartphone, tablet, or PC and has Internet or cellular access. The price of these technologies is decreasing throughout the world. So far we are finding that in low-income areas, schools have Internet access and PCs or tablets for at least part time student use, but there are no computers at home. However, the parents often have smartphones. Therefore, a platform that is available on both can make possible new connections between home and school. Furthermore, on-line philanthropy will increase. People will provide funding to students to enable them to take the lessons they want. It will be very easy for anyone anywhere to do this. There will also be closer collaboration between employers in the business community and the schools. The learning needs of both communities will be supported on a single platform that will enable new levels of collaboration. Besides working together, the data collection and reporting capability built into Memarden will make possible novel research projects. This will tie more closely the educational research community with the world's schools. Also, Memarden will help students who have learning disabilities, not only when they're in school, but throughout their lives. These at-risk students will not be lost once they leave the school. They can stay on Memarden and use it to review material from school, as well as explore new learning for recreation or for work. We are very hopeful and excited about the creative and valuable things the world's educational community will do.