EAGER ADOPTERS IN EDUCATION:
Strategic Plan Ideas for Integrating Instructional Technology

Jace HARGIS, PhD
San Diego, CA, USA

ABSTRACT

Strategic plans for teaching and learning are essential, however, they tend to focus on moving a mass of stakeholders along an agreeable path. The strategy is necessary and sensible, although many times, these plans miss a key audience important to the future of education, the eager adopters. Previously, this group was called "early adopters", however, I believe that the time in which educators become involved is not as important as their eagerness. This philosophy follows Thoreau's notion that, "If a man loses pace with his companions, perhaps it is because he hears a different drummer." It is those, who hear different drummers that may appear to be tangent to institutional missions, although they may actually be leading initiatives, which the institution may eventually adopt. Some of the eager ideas which will be shared in this paper include Social Emotional Competency, Digital Content Creation Ecosystems, MOOCs, play with purpose maker economy fabrication labs, Scholarship of Teaching and Learning, big data learning analytics, wearable technology, the quantifiable self, the internet of things, and mobile learning. The paper describes these eager adopter ideas aligned to the 2014 NMC Horizon report; eager adopter philosophies; and eager adopter questions to help initiate and guide strategic planning discussions.

Keywords: **Eager adopters, technology, mobile learning, strategic plans, instructional technology.**

INTRODUCTION

A model frequently referenced by eager adopters is the Elements of the Creative Classroom Research Model from the 2014 New Media Consortium (NMC)/Educause Horizon report (http://cdn.nmc.org/media/2014-nmc-horizon-report-he-EN-SC.pdf) (Johnson, et al, 2014). This model provides a broad organization of innovative pedagogical practices. Eager adopters are able to independently consider ideas from this model, which they typically have observed or could envision using in their classrooms. An ideal method for addressing many, if not all of these practices would be to bring together a cohort of eager adopters as a think tank to share their ideas and subsequently create a map of practices, which they currently use, plan/hope to use and would like to use, but perhaps cannot due to limited resources.

I will use this model as an advance organizer for this paper, identifying particular aspect of the model, which align well with eager adopter philosophy and describing potential eager adopter ideas for strategic plan consideration.

Content and Curriculum (Emotional Intelligence, Cross/trans-disciplinary, Open Educational Resources, Meaningful Activities)

In this category, an eager adopter would be interested in building a Digital Content Creation Ecosystem (DCCE), which allows faculty to upload media-rich, instructional strategies into an open-source platform. The concept-based active instructional plans would then be crowd source-assessed, edited, improved and returned to the open system to be continually updated and improved. In addition, best-practice instructional design suggestions based on foundational learning theories would be provided online to help faculty create electronic learning objects (eLO's) as Open Educational Resources (OER). The open environment would also include copyright free graphics, video's, simulations, and apps. As education begins to use more digital tools and information, the need to create an efficient collaborative learning DCCE platform will be essential.

To address, the Emotional Intelligence attribute of this category, an eager adopter would be searching for an institutional Center for Social Emotional Competency (SEC) to collaborate and use as a vehicle to promote their work beyond as as a distinction to their disciplines. Typically SEC is thought to have at least five distinct attributes, which include self-awareness, self-regulation, intrinsic motivation, empathy and social skills. A proper Center would include a focus on embracing failed events and instilling grit as enduring characteristics. Emotional Intelligence has been popular in the engineering circles since Goleman's (1996) book on Social Emotional Intelligence. The thought was incorporating social skills for working engineers may assist in their conversations on analytical topics with clients. The "intelligence" has been researched further and many believe Emotional Intelligence is a competency, hence the updated terms Social Emotional Competency, which can be taught.

Assessment (Engaging formats, Formative, Informal learning)

Generating an electronic portfolio process, leveraging technology to represent learner abilities, which would have been difficult or impossible to do without technology previously? E-Portfolio's have been idealized for many years, however, as of yet, a complete, functional package has not been developed.

Several universities have attempted, however, their efforts have been abandoned. Textbook and software companies have attempted, but their lack of experience and high cost have prohibited adoption. Learning Management Systems have taken a similar path, originating in the post-secondary, and now common in the secondary schools.

This provides for an easier transition from secondary to post-secondary for learners, which is especially helpful during a stressful time, when many parts of their education is new. For revenue, we could copyright and market to secondary and post-secondary institutions.

An idea that capitalizes on the power of both formative assessment and informal learning for eager adopters would be to make mobile tablets with screencasting apps readily available. Soto and Hargis (2014) found that by asking students to create screencasts on an Apple iPad mobile tablet on how they solved mathematical problems, the researchers could capture the learner voice and actions in an efficient, easily managed audio file. Upon further examination, the researchers were able to more deeply understand how students were processing and making sense of math.

The screencast app allowed the ability to view when and what was erased, along with their verbalizations as to why, which enabled the researchers to correct math misconceptions, that otherwise would have gone unnoticed.

Review of the screencasts were completed soon after producing, and therefore as a formative assessment acted as a key piece of information for real time remediation.

Learning Practices
(Exploring, Creating, Playing, Self-regulated, Personalized, Peer-to-peer)

Although Massive Open Online Courses (MOOCs) for large-scale dissemination of our teaching and learning may not be new to the educational scene, building effective MOOCs remains a mystery. Most MOOCs now available have simply transferred low level, didactic lectures into an electronic format and placed in easy to access online platforms. An eager adopter would bring similar innovative, active teaching methods, which have been successful off-line into the MOOC world and find creative ways to further engage the learner. For example, students could be presented with a menu of video's from which to select from, each of them providing a different real life problem. After viewing, they are asked to create an organization to address the issue, share with their colleagues, crowd-source a consistent and agreed upon procedure. Guidance from the instructor could suggest that the final student representation of learning outcomes include a media-rich artifact, using a menu of programs, which could include vodcast, virtual worlds, social networks, green-screen video technologies, perhaps even find ways to connect to wearable technology, the quantifiable self or the Internet of Things. This approach would empower the learner to use skills, which we know have been shown to help learners engage, retain and use conceptual frameworks, which are exploring, creating and playing.

Eager adopters are eager mostly because they enjoy what they do and they enjoy what they do because many of them view teaching and learning as a form of play. Therefore, eager adopters would thrive at an institution, which could build a highly interactive, manipulative-based "Play with Purpose" facility which combines the benefits of a gamification-zone and Fabrication Laboratory (Fab Lab). The space would provide equipment and materials for users to create physically engineered prototypes, and/or technology products, such as mobile apps or even educational app packages. The major theoretical construct typically used in this context is the Information Processing Model, where the instructor/designer has intentionally built in coding activities to connect working memory to long term memory.

When this is done properly, the learner can decode the information in meaningful ways. Current cognitive science research by Mauro (2011) indicates the reason why and how we can incorporate gaming into learning. Key attributes for a successful learning game include a simple, yet engaging interactive concept; cleverly managed response time; short term memory management; mystery (i.e., inquiry); and measuring that which some say cannot be measured. Using learning games is a highly effective way to build personalized self-regulated abilities.

Teaching Practices
(Soft skills, Individual Strengths, Multiple learning styles, Modes of thinking)
Eager adopters are also eager to share their efforts with a broader community of educators. One of the best methods to achieve this is to use the current scholarship model, although with a different audience.

Instead of discipline specific research, a useful model for a technology-educator-scholar model is the Scholarship of Teaching and Learning (SoTL).

A common SoTL model is the Ernest Boyer (1990) model. Boyer proposed a broader definition to traditional scholarship in the academe. His model incorporated four distinctively different types of scholarship, the traditional scholarship of discovery; the scholarship of integration, synthesizing information across disciplines; the scholarship of application, or engagement; and SoTL, a systematic study of the teaching process using accepted social science design study models.

SoTL empowers teachers to systematically collect data on the effectiveness of how they integrate instructional technologies, as well as provides a credible, evidence-based method for sharing the results with their colleagues in a language accepted by the academe.

In addition to exploring how technology works in their class and discipline, SoTL also provides a springboard to explore soft skills, individual strengths, multiple learning styles, and alternate modes of thinking.

An ideal way to accelerate faculty engagement in SoTL activities are "Learning Laboratories", where faculty experiment with teaching strategies which integrating appropriate, functional, meaningful instructional technology. Typically, these labs are classrooms, which are retrofitted with exploratory technology, as well as staff, who could assist with new, innovative teaching strategies. Equipment could include large multi-touch screens, mobile devices, remote projection, green screen technology, high end video-conferencing and recording and multiple ways for learners to present and capture their learning experience.

Common is the development of a Learning Lab Faculty Fellows program were faculty are certified, similar to the Apple Distinguished Educator program and then provide professional development for the university community.

Organization (Monitoring quality, Innovative timetables, Innovative services)

Monitoring quality and providing innovative services could be provided by creating efficient ways to gather large amounts of data and making them available to eager adopters to aid in real-time decision-making. Eager adopters would appreciate being able to use big analytical data to aid instructional delivery, perhaps in an adaptive technology model. The ability to capture what students know as soon as possible, and in a low threshold way, both for the learner and the teacher to make sense of the data will greatly assist in the educators ability to reroute students progress if needed. An early adopter would hope for more useful data than simply examination responses. They would encourage the ability to easily capture the high quality, media-rich, qualitative assessment artifacts, which have been created by their students. The ability to quickly share, peer-review and create aggregate products, as well as provide assessments compared to inter-rater reliable rubrics would be an ideal way to use the big data phenomenon.

Leadership & Values
(Innovative management, Social entrepreneurship, inclusion & equity)

Eager adopters search for innovative leadership, many times this becomes a deciding factor for their employment at the institution. Perhaps, we will encourage more eager adopting leadership as an additional parameter to this category of Leadership and Values. The major indicator of eager adopter leadership is for the leadership to model eager adoption. Some leaders build strategic plans, which propose integrating innovative, useful technologies, and then they continue to use traditional means to do business, instead of integrating the technology themselves.

Connectedness
(Networking with the real world, Social networking, Learning events)

Eager adopters are also passionate about continuous learning and many are in dedicated to the academe because of the opportunity to learn everyday themselves. Therefore, they would look to an institution to provide on-going, current professional development, such as offering a Certificate Course on Teaching using Mobile Devices. In the past decade, there have been programs developed, even Masters of Education degrees addressing teaching in higher education. However, with the rapid movement of mobile devices in the classroom, there lacks a specific offering for how to effectively use the mobile tools for learning (Hargis, & Cavanaugh, 2014). We all know that the key to the success is not the device, but the method of our deployment and our hyper-focus on front-end faculty development. Hargis, Cavanaugh, Kamali, and Soto (2013) created a four tier model which could be used as a basis for a certificate course. The model was generated to lead to pedagogy portion of the United Arab Emirates large scale federal mobile learning project. The four steps include iChampion, iCelebrate, iCommunicate and iSoTL.

Infrastructure (Physical space, ICT infrastructure)

Eager adopters will aggressively pursue an highly interactive ICT infrastructure, one that allows the faculty member to interact frequently, without the need of programing language capabilities.

Eager adopters could then dream and find ways to resource leading edge technologies and explore how they can advantage educational settings. Possible high end technology-based initiatives, which would require a rigorous ICT infrastructure include wearable technology, the quantifiable self, and the internet of things. Google glass is just the beginning to interface wearing technology and learning.

On the near horizon technologies are currently proposed to allow learners to wear devices, which can monitor their physical health, perhaps someday their mental and intellectual health via the quantifiable self. The internet of things will help connect the data and make available to teachers and other experts.

AN EAGER ADOPTER PHILOSOPHY

Eager adopters focus on developing relationships and learner engagement. To accomplish these, they focus on creating opportunities, which ...

1. **provide frequent authentic activities geared towards collaboration, which parallels the type of behavior expected in and beyond learner careers;**
2. **integrate functional, meaningful mobile technology, which allow for easy access to the community, and creation of media rich artifacts representing learner efforts;**
3. **collect dynamic, formative assessment data, measured in authentic ways, such as ePortfolio's and screencasts, which can be used to redirect real-time misconceptions;**
4. **include physical and virtual space with tactile manipulatable's, such as 3D printers and electronic building blocks creating a "Play with Purpose" attitude;**
5. **contain informal micro-teaching areas, and green screens for recording and editing digital video to provide active practice space for reflection and self-regulation; and**
6. **focus on inquiry, project-based learning, where learners are creators instead of consumers and are allowed to intrinsically develop their own meaningful driving questions.**

Eager adopters accomplish their aspirations through creating engaging learning environments, which:

- **provide many casual interactive areas where conversations are supported between colleagues, students and teachers, and the community;**
2. **encourage active physical, mental and spiritual interactions, which can be enhanced with integrated, seamless technology;**
3. **intentionally integrate the curriculum throughout campus, creating a campus-wide learning environment that learners can use for challenge-based learning;**
4. **have supportive leadership with frequent presence and are models of meaningful technology;**

5. **are ideal examples of sustainability, providing public showcases throughout the world;**
6. **are able to see beyond the classroom and knowledge acquisition, creating holistic learners with much needed social emotional competencies;**
7. **understand the importance of internationalization and the promotion of frequent interplay between their students abroad and welcoming foreign students;**
8. **reward the Scholarship of Teaching and Learning (SoTL), which produces internal and external evidence-based literature on best practices in teaching;**
9. **exemplify a learning culture, which values inquiry, and self-directed learning.**

Critical to Eager Adopter success are colleagues, who design and facilitate innovative and personalized learning experiences because he/she:

1. **is an enthusiastic, passionate curious, caring, risk-taker, who embraces failed events as necessary for meaningful learning;**
2. **understands that not all students think as the educator does, so the educator's role is to design and lead multiple flexible pathways for deep individualized learning;**
3. **exemplifies an engaging story-teller according to his/her personal style, translating a love for the discipline to learners;**
4. **can "teach with their mouth" shut to open opportunities for a broad student voice and activity (Finkel, 2000);**
5. **is respected as an expert, attuned to learner needs, and acts as a coach, mentor and motivator; and**
6. **collaborates and shares ideas openly and freely with colleagues for the betterment of all students.**

The most important attribute for eager adopter success is learners who are able and ready because they;

1. **are engaged, curious, playful, open-minded, spirited, responsible, hard working, goal-oriented, persistent, organized, motivated, independent risk-takers;**
2. **approach learning as a connected and meaningful experience with peers and the community and they contribute to the community;**
3. **develop grit for enduring failed events as challenges that will be overcome with time, recognize the importance of guided practice, apply the habits of project management for their learning pathways;**
4. **try to use a range of tools and resources, including media, games and manipulatables;**
5. **have support from teachers, administrators, parents, business leaders and peers; and**
6. **are less concerned about grades and more about learning (intrinsic motivators).**

EAGER ADOPTER QUESTIONS

Finally, some thoughts on the type of questions, which keeps an eager adopter awake at night. There are people who believe the "smart ones" are the ones who have answers, however, eager adopters know that the future depends on those who know the key questions.

- **What does a learning environment, educators and learners of the future look like?**
- **What pedagogies are required to be empower a 21st Century learning community?**
- **What framework and process will we use to create a progressive vision?**
- **How will we prepare the community for change?**
- **What professional development is needed, how do we deploy and sustain?**
- **What instruments will we create to accurately "measure the difficult to measure"?**
- **What mobile teaching and learning tools will be required and of whom?**
- **How do we integrate work-style with life-style, while integrating change?**
- **What is the role of new ways to communicate, including texting, podcasting, virtual worlds, social networking, blogs, and future tools?**
- **How do we prepare for remote learning?**
- **How do we migrate information, access and philosophy to the cloud?**
- **How do we maximize the function of our current LMS, while maintaining flexibility for when we need to change?**
- **Will we develop rich content management systems to search, store and share?**
- **What eLearning Objects are available and what is the role of textbooks?**
- **What interactive multimedia components can be created internally and outsourced?**
- **What are the links to National Curricula, internal and external agency repositories?**

BIODATA and CONTACT ADDRESEES of the AUTHOR

Dr. HARGIS has been a College Director in the UAE; an Assistant Provost and Associate Professor at the University of the Pacific; and a Director of Faculty Development and Assistant Professor at the University of North Florida. He has authored a textbook, an anthology and written over one hundred academic articles as well as offered hundreds of national and international academic presentations. He has earned a B.S. in Oceanography from Florida Institute of Technology; a M.S. in Environmental Engineering Sciences and a Ph.D. in Science Education from the University of Florida. His research agenda focuses on how people learn with the use of emerging instructional technologies.

Jace HARGIS, PhD
San Diego, CA 92101
Email: jace.hargis@gmail.com

REFERENCES

Finkel, D. (2000). ***Teaching with your mouth shut*****. Portsmouth , NH : Heinemann.**

Goleman, D. (1996). Emotional Intelligence: why it can matter more than IQ. London: Bloomsbury Publishing.

Hargis, J., & Cavanaugh, C. (2014). A one year federal mobile learning initiative review. ***Encyclopedia of Information Science and Technology*****, Third edition.**

Hargis, J., Cavanaugh, C., Kamali, T., & Soto, M. (2013). A federal higher education iPad mobile learning initiative: Triangulation of data to determine early effectiveness***. Journal of Innovation in Higher Education*****, 39(1).**

Johnson, L., Adams Becker, S., Estrada, V., & Freeman, A. (2014). NMC Horizon Report: 2014 Higher Education Edition**. Austin, Texas: The New Media Consortium.**

Mauro, C. (2011). Why Angry Birds is so successful and popular: a cognitive teardown of the user experience. PulseUX Blog Theory, Analysis and Reviews on UX User Experience Research and Design. Retrieved August 15, 2014 from http://www.mauronewmedia.com/blog/why-angry-birds-is-so-successful-a-cognitive-teardown-of-the-user-experience/.

Soto, M., & Hargis, J. (2014). Students ExplainEverything using iPads. ***ISTE Learning and Leading with Technology,*** **32-33.**