Online Learning

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How Can Colleges Prepare for the age of Online Learning?

Online learning is a current trend among the higher learning institutions around the world. Universities readily adapted to technology, and after 20 years of building infrastructure and tools to facilitate this movement, it literally has become a common component of most institutional academic structure. Wireless initiatives have ensured that Wi-Fi internet access is a required utility on a college campus, much in the same way that water, electricity, heat and air-conditioning are a necessity. When students arrive on campus, they expect the same amenities that they have at home. This means connectivity and bandwidth for all of their devices; the number of which has increased steadily in the last decade. When walking the residence halls of a large campus, the typical lounge and communal type areas are filled with students utilizing these devices not only for fun, entertainment and communications; but for their homework and coursework as well. Today's students have technology interwoven into the fabric of their experience at a university. It would only make sense that their education has so-to evolved to include the same components they use in their everyday life. Classes for almost every major are now available to include sections that are completely online. While we still have many courses in which the traditional course is still the experience that most students are after, today's students will also be able to choose from a mixed schedule to include some of the benefits of the online courses to complement their schedule. While online class delivery will require instructors to change some of their methods and also require them to evolve technically in their own way; online learning has many benefits, and when compared to traditional in-person classes, educators can use many of the same strategies as their traditional classes, with additional technological advancements, to achieve the same positive student outcome.

Anyone who has ever taken classes at one of these institutions has most likely encountered a large lecture-hall type of class, void of interpersonal contact between the instructor and student, where you can literally attend every class, and never have much interaction within the class unless you reach out and initiate that contact. In comparison, they are not that much different from an online class, where anonymity can be both comforting and convenient for some learners. When first introduced, classes of this nature were actually labeled "distance education," and that label still remains, however online classes are not only for distance education anymore. Online learning is now becoming so popular that many students on-campus take these classes online as opposed to the in-person section. "Estimates indicate that about 30% of all students enroll in at least one online course. (Fredericksen, E.E. 2018) Colleges are now establishing "leadership positions to coordinate and direct their efforts in this area." Are the community colleges and universities across America prepared for this challenge of delivering traditional courses in an online format?

Now that online learning is a common feature, colleges are actively refining their methods and developing strategies for better online learning outcomes. In fact, at Southern Illinois University in Carbondale, IL; "The Center for Teaching Excellence" or "CTE," has been established to support this directive. As a mission for the College, "CTE serves as the one central unit for expert assistance in sound pedagogy, instructional technology and overall enhancement for on-campus and distance education courses. We provide support for faculty, teaching assistants, and staff through a variety of services and solutions designed to meet SIU's changing needs in teaching and learning." Instructors can sign up for CTE training and events, utilize a multitude of available documents designed to enhance their courses, and tap into a vast amount of resources such as template guides, and videos; all the way up to complete evaluations of their

courses through ICE's--an acronym for "Instructor or Course Evaluations." Instructors at SIU should be very prepared to deal with a variety of issues that are not only exclusive to online learning, but in all courses in general. At the University of Illinois in Springfield, faculty, staff and online leaders utilize "ION," the Illinois Online Network; to receive high quality professional development in the area of online education. First funded in 1997, their mission to provide leadership roles in online learning is among the first ever developed since the invention of the internet.

Having established online learning as a permanent, developed fixture in a few of the most advanced institutions in our state of Illinois, it begs the following questions: Does a framework exist to provide guidance to faculty in order to meet these challenges? Can we focus on the same learning objectives and student outcomes when delivering online courses? Are the challenges the same as in traditional learning, in the areas that are most important to prepare students for success in a technologically advanced world? Finally, how will online learning evolve as the pace of technology continues to advance? Through this discovery of the main issues present, we can develop a new perspective that can synthesize the work that others have done to provide a foundation for this inquiry. Through research of some of the latest journals, I will attempt to find evidence to support factual answers to these questions. Utilizing available online public materials and journals, I will outline the design elements that have equated to success in many situations, providing facts that support the outcomes that have been defined as "successful." Through this outline of the most relevant issues, topics and subjects involved, I will provide context to these assertions and discuss further the issues that are still yet to be explored as technology advances, and we evolve into the future.

Design elements of online courses have evolving terminology and a new collection of frameworks and concepts to draw from. New topics relevant to the learning experience, and new design elements are the topics of many late journal articles, such as the JIOL, *The Journal of Interactive Online Learning*, and other research-based publications. These new concepts often involve traditional learning paradigms, with additional elements that are relevant to the delivery of the content involving technical avenues. Among these are online discussions, videos, and a vast internet from which students can conduct research with incredible speed. Assessment of the student's work ranging from normal assignments, to exams, and projects is now automated and convenient; but not without the usual but perhaps magnified ethical considerations brought on by the same technology that makes it convenient. That same technology makes the collaboration and teamwork readily accessible by students through various new communication systems such as Google Hangout and the overall concept of cloud sharing. Student outcomes are now the focus of our education, and along with newer technology, these desired outcomes include producing technically savvy students who can thrive in today's job market. Results from some available studies will provide proof of which ideas have worked, and which ones my need further development. The evolution of learning will continue to require us to further analyze these topics and provide this information to our educators as they themselves help to formulate this plan for the future. Design elements for further discussion will help us draw a conclusion to both the original question; and the overall question of "how" today's colleges around the country can prepare for the successful delivery of online courses to their fullest potential. We can assert that the audience for this paper should include both educators, and personnel in the leadership positions responsible for the direction of the online curriculum.

When it comes to course design, colleges first and foremost need to establish an entity to the extent of the examples set by SIU and UIS. Having a department established specifically to address the objective of more effective online learning will be paramount to the success of a college in this area. Among the items that are beneficial to faculty and leaders beyond training, will be the widely available documents designed to enhance their learning in this area. Course building frameworks, instructional design documents, and quality checklists can provide immediate feedback and clarity on the subject of course design. Beyond these examples, instructors can delve deeper into this subject at a more abstract level to gain a greater understanding of new concepts being introduced in this area. The following concepts in Table 1 should be researched further and introduced into their course design:

TABLE 1 Deeper Learning Strategies and Outcomes of Deeper Learning

Strategies For Deeper Learning	**Outcomes of Deeper Learning**
Meaning Making and Comprehension	Master core academic content
Declarative Learning	Think critically and solve complex problems
Higher Order Thinking	Work collaboratively
Meaningful Learning and Active Engagement	Communicate effectively
Intrinsic Motivation	Learn how to learn
Knowledge Transfer	Develop academic mindsets

(Note: Each Outcome is not linked directly to any specific strategy.)

"Educators need to be aware of the pitfalls of surface learning, where the instruction provided by the teachers results in students memorizing, reproducing, and repeating information without

much understanding." (Czerkawski 2013) Deeper learning is designed to provide instruction that promotes the synthesis of information learned, and has outcomes that benefit the student to enable them to solves life's problems, not just recite facts and figures. The following quote identifies additional learning modalities and paradigms for use in models and strategies that are connected to deeper learning. "Educators and instructional designers should be aware of student learning modalities and use a variety of paradigms (e.g., rationalistic, interpretivist, naturalist) in their learning and teaching models and strategies. Although this is a potentially difficult task, it is important to underscore the need for college graduates to possess the competencies consistent with deep learning. This means that, amongst other competencies, graduates should be capable of dealing with the complexity of the tasks in which they will engage in professional situations" (Nijhuis, Segers, & Gijselaers, 2005, p. 67). It bears worth repeating that graduates need the skills to prepare them for their career's, and for situations that will require the same critical thinking skills. I would compare these with an analogy of a technical class dealing with information security which uses many multiple-choice question-based assessments; as opposed to meaningful learning exercises that require you to research and solve a technical security issue. My assertion is that it does not help for the learner to memorize 30 acronyms for protocols and concepts for a multiple-choice test, when in real life the security analyst will be able to research an issue and develop a remediation strategy, and would not leave the specifics to chance when developing a course of action to take in solving a threat. He will in fact have to verify a great deal of information through research beforehand anyway. My point is that the concrete experience of solving the issue will be of equally great importance, perhaps even more so than memorizing the security acronyms associated with a security standard such as "SSL" or "TLS", because new acronyms arrive at a startling pace in the industry. The learner will have to ensure

that he keeps abreast of new standards anyway, and it is at least equally important that he learns the process for research and remediation of the threats. So, while acronyms are important, so are concrete learning experience derived by "Higher-Order-Thinking", or the ability to analyze, evaluate, create, apply, understand and remember through that experience. The concept of rapidly-altering foundations is equally important.

Using connectivism can also ensure that students can adapt to changing terminology, techniques and ideas within their discipline. "Connectivism is the integration of principles explored by chaos, network, and complexity and self-organization theories. Learning is a process that occurs within nebulous environments of shifting core elements – not entirely under the control of the individual. Learning (defined as actionable knowledge) can reside outside of ourselves (within an organization or a database), is focused on connecting specialized information sets, and the connections that enable us to learn more are more important than our current state of knowing." (Siemens 2005) "Connectivism is driven by the understanding that decisions are based on rapidly altering foundations. New information is continually being acquired. The ability to draw distinctions between important and unimportant information is vital. The ability to recognize when new information alters the landscape based on decisions made yesterday is also critical." (Siemens 2005)

Education delivered online often draws from one of the most trusted techniques of delivery-- by instructional video. "In online education, video is often used as the primary method of delivering education content such as instructor lectures." (McConachie & Schmidt, 2015). In many courses today, the videos are often link's to YouTube content and provide excellent lessons, even though the source needs to be examined thoroughly before presentation to students. In a recent article by Melanie Hibbert entitled *Blurred Experiences: The undefined*

contours of student learning in online environments, the following excellent advice was given: "Educators should be careful using videos because the intentions of the designers often do not align with student perceptions. Student experiences with online videos are influenced by their contexts, including student approaches to the video and the sites in which the videos are embedded. These findings suggest that students have significant agency and the ways in which they take up, interpret, and make meaning from online videos may be different than the intentions of the designers of these artifacts." (Hibbert, 2017) With meaning-making being a desirable strategy for online learning mentioned earlier, the problems with videos is that they do not represent the experience needed in in meaning-making. "These emerging findings have design implications, even though a theme is that users have agency in their meaning-making, and offers a critique of the idea that "experience" can be designed." (Hibbert, 2017)

Learning Management Systems are an investment that will be of the greatest importance for a college. Internet based LMS's (i.e. Moodle, Blackboard, WebCT, Desire2Learn) are popular Internet technologies that have been supporting distance, face-to-face and hybrid/blended teaching-learning processes. (Dahlstrom, Brooks, & Bichsel, 2014; McGill & Hobbs, 2008; Connolly, MacArthur, Stansfield, & McLellan, 2007; El Mansour & Mupinga 2007; DeNeui & Dodge 2006). An LMS can be defined as "a self-contained webpage with embedded instructional tools that permit faculty to organize academic content and engage students in their learning" (Gautreau, 2011, p.2). As an extension of the previous concept, these will be essential to understand from a technical, supportive standpoint, student perspective, and from the instructor perspective. In other words, the administrative-technical people will need to be able to support this software, the student will need to be able to use the software effectively and understand the requirements of the software, and the instructor will need to have at least a

basic understanding; both from the viewpoint of the student and the administrative/technical standpoint. Third-party solutions will be essential to the vast majority of colleges without the infrastructure to design and implement their own custom LMS's. Colleges should conduct a great deal of research to select a system and also conduct a formal requisition for the acquisition of such a service. By including computer and Internet technologies in the learning processes and by offering multiple teaching learning tools, LMS's provide an enhanced virtual way of increased and faster communications among students and teachers and offer speed and effectiveness in educational processes. While LMS's offer various supporting features for teaching learning processes, and though universities make considerable investment on LMS's, research has suggested that these are not used by faculty members to their fullest capabilities (Jaschik and Lederman, 2014; Dahlstrom, et. al., 2014; Allen & Seaman, 2010). In my opinion, faculty involvement and participation will be essential. Students also need to see consistency between their classes when comparing instructor involvement and participation in those classes.

Learning Management Systems (LMS's) provide tools and functions like course management tools, online group chats and discussions, documents (lecture materials, homework and assignments etc.), power points, video clips uploading, grading and course evaluations to support teaching and learning. Since, LMS's have evolved in a complex way in terms of educational contents, technological resources and interaction possibilities; there is an increasing concern in regard to the quality of the interface and the ways in which tasks are completed in these systems (Freire, Arezes, Campos, Jacobs & Soares, 2012). Studies conducted regarding the LMS found some interesting facts regarding the successfulness of an LMS at a college. They found personal interest to use technology; intellectual challenge and sufficient provision for technology infrastructure were the important motivators in e-learning adoption by faculty

members. Pajo and Wallace (2001) identified personal barriers (lack of knowledge, skills, training, role models and time), attitudinal barriers (no faith in technology, unwillingness to work with technology, concern about student access) and organizational barriers (inadequate technical support, hardware, software, instructional design, no recognition of the value of online teaching) that impeded that implementation of web-based teaching by university teachers. It is pretty clear that faculty involvement and participation in selecting and implementing an online course through and LMS is a key requirement.

While it seems that the perceptions of student outcomes evolved from traditional student learning objectives, those are often given from the standpoint of the educator. To address this in the modern age, we will have to be cognizant of student perceptions of their learning outcomes in order to excel in this new age. We also have to be aware of the challenges facing these students of online courses. Although not unique to online learning, research studies have found some evidence that attrition is higher, and motivation is also a huge factor. In a very recent article written in 2018, the following information seemed pertinent to answer some of the questions raised, *Online Student Persistence or Attrition: Observations Related To Expectations, Preferences, and Outcomes.* Authors Jian Su, and Michael Yaugh advise: "First, recruiting materials should communicate to potential students a realistic appraisal of the time and effort that will likely be required of students for them to be successful in the online program. Second, regardless of how the online academic program is structured (open-enrollment, cohort model, or individualized study model), some online students are likely to have time management difficulties. Programs should seek ways to accommodate such difficulties to provide a degree of individualized flexibility as needed. Third, instructors should be encouraged to be as flexible as possible to help students overcome time management difficulties during the completion of a

class. Fourth, online students often do not have access to the same human support infrastructure as resident students. Programs should attempt to overcome this shortcoming by providing a responsive human being to act in a contact, advisor, or support role." (Su, Waugh, 2018) Student attrition rates are studied now to figure out why. Twenty-five students were recruited for the first cohort (WebIT-1) of the WebIT online M.S. program in Instructional Technology (IT) at the University of Tennessee at Knoxville. During the two-year program, 12 students withdrew and two were removed from the program for academic difficulties. Of these 14 students who did not complete the program, 13 were lost during the first year. Of the original 25 students who began the program, 11 graduated at the end of the program. The overall attrition rate for the WebIT-1 cohort was 56% (Waugh & Searle, 2012). Other researchers report online program attrition rates that vary widely, typically between 20% and 50% (Carr, 2000; Chyung, Winiecki & Fenner, 1998; Diaz, 2002; Kember, 1989; Moore, Bartkovich, Fetzner & Ison, 2002; O'Brien & Renner, 2002; Patterson, Mallett, & McFadden, 2012; Rovai & Downey, 2010). These findings should be fairly alarming, and provocative enough to warrant careful considerations as a college implements their programs.

As evidence that academic dishonesty is still a major issue, the article mentioned above by Michael Spaulding in 2009 reveals a major piece of evidence that is very noteworthy: "For example, when asked whether students planned in advance and then copied from another person's paper or received unauthorized aid from another person during an examination, only 1.9% indicated that they themselves had done so at least five or more times. However, when asked if they had observed other students do this, 20% indicated they had done so. Similarly, when asked if they planned to and then used unauthorized materials or devices during an examination or any other form of academic evaluation and grading; for example, used signals,

notes, books, or calculators during an examination when the instructor has not approved their use, 2.9% indicated that they themselves had done so at least five or more times while 25.2% indicated observing another student participating in this." (Spaulding 2009) Later, in an article by Jeffrey R. Young entitled "*High-Tech cheating abounds and professors bear some blame,"* encapsulates the thoughts on faculty dishonesty in the form of "passive observation" of dishonesty perfectly. Online learning will always provide students with new ways and creative opportunities to cheat on their homework and tests. In not confronting students, faculty has been noted to look away and let students pass in the realization that they have committed the act of academic dishonesty. While the article informs of a few institutions where this has happened, I will not make this the main focus– as there are many professors who are doing all that they can to combat the changing moral values and ethical codes of today's modern technically assisted student. Services such as "Turn-It-In" can also provide a basic level of service to serve as a first-line of defense against basic plagiarism and paper recycling; two common ways of cheating that should not need any explanation. In conclusion, when it comes to pro-active involvement to curb cheating, we need our educators to be involved in a positive way, at least providing basic defenses– not simply looking the other way.

The same article mentioned in the previous section dedicated to design elements called "Designing Deeper Learning Experiences for Online Instruction," gives a very comprehensive view that supports my theory that "involvement" by both the student and instructor; while completely obvious to most, is one of the most important aspects of an online class. While a writing course or some similar subjects may be introspective and not require as much involvement, other subjects will be a great platform to engage the students on a deeper, more cognitive level that will allow them to work on assignments together. The for-mentioned article

is also not without many other comparisons of online learning and traditional learning in regard to involvement. New studies outline “five” elements of engagement for teaching and learning in the online space: social engagement, cognitive engagement, behavioral engagement, collaborative engagement, and emotional engagement. These five elements are considered crucial for effective student engagement within the online learning and teaching environment. (Redmond, P., Heffernan, A., Abawi, L., Brown, A., & Henderson, R. (2018)

As for the evolution of online learning, could we be headed towards a socialist type of movement, supportive of free education and open classes? Massive Open Online Courses (MOOC’s) are in my opinion a product of the open-internet, the very principals stemming from very near socialist values. However, it is easy to see that there are too many negative aspects of the MOOC. "Thirty years from now the big university campuses will be relics. Universities won't survive. It's as large a change as when we first got the printed book ... Higher education is in deep crisis." – Peter Drucker (quoted in Lenzner & Johnson, 1997, p. 126) Certainly this quote is as amusing as the notion that the internet could also destroy the higher education system. “As Peter Drucker's comment above illustrates, predictions about the internet destroying higher education are nearly as old as the World Wide Web itself. Large, elite institutions may be shielded, at least in the short term, by their reputations and endowments from the impact of MOOC mania. (Scholz 2013) The second way of interpreting "open" has to do with barriers to entry. MOOCs have no admissions criteria. Anyone can sign up. Most LACs have extensive admissions criteria, including transcripts, essays, test scores, and often, interviews. The admissions process ostensibly limits the student body to those most likely to thrive. Advising and other student support services are in place to make sure that admitted students, particularly those deemed at risk, do not fall through the cracks. (Scholz 2013) While attrition rates are high

enough among online courses, the attrition rates of the MOOC's are even higher. Rovai & Wighting (2005) report that higher attrition rates (above 40%) are relatively common among online program students. Jordan (2014, 2015) reports typical attrition rates for Massive Open Online Courses (MOOCs) to be in excess of 90%. Because online programs of various types are consistently reporting relatively high student attritions rates, research is needed to examine the potential causes and possible remedies associated with these online learning environments. Regardless, it is safe to assume that education is not in any danger of falling out of favor with today's students. I simply believe in the age-old principal, of "You get what you pay for."

As far as traditional learning, we will never fully be able to replace the experience of attending a college and living on campus as many colleges require in their first year; with online learning. And we are not in any danger of evolving to that kind of an open-system where the MOOC will replace a traditional class--as long as colleges follow the main points of this essay. In closing, colleges must build on the framework that they have already started, establish entities to promote those structures and continually keep the pace with fresh innovative ideas to engage students and make them think. It would be in their best interests to invest in manageable system that provides a reliable vehicle to deliver all of the required elements we have discussed. And I believe that we must also require faculty to "buy-in" and embrace online learning as something that can both enhance and complement the traditional class. With those interests ensured, we can expect online learning to possibly become one of the most competitive markets that a college will have to prepare for– in order to succeed in a time where not every college is finding it easy to acquire students.

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