

Is Hybrid Education and Videoconferencing the Wave of the Future for Online Courses?

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A comprehensive literature review examines the effectiveness of hybrid education utilizing videoconferencing. The observations and perceptions of both students and the instructor participating in a hybrid pilot program will be discussed. Discussion highlights the value of hybrid education within the context of the students' busy schedules and concludes with implications and recommendations for implementing such a program.

We are at a crossroads in education today. If we were to look at the many factors of change that have occurred in the technological field in the past decade, not to mention the change in the students themselves (Peercy & Cramer, 2001), it becomes apparent that the structure and format of courses need to adapt to meet students' needs. Hybrid courses provide an alternative to traditional face-to-face instruction. The concept of a hybrid education was stimulated by many variables, such as busy students' schedules, time factors, convenience, and the cost of educational facilities (Hochberg, 2006). According to Buzzetto-More and Sweat-Guy (2006), a hybrid course "blends face-to-face interaction with online learning and involves the delivery of curricular materials, access to resources, submission of assignment and online discussions that may be asynchronous or synchronous in nature" (p.155).

The goal of hybrid education is to blend the effective pedagogical methods of face-to-face instruction with advantages of online education (Doring, 2006). Combining the best of both worlds, it is being discovered that some students are more satisfied with the learning experience of the blended approach compared to either face-to-face or online instruction alone. In one study of three methods of teaching a class (face-to-face, on-line and hybrid), Rivera, McAlister, and Rice (2002) found the students favored hybrid learning over the other two modalities. Hybrid education promotes active independent learning and, at the same time, reduces

class seat time. Students report it is convenient and much more flexible than taking only face-to-face or only online courses. One of the major reasons for the success of hybrid education is that it gives the opportunity to learn without the restrictions of time and space (Hochberg, 2006). Hybrid education can benefit students by giving them more time to reflect on the issues as they discuss them, and this process can be enhanced by using tools such as videoconferencing (Yanes, 2004).

RESEARCH ON HYBRID EDUCATION

A review of the literature shows us that the hybrid-teaching concept is relatively new, but the use of the Internet for online courses has been going on for some time. Online education has been considered by some to be a "poor and unwanted stepchild" in the educational field for years, but it has become a necessity for a variety of reasons that benefit both the institution and the learner (Harden & Hart, 2002, p. 261). Hybrid education offers a means of overcoming some of the negative associations of a completely online course while still benefiting from the practical, financial, and pedagogical advantages offered through virtual education. From an institutional view, hybrid education offers a lower cost means of delivering instruction that can reach a wider audience of students. For example, the University of Connecticut had three campuses but not enough students at each to offer separate classes at each campus, so they developed a hybrid course.

They met on one campus once and met twice as an interactive television course, which was delivered to all three campuses (Donorfio & Healy, 2008).

Our task as educators today is to try to give the best possible education to the “net generation,” a group sometimes called “digital natives” (Percy & Cramer, 2011). The net generation relies on collaborative, interactive, non-linear thinking. Percy and Cramer (2011) described this “net generation” with its different learning styles than the generation before them when they stated:

Traditional methods of instruction do not correspond to the way students gather and process information today. They communicate using social networking such as Facebook and Twitter. Completing homework for these students is wrapped in with concurrent activities such as monitoring incoming text messages, answering the critical ones, listening to music and having at least one internet window open, likely to a website or chat tools. They cannot just walk into our university classrooms and sit there, passively listening to the professor talk while they take notes. (p. 626)

Hybrid education can help to cross this barrier and engage this new generation of learners.

Like any new pedagogical movement, hybrid teaching involves a paradigm shift at the most integral levels of education. In recognition of this challenge, Brunner (2007) stated that many professors are given a lighter teaching schedule to pilot hybrid classes. For those that are involved in hybrid teaching, unlearning previous beliefs and techniques of teaching is a must (Brunner, 2007). Another adjustment being made is that the professor is no longer the main dispenser of knowledge, but rather, in a hybrid course, all members of the class are the dispensers of knowledge through interactivity among the group (Brunner, 2007).

The engineering industry is using the hybrid model in their education programs. Hybrid e-learning system provided electronic, illustration, group learning, comprehension, and workshop learning units and complied with the training objectives of the designated course (Tsai, 2011). A hybrid scheme, where information presentation transitions from an author-driven to a reader-driven environ-

ment may help weaker students develop better non-linear, open-ended problem solving skills (Hailey, C & Hailey, D., 2000). The development of such problem solving skills is vital not only in the engineering industry, but in many other academic disciplines. In the technology designers’ world, by using hybrid-teaching methods, they discovered a new but exciting form of “the user-centered design” model in place of the traditional one (Fleischmann, 2006).

Similarly, medical and pharmaceutical schools are also adjusting to new technologies and exploring hybrid methods of teaching. Medical schools are blending their home base curriculum with the innovative e-learning, hybrid methods of teaching. In the medical field, “the universities that do not rise up to embrace this new technology will not survive long into the next century” (Harden & Hart, 2002, p. 262). The College of Pharmacy at the University of Florida doubled their enrollment when they implemented their hybrid program in 2002; at that time, the pharmacist shortage in the United States showed that there were thousands of pharmacist’s positions open and not enough qualified pharmacists to fill them (Ried & Byers, 2009). By introducing a more flexible hybrid program, the College of Pharmacy at the University of Florida met both the academic needs of their students and the logistical needs of the field. Lack of funding and buildings forced the University of Maryland School of Pharmacy to think outside the box as well. The University of Maryland developed hybrid classes, using both synchronous (videoconferencing) and asynchronous (recorded lectures) as well as small group activities in order to meet the economic challenges faced by the institution (Congdon, Nutter, Charneski, & Butko, 2009).

The push for hybrid education extends beyond the science-based fields; religious institutions are embracing this new hybrid model in their curriculum as well. For example, Aquinas Institute of Theology, based in St. Louis, Missouri, integrated the hybrid model years ago to accommodate the busy schedules of their young ministers. The model Aquinas follows blends face-to-face teaching with online instruction, using a website for each course (Esselman, 2004). At Boston College’s Institute for Religious Education and Pastoral Ministry, the course entitled “Co-Creating the Reign of God” was build around the hybrid model, integrating the online teaching/learning and face-to-face class meetings

(Blier, 2008). Brunner's (2007) review of hybrid programs in Christian-based institutions notes the strengths of a hybrid course over only the online or face-to-face course include "an increase in student performance and retention; more time flexibility for students; the ability of multiple modes of learning; a deeper sense of community [and] greater interaction among students and instructors" (p. 117).

Hybrid education is not without its challenges. Students' lack of technology skills interferes with students being able to readily embrace programs that are often included in this new approach to education. One way to ameliorate this concern is to make such a hybrid course optional to those students who are willing and technologically able to learn in this modality. Also, some universities feel that programs should only be offered to graduate students, feeling that the undergraduate is not as ready for this kind of instruction at the beginning of their college career. In order to make the experience as successful as possible, effective hybrid instructors must be "willing to experiment and tolerate frustrations; they are internally motivated and resistant to non-rewards or lack of support from the system; they recognize the extra workload involved but take satisfaction from seeing students learn in the new milieu" (Brunner, 2007, p.118).

RESEARCH ON VIDEOCONFERENCING

Generally, videoconferencing is defined as "live, synchronous audio and video communication via a computer or digital phone network among sites in different physical locations" (Dal Bello, Knowlton, & Chaffin, 2007, p. 38). Most videoconferencing products include a web-standard video camera, a microphone, a system to deliver audio and video, and software (Franklin, 2010). Videoconferencing may be a part of the hybrid educational method or used separately in an online course. The advantage of videoconferencing is that it enables two or more people to see and hear one another in real time (Motamedi, 2001). One example of videoconferencing is Skype, which has the potential to add another dimension to the online classroom. Skype is a free Internet video program that enables two or more individuals to talk and see each other in real time. Video cameras, Skype, and other powerful technology tools should be used to add life and value to the tools of best practices in education (Pitcher, Davidson, & Napier, 2000). To help make this technol-

ogy come to life in an educational setting, Internet2 was developed; Internet2 is a system used by a non-profit consortium of universities whose main goal is to get universities to use this high speed Internet system for the primary use of videoconferencing (Özkan, 2005).

Videoconferencing can be supplemented with other tools to adapt this technology to the educational setting. Using a collaborative file-sharing program, like Google Docs, two or more people can work on a document, presentation or spreadsheet at the same time (Klein, n.d.). Google Docs allow users to upload, store and download any type of file, so authorized users are allowed anytime-anywhere access to those files (Levitt & Rosch, 2011). The biggest leap forward, however, is that changes during collaborative editing (two or more people working in a document or spreadsheet at the same time) now happen almost instantaneously, rather than the roughly 15-second delay that used to typify the process (Claburn, 2010).

PILOT HYBRID COURSES

Online Course with Videoconferencing and Collaborative File-Sharing

My first experience with videoconferencing occurred in an online course of administrative interns who were completing their requirements for their Administrative Master's Degree. Reflecting on the small size of the class (three students), videoconferencing was selected as an instructional supplement to enhance the active engagement of all students. I knew of the value of "Skyping" students individually; however, the structure of the course required students to participate in a group project. I contacted the three students and asked if they were interested in using videoconferencing to complete the group project; all students agreed and videoconferencing was integrated as a portion of the course interaction.

Once a week, the three students and I met virtually using Skype videoconferencing and Google Docs file-sharing. Google Docs provided the students with the opportunity to work on a project simultaneously with their classmates during their Skype sessions. While in the Google Docs, the students were able to add their part of the paper to the document while the rest of the class looked at the document on their own computer. All were able

to read it and make corrections on the document from wherever they were in the country. Once they completed the document and put it into the proper format, they uploaded it into their group project assignment post.

The feedback I received from the students was that they would never want to go back to the “old way” of doing assignments again. They were more motivated and engaged than they had ever been in any of their previous online classes. The students felt that using videoconferencing and Google Docs engaged all participants and created a proficient final product. Students indicated the use of videoconferencing allowed them to maintain real-time contact with their fellow classmates. I found the format facilitated improved relationships among the students and their instructor.

Hybrid Instruction Pilot Project

In response to scheduling concerns expressed by administrative intern students enrolled in an upcoming face-to-face course, the course structure was modified into a hybrid format. In this structure, the sixteen-week course included campus-based, face-to-face classes for six weeks and videoconferencing for ten weeks. The campus classes consisted of the whole group while the Skype sessions were divided into small groups.

In a survey conducted at the end of the course, students expressed their satisfaction with the hybrid format. The consensus of the ten students was that the hybrid model was successful from every standpoint. From the students’ perspective, the hybrid class had the right amount of interaction with classmates and the professor to achieve quality discussion and collaboration. After being a part of this hybrid class, the students felt it was a truly rewarding experience. They reported that it was highly organized, structured and “very conducive to the limitation of time all of us students have.” Students perceived that, compared to an online-only course, the hybrid method was more effective; specifically, students indicated that the opportunity to interact with classmates in real-time made the course more meaningful than reading and responding (as they had done in typical online courses). The students reported that live discussions allowed for spontaneous questions and thoughtful responses

CONCLUSIONS

Despite the advantages offered through videoconferencing, one must be aware of relevant challenges associated with this instructional strategy. From these experiences, I have found that one of the major problems with videoconferencing is that students need the latest equipment, such as video cameras and audio equipment on their computers. Using the latest update versions in programs such as Skype is crucial for clear pictures as well. Also, Skype requires at least one person to pay a monthly fee for videoconferencing with three or more people. Because the incorporation of this technology is relatively novel in online or hybrid courses, some students fear they lack the knowledge to troubleshoot potential technological problems. In addition, problems associated with scheduling synchronous interaction in different time zones and monitoring at-home distractions (children, pets, phones, etc.) must be addressed.

Based upon my experiences, videoconferencing is more effective when using small groups of five to seven. This method is not as effective for large groups due to the limited participation of each group member. One of the key advantages to videoconferencing is student participation in which they can actively share and discuss their views on a topic.

IMPLICATIONS AND RECOMMENDATIONS

As a result of this pilot program, I encourage educators to further explore this model of hybrid learning that incorporates videoconferencing and collaborative file-sharing. Universities must understand that adopting such programs as the hybrid model means change and that normally is a slow process. Although challenges exist, I found that students are enthusiastic about the hybrid design as it is student-centered, stimulating and dynamic.

Institutions of higher learning must acknowledge that we are living in a changing technological world and that traditional approaches may no longer be effective. The future may lie in using technological tools to support synchronous, virtual collaboration rather than sitting in a class listening to a lecture. Students seek educational opportunities that fit into their busy lives, technologies that match their learning styles, and an interactive learning environment to align with their active, fast-paced lifestyles. Hybrid learning enhanced with videoconferencing and collaborative file-sharing tools shows promise as an effective educational modality.

Author Biography

Joseph Earl Popma, Adjunct Professor at Grand Canyon University. His research focuses on hybrid education and the use of videoconferencing in both the hybrid model as well as in online courses. Joe received his B.S. in Education from the University of St. Johns, Brooklyn, N.Y. and his Masters of Arts from Michigan State University.

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References

- Blier, H. (2008). Webbing the common good: Virtual environment, incarnated community, and education for the reign of God. *Teaching Theology & Religion*, 11(1), 24-31.
- Brunner, D. (2007). Using "hybrid" effectively in Christian higher education. *Christian Scholar's Review*, 36(2), 115-126.
- Buzzetto-More, N. A., & Sweat-Guy, R. (2006). Incorporating the hybrid learning model into minority education at a historically black university. *Journal of Information Technology Education*, 5(1), 153-164.
- Claburn, T. (2010). Google's real-time bet. *Informationweek*, (1262), 27-34.
- Congdon, H. B., Nutter, D. A., Charneski, L., & Butko, P. (2009). Impact of hybrid delivery of education on student academic performance and the student experience. *American Journal of Pharmaceutical Education*, 73(7), 1-5.
- Dal Bello, A., Knowlton, E., & Chaffin, J. (2007). Interactive videoconferencing as a medium for special education: Knowledge acquisition in preservice teacher education. *Intervention in School & Clinic*, 43(1), 38-46.
- Doering, A. (2006). Adventure learning: Transformative hybrid online education. *Distance Education*, 27(2), 197-215.
- Donorfio, L. K. M., & Healy, C. (2008). Teaching an interactive television course on adulthood and aging: Making it happen. *Educational Gerontology*, 34(6), 531-549.
- Esselman, T. (2004). The pedagogy of the online wisdom community: Forming church ministers in a digital age. *Teaching Theology & Religion*, 7(3), 159-170.
- Fleischmann, K. R. (2006). Do-it-yourself information technology: Role hybridization and the design-use interface. *Journal of the American Society for Information Science & Technology*, 57(1), 87-95.
- Franklin, C. (2010). Videoconferencing: Stepping up from Skype. *PC WORLD*, 28(12), 29-30.
- Hailey, C. E., & Hailey, D. E. (2000). Evaluation of instructional design of computer-based teaching modules for a manufacturing processes laboratory. *Journal of Engineering Education*, 89(3), 345-362.
- Harden, R. M., & Hart, I. R. (2002). An international virtual medical school (IVIMEDS): The future for medical education? *Medical Teacher*, 24(3), 261-267.
- Hochberg, J. M. (2006). Online distance education pedagogy: Emulating the practice of global business. *Distance Education*, 27(1), 129-133.
- Klein, A. (2011, August 9). 3 reasons why online teachers should start using Google Documents. Retrieved from <http://learnoutlive.com/3-reasons-why-online-teachers-should>
- Levitt, C., & Rosch, M. (2011). Google apps: Hot tips for putting Google tools to work in your practice. *Law Practice: The Business Practicing Law*, 37(2), 43-45.
- Motamedi, V. (2001). A critical look at the use of videoconferencing in United States distance education. *Education*, 122(2), 386-394.
- Özkan, B. C. (2005). Pros and cons of Internet2 videoconferencing as a new generation distance education tool. *Computers in the Schools*, 22(1/2), 33-42.
- Peercy, P. S., & Cramer, S. M. (2011). Redefining quality in engineering education through hybrid instruction. *Journal of Engineering Education*, 100(4), 625-629.
- Pitcher, N., Davidson, K., & Napier, J. G. (2000). Videoconferencing in higher education. *Innovations in Education & Training International*, 37(3), 199-209.
- Ried, L. D., & Byers, K. (2009). Comparison of two lecture delivery platforms in a hybrid distance education program. *American Journal of Pharmaceutical Education*, 73(5), 1-10.
- Rivera, J. C., McAlister, M. K., & Rice, M. (2002). A comparison of student outcomes & satisfaction between traditional & web based course offerings. *Online Journal of Distance Learning Administration*, 5(3), 151-179.
- Tsai, A. (2011). A hybrid e-learning model incorporating some of the principal learning theories. *Social Behavior & Personality: An International Journal*, 39(2), 145-152.
- Yanes, M. J. (2004). Distance education in traditional classes: A hybrid model. *Quarterly Review of Distance Education*, 5(4), 265-276.