Broadcasting education in the age of new media: Building multimedia products from the academy

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ABSTRACT

As our society continues to develop new technologies, the use of streaming technologies in higher education has lagged behind. The traditional academic landscape is dependent upon instructors to use commercial media products to deliver adjunct learning materials to the classroom. Faculty are also beginning to explore in the use of social media in classrooms for the first time. Video production may be seen in some communication departments as course requirement, but are not thought of as a means of delivering content for teaching and learning. The purpose of this study is to outline the development and use of a multimedia production facility, and the use of multiple platforms and to demonstrate it as a dynamic environment for creativity and innovation at the university. Additionally, it argues for a shift in thinking for both faculty and administration toward an innovative, creative environment supporting academic media production that can be used in conjunction with the social media movement in education. Universities can use multimedia production facilities for purposes of instruction, recruitment, retention and graduation along with the creation of television style presentations beyond the traditional classroom to build an even larger audience. The development of new technologies, for assisting faculty in the creative process, for improved learning content is discussed.

Keywords: university broadcasting, video production, multimedia

INTRODUCTION

21th century universities have witnessed strong economic and technological growth. (Gurses & Demiray, 2009). At the same time, there is a notable increase in online course offerings and an increase in the use of certain technologies to facilitate learning, such as content management systems, the use of video playback in classrooms and assessment instruments to measure student learning (Baepler, Walker and Driessen, 2014). While technology use in the classroom has been transformative from the traditional classroom in higher education (Riismandel, 2016), newer technologies, such as video streaming (Calk, Alt, Mills and Oliver, 2007) and interactive conferencing (Carlson, 2012) is moving at a slower pace despite the availability. This general increase in the availability of technology may drive universities, colleges and departments to consider adoption of advancing technology used for teaching and learning. As the growth of overall institutional technology to deliver on demand content rises, there are missed opportunities for faculty and students (Clemmons and Posey, 2016) to create specifically defined content. That is, there are ways to enhance the teaching and learning process by instructor and student led creation of content specific videos tied to course objectives (Jordan, Box, Eguren, Paker, Saraldi-Gallardo, Wolfe Gallardo-Williams, 2016). These instructor and student created videos can then be used in a variety of ways to enhance learning and student engagement (Pond, 2016). Further, content creation as part of the academic mission can lead to improved student interaction with content. The flipped classroom (Charles-Organ and Williams, 2015) demonstrates this principle, where students review lectures prior to class and while in class, further the discussion of course content and interaction with the instructor. Whether it is face-to-face or online classrooms, created content by faculty and student leads to increased interaction, a basic mission to most teaching and learning environments. Given this context, the focus of this paper is to highlight the process of creative content development within the academy to enhance teaching and learning.

HISTORY

The process of creating content within the framework of university courses using expertise of both faculty and students has been rarely realized. The development of personal computers that can create multimedia is now a common phenomenon. Personalized electronic creation and publication began with the advent of desktop publishing (Bowman and Renshaw, 1989). An analogous development in the area of video and audio production came about with advancing hardware and software that placed the ability to create video productions on personal computers. Video and audio recordings have played a regular part in content presentation with university courses, but not typically created by instructors. Faculty, over the years, have used video cassettes (now rarely seen) as a source of instruction, for instance, in the demonstration of skills and techniques or for an overview of complex content. As with lectures, these viewings became part of instruction and content from these viewings may be included on exams (Odhabi and Nicks-McCaleb, 2011). Hopefully, but not always, the video products chosen by the faculty members may be aligned with particular course objectives, but in some cases contain material separate from or less desirable for demonstrating what the instructor intended. It became a process of settling on available material, sometimes from the entertainment industry, that loosely contained suitable content. As one might imagine, the instructor often had to qualify this content before the intent of the materials became clear. There was always a risk that students would become passive viewers of the material and less concerned with the important ideas associated

with the presentation. This “dis-interaction” or "dis-engagement" has been a cause for concern by many instructors over the years and the work toward more engagement is now acclaimed as an objective for most, if not all, instruction. Yet, few resources made the use of commercial video products the only game in town.

It was not until the late 70’s and early 80’s, that large publishing houses of textbooks began to add supplemental CD-ROMs and eventually, DVDs as part of the book package for purchase by students at college bookstores. These “digital” products were made in studios, typically at the expense of the publishers and were used to coincide with the textbook chapters and content. The digital products were structured to the text chapters to illustrate the author’s original intent or to demonstrate a skill or, in some cases, for class discussion. Often, these products were expensive. However, the instructor was linked to the text, the videos and the text outline, and the need for departure away from the outlined text wasn't necessary. While this might be welcome by some, other instructors may desire to work from their area of expertise, add their unique viewpoint and look for alternative products.

In the late 90’s, the concept of using video to supplement classroom learning began, including video lectures for students as part of course requirements. Salmon Kahn introduced the “flipped classroom” concept, sometime later, after recording video lectures with college content to help his relatives (Murphy, Gallagher, Krumm, Mislevy,and Hafter, 2014). This concept has resulted in experimentation within classrooms across the country (Baepler, Walker and Driessen, 2014).

This idea was welcomed by many and started a transformation in using available digital lectures “on-demand” (Sohrabi and Iraj, 2016). In considering this shift to on-demand learning, that is, lessons available when the student needed them, but prior to class, the interaction between student and instructor changed. It was now up to the instructor to set this type of instruction in place (Stov, Uzunova,Kozak and Stoic, 2016).

In all cases, the timing of technology and the need to improve the learning experience become the key driving forces at work. Given these factors, it is now up to the instructor to decide if they would take the time, finding and using available resources to make their own video lecture or demonstration. As mentioned, the timing of new computer software and hardware was a key component for faculty to engage in this creative process. In fact, available resources required learning new technology skills taking significant time and effort to achieve prior to any production efforts. Many universities and colleges have information technology centers currently, yet, are mainly focused on typical tasks, such as, projection, computer access and maintenance. Until recently, few creative centers existed where faculty can create lecture and demonstration videos for supplementing instruction.

Finally, desktop computing and publishing is now at a place where cameras can work with software that allows the faculty member to sit and record a "talking head" version of lectures and save these lectures for online, face-to-face and flipped classes (DeLozier and Rhodes, 2016). This shift in the ability to access and create a video product, by the instructor represents a major shift that allows for both self-created products to be used with or without large publishing house or other source videos, and in some cases with small cameras (Ortiz and Moya, 2015).

Further, students can be assignments can now include turning in video role plays and other on-camera productions as part of the class requirements. The frequency and use of personal video for course assignments is on the rise. Still, video from other sources might be easier with

the instructor simply choosing an accessible video by the instructor for use. It remains to be seen if faculty created video productions can become a regular addition to university instruction.

ENVIRONMENT

For faculty to begin the process of video production specific to coursework and to professional development, resources must be available. Typically, universities have devoted the financial support to operate information technology components to campus that include computer technology and hardware and software components that are capable of recordings. While it is still up to the instructor to utilize these resources, specific departments may use these resources as part of their plan of study. For example, nursing departments and certain technology disciplines use high tech simulation labs to train students and video recording for assessment by instructors. Professional counseling programs use video-equipped labs to role-play simulations and practice prior to internship placement (Topor, AhnAllen, Mulligan and Dickey, 2017). Yet, a mainstay of the use of recording and broadcast capability remains with communication programs for most universities. Less common is an actual recording studio that faculty and students can access to build video productions. In some instances, centers for video production can be created as part of the overall university mission. In order for a video production lab to be successful, faculty, students and university organizations must be involved.

Faculty who are interested in video production as supplemental materials for their classes can acquire training in the use of video production essentials. That is, the ability to establish rudimentary techniques in sound, lighting, audio and camera operations. Given the ease of use, understanding of basic studio operations and a desire to create and distribute video productions, a faculty member can pursue the creation of specific products to enhance student engagement as well as professional development.

Students can use an established video production lab to create multimedia productions for their coursework and develop skills that may benefit them in the future. Once a multimedia product is created, its use can be directed for multiple purposes. As video on the web increases, documentation of the students work can be used in portfolios showing progress throughout one's program. The student benefits in several ways from the use of a video production beyond individual assignments in a course, including personal and professional development in the skills needed for own camerawork.

Another beneficiary of a video production lab are organizations and groups on university campuses. The ability to advertise special events, notable speakers coming to campus and unique interviews and messages to a larger audience becomes an important part of a video lab's purpose. In the age of social media, video productions created specifically for use on campuses can be used for many purposes (Kearney and Bailey, 2016). Given the use of social media and a demand for distance learning, online courses have increased (Yarbrough and Jillian, 2015). Social media by definition is the ability to share digital media with friends and the larger community (Dezuanni, 2015). There is a need for using social media in the classroom to match course objectives and provide learning opportunities. The utilization of social media on a larger scale (meaning, in some cases, a world-wide distribution) can further the mission of universities for outreach and recruitment.

Video recording, editing and production could bring significant opportunity for capturing and highlighting student work, faculty projects and research to further the University mission. Most universities, facing difficult funding challenges, are faced with the task of increasing

admissions, resolving issues with the retention of students and increasing graduation rates. Highlighting outstanding efforts from faculty and students through the use of video production can be easily realized and may represent the trends in digital viewing (Caldwell, 2005).

ONE EXAMPLE

At a southeastern university of approximately 9,000 students, a video production proposal was funded with the intent to provide a television studio production lab for use by faculty and students for the purpose of creating video products for teaching and learning. This two-year project was established by faculty and administration based on a previous streaming television channel developed in the college of education. Utilizing recording and television broadcast equipment, the small video production lab established a schedule for faculty and students to use the facility as needed. Graduate assistants, that is, students enrolled in graduate programs, would serve as technicians ensuring the accurate recording of both events in the studio and on main campus as events occurred.

The establishment of this video production lab was a joint venture between administration, faculty and an appointed editorial board who would oversee the project. Three key groups would work together in order for the production studio to operate. These three groups included: an administrative group, who monitored video productions against the mission of the University; a technical group, who insured the viability of the technology streaming and operation; and a content creation group focused on creating television-ready teaching and learning productions generated by faculty and students. These three groups work together to manage the operations.

Once a video production was completed and approved, it was provided to web technicians for placement on websites, to streaming video technicians for live streaming to the web (DeCesare, 2014) and to a local cable television for direct distribution to households in the area. Further, tracking and distribution data were gathered to evaluate the number of viewers including worldwide distribution on the content distribution network used by the facility. During the first year, quarterly results show over 43,000 unique views on the web alone as indicated in Table 1 (Appendix). Results show that the video production broadcast in over 24 countries as indicated in Table 2 (Appendix), 14,000 households in the local viewing area on a local cable.

TECHNOLOGY AND PRODUCTION

The video production studio was comprised of existing computer equipment readily available, video cameras, audio microphones, professional lighting, and television set designs. A television switcher used to change cameras during recording incorporated the ability to stream the video to the web both during and after recording. Using existing and purchased equipment necessary for the studio operation, the studio could then begin offering scheduled times to faculty and students for their projects. Graduate assistants, once trained on the audio visual equipment could also operate the television camera switcher in order to add production value to any project.

The video production equipment and its use was only a part of the overall mission of the studio. In fact, one of the most important tasks of the video production crew was to advance the idea that faculty and students were free to be creative in the development of content. The content creation group was responsible for communicating with faculty and students the availability of

the studio, but also the production process which involved being on camera, in many cases for the first time. As one might note, being on camera can produce anxiety that interferes with appearing at ease with the delivery of content. It is important to note that both faculty and students required an understanding of the process that helped them to become comfortable in presenting their content. One important factor was to relay to the talent (those on camera) that their presentation must be authentic and conversational in style. This bit of information seemed to put most people appearing on camera at ease. As talent completed the first project, following projects became easier.

Production value (Shewbridge and Berge, 2004) is an important requirement in recording quality productions for audiences. Taking into account the essentials of videography including, camera switching at the appropriate time and backgrounds that are appealing to viewers must be included. The appeal of academic video productions must be addressed as larger audiences have expectations resulting from years of viewing high-quality television and film productions. Therefore, it is essential that a university video production lab set high standards regarding production value and that all productions have visual appeal for the audiences they expect to serve.

DISTRIBUTION AND SOCIAL MEDIA

Once video productions are captured, edited and approved, the process of distribution can begin. There are numerous ways to distribute content in this component of the production must be considered carefully. Online distribution begins with the video product being placed on the website for viewing. Many universities are now turning to YouTube, a Google company, because of ease of use and the capability of playing video on most computer equipment. In many cases, the content management system used by the University allows for directly embedding YouTube videos in online courses. Further, the use of YouTube also means that viewers can access the video production without concern of proprietary equipment and software, only an Internet connection is needed. Further, videos distributed by YouTube are electronically downgraded when the Internet connection is slower, but retaining the ability to view the video.

There are a number of websites that accept videos for viewing including: Vimeo, a paid hosting solution and other similar websites that host video for a fee. Obviously, an individual can pay for web hosting and website creation that allows for the owner to post their own video at any time. Once a website is obtained, it is up to the owner to distribute notifications that the video can be viewed. One way to distribute videos is through social media. Social media video distribution has increased significantly with Facebook, Twitter, Instagram and other applications offering live streaming for participants. With the growth of Facebook in particular, large distribution of a video is possible (Anthon, Hemingway and Smith, 2014).

Social media, such as Facebook, with its 1.86 billion members, represented the next challenge for education related video productions. With the adoption of Facebook presence by University administrations, the challenge will be to maintain the University's integrity and brand while reaching the largest media audiences about level. With the inclusion of social media adaptation into the classroom by University instructors, and an increase in its use within the classroom, the question of using social media as part of public outreach within university mission needs careful consideration (Gul, 2017).

Content distribution networks (CDN) are also available with live streaming capabilities. This solution involves embedded live broadcast streams available to consumers on an extremely

large-scale. For example, the video production lab mentioned above used a content distribution network to reach viewers in over 30 countries. But the reach may go further, with local and public television opportunities (Iosifidis, 2010).

With the ability to distribute content to such a large potential audience, it can, in fact, create larger learning communities when academic and instruction-focused materials are ready for distribution (Kompare, 2011). Professional learning communities are on the rise in university systems in some states (Kirkwood, 1990). Learning communities are comprised of faculty and instructors who provide opportunities for sharing information with peers (Steeg, 2016). This particular form of faculty development (Levitskava, 2014) can easily be adapted to video production and distribution.

FACULTY DEVELOPMENT

As faculty have a responsibility to continue to grow professionally through promotion and tenure at the University, most universities require at least three factors for advancement: teaching, research and service. Academic rigor is expected in a continual process of improvement in the ability to teach in the classroom, publish within the Academy and to serve in the community at large. Documentation of this professional growth is an important part of the process. Specifically, the documentation of teaching and learning should be evident as a university professor progresses toward tenure. Video production of teaching events, lectures and other multimedia products can be leveraged as part of the overall professional growth of a faculty member. In fact, widespread distribution and recognition for the faculty member could be recognized as part of the university mission. Also, with the use of video products with high production value, there appears to be an opportunity for increased engagement with students in the classroom and in the online classroom (Ljubojevic, Vaskovic, Stankovic and Vaskovic, 2014).

As universities within our society continue to keep pace with new technologies, recognition for the need for video production of educational products can work both for the individual faculty and the University at large. The use of talented faculty to create teaching and learning products can help advance and improve learning communities. As the use of technology continues in academic communities and becomes adaptive for teaching and learning, faculty can decide to create their own digital learning materials. As outlined above, the development of a multimedia production laboratory can be constructed to deliver high production value products, placing the ability to create back in the hands of the instructor.

LIMITATIONS

The motivation for transforming the classroom is in the hands of the instructor. There are several factors for consideration of any faculty member including to time necessary to learn the production skills and on camera skills, the task of rehearsal and live recording and, if not most importantly, the goals of production and how the multimedia products will be used. The time necessary for video production to take place is dependent on the availability of equipment and support both in terms of facilities and personnel. Faced with a lack of equipment, trained technicians and other support, the faculty member still has the opportunity using desktop hardware and software to make video productions for use in the classroom. However, most universities and colleges are now seeing a need to be connected to social media for recruitment

as part of their marketing plan (Rutter, Roper, and Lettice, 2016), and with that, should be able to provide equipment through information technology services are within colleges and departments.

CONCLUSION

Creating a dynamic environment for creativity and innovation should be a goal for all learning institutions. The support of individual faculty creativity can be an additive component that supports the overall growth of the University. Given the new means for distribution, including social media and content distribution networks easily accessible for educational content, faculty should carefully consider using material aimed particularly at the content they teach. The traditional classroom appears to be constantly changing and within this environment faculty and teachers should consider adopting a shift in thinking from viewership to producer. The faculty member becomes the producer of the learning content delivery as with movie producers controlling production of a major film. Also, the readily accessible recording and broadcast equipment and distribution networks, an individual faculty member can complete a portfolio of teaching products in order to build or contribute to a library of content.

Finally, the documentation of teaching and learning within the University can be shown on a larger stage. It is up to the University to determine to support a video production facility used for the purpose of documenting works from its members. As streaming technology expands and live and recorded video productions are available and are increasingly used via the Internet, consideration should be given to video production and broadcast within the Academy.

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APPENDIX

Table 1. Unique web visits live streaming channel quarterly report from 01-Jan-2014 - 01-Apr-2014.

Week	From - To	Visits
1	01-Jan-14 - 04-Jan-14	2,447
1	05-Jan-14 - 11-Jan-14	4,109
2	12-Jan-14 - 18-Jan-14	3,741
3	19-Jan-14 - 25-Jan-14	3,839
4	26-Jan-14 - 01-Feb-14	3,983
5	02-Feb-14 - 08-Feb-14	4,618
6	09-Feb-14 - 15-Feb-14	4,421
7	16-Feb-14 - 22-Feb-14	4,046
8	23-Feb-14 - 01-Mar-14	4,328
9	02-Mar-14 - 08-Mar-14	4,193
10	09-Mar-14 - 15-Mar-14	3,085
11	16-Mar-14 - 17-Mar-14	909
	Total	**43,719**
	Averages	**3,643**

Table 2. Visits from Countries during the first quarter report 01-Jan-2014 - 01-Apr-2014.

Countries	Visits	%
United States	28,396	77.38%
Canada	2,017	5.50%
China	1,136	3.10%
Australia	913	2.49%
United Arab Emirates	841	2.29%
Malaysia	673	1.83%
Hong Kong	426	1.16%
United Kingdom	403	1.10%
Denmark	306	0.83%
Japan	283	0.77%
Mexico	137	0.37%
Russia	129	0.35%
France	116	0.32%
Belgium	80	0.22%
Germany	78	0.21%
Ireland	78	0.21%
New Zealand	77	0.21%
Indonesia	76	0.21%
Netherlands	63	0.17%
Portugal	34	0.09%
South Africa	33	0.09%
Ukraine	32	0.09%
Philippines	32	0.09%
Other	337	0.92%
Total	**36,696**	**100.00%**