



Fostering Student-Faculty Engagement and Increasing Learning in the Ongoing Quest for Online Quality

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ABSTRACT

As online delivery of higher education programs continues to increase, a scarcity of empirical research assessing the efficacy of online pedagogy exists. Believing that a focus on learning is more important than the touted accolades of access and convenience, this experimental study examined how best to leverage specific components of technology to provide engaging and meaningful faculty-student interaction that actually increases learning within online courses. The results indicate that the use of digital presentations narrated and provided by the instructor of record rather than course material incorporated from static presentations or other external sources brought about a statistically significant increase in learning improvement compared to the use of more traditional online tools. Amid the clamor for academic quality and accountability within higher education programs, the results and context of this study provide direction for future discussions and research as well as immediate implications for online education praxis.

Keywords: Online education, Distance learning, Online learning, Online delivery, Online pedagogy

INTRODUCTION

Across the higher education landscape and as new and robust technology propels us through a dramatic shift in educational practice, providers and practitioners tout online education (OE) as a highly effective delivery method, accompanied by the usual accolades of convenience and accessibility for the learner. Although myriad research addresses the general feasibility of OE and the use of technology within formal educational settings, notoriously little examines how best to leverage specific components of technology to provide the greatest educational benefit: engaging and meaningful faculty-student interaction that actually increases learning [6; 18; 30; 43]. Rather, the overwhelming majority of existing literature and research compares online delivery to traditional face-to-face instruction, resulting in a no-significant-difference stalemate that does little to inform or enhance meaningful online education [18; 43; 47; 48]. If, as most research has indicated, there is no significant advantage to the effectiveness of the respective delivery methods, but there is also no distinct disadvantage, then either approach would be appropriate given particular circumstances. However, just as in traditional face-to-face settings, educational practitioners bear responsibility for identifying meaningful ways to maximize learning within the given context – in this case, the online environment.

Against this backdrop, the allure and number of undergraduate programs have skyrocketed since 1971, and more than one in four programs now are delivered fully online [44]. The increase is particularly dramatic within the social sciences and humanities, with these fields now representing seven of the top 10 most awarded degrees [49]. For example, general humanities have jumped from 11th to 1st with over 175,000 degrees awarded annually; always popular, psychology has maintained its relatively high ranking but increased 308% in degrees awarded; and, criminal justice, with more than 62,000 degrees awarded annually, has catapulted from 29th to 9th as the most awarded baccalaureate degrees in the United States.

Beyond the continuing influx of traditional students into college and university programs and fueled by various state completion agendas and incentives, significant numbers of working professionals nationwide have completed some college but no degree [10; 18; 19], adding tens of thousands of stopped-out adults returning to complete degrees and swelling the ever-expanding number of students accessing these offerings online in order to facilitate work and lifestyle schedules [4]. But, with the continuing popularity of virtual programs and the explosive growth of online delivery, does the quality of these offerings satisfy sound academic practice, those endeavors that combine appropriate curricular and faculty standards with convenient access in order to actually increase learning? With 39 states currently in the Complete College America (CCA) alliance focusing on the completion agenda and promoting significant increases in the overall number of students completing degrees [14; 15], professional associations and regional accrediting agencies such as the Association of American Colleges and Universities [2] and Southern Association of Colleges and Schools Commission on Colleges [46] continue to emphasize strategic attention to program quality standards, with AAC&U [1, p. 1] noting that “the quality shortfall is just as urgent as the attainment shortfall.”

Creative and engaging online courses utilize not only the vast technological resources available to supplement this continually evolving method of educational delivery, but also the expertise of the facilitators. Proponents herald the use of OE as one means of meeting learners “where they live” and providing them with rich material that attaches meaning to their daily lives and the learning experience. But are the current technological enhancements and plethora of videos and other media that are finding increased use within the online environment and on myriad digital devices simply gimmicks to lure participants to an expanding educational cash cow or legitimate tools that can help online learners derive the greatest benefit from their educational experiences? Rather than focusing on the online delivery method as a whole, this experimental pilot study examined the effectiveness of various deliveries of educational material within the online environment, and whether those efforts impacted learning improvement and contributed to academic measures of program quality.

THE CURRENT LANDSCAPE

The general academic goal of many (most) educational institutions offering online programs, and college or university faculty delivering online courses, seems to be to try to make the online class as good as its traditional counterpart. A few researchers even tout positive assessment results as evidence that OE is *more* effective in some instances, especially within the so-called “soft” sciences such as the humanities, liberal arts, and education [44; 47]. But the question of whether OE can be just as effective as its face-to-face counterpart has long been answered, and the more pertinent question becomes how best to leverage the myriad technological options

and instructional techniques available to achieve the greatest learning improvement within the expanding online environment.

When discussing the effectiveness of educational methodologies, one would be hard-pressed not to acknowledge the ability to relate various examples of practical application through the use of dialogue and discussion, i.e., verbally, and tempered through the lens of faculty perspective and expertise, as a primary strength of the face-to-face classroom. Whether remotely or in person, students can glean only so much from books, slides, and other materials projected onto a screen; yet, in response to the widely proclaimed lack of personal interaction that impedes online learner engagement, online delivery often relies upon the use of these static presentations, asynchronous typed discussion boards, and uploaded video clips from various external sources in a dismal attempt to simulate the interaction of the face-to-face classroom [8; 13; 20; 30; 34]. Finding engaging ways for delivering anecdotal yet valid and well-informed insight, those real-world examples best provided by subject-matter expert facilitators, offers the greatest opportunity to bring the material to life and make meaning of the experience. To do otherwise minimizes the role of higher education faculty to obsolescence, and learners might just as well enroll in a self-directed correspondence course.

One readily available and popular alternative for faculty aspiring to increase the interest, engagement, and satisfaction of their online students is to incorporate materials from the growing array of open educational resources (OER) currently available through social media and other providers (Colvard et al., 2018), which typically encompass no-cost online learning content and other materials not restricted by copyright license and available for reuse or redistribution (Hilton et al., 2016). Many faculties rate the increasingly high-quality of OER, as well as items readily available through YouTube, iTunes, and other outlets, as superior to printed textbooks and other traditional materials [4]. Several studies suggest that their use contributes to increased student performance [22; 23; 37], while others find no significant difference in final grades whether using OER or traditional resources [16; 29]. Of course, the use of supplemental materials to provide currency to course topics and inform theoretical perspectives is a common and appropriate practice within academia, and faculty unequivocally should maintain full freedom in their pursuit of academic duties. However, these assessments and recommendations fail to consider how the overuse of OER – and concurrently minimal direct faculty input into the teaching endeavor, a situation exasperated by the remoteness of the online environment – may create a failed critical mass of program direction and oversight, or how the minimization of faculty engagement may be viewed by various accrediting bodies and professional associations. SACSCOC [46, p. 44] notes that “[q]ualified, effective faculty members are essential to carry out the mission of the institution and to ensure the quality and integrity of its academic programs” and identifies the instructor of record as “the person qualified to teach the course and who has overall responsibility... for the achievement of student learning outcomes” (p. 45). While encouraging the incorporation of various media and OER into online classes in order to reflect the most current perspectives regarding criminal justice issues, Bernat and Frailing [8, p. 345] offer valuable perspective and advocate an appropriate balance between “technology and social presence” in both course materials and instructional delivery, noting faculty members’ responsibilities for making these determinations.

Arguably, most instructors find that their greatest strength in the traditional classroom is the ability to relate various examples of practical application through the use of dialogue and discussion, i.e., verbally; yet many faculties struggle to find ways to incorporate this component into their online courses. In too many instances, excellent classroom facilitators attempt to bundle their material and “stick it online,” often in the form of the same static PowerPoint presentations or other pre-recorded media they use in face-to-face settings [8; 20]. This leads to frustration for both the facilitator who does not understand why students are not “getting it” and the learner who is forced to self-educate. Students often come away from these experiences exasperated that they had to enroll in a course when they could have learned just as much by simply buying the book and reading it on their own.

The virtual classroom requires innovative approaches that help learners engage in the experience. Online education suffers from a lack of imagination and willingness by facilitators to evaluate current practice and employ new approaches to delivering educational material [30; 44; 47]. A recent review of one well-known publisher’s instruction manual for developing online courses said that nearly all communication in the online classroom is written, referring to not only the correspondence among participants and facilitators, but the delivery of educational material as well. Although probably accurate, this notion is self-limiting, and faculty must leverage technology to identify and implement new mechanisms for bridging the online student-faculty communication gap, always with an emphasis on convenience and ease of accessibility for the learner but focusing on genuine academic gain.

To date, the predominant consideration among studies examining the quality of OE revolves around satisfaction with the student-student and student-instructor interaction [3; 8; 9; 18; 19; 25; 32; 38]. In national and regional studies of online professional development, Donavant [18; 19] found that student interaction with the facilitator is paramount to participants’ recognition of OE as a legitimate educational delivery. Many studies of OE in higher education have identified gender, race, and age [27; 30; 41; 42], or the participant’s level of formal education [12; 19; 43] as determinant factors in the satisfaction and potential success of online students. Others simply tout the popularity of modern technology with students in today’s increasingly digital world or simple convenience as the driving forces behind increased participation in online classes and a justification for exploring continually evolving issues within this growing field [7; 11; 40].

In the dismally few instances in which educators utilized pre- and post-tests strategies to measure academic improvement, an exhaustive review of the literature reveals virtually no empirical evidence regarding which educational practices maximize success in the online environment. Educational effectiveness generally is determined by learner achievement and results in the acquisition and development of new knowledge and skills [17; 31; 35; 39]. Recognition of any educational methodology as appropriate is contingent upon the demonstration that participants actually learned, and online practitioners must find ways to maximize the benefits of emerging technology. Learning success is affected by a myriad of circumstances and demographic considerations including educational level; time spent availing oneself to educational material; the use of various educational methodologies; familiarity with and previous exposure to the educational methodology employed; and gender, race, and age of the learner [21; 30; 43]. Understanding the make-up and capacity of the student base remains a critical component of any evaluation of effective education, especially within the rapidly

expanding online arena and as the field continues to address the continuing criticism of low-quality academic programs accused of attracting below-average students [44].

THE PRESENT STUDY

Rather than focusing on the delivery method of OE as a whole, this study focused on the integration of narrated digital presentations into online courses and their efficacy for online pedagogy. The study utilized an experimental design to examine the potential benefits of enhanced instructional delivery features such as facilitator-narrated digital presentations within specific online undergraduate course iterations to effect higher levels of learning improvement. The research results offer practical insight for those educators who may be considering ways to enhance online courses, online components of hybrid classes, or online materials in support of face-to-face courses, and how these tools best fit within a comprehensive approach to online education.

This study examined the differences in the levels of academic engagement and learning improvement of students who participated in OE with enhanced features, defined as digital presentations accompanied by audible narration, compared to those who participated with traditional features, defined as digital presentations comprised of slides with photographs or videos, and narrative text, but with no audible narration. The study also considered whether differences in academic engagement were related to learning improvement, as well as whether the demographic factors of gender, race, age of the learner, number of years of formal education received, and previous exposure to OE related to the levels of academic engagement and learning improvement of students who participated in OE with enhanced features compared to those who participate with traditional features. For purposes of this study, online education was defined as instructional material transmitted and delivered via a personal computer to learners at locations remote from that of the instructor(s). Within this context, instruction may include postings, discussion board, online materials, synchronous or asynchronous chat, and other methods, and allows self-paced, interactive, and individualized learning. Academic engagement was defined as the level of meaningful discussion, determined by evaluating the length of time and level of detail included in prompted responses posted to asynchronous online audio discussion boards, and learning improvement was defined as an increase in the academic knowledge of students measured by comparison of pre-and post-test scores.

METHODOLOGY

The relevance of any study examining the efficacy of a particular educational delivery method is logically contingent upon the data indicating that learning actually occurred, and the pre-test/post-test design of this study provided this validation. Although not part of the original research design but because the numbers of participants in the control and experimental groups were relatively low, replicating the study bolstered the reliability of the results, with the initial and subsequent iterations designated as Cohorts 1 and 2, respectively. Similarly, multiple research iterations increased the total number of participants to enhance validity of the results.

Cohort 1 consisted of 24 university students who enrolled in an online social science course and were randomly placed into one of two sections of the course, with 13 students placed in the control group and 11 students placed in the experimental group (initial placement included 12 and 11 students in the control and experimental groups, respectively; however, one student enrolled late and was placed in the control group). Cohort 2 also consisted of 24 university

students who enrolled in a subsequent iteration of the same online course, but with 12 students placed in both the control and experimental groups.

Students in both groups of both cohorts were informed that research was being conducted to evaluate best educational practices within the online environment and that their participation in the study was voluntary. No incentives were offered for participation in the study, and students were informed that their participation was not linked to course performance, grades, or status with the university. All students agreed to participate in the study, and, once each participant had completed the pre-test, access was granted to all course and instructional materials. No additional references to the ongoing research study were made during the remainder of the 15-week course iterations.

To ensure that the respective course sections educated all participants effectively, both the control and experimental groups in both cohorts were taught by the same instructor and received the same educational content, supported by the same course textbook and methods of academic assessment over the same period of time. All groups were provided the same video clips, provided the same audio recordings of classroom lectures, asked the same discussion prompts and required to respond to audio discussion boards, required to submit the same writing assignments, and administered the same course examinations. Because the online delivery platform utilized by the university allowed for the combination of multiple course sections into one online “class,” students in the control and experimental groups were unaware that students had been separated into different course sections. All students were able to collaborate with each other in discussion board topics, regardless of whether they were members of the control or experimental groups.

While both the control and experimental groups received the same educational content material, digital presentations incorporated into the course during the ninth weeks of the two 15-week semesters differed in respect to their delivery format. The presentations provided to the control groups consisted of static, un-narrated slide presentations, while those provided to the experimental groups consisted of the same visual slide presentation, but also incorporated narration by the instructor. McLeish [33] points out that learner interest typically begins to decline after about 10 minutes, reaches a low point at about 40 minutes, and increases somewhat during the last 10 minutes. Accordingly, none of the narrated presentations exceeded 20 minutes, compared to the hour-long classroom recordings provided to both groups. The narrated digital presentations contained essentially the same audio information as the pre-recorded classroom lectures provided to both groups, but in a condensed format; hence, audible instruction and coverage of course topics were not withheld from either group.

After incorporating the narrated presentations into the courses, the researcher monitored the amount of time students spent accessing other course materials. The researcher also assessed students’ levels of academic engagement, i.e., the level of meaningful discussion as determined by evaluating the level of detail included in prompted responses to discussion topics provided by the instructor. Both the control and experimental groups participated in audible discussion boards, that is both the discussion topics presented by the instructor and students’ responses were in the form of audio recordings rather than typed text. Students’ levels of academic engagement were assessed by determining how many seconds of meaningful discussion they posted to the discussion boards. Students’ comments and questions that were not germane to

the respective topics were not included in the assessment. Finally, at the end of both 15-week course iterations, all participants were given a post-test related to the course material. The comprehensive post-tests comprised the weighted final examination and one component of the courses' grading criteria, and were included in the calculation of students' final course grades; other factors included in the courses' grading rubrics included three additional examinations, participation in discussion board postings, and a research paper.

FINDINGS

The majority of online students in this study exhibited significant learning improvement from their participation in the respective courses, but the learning improvement of students participating with enhanced narrated presentations was statistically significantly higher than students participating with only traditional static presentations of the course materials. The following comprehensive assessment of results includes descriptive data of the participants and results of the statistical analyses, followed by a summary and discussion of the major findings.

Descriptive Data

Cohort 1 of this study consisted of 24 criminal justice students enrolled in an online criminal investigations course. Participants included 13 males (54%) and 11 females (46%), and ages ranged from 20 to 64 years ($M = 33.3$, $SD = 10.06$). Seventeen (71%) of the participants were white, six (24%) were black, and one (5%) was Hispanic. The majority of students were seniors (13, 54%), with six juniors (25%), three sophomores (13%), and two freshmen (8%).

Cohort 2 also consisted of 24 criminal justice students enrolled in a subsequent iteration of the same online course, with similar demographic distributions. Participants also included 13 males (54%) and 11 females (46%), and ages also ranged from 20 to 64 years ($M = 31$, $SD = 9.67$). Nineteen (79%) of the participants were white, four (17%) were black, and one (4%) was Hispanic. The majority of students were seniors (12, 50%), with six juniors (25%), three sophomores (12.5%), and three freshmen (12.5%).

Statistical Analyses

Paired samples t tests for Cohort 1 indicated that students in both the control and experimental groups demonstrated statistically significant improvements in learning based upon pre- and post-test scores. The control group post-test scores ($M = 78.38$, $SD = 9.81$) were significantly higher than the pre-test scores ($M = 61.75$, $SD = 8.31$), $t(12) = -5.42$, $p < .001$; and, the experimental group post-test scores ($M = 83.55$, $SD = 7.98$) were significantly higher than the pre-test scores ($M = 66.55$, $SD = 9.76$), $t(10) = -6.55$, $p < .001$. Though not significantly, Cohort 2's control group post-test scores ($M = 44.5$, $SD = 11.48$) declined from their pre-test scores ($M = 61$, $SD = 2.59$), $t(11) = 1.38$, $p = .19$; however, the experimental group post-test scores ($M = 84.33$, $SD = 2.33$) were significantly higher than the pre-test scores ($M = 67.0$, $SD = 2.72$), $t(11) = -7.25$, $p < .001$.

One-way analyses of covariance (ANCOVA) indicated that both cohorts experienced statistically significant differences in learning improvement between the control and experimental groups as demonstrated by the differences between post-test scores, controlling for pre-test scores. Preliminary evaluations of the homogeneity-of-slopes assumption indicated that the relationships between the covariates and the dependent variables did not differ significantly as

a function of the independent variables, $F(1, 20) = .02, p = .90$ (Cohort 1) and $F(1, 20) = .29, p = .59$ (Cohort 2). The Cohort 1 ANCOVA revealed that the post-test scores of the experimental group ($M = 83.55, SD = 7.98$) were statistically significantly higher than the post-test scores of the control group ($M = 78.38, SD = 9.81$), indicating a statistically significant difference in the effectiveness of OE with narrated digital presentation compared to OE without these features, $F(1, 21) = 6.66, p < .02$. The Cohort 2 ANCOVA revealed that the post-test scores of the experimental group ($M = 84.33, SD = 2.33$) were statistically significantly higher than the post-test scores of the control group ($M = 67.0, SD = 2.72$), indicating a statistically significant difference in the effectiveness of OE with narrated digital presentation compared to OE without these features, $F(1, 21) = 9.53, p = .006$. Both cohorts' relationships between the post-test scores and the delivery of narrated digital presentations were strong, as assessed by partial η^2 , with these presentations accounting for 24% of the variance in Cohort 1 post-test scores and 31% of the variance in Cohort post-test scores, holding constant the respective pre-test scores.

Independent samples t tests were conducted to determine whether there were statistically significant differences between the overall lengths of time spent accessing educational materials, or between the levels of academic engagement as determined by evaluating the level of detail included in prompted responses, by students in the control and experimental groups. Differences in the overall length of time spent by the Cohort 1 control group ($M = 40.54, SD = 27.15$) compared to the experimental group ($M = 57.50, SD = 39.27$) were not significant, $t(22) = -1.25, p = .23$, nor was the time spent by Cohort 2 control group ($M = 39.08, SD = 8.03$) compared to the experimental group ($M = 57, SD = 11.32$), $t(22) = -1.29, p = .21$. Differences in the level of engagement of the Cohort 1 control group ($M = 162.69, SD = 164.23$) compared to the experimental group ($M = 234.91, SD = 203.23$) were not significant, $t(22) = -1.97, p = .34$, nor was engagement of the Cohort 2 control group ($M = 147.83, SD = 46.42$) compared to the experimental group ($M = 215.58, SD = 50.85$), $t(22) = -.99, p = .33$.

Pearson product-moment correlations were computed to determine whether statistically significant relationships existed between learning improvement and the individual independent variables of gender, race, age of the learner, number of years of formal education received, lengths of time of academic engagement, and levels of academic engagement. Using the Bonferroni approach, a p value of less than .001 was required for significance. Learning improvement was not found to be significantly related to any of the individual independent variables for either cohort.

Pearson product-moment correlations also were computed to determine whether statistically significant relationships existed between course content mastery, as measured by post-test score, and final course grades. Post-test scores of both cohorts were found to be significantly related to final grades, $r(22) = .74, p < .001$ (Cohort 1) and $r(22) = .79, p < .001$ (Cohort 2).

DISCUSSION AND IMPLICATIONS

First and foremost, the study demonstrated that learning and academic success in online criminal justice courses can occur under a variety of circumstances. While somewhat limited by the relatively low number of participants, the two-cohort design combined with similar results in the subsequent iteration of this study to bolster the reliability and validity of the findings.

This study primarily examined the efficacy of using narrated digital presentations in the delivery of educational material within the online criminal justice environment to bring about higher levels of learner engagement and, ultimately, learning improvement. Some students in the control and experimental groups of both cohorts demonstrated a statistically significant learning improvement based upon pre- and post-test scores. However, some students within both control groups 'disengaged' from the course, even though they remained enrolled in the course and participated – albeit minimally – throughout the semester. These students failed to complete all course assignments, and some actually scored lower on the post-test than the pre-test. It was interesting that this was in contrast to students within the experimental groups who, all but one student in Cohort 1, remained engaged in the course and completed all assignments, and achieved higher scores on the post-test.

Just as academic program quality has long been a concern across higher education, many scholars express concern that institutions may be ignoring academic quality standards in favor of exploiting the growing online delivery trend and its expanding tuition revenues in order to support other disciplines with less robust or sagging enrollments [24; 36; 44; 45]. Critical to the integrity concerns that often accompany programmatic or institutional considerations for venturing into or expanding online offerings, the results of this study indicate that the use of narrated presentations, provided by the instructor of record rather than incorporated from external sources, can enhance learning and, therefore, academic success. These resources brought about a statistically significant increase in learning improvement compared to the use of static presentations, all without statistically significant increases in the time spent accessing the educational materials provided for the course. Ultimately, initial credence is granted to the argument that more is not necessarily better, and that *quality* of instruction and educational tools has a greater impact on learners' success than *quantity*. Recognition of this factor may well provide educators with the means to successfully embrace the paradigm shift that is underway within education as a result of advances in technology and the continuing shift toward online delivery while continuing to uphold academic program integrity standards.

Creative and engaging education utilizes not only the expertise of the facilitator, but also the vast resources available to supplement evolving methods of educational delivery. The use of narrated digital presentations is one means of meeting learners "where they live" and providing them with rich material that will bring meaning to their learning experience. As more and more learners embrace digital media and digital media presentations, they have expectations, skills, and tools to use them with ease. This reality provides an enormous and exciting opportunity for faculty to use the same tools to create enriching educational experiences, especially within the online environment where facilitators often struggle to present information in rich and meaningful ways. The use of narrated digital presentations is not a panacea to solving the perceived lack of personal interaction with the facilitator that so often is cited as detrimental to attracting and retaining online learners, or even requisite to creating quality online courses. But it is one tool within a comprehensive approach to online education that can help to improve the effectiveness of the experience.

Both an operational definition of engagement and the current literature on the effectiveness of specific practices within the online environment to provide meaningful education are woefully lacking [28; 43; 47]. While numerous previous studies examined the general efficacy of online delivery within higher education and some explored its feasibility for professional

development, educators generally have been left to fill the void in literature with anecdotal information and peripheral research only marginally applicable to their particular needs because almost none of these provided any empirical evidence regarding best practices for producing tangible learning improvement. The results of this study provide not only valuable empirical insight into sound online education practice but an impetus for further research, and replications of the study with larger or multiple cohorts may enhance the reliability of the results found here.

It is hoped that the findings and discussion presented here provide insight into the practical use and applications of online resources, and help to alleviate some of the anxiety associated with the development or adoption of new educational techniques. As more and more learners embrace their need for higher education, and students increasingly continue to do so through the online arena, we must provide them with the tools that will enrich their experiences within the online environment. It is the responsibility of educators to bridge the gap between the motivated learner and the static methodologies that separate him or her from truly meaningful education. As faculty, we must be willing to attempt new techniques – to free ourselves from the bounds of doing the same old things in the same old ways. We must actually transition to the online environment, with all of the resources and opportunities that it has to offer, and be limited only by our capacity for imagination and innovation within the parameters of sound educational practice.

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