

# Current Issues in Higher Education: Faculty Productivity, Distance Education, Course Assessment, and Online Proctoring

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**Abstract-** Faculty productivity is measured as a combination of teaching, research, and service. Universities are making a major push towards offering online courses. As the world-wide-web becomes a state-of-the art delivery medium there is a need among educators and trainers to obtain knowledge about the tools needed for developing and implementing web courses. Assessing the effectiveness of education is centred on student learning. Online proctoring accommodates the growing number of online learners who are looking for an easy, safe, and secure way to take their exams online with a remote proctor.

**General Terms-** Faculty Productivity, Distance Education, Course Assessment, and Online Proctoring.

**Keywords-** Higher education; faculty productivity; distance education; course assessment; online proctoring.

## 1. INTRODUCTION

Education is an interaction among teacher, student, and the subject matter. Historically, distance education has been characterized as an independent form of study due to limited communications technology. Today, distance educators realize that distance education must be responsive to interaction, access, and support issues. Online course objectives mirror the face-to-face course objectives. The difference is in the flexible structure of the course. In online courses, the instructor role transformed itself from a provider and transmitter of knowledge to a facilitator of the learning process. There is no substitute for quality in distance teaching. Quality does not come inexpensively or easily, but it is critical that it is planned for, implemented and monitored, and continuously evaluated. This involves hiring and retaining highly competent, experienced staff, and providing sustained support for students with learning at a distance. The provisions of distance learning options may not be less expensive for the institution. Although the institution saves money on the use of classroom space, the costs of the technology, transmission, maintenance, infrastructure, production, support, and personnel all need to be factored into the mix. Online learning environments can make education and training more accessible, convenient, focused, effective, and cost-efficient for the learners and providers alike. The challenge of creating online learning environment is to determine what learners truly need and how to reasonably accommodate their needs. Numerous institutions have entered the distance learning arena

because it makes economic sense. The hope has been to attract nontraditional students, as defined by age, marital status, or employment status, to the academic market. The attempt has been to capture a group of students who might not otherwise attend classes in a traditional setting. In today's global marketplace, organizational success is increasingly built on a foundation of skilled, self-motivated, and engaged individuals with the capacity for managing their continuous learning needs. Being able to think creatively, to solve problems, and to accommodate ambiguous situations is expected in addition to literacy and numeric skills. If information is now assumed to be available at one's fingertips, it is less important that students memorize facts and concepts when engaged in learning. Instead, the ability to access, interpret, and apply information becomes a reasonable goal.

## 2. FACULTY PRODUCTIVITY

The importance of scholarship and research publications has reshaped faculty work and reward structure [1]. The establishment of community colleges bifurcated higher education into teaching focus at community colleges and research focus at universities. Service has been undervalued and reserved for post-tenure work [2]. Individuals in higher education are steeped in global competition with the flattening of the playing field [3]. Institutions are trying to become more self-reliant to ensure financial growth and stability and this has shifted attention away from teaching [4]. The competition for external funding continues to grow. University

administrators are spending enormous amounts of money to recruit renowned scientists to join their faculty [5]. The reward structure at any college or university is indicative of its priorities. Decisions are made regarding faculty hires to better position the institution for success. Hiring advisors, graduate assistants, and adjuncts frees faculty for more capitalistic pursuits.

Faculty productivity is measured as a combination of teaching, research, and service. While teaching is the transmission of knowledge, research is the creation of knowledge [6]. Publications, federal funding, and research are encouraged at a research university. The reputation of a research university is based on its research output. Service to the university is most frequently activities involving program, department, college, and campus wide. Service also includes activities involving professional organizations, and other public service related to a faculty member's discipline and academic expertise. The key to promotion and tenure is through publications in peer-reviewed publications that are rooted in the disciplines.

Faculty work is aligned to maximize the production of new knowledge, engage in entrepreneurial activities, and create profitable links for the university [7]. This boosts organizational prestige and enhances its standing in the competitive global environment. Universities use institution mechanisms such as tenure to drive the research mission [8]. Traditional forms of technology transfer such as academic papers account for ninety percent of knowledge transfers from universities to the public [9]. Institutional policies and structural factors such as technology transfer offices can direct academic research towards patent production [10].

Access to higher education includes financial access, geographic access, and academic access [11]. In order to maximize student numbers and cost efficiencies universities have turned to distance learning to enhance educational entrepreneurship in the face of shrinking state money and liking funding to credit hour production[7].

### 3. DISTANCE EDUCATION

Strategically developed distance learning programs could be cost-effective and implemented without large instructional design teams, by contracting faculty for individual classes and piloting online courses in a traditional environment. Technology based distance education does significantly expand educational opportunities to new and distant audiences whose quest for knowledge would otherwise be hampered by time and distance. Students in distance courses may not be able to meet personally with instructors for help, but can interact with them or other students through email, discussion boards, or private course chat rooms. The asynchronous network established by distance courses allow the barriers of time and space to be removed so students can study when it best fits their schedule. Nontraditional students include full time employees, at-home mothers, and those who live in remote areas. Supporters of distance education

feel that active learning can be directly incorporated into the multimedia design of the course, and may be the key to stimulating education. Today, the most interactive Internet courses use digitized lectures, audio supplementation, discussion boards, and interactive software to incorporate the active use of writing, problem analysis, and collaborative learning into the lessons. Students are in control of the amount of time spent on a lesson and are able to stress areas of weakness [12]. Distance courses may provide educational benefits by liberating shy students who would otherwise not speak out in the classroom. Students in distance courses may not be able to meet personally with instructors for help, but can interact with them or other students through email, discussion boards, or private course chat rooms [13]. Distance courses may also seem convenient to those with constraints on their time such as the extracurricular activities they are involved in, or the number of hours they work per week. Additionally, a student more skilled in the use of a computer is less likely to have any anxieties about enrolling in a course that is taught exclusively online. Anxiety and reservations about taking a distance course will also be less for those who already have prior experience with distance learning.

The asynchronous network established by distance courses allow the barriers of time and space to be removed so students can study when it best fits their schedule. The most obvious, and probably the most significant, element missing from the distance course is the ability for students to immediately interact with the instructor and each other. The only link distance students have to the instructor and other students is email and discussion boards. Traditional students have the ability to interact with the instructor and other students in order to ask questions, clarify points, and to discuss the material during the lecture period. In the traditional section the instructor can tailor and divert the discussion according to student interest, and adjust the presentation based on student comprehension of the material. The lack of interaction involved in the distance course prevents distance students from engaging completely in active learning. Distance students can actively guide themselves through lectures and are able to analyze and interpret the material presented to them, but they are not able to actively engage in class discussions of the material as it is presented, as is done in the traditional course. Giving direction when students are stuck with a problem becomes much more difficult with an online course, especially if it is a difficult problem. This would be simple to do in a classroom, as you could gauge the student understanding and explain till they understand the material. On the other hand students who are shy about asking questions in class cannot be crowded out by those who are more vocal. They can send their questions through electronic mail [14].

Smarthinking, a tutoring service provider, provides tutoring in mathematics, Biology, Intro Human A & P, Chemistry, Organic Chemistry, Physics, Economics, Accounting, Intro to Finance, Statistics, Spanish, Writing, Reading, and IT

Support. They provide online tutoring 24 hours a day, 7 days a week enabling students to get the help they need when they need it. Smarthinking's tutors are seasoned educators and they average over 9 years of teaching or tutoring experience. Drawn from college faculty, graduate students, high school teachers and retired educators, all tutors must complete an online training program and are regularly evaluated for quality and consistency. Each academic area is led by one of Smarthinking's subject-area coordinators, all of whom are former college professors and experts in their disciplines [15].

Successful online education requires a student with the ability to communicate effectively through an electronic medium [16]. Some faculty suggest that students should be evaluated for their level of competency before their participation in virtual courses [17]. Faculty members did not feel that web-based courses were as effective in strengthening group problem solving skills, improving verbal skills, or helping students deliver better oral presentations [18].

#### 4. FACULTY IN DISTANCE EDUCATION

Universities are making a major push towards offering online courses. Most universities offer incentives for faculty teaching on-line courses [19]. The incentives include a small monetary reward and/or a reduction in the teaching load during the semester we first teach the course. Faculty development is a key to improving student achievement through the improvement of the teacher's skills and abilities for online classes. As online instruction grows, educators must constantly evaluate faculty development models and components seeking the most effective and efficient strategies and models that promote student success [20].

As the world-wide-web becomes a state-of-the art delivery medium there is a need among educators and trainers to obtain knowledge about the tools needed for developing and implementing web courses. Easy access to education and training to potential students is a growing need, as well as servicing industry needs through asynchronous learning for employees. Historically, distance education has been thought of as a means to deliver instruction between geographically separated people [21].

Online instruction transforms an instructor's role from the source and dispenser of knowledge in the classroom to that of a facilitator or monitor of learning [22]. Planning instructional design and management, support for teacher-student and student-student interaction, reliable technical support, empathy for student needs, and instructor training are all similar requirements for all face-to-face and distance courses [23].

Faculty is regularly evaluated on scholarship, service and teaching effectiveness. The major criterion for evaluation is teaching effectiveness. However, faculty is expected to engage in professional development and industry service activities, either that sponsored by the University or individually. Distance education must have an integrated

strategic plan that successfully aligns all vital programs to support academic and societal needs. Students and faculty must have access to information resources, support services, policies and procedures for distance education. The cost-effectiveness of a distance learning system depends on the potential for increased enrollments over a larger geographic area. Instructors must be trained in distance learning presentation skills to be effective. An organization must provide learner support services at least equivalent to those in a traditional environment. Support services should include access to digital libraries, student services, advising, counseling, registration, and technical support [24].

Universities help enhance professors' teaching and students' learning experiences by providing a diverse source of materials on effective teaching, and incorporating technology into education [25]. The home page, which includes the syllabus for each of the classes, bulletin board for students to discuss topics with each other, and online grade information for the students' benefit, were all made with the help of university resources. Students are happy to have the means to communicate with each other as is provided by the bulletin board program [26].

#### 5. ASSESSMENT

Assessing the effectiveness of education is centered on student learning. Student learning is largely measured through grades received on exams and assignments. A course is often judged as being effective or not effective in educating based on the overall class performance through grades achieved by the students. In addition to grades as a measure of effective education, measures of increased interest and positive changes in student attitudes towards a subject also provide evidence of effective instruction. Sparking student interest in a discipline or improving their attitude towards a subject matter is considered effective instruction because it increases the likelihood of the student to retain what was learned and apply it to real-life issues [27].

Tests can be used as indicators of how much information a student has learned or retained in a course, but it cannot measure a student's appreciation for, interest in, or attitude towards a discipline. These educational outcomes are also important influences in the educational process that are worthy of assessment, but cannot be measured in test scores. Student appreciation and interest in a discipline are also associated with student perceptions of course content and its instruction. Student perceptions are frequently measured by course evaluations. Student perceptions about the effectiveness of instruction may itself be an important indicator of student learning and attitudes. The utilization rate, or time spent studying in a course, has been found to increase a student's achievement in that particular course, as well as other related courses. Other important issues involving time are the number of course hours in which a student is enrolled, and the number of hours a student is



involved in extracurricular activities or work. In an attempt to measure student effort in courses, the number of course hours a student is enrolled in per semester is a variable given attention in recent literature. Constraints on a student's time, whether studying for other courses, participating in non-academic extracurricular activities, or working a job, should be considered as possible factors that could affect a student's achievement in a course. Learning is measured by student test performance [28].

Accreditation is a non-governmental, peer-review process that assures the quality of the postsecondary education students receive. Assessment is processes that identify, collect, analyze, and report data that can be used to evaluate achievement. When a professor creates an assignment, he also creates a grading rubric for it where each item on the rubric corresponds directly to a course outcome. When an assignment is electronically submitted by a student via the web site, the professor can view the submission and then check each item on the rubric that the student correctly addressed [29].

## 6. ONLINE PROCTORING

Online proctoring accommodates the growing number of online learners who are looking for an easy, safe, and secure way to take their exams online with a remote proctor. As enrollment in online courses grow, academic integrity of online courses is being looked at by accrediting organizations. Proctored exams are the best means of mimicking the face-to-face environment. This ensures that the person receiving credit for a course is the person who actually earned it. For writing assignments there is software to uncover plagiarism. For online exams and quizzes, proctored exams rank highest. Electronic real time proctoring requires a computer, reliable Internet connection, a web camera, and a microphone. Proctors verify the identity of the student with picture identification. The students can remain under the supervision of the proctor for the entire duration of the exam.

Academic integrity is a growing concern in the online learning environment. Employers may ask how a university offering an online degree ensures that the person receiving the degree actually earned it. Regional and national accrediting agencies are examining how colleges and universities proctor distance education students. The level of proctoring and the cost of proctoring vary widely with different companies depending on the services the companies provide. Proctoring service companies include Examinty, BVirtual, BioSignID, Remote Proctor Now, ProctorU and several other university developed proctoring services. We review some of the proctoring software available.

Examinty: It has round the clock service and global proctoring capabilities. It offers four levels of security: live proctoring, record and review, monitoring, and authentication. The service also includes a lockdown browser option, single sign on, LMS (Learning Management System) integration, and product tailoring to

user needs. It provides for test providers to schedule online tests, enroll and notify test takers, access proctoring, and access standard or customized reporting. The cost varies from \$2 per hour test to \$16 per hour test based on the level of proctoring required. The basic level is automated student authentication. The highest level is live proctor authentication, live monitoring, and ability to stop tests. Selection of the level is on a test by test basis. Higher stakes tests can have higher levels of monitoring, whereas non-critical tests can use a lower level of monitoring service to save money. Round the clock support is available via chat, email, and phone [30].

BVirtual: It offers full recording of test session from end to end. Students need a webcam and microphone. The cost varies between \$10 and \$20 per exam [31].

BioSignID: Users create a unique biometric passcode using just a finger or mouse that imposters cannot replicate. BioSig-ID™ captures a user's unique movements: direction, speed, length, angle, height etc. as they draw and create their passcode using just a mouse or finger. Each time a user logs in their passcode is compared and only if the patterns match will the "legitimate user" gain access to the online activity. Students need a computer that is flash 4 or 5 compatible. It claims to block 99.7% imposter access to the system. Positive experience is 98% due to ease of use. It interfaces with all major LMS's. It has a year of service for every student with unlimited use – no matter the number of courses or exams. The institution pays for a bulk number of licenses [32].

RemoteProctorNow: It has a flat fee of \$15 per exam. There is no scheduling required. It is entirely on demand. It has 24/7 support. It offers a free practice exam that allows students to go through the whole process. Identity of test taker and audio/video file is reviewed by certified proctors[33].

## 7. CONCLUSION

The internet has become an effective delivery medium for providing easy access to education and training needs, as well as facilitating asynchronous learning. Having a good understanding of the tools needed for developing and implementing courses on the Internet is imperative for educators developing web courses. Three types of test supervision are at a local testing center, with a human proctor, or with a virtual proctor. There are several online software companies that will proctor your exam for a fee. They provide different levels of security: live proctoring, recording of the exam session, and authentication. Services may include lockdown browser options. Students cannot take the exam with unauthorized books, notes, or reference aids of any kind unless specified on the exam instructions.

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