

# Best Practices in Authentication and Verification of Students in Online Education

Dr. Cheryl Smith, EdD, MSN, FNP, RN  
Dr. Sheri Noviello, PhD, MSN, RN, CNE  
CSU School of Nursing  
Columbus, Georgia



COLUMBUS STATE  
UNIVERSITY

# Introduction

- Universities with online programs are challenged to:
  - provide positive identification of students enrolled in online courses
  - reduce the occurrence of cheating on assignments and tests



# Higher Education Opportunity Act (HEOA) of 2008

- Congressional bill
  - Public Law 110-315
- States that an institution that offers an online program must prove that an enrolled student is the same person who does the work\*
- Intent is to reduce the amount of cheating that occurs in online courses

\*Foster, A. (2008, July). New systems keep a close eye on online students at home. *The Chronicle of Higher Education*, 54(46), A1.



# Higher Education Act

- Requires that accreditors must monitor the steps that colleges take to verify that enrolled student is same person doing the work\*
- Policies for SACS accreditation began addressing this issue
  - Policy statement on Distance Education requires universities to demonstrate they have processes in place that reduce opportunities for students to cheat (SACS: CS 3.4.6 and CS 3.4.10, 2008)\*

\* Bedford, W. Gregg, J, & Clinton, S. (2009). Implementing technology to prevent online cheating: A case study at a small southern regional university (SSRU), *Journal of Online Learning and Teaching*, 5(2), 1-6.

\* Parry, M. (2009, June). Online educators won't have to spy on students, new rules say. *The Chronicle of Higher Education*. Retrieved from <http://chroniclecareers.com/article/Online-Educators-Wont-Be-F/44439>



# Academic Standards

- Colleges and universities have obligation to stress regulatory requirements
- Reinforce ethical academic standards
- Provide written evidence of the requirements

Semple, M., Hatala, J., Franks, P., & Rossi, M. (2011). Is your avatar ethical? Online course tools that are methods for student identity and verification. *Journal of Educational Technology Systems*, 39(2), 181-191.



# Federal Regulation

- Federal regulation of distance learning
  - Implies that cheating is more of a problem in online courses than in face-to-face classes
  - Online educators are being held to a higher standard than peers teaching in brick-and-mortar classes



# At the Present Time....

- Official from U.S. Education Department state that regulations do not require colleges to put in place any new student-authentication technology beyond a secure log-in and password.....at this time....\*
- Proctored testing is essential for program quality

\* Parry, M. (2009, June). Online educators won't have to spy on students, new rules say. *The Chronicle of Higher Education*. Retrieved from <http://chroniclecareers.com/article/Online-Educators-Wont-Be-F/44439>



# Cheating in Online Courses versus Face-to-Face Courses

- No evidence that cheating happens more often in online courses
- A study of 1068 undergraduates found 81% of students felt that cheating in their online course was no more prevalent than within a traditional course (2008)
- Study of 635 undergrads and grads at medium-sized university
  - Cheating in online courses is no more rampant than cheating in live classes
  - Students were significantly more likely to obtain answers from others during online test or quiz

Black, E., Greasers J., & Dawson, K. (2008). Academic honesty in traditional and online classrooms: Does the “media equation” hold true? *Journal of Asynchronous Learning Networks*, 12(3-4), 23-30

Watson, G. & Sottile, J. (2010, Spring). Do students cheat more in online courses? *Online Journal of Distance Learning*, 13(1).



# Cheating

- 73.8 % of students in study felt it was easier to cheat in online class (King, Guyette, & Piotrowski, 2009)
- A study by Grijalva et al. (2006) found no significant difference between cheating on regular paper assignments and web-based assignments
- No one checks photo IDs when students enter a classroom

Grijalva, T., Nowell, C., & Kerkvliet, J. (2006). Academic honesty and online courses. *College Student Journal*, 40((1), 180-185

King, C., Guyette, R., & Piotrowski, C. (2009). Online exams and cheating: An empirical analysis of business students' views. *The Journal of Educators Online*, 6(1) 1-11



COLUMBUS STATE  
UNIVERSITY

# Cheating

- In 1940, only 20% of college students admitted to cheating
- Today, 75 to 98% of college students have cheated ([http://education-portal.com/articles/75\\_to\\_98\\_Percent\\_of\\_College\\_Students\\_Have\\_Cheated.html](http://education-portal.com/articles/75_to_98_Percent_of_College_Students_Have_Cheated.html))



# Cheating

- Cheating to pass or get ahead?
  - Cheaters have higher GPAs <http://oedb.org/library/features/8-astonishing-stats-on-academic-cheating>
- Primary reasons:
  - Campus norm
  - No honor code
  - Penalties not severe
  - Faculty support of academic integrity policies is low
  - Little chance of being caught
  - Incidence is higher at larger, less selective institutions
- Administration / Institutions as role models

<http://www.glass-castle.com/clients/www-nocheating-org/adccouncil/research/cheatingfactsheet.html>



COLUMBUS STATE  
UNIVERSITY

# Authentication

- The process of proving to a system that you are who you say you are.
- Authentication can be performed using one or more of the following:
  - Something you know (username and password).
  - Something you have (smartcard)
  - Something you are (finger print, hand writing, voice pattern)



# Technology Vendors

- Increased anxiety by distorting and exaggerating what was being required by HEOA
- Will profit from the regulations
- May not safeguard student's privacy
  - Fingerprints
  - Images inside of student's home
- FBI-like requirements
  - Fingerprints from encrypted mouse, monitoring of eyelid movements, webcam surveillance, keystroke recording
  - Eye iris identification



# Vendors

- Securexam Remote Proctor
- Webassessor
- Acxiom Corporation
- Webcam Invigilation
- Respondus Lockdown Browser
- Proctor U



# Respondus Lockdown Browser

- Used by:
  - 10 public universities from Utah System of Higher Education
  - Also state's Library system
  - CSU School of Nursing
- Integrates with Blackboard Vista
- Prevents students from printing, copying, visiting other URLs, or accessing other applications during an online assessment
- Locked into assessment until submitted for grading



# Respondus Lockdown Browser

- Cannot prevent all cheating
- Also integrates with ANGEL, Blackboard, Desire2Learn, Moodle, and WebCT
- Campus-wide licensing
  - \$2000-\$6000 per institution based on student enrollment numbers
- Free 2-month pilot license
  - Some restrictions





# Proctor U

- Live online proctoring service
- Students pay per exam (\$17/1 hour exam; \$20/2 hour exam)
- Three step authentication process
  - Webcam
  - Monitor student's computer screen in real time
  - Multi-factor process



# Challenge Questions

- Derived from public data sources
- Manage by a 3<sup>rd</sup> party
- Student cannot predict questions so fraud would be difficult
- Questions about the student's own demographics
  - Where lived in past
  - Type of car owned

Bailie, J. & Jortberg, M. (2009). Online learner authentication: Verifying the identity of online users. *Journal of Online Learning and Teaching*, 5(2), 1-10.



# Plagiarism Detection

- Turnitin Originality Check
  - Electronic dropbox tool that compares submitted papers to repository of papers previously submitted to Turnitin, Internet and print sources
- iThenticate
  - Website service that generates originality reports
  - Cost: licensing fee based on type and size of organization
- SafeAssign
  - Offered by Blackboard to LMS clients
  - Free to Blackboard enterprise clients
  - Provides “percent match” information



# Plagiarism

- Dustball
  - Ignores text in quotes
  - Cost: \$8/month for up to 50 uses then \$.25/use
- PlagiarismDetect.com
  - Cost: \$.50 per page
- Searchmaze
  - Free service that alerts you to text taken directly from Internet websites
- Plagiarism Sleuth
  - Free service that alerts you to text taken directly from Internet websites



# Best Practices

## To Reduce Cheating



# Suggestions

- Use of test proctors
  - Either on every exam or just the comprehensive final exam
  - Final exam is heavily weighted and proctored
- Randomize questions on exams
  - Scramble questions and reorder questions
- Change type of assessment
  - Objective (multiple choice or true/false) to more subjective (essays and research papers)
  - More discussions, writing assignments, quizzes, group work
- Shorten time for tests
  - 1 ½ minutes per question
  - Do not allow students to back track
- Lower assessment's value in relation to other course assignments
- Use of online exam sites from publishers of most textbooks



# Other Options

- Not as many big exams
- Do not release scores until all students have completed quiz/exam
- Increase number of assignments
  - Makes it difficult and expensive to recruit others to help
- No strategies will totally eliminate cheating



# Papers

- Make assignments clear
  - Do you allow collaboration or not?
- Break down course assignments into a series of steps leading to the major writing assignment
- Assign paper length less than or equal to 6 pages
  - Most paper mills have papers greater than 6 pages
- Require abstract of paper
  - Difficult for student to write a synopsis of paper from paper mill
- Require recent references (last year or so)
- Use plagiarism detection of some type





# Ethical Behavior

- Course in ethical behavior and moral development
- College experience should instill a prominent level of ethical behavior
- Program student handbook should have information about academic integrity and definitions of academic misconduct
- In every course
  - Provide ethical expectations
  - Syllabus should contain section about cheating, plagiarism and consequences
  - Provide link to student honor code
  - Develop a contract and have students sign it at beginning of course
- Students caught cheating pay a consequence



# Nursing and Ethics

- Nursing has high level of ethical practice inherent in the profession
- Important component of nursing practice
- Supported by nurses' professional peers
- This should be translated into student clinical experiences and course work



# Communication and Contact

- Single best means of identifying individual students in a course is through communication and contact
- Know your students
- Ask students to provide a writing sample at beginning of semester
  - Learn student's voice and manner of writing



# Questions????????



COLUMBUS STATE  
UNIVERSITY

# References/Resources

- Bailie, J., & Jortberg, M. (2009). Online learner authentication: Verifying the identity of online users. *Journal of Online Learning and Teaching*, 5(2), 1-10.
- Black, E., Greasers, J., & Dawson, K. (2008). Academic honesty in traditional and online classrooms: Does the “media equation” hold true? *Journal of Asynchronous Learning Networks*, 12(3-4), 23-30
- Bedford, W. Gregg, J, & Clinton, S. (2009). Implementing technology to prevent online cheating: A case study at a small southern regional university (SSRU), *Journal of Online Learning and Teaching*, 5(2), 1-6
- Conway-Klaassen, J.M., & Keil, D.E. (2010). Discouraging academic dishonesty in online courses. *Clinical Laboratory Science*, 23(4), 194-200
- Epsilon, D.M., & Keefe, T.J. (2010, May). Practical tips for preventing cheating on online exams. *Promoting Academic Integrity in Online Education*. Retrieved from [www.FacultyFocus.com](http://www.FacultyFocus.com)
- Foster, A. (2008, July). New systems keep a close eye on online students at home. *The Chronicle of Higher Education*, 54(46), A1.
- Grijalva, T., Nowell, C., & Kerkvliet, J. (2006). Academic honesty and online courses. *College Student Journal*, 40((1), 180-185
- Hart, L., & Morgan, L. (2010). Academic integrity in an online registered nurse to baccalaureate in nursing program. *The Journal of Continuing Education in Nursing*, 41(11), 498-505



# References/Resources

- King, C., Guyette, R., & Piotrowski, C. (2009). Online exams and cheating: An empirical analysis of business students' views. *The Journal of Educators Online*, 6(1) 1-11
- McNabb, L., & Anderson, M. (2010, May). 91 ways to maintain academic integrity in online courses. *Promoting Academic Integrity in Online Education*. Retrieved from [www.FacultyFocus.com](http://www.FacultyFocus.com)
- Parry, M. (2009, June). Online educators won't have to spy on students, new rules say. *The Chronicle of Higher Education*. Retrieved from <http://chroniclecareers.com/article/Online-Educators-Wont-Be-F/44439>
- Semple, M., Hatala, J., Franks, P., & Rossi, M. (2011). Is your avatar ethical? Online course tools that are methods for student identity and verification. *Journal of Educational Technology Systems*, 39(2), 181-191
- Stephens, J.M., Young, M.F., & Calabrese, T. (2007). Does moral judgment go offline when students are online? A comparative analysis of undergraduates' beliefs and behaviors related to conventional and digital cheating. *Ethics & Behavior*, 17(3), 233-254
- Watson, G., & Sottile, J. (2010, Spring). Do students cheat more in online courses? *Online Journal of Distance Learning*, 13(1).



# Securexam Remote Proctor

- Used by Troy University, University of South Alabama, University of West Alabama
- Mirrored sphere suspended above a small pedestal
- Plugs into a standard port on home computer
- Groove for scanning fingerprints, a tiny microphone, and a camera
- \$150-\$200
- Only works with Windows operating system and Internet Explorer browser



# Securexam Remote Proctor

- Student sits in front of computer
- Places finger on pedestal
- Digital fingerprint and photo taken with camera compared with one recorded at registration
- Test opens online via course management system
- Student cannot view anything else online





# Webassessor

- Used by World Campus, online arm of Pennsylvania State University
- Human proctors
- Web cameras
- Software that recognizes students' typing styles
- Students must have broadband connection
- Cameras \$50- \$80 (student cost)
  - Allow proctors to view a student's face, keyboard, and workspace



# Webassessor

- Kryterion charges institutions \$20,000 for set up of software and training
- Also charges each time students sit for an exam
- Proctor can prevent student from starting the exam or completing the exam



# Acxiom Corporation

- System gathers information from variety of databases, including criminal files and property records
- Uses the data to ask the student questions, such as street lives on, house number, previous employers
- If student answers the questions correctly, given access to the exam



# Acxiom Corporation

- National American University Online presently testing system
- Also Colorado community college consortium evaluating its use
- Approximately \$10 per student



# Webcam Invigilation Method

- Students purchase basic webcam
- Attach to top of computer or laptop so student's face can be seen
- Exam is scheduled at same time for all students
- All webcam images are displayed at monitoring headquarters
- Monitor how often students change pages and how long it takes to answer questions



# Webcam Invigilation Method

- Students not allowed to leave exam area except for bathroom break
- If cheating is suspected, student is disconnected from exam
- Must either reschedule exam or present case to educational institution

