Academic Integrity Issues in Online and Computer Based Testing

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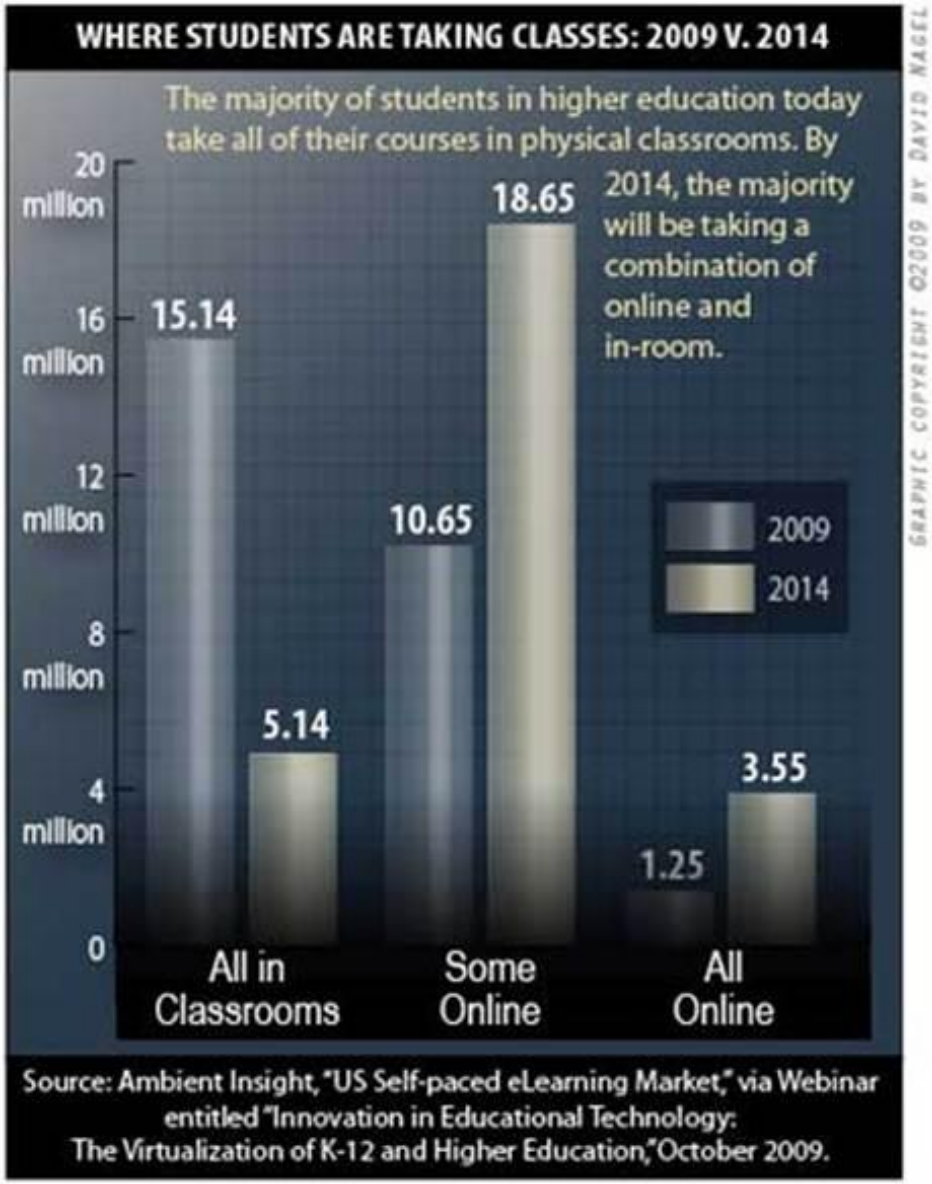
The Premise: E-Learning

- Need to reach global workforce/students cost effectively.
- Knowledge, technology and products are available for dissemination of information.
- Institutions and customers are comfortable interacting online.
- New pedagogical models with media rich environment provides better learning methods.
- Standards are emerging but we are not there !!

E-Learning Case

- In 2009, 1.25 million took all classes online
- 10.65 million take some classes online.
- Predictions indicate this total number could reach 22 million.

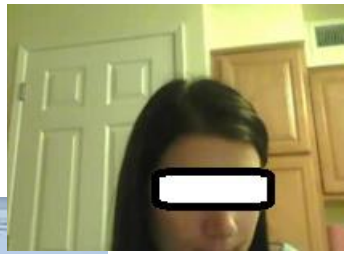


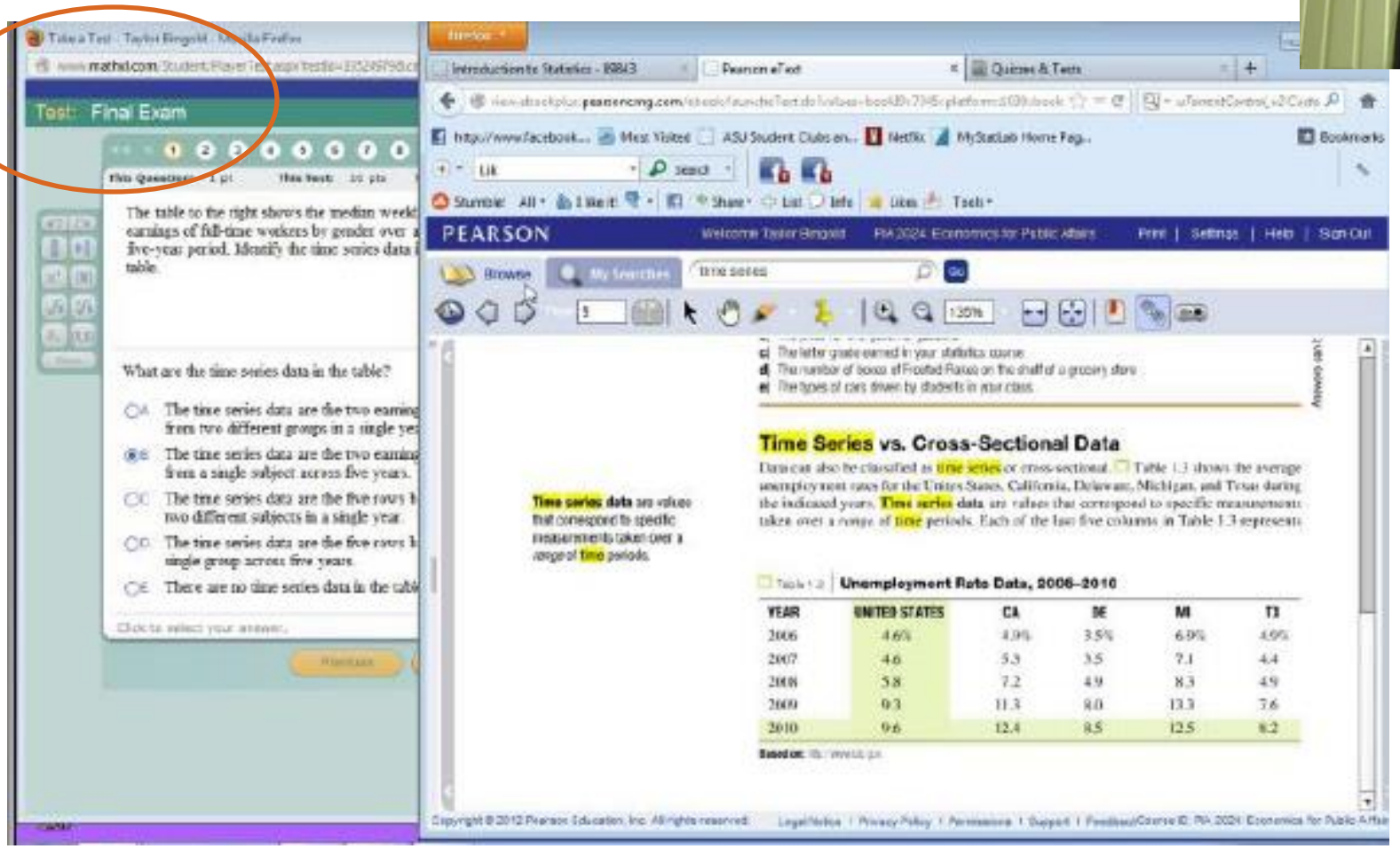
"I love e-learning because it makes employees more productive and it's available anytime, anywhere. Although I think it will take three to four years for e-learning to make as much impact as e-commerce, I truly believe that it will change the way schools and universities teach, the way students learn, and the way businesses will keep employees up-to-date with the skills and information for this fast-changing Internet economy."

John Chambers, CEO Cisco, 2009

But, what about the assessment?

Cheating?




Test: Final Exam
What are the time series data in the table?
PEARSON
Time Series vs. Cross-Sectional Data
Time series data are values that correspond to specific measurements taken over a range of time periods.
Unemployment Rate Data, 2006–2010
YEAR
UNITED STATES
CA
DE
MI
TX
2006
4.6%
4.9%
3.5%
6.9%
4.9%
2007
4.6
5.3
3.5
7.1
4.4
2008
5.8
7.2
4.9
8.3
4.9
2009
9.3
11.3
8.0
13.3
7.6
2010
9.6
12.4
8.5
12.5
8.2

Something Wrong with this Picture?

The Online/CBT Assessment Challenge

- Academic Integrity Who is taking the exam?
- Audit Trail: If cheating is suspected
  - Where is the evidence?
  - How to generate the audit trail for action?
- Bottom/Top line
  - How does it affect the credibility/ accreditation, brand/ranking and $$ for your program?

Survey of Self Reported Dishonest Behavior by Watson et al

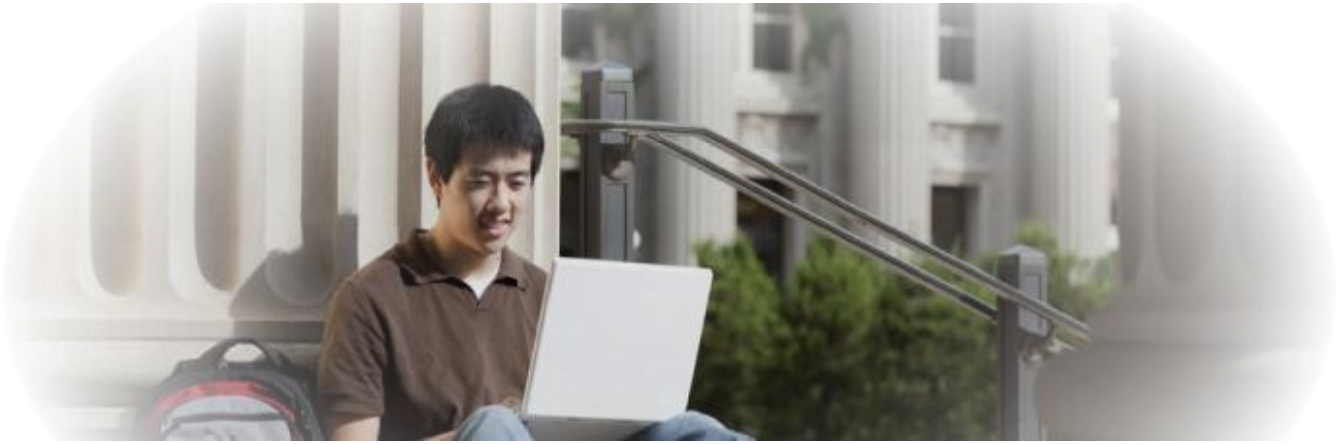
- 32.1% admitted to having cheated in a live class and 32.7% admitted to cheating in an on-line class
- 23.8% obtained answers from someone else in an online exam (web, chat, ..).
- Students reported they were more than 2X as likely to have been caught cheating in a live class.
- Students predisposed to cheating (Kohlberg 71)
- Role of Gender in Cheating (Stevenson 99).

Physical or Online Proctoring

- Students go to a physical location – PearsonVue, Kaplan, local library, …
- Online Live Proctoring:
  - Sign up for a time slot to take the test.
  - A human proctor watches N (typically 10-20) students at a time over webcam/mic/shared screens.

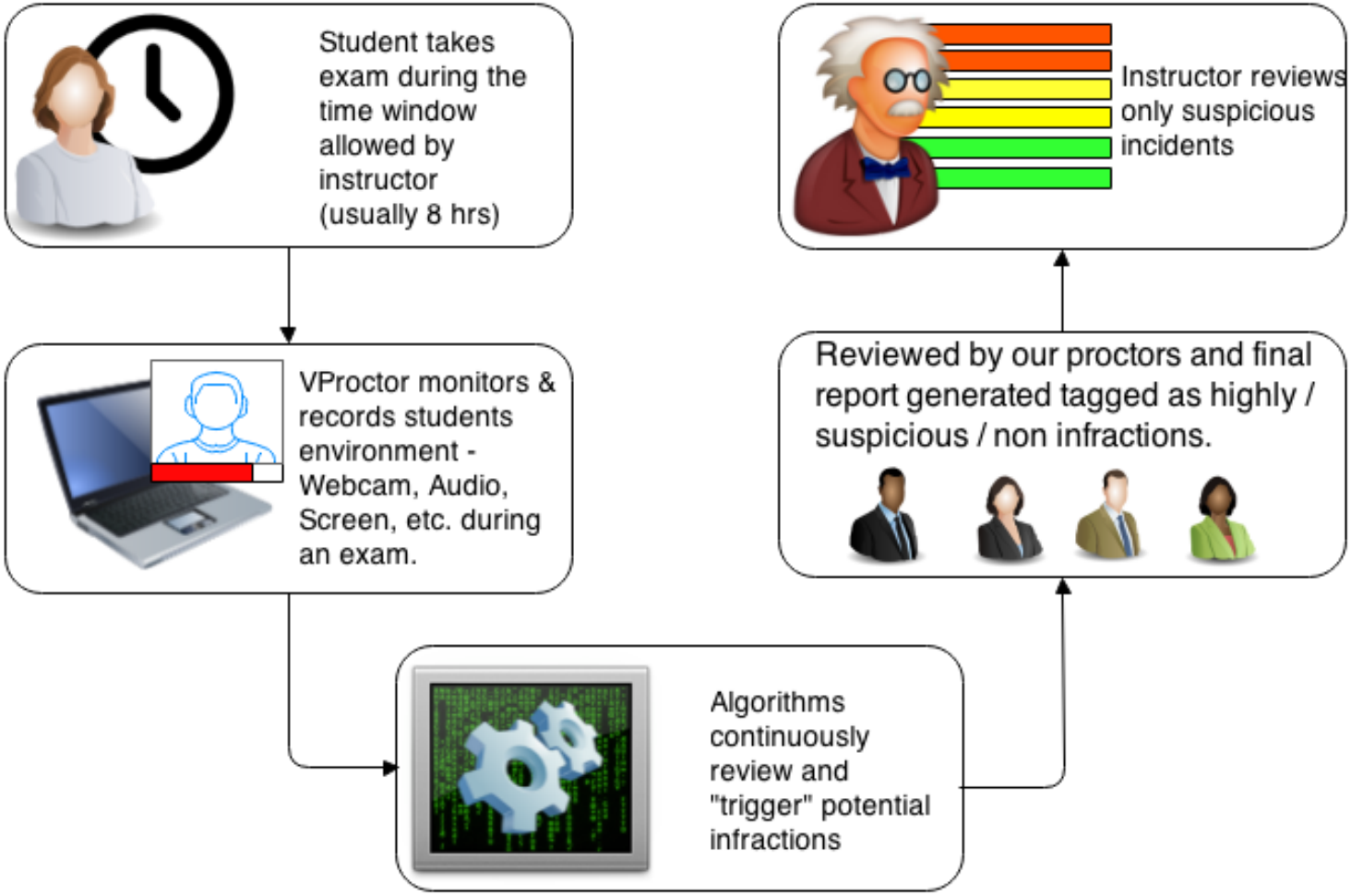
Challenges with Current Model

- A 2 hr exam requires 2 hrs of monitoring
- Human in the loop:
  - One can oversee only so many webcams: distraction at the casino!!
  - Monotonous observations and inconsistently trained
- Lack of Asynchronous access
  - Miss the timeslot, out of luck
  - Not anywhere, anytime as Online is supposed to be
- Cost prohibitive: $25-40 per 2 hr exam.

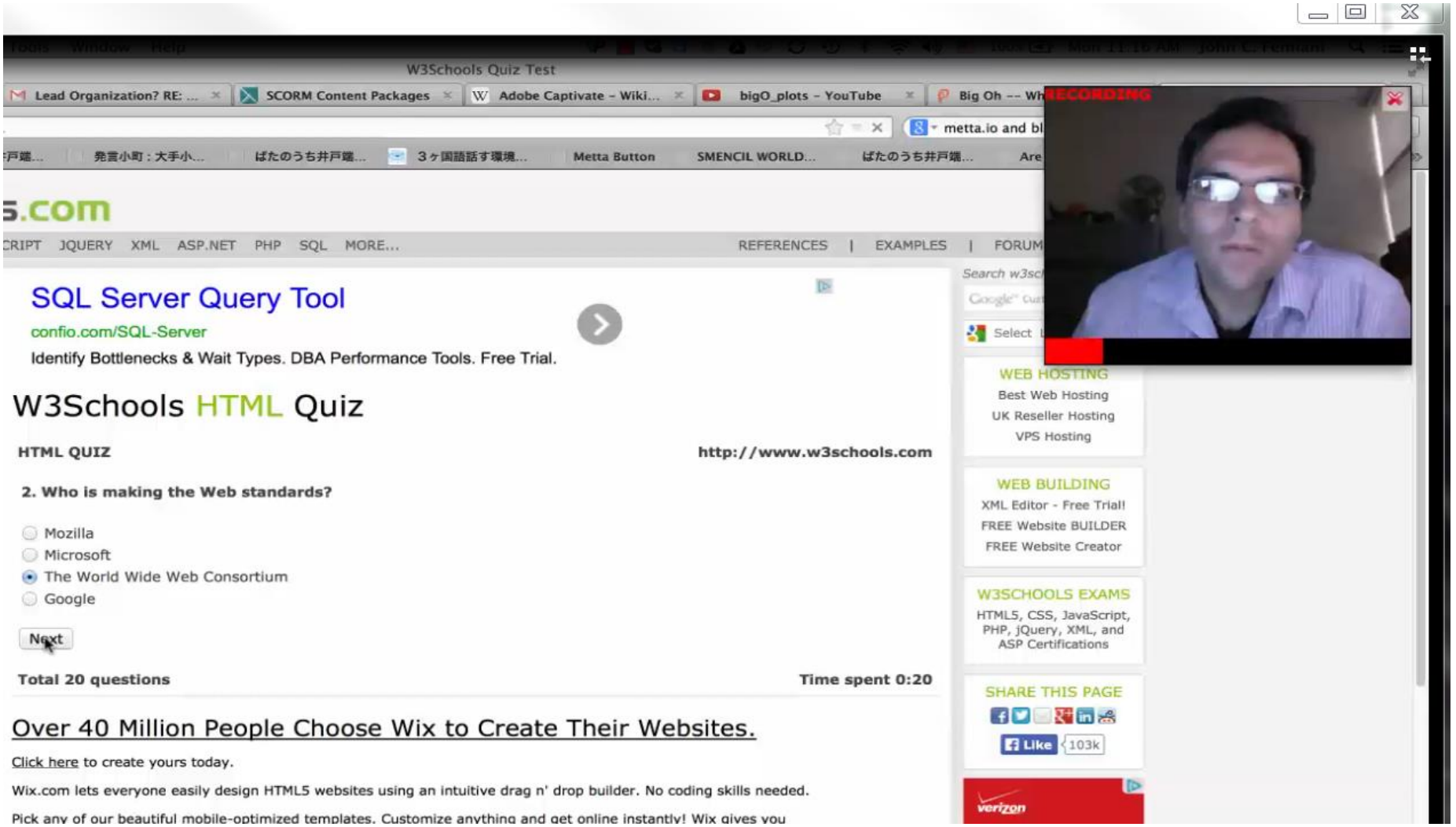


The future of online proctoring: algorithm based, asynchronous and cost effective

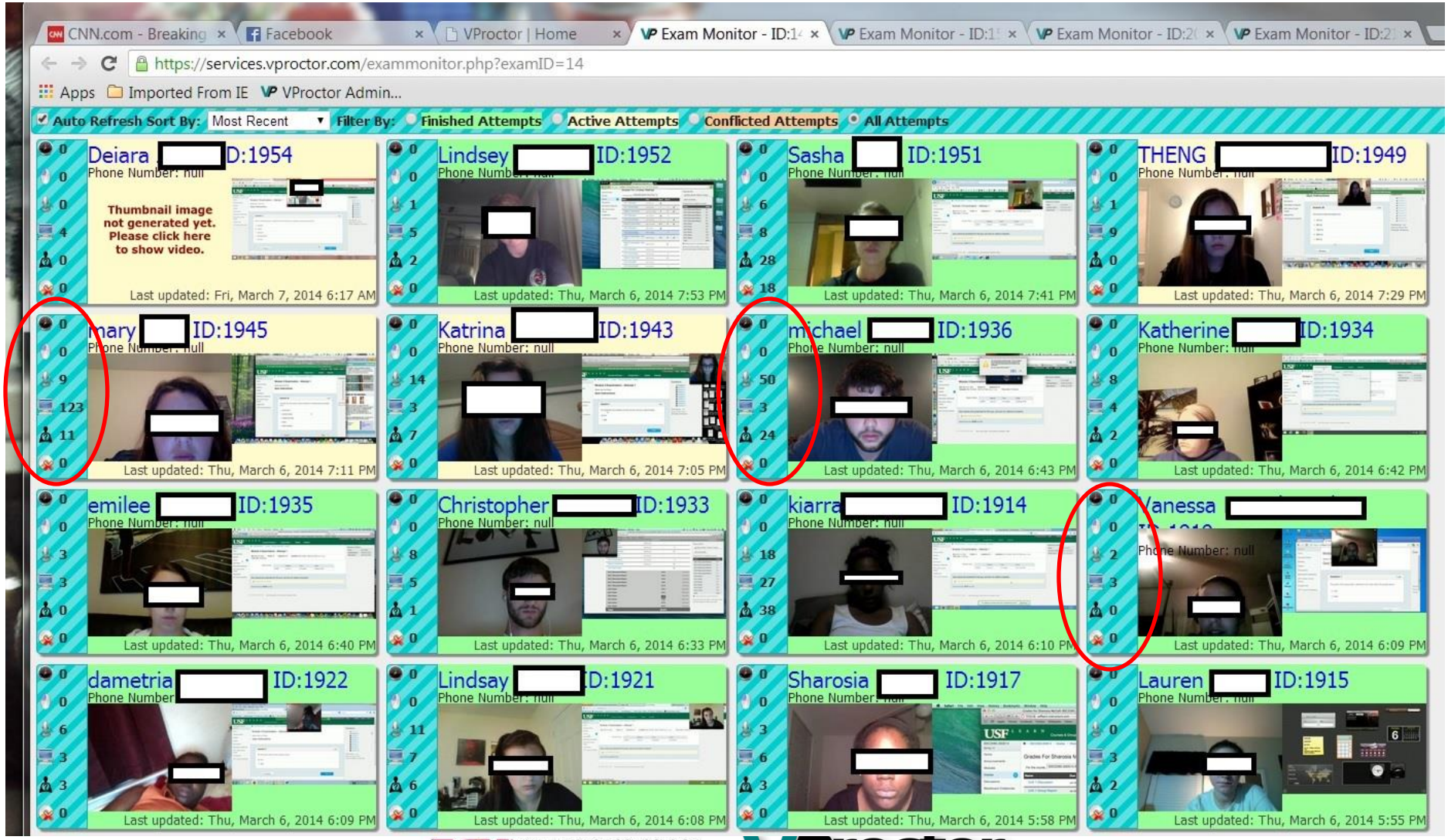
VProctor: How It Works



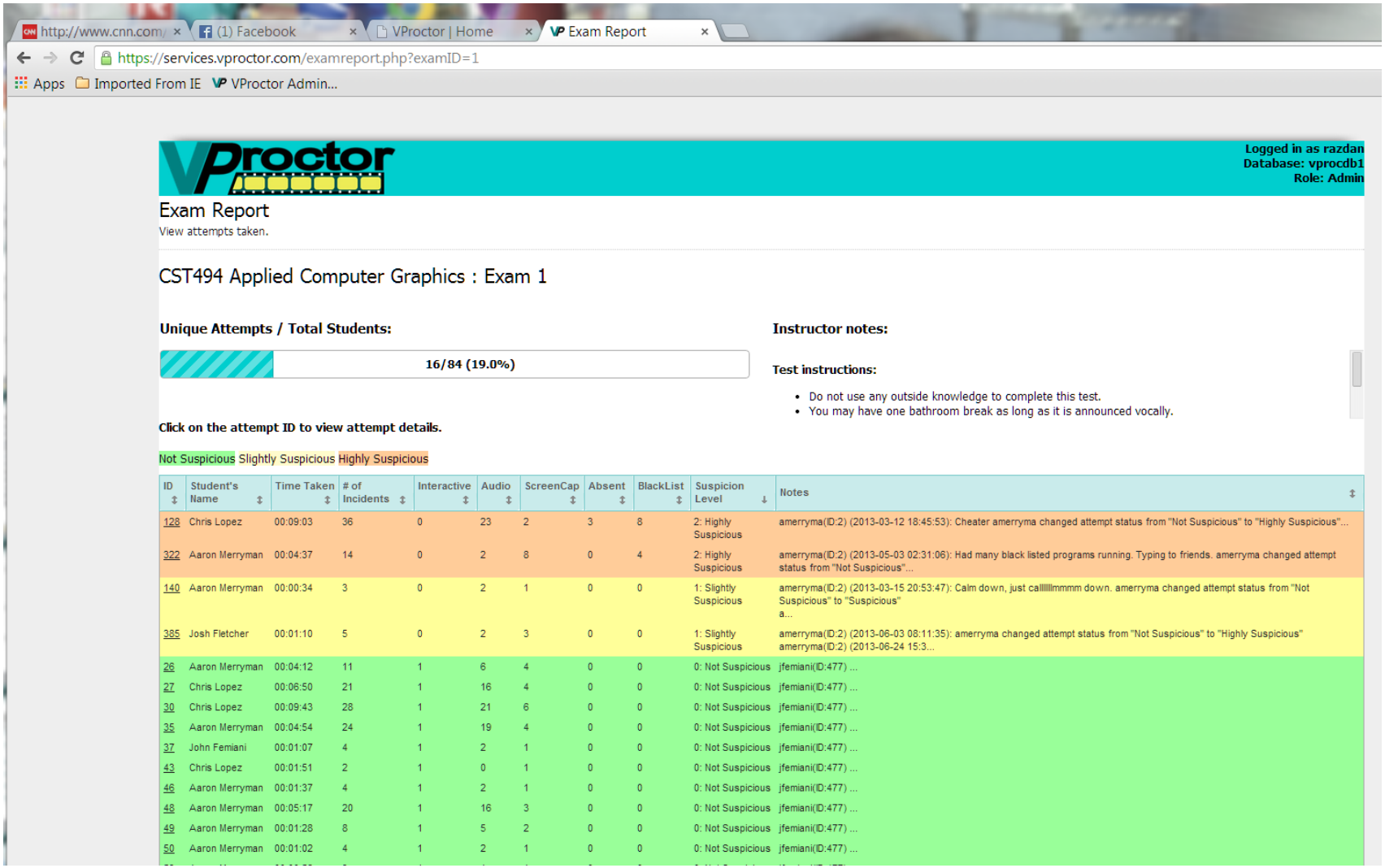
Student's View



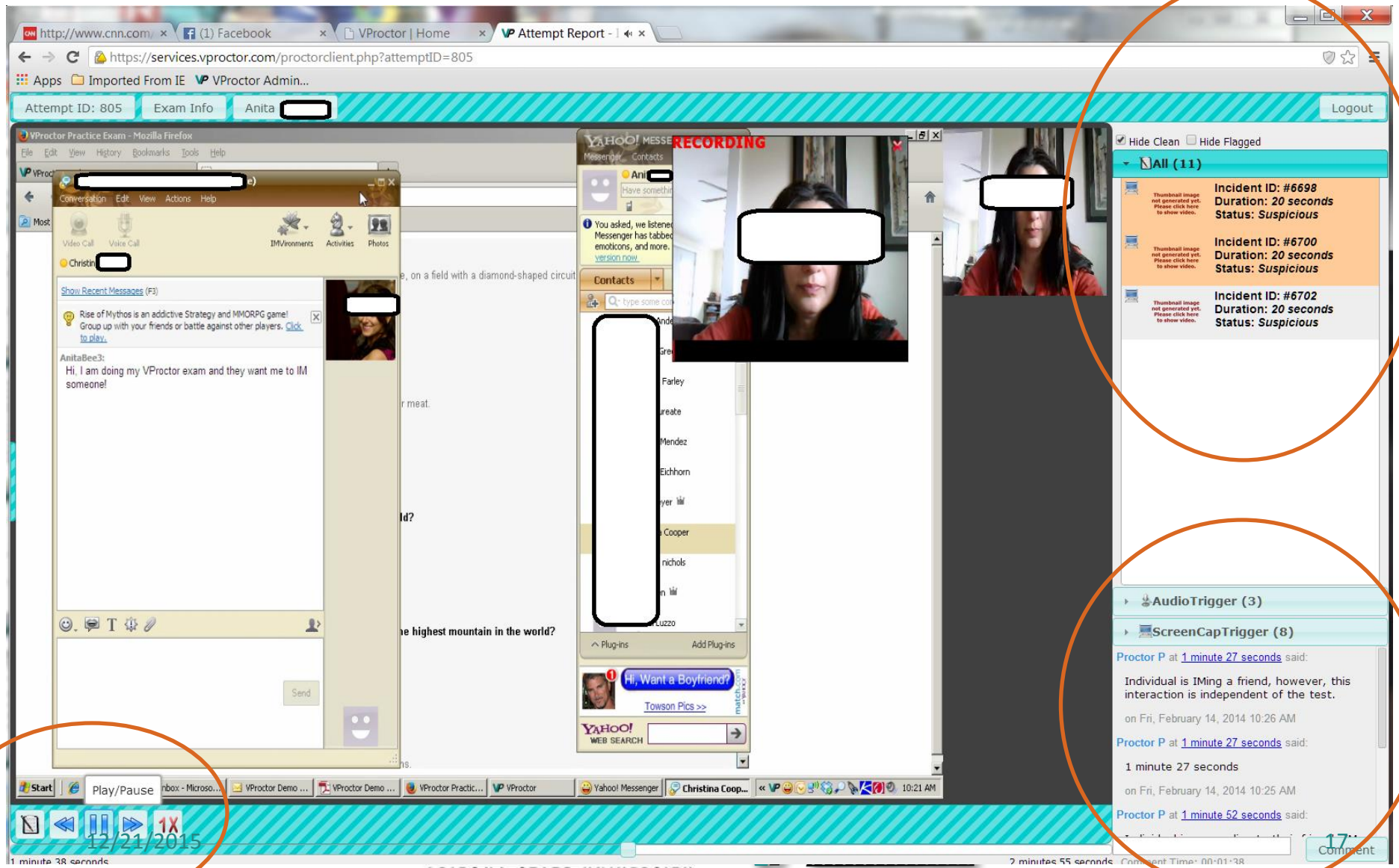
Live Chat Support and Monitoring



Instructor Report



Instructor's Review – Evidence/Audit Trail



What VProctor Does/Doesn't Do

- Catches suspicious behavior – 10-12% inline with experts view on how many cheat.
  - Does not prescribe action – instructor/Institution responsibility
- Deters cheating, reinforces ethical behavior
  - Does not stop students from cheating.
  - Determined cheaters will cheat (will they succeed?)
- VProctor implements Instructors rules
  - Instructor defines open close book/notes, use of online software, chat and other software.

Great For

- Deployment over a semester for multiple exams
  - Quizzes, mid-terms and finals
  - Makeup exams, in-class Comp. Based Testing
- Proficiency or Certification test(s).
  - Math and English proficiency tests
  - Nursing/dental board exams

About VProctor

- Vproctor is based inPhoenix Az, USA.
- VProctor was spun off from the technology developed at Arizona State University
- Battle hardened software technology deployed at many institutions.
- Patent Pending (Filed in 2013).

	VProctor	KRYTERION ONLINE SECURED TESTING	proctorcam	B-Virtual Inc.	ExamSoft	Respondus LockDown Browser™	Software SECURE SecureExam	ProctorU	Integrity
Human Proctoring	✓	✓	✓	✓	✘	✘	✓	✓	✓
Screen Recording	✓	✘	✓	✓	✘	✘	✘	✓	✓
Anytime	✓	✓	✘	✓	✘	✓	✓	✘	✓
Anywhere	✓	✓	✓	✓	✘	✓	✓	✓	✓
Uses Built-in Hardware (Cam/Mic)	✓	✘ Proprietary Cam	✓	✓	✘	✘	✘ Proprietary Cam	✓	✓
Audit Trail	✓	✓	✓	✓	✘	✘	✓	✘	✓
No Computer Lock-Down	✓	✘	✘	✓	✘	✘	✘	✓	✓
Web-Based Configuration Tools	✓	✘	✘	✘	✘	✘	✘	✘	✓
Triggers / Infraction Detection	✓	✘	✘	✘	✘	✘	✘	✘	✘
Trigger Configuration	✓	✘	✘	✘	✘	✘	✘	✘	✘
Add/Remove Proctors	✓ Our / Instructor Proctors	✓ Only Their Proctors	✘	✘	✘	✘	✘	✘	✘
Smart Proctor Client	✓	✘	✘	✘	✘	✘	✘	✘	✘
Proctor Report Generation	✓	✓	✓	✘	✘	✘	✓	✘	✘

Leadership

- **Dr. Anshuman Razdan** (AR), a Prof. of Computer Sc. at ASU, heads the Image and 3D Data Exploitation and Analysis Lab (I3DEA Lab), and is a serial entrepreneur having started two other successful companies. AR has over 20 years of software development experience having worked at Motorola and Informative Graphics before joining the academia. He is currently the President/CEO of VProctor. He also holds two patents including one on facial recognition.Email: razdan@vproctor.com

- **Dr. John Femiani**, an Assistant Professor at ASU is the Chief Technology Officer of VProctor and holds one patent. John oversees the algorithmic and architecture development for all VProctor software. John has over 15 years of software development experience in both academic applied research and industry. Email: femiani@vproctor.com

Key Features

- Flexible Testing: Anytime Anywhere using built in hardware.
- Works independent of LMS, Blackboard, Canvass, E-College … lockdown browsers.
- Windows and Mac OS supported
- Easy to deploy and scale – no human factors issues. Deters and catches cheating.
- Secure: Uses Amazon's cloud servers – international connectivity and bandwidth.
- Fast and Easy review + Audit trail
- Inexpensive: 50-70% Cheaper