Use of Interactive Technologies to Enhance Teaching and Learning

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Objectives

1. Differentiate between several types of possible technologies that can be integrated into undergraduate teaching, especially in ethics courses.

2. Understand the advantages and challenges with implementing these technologies into the classroom.

3. Participate in a mini “mock” class session to demonstrate the technologies in action.
Technologies

• TurningPoint
• Wikis
  – In Blackboard
  – Google Sites (for www.bioethics2.net)
• Online Bookstore
• Podcasts
  – YouTube videos made with Articulate Studio ’09
  – Also uploaded to iTunes University
• Self-Paced, Crucial Choices™ interactive case studies
TurningPoint Audience Response System

- Radio Frequency (RF) “solid state” version
- Web-based version for mobile devices and laptops
Pedagogical Techniques using “Clickers” to Enhance Lectures

<table>
<thead>
<tr>
<th>Technique</th>
<th>Level of Difficulty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graded quizzes</td>
<td>Advanced (linking to LMS); high risk so reverted to paper quizzes</td>
</tr>
<tr>
<td>Random “toss up” questions sprinkled throughout lectures</td>
<td>Easy</td>
</tr>
<tr>
<td>Competition-based games (like Jeopardy)</td>
<td>Medium</td>
</tr>
</tbody>
</table>

**For games:**
- Separate by year (freshman, sophomore, juniors, seniors, other)
- Offer rewards: chocolate or individually wrapped prunes (wow, were they popular!)
# Pedagogical Techniques using “Clickers” to Enhance Activities

<table>
<thead>
<tr>
<th>Technique</th>
<th>Level of Difficulty</th>
</tr>
</thead>
<tbody>
<tr>
<td>To record and ensure attendance (pre- and post-)</td>
<td>Easy</td>
</tr>
<tr>
<td>On-the-fly questions as litmus tests</td>
<td>Medium (comfortable interrupting the usual PPT)</td>
</tr>
<tr>
<td>To ensure completion of individual or group exercises</td>
<td>Easy</td>
</tr>
<tr>
<td>Comparison of individual or group work to instructor’s answers (4-point Likert scale, although other uses can be implemented)</td>
<td>Easy</td>
</tr>
<tr>
<td>Use of branching logic to skip material that students already grasp</td>
<td>Advanced</td>
</tr>
<tr>
<td>Pre- and post-tests to show changes in learning and measure effectiveness</td>
<td>Medium</td>
</tr>
<tr>
<td>To gather evaluation data about activities</td>
<td>Easy</td>
</tr>
</tbody>
</table>
Wiki Architecture

Bioethics 2.0 Podcasts

Welcome to the Bioethics 2.0 Website

Visit the Bioethics 2.0 Amazon.com Store!

What is Bioethics 2.0™?

Bioethics + Web 2.0 technologies = Bioethics 2.0™

Where are the Podcasts?
The podcasts can be accessed in YouTube videos here and on iTunes University here.

How Did You Do the Podcasts?

Many educators are beginning to see the value in providing video podcasts of educational content. The Bioethics 2.0 Project Leader, Dr. David Perlman, will be producing an eBook on the topic soon. The eBook will be available in the Bioethics 2.0 Amazon.com Store.

Legal Information

- **Use of this Website:** This website is intended to provide free, publicly available ethics education to medical professionals, trainees, patients and families, and others interested in bioethics. Any commercial use of the materials on this website (or the associated podcasts on iTunes University) is expressly prohibited and violates the provisions of the Fair Use Act. Such commercial use includes use by academic or other institutions for education in courses, programs, and continuing education for which persons have paid tuition, fees, or other monies. Ethically, if such uses are intended, a fair market value donation should be made via PayPal or other means. Click here to make such a donation.

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Web 2.0 + Bioethics = Bioethics 2.0™

- Wiki architecture (Google Sites)
- Hosts YouTube podcasts
- Online bookstore for textbook ordering and faculty books
- Hope to expand to offer subscription-based continuing education credits

All of these resources are freely available on www.bioethics2.net, courtesy of funding through Penn Nursing.
Episode 1 - Bioethics for the YouTube Generation

Please click on the YouTube video to play. If you would like to view the videos in full screen, right click on the video below then open it in YouTube directly then resize the screen to full screen.

Two problems still remained:

- TurningPoint limited to 0-9 responses only, ethics requires more detailed answers justifications for questions posed.
- Student research lost between semesters.
iTunes University

Link available from www.bioethics2.net
Process in Brief – From A to B...

1. Lecture in PPT
2. Record in ProfCast (www.profcast.com)
3. Transcribe audio then script into Notes section of PPT
4. Convert Flash to MP4
5. Publish in Flash
6. Build custom animations, graphics, multimedia using Articulate Studio ’09 (www.articulate.com)
7. Convert MP4 to YouTube or upload to iTunes University
Amazon On-Line Bookstore

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Witness: Observations of Death, Dying, and ...
by David Perlman
A bioethicist in training reflects on his experiences during his clinical training in the hopes that what he witnessed will al...

The Organ Farm
by David Perlman
E4's PVS, Inc. Novella "The Organ Farm" The year is 2022, and bioethics has come full circle. Learn how guerilla bioethicist....

Ethics and the Metaphysics of Medicine: Ref...
by Kenneth A. Richman
$29.00
Blackboard

• Learning management system = Blackboard
• Use the wiki tool in Blackboard to manage much of the technology integration
  – Host podcasts before they are ready for iTunes U
  – Sign up for roles for actors and writers
    • File exchange, Email, Chat, and Whiteboard for collaboration
  – Evolving repository for student research on roles for future students to access
  – Links to SurveyMonkey
Welcome to the interactive wiki pages for NURS 330. If you've never used a wiki before, click here for an informative video.

Below please find a chart for wiki navigation:

<table>
<thead>
<tr>
<th>What?</th>
<th>Before a Particular Class</th>
<th>Before Filming Your Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are there podcasts that I can access to prepare for today's class?</td>
<td>Yes, they are on the wiki. Click here to access them. Some are also available on the School of Nursing's iTunes University page. Click here to access that iTunes page.</td>
<td>How do I register for the mock ethics committee exercise? It's on the wiki. Click here.</td>
</tr>
<tr>
<td>Where are the redacted slides?</td>
<td>It's in the Lecture Materials area of Blackboard.</td>
<td>Where do I sign the photo release so I can be filmed? It's on the wiki. Click here.</td>
</tr>
<tr>
<td>Where are the cases for the mock ethics committee exercise?</td>
<td>They are on the wiki. Click here to access them.</td>
<td>Where’s my secret motivation? It’s in your group area in Blackboard under Communication.</td>
</tr>
<tr>
<td>How do I collaborate with my partner for the role I selected? Those resources are in the group area in Blackboard under Communication. You can send email, chat, whiteboard, and other cool stuff.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Wiki in Blackboard

- Primary purpose was for students to capture and upload their research for their roles in the mock ethics consultation presentations
  - So future students don’t have to start from scratch but still need to digest and interpret materials
- Expanded to help organize the myriad details that comprise my course
For Instance...

• Electronically sign the photo release required by my institution to film students

• Sign up for roles using the comment feature (which allows for audit trail to determine first-come, first served for role selection)

• One-stop-shopping for guidance and information for all facets of the course
Crucial Choices™ Interactive Case Studies

What’s Your Crucial Choice™?

To ask Dr. Foster to provide additional information, click here.

To recommend Dr. Foster not participate in the discussion and voting, click here.

And so on...

And so forth...

Your knowledge, your choices.
"War Stories,"
A Crucial Choices™ Ethics Learning Activity
On Privacy and Confidentiality in Health Care

What is Crucial Choices™ and How Does it Work?
Crucial Choices™ is a proprietary and patent-pending learning format that combines the following elements:
1. Storytelling and narrative elements of ethics cases and scenarios, with built-in opportunities to engage in creative and critical thinking about ethical issues in health care, research, and science
2. The ability of readers to determine individual choices within the story, so that they navigate the trajectory, path, and outcome of the ethics scenario.
3. Current research and/or consensus positions on bioethics and health care topics presented either in text format or via video podcasts with E4-vetted ethics experts (Note: the latter is a planned expansion in future editions)
4. Commentary on such topics to help guide learners make Crucial Choices™
5. Interactive and informal learning opportunities from other Crucial Choices™ end users and E4’s editors in a wiki format. (Note: planned expansion in future editions)

Web 2.0 meets Bioethics = Bioethics 2.0™
Crucial Choices™ ethics scenarios represent what E4 has termed Bioethics 2.0™. Like other Web 2.0 applications, Crucial Choices™ liberates the static and passive learning from text-based ethics scenarios that are the hallmark of bioethics learning and activates them to informal, group learning and a level of individual and group interactivity that is more akin to a real discussion, whether in a classroom setting, an interaction between professionals, or within one’s own conscience.

Crucial Choices™ could be developed and deployed using:
- Text-, audio-, or video-based (or some hybrid combination) scenarios with wikis, podcasts, and other interactive technologies on hosted websites, intranet sites, DVDs, mobile devices, etc.
- Text-, audio-, or video-based virtual mentors or avatar-based discussions using Second Life®
Branching Logic Scenarios for Self Study as eLearning (Perlman, 2010)
Fall 2010 – An Innovative Addition

• A Live Version of Branching Logic Cases for Enhancing Critical Thinking
• Currently in feasibility testing thanks to a grant from Penn Nursing
Crucial Choices™ for Public Education
Crucial Choices™ Live – Integration of Critical Thinking in Ethics Education

• Since it’s better to show than to tell, let’s engage in a truncated version of what I do with my undergraduate nursing students
About My Class  (Perlman, 2008)

• My teaching philosophy:
  – Target as many adult learning styles as possible to provide variety
  – Ethics education is not a one-time course; it is a life-long responsibility

• Course structure:
  – 3-hour weekly course for 60 students

• Books:
During Each Class

1. Weekly quiz or outline to test comprehension of assigned readings
2. 30-45 minute lecture and Q&A on the topic
   – Testing use of Bioethics 2.0 podcasts in class for greater efficiency and more time for the activity below
3. Mock Ethics Committee
   – The entire class acts as a mock ethics committee for a case
Mock Ethics Committee

• Clinical pragmatism framework integrated into mock ethics committee exercise
  – To ingrain a framework for working through tough cases
  – To enhance critical thinking and clinical judgment skills

• Phases:
  1. Assessment
  2. Moral diagnosis
  3. Option generation and implementation
  4. Evaluation
Critical thinking | Argument assessment | Ethical theory | Clinical pragmatism | Adult learning theory

Read | Listen | See | Do
---|---|---|---
Text | Podcast | Podcast | Podcast
Podcast | Lecture | Lecture | Lecture
Class | Class | Class | Class

Mix (on special dry erase sheets)

P1 (facts/options)
P2
P3 etc.

C (to answer moral diagnosis)
Videos

- Show student-produced, instructor-directed trigger videos (Phase 1 – assessment)
- Show Bioethics 2.0™ podcast that’s relevant to the topic
# Videos – Behind the Scenes

<table>
<thead>
<tr>
<th><strong>Students</strong></th>
<th><strong>Instructor</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Research their role, using former students’ research captured in the wiki as a starting place</td>
<td>Uses authenticated group pages to provide student teams with a “secret motivation” for their character as a starting place</td>
</tr>
<tr>
<td>Students produce scripts, upload them to group pages</td>
<td>Instructor comments on scripts on Blackboard</td>
</tr>
<tr>
<td>Students use scripts during filming</td>
<td>Instructor films students</td>
</tr>
<tr>
<td>Students upload their research to the wiki for future students to use</td>
<td>Instructor edits and produces films</td>
</tr>
<tr>
<td>Students complete qualitative reflective survey on SurveyMonkey</td>
<td>Ensures each students signs film/photo waiver and students do not have any ethical, religious, or cultural objections to being filmed</td>
</tr>
</tbody>
</table>
What is Your Moral Diagnosis?

• Try to phrase a question (avoiding closed-ended questions where a simple Y or N will answer it) to diagnose what’s going on in the case
  – Such that if a resolution were proposed it might resolve (one aspect of) the case.
• Use the following interrogative language:
  – How, When, Where, Who?
Please use your clicker to let the instructor know you’re done with your moral diagnosis.

1. I’m Done

100%
Moral Diagnosis – Instructor’s Take

1. Under what conditions, if any, is it permissible to maintain a brain dead person (and use valuable resources) so that:
   – A relative can say their goodbyes;
   – The family can be approached to donate organs; and
   – A “miracle” can happen?
How closely did your *individual* moral diagnosis match the instructor’s?

1. Almost exact match
2. Mostly matched
3. Matched some
4. Not even close
Option Generation

• The general structure of arguments

• What if (one part of) the moral diagnosis were to have the value of “permissible” (i.e., ◊ for all you logicians)?
  – What premises would we need? These are the options that we need to consider to see if we can come up with a strong argument in support of the moral diagnosis.

• Brainstorm on flip chart
Which of the options do you judge to be the best one to resolve the case ethically?

1. Choice 1
2. Choice 2
3. Choice 3
4. Choice 4
5. Choice 5
6. Choice 6
7. Choice 7
8. Choice 8
9. Choice 9
10. Choice 10
Critical Assessment of Options

• Let’s look at the positive and negative consequences of the option(s) that have passed muster thus far
Which of the options do you judge to be the best one to resolve the case ethically?

1. Choice 1
2. Choice 2
3. Choice 3
4. Choice 4
5. Choice 5
6. Choice 6
7. Choice 7
8. Choice 8
9. Choice 9
10. Choice 10
Which of the options do you judge to be the best one to resolve the case ethically?

Choice 1
Choice 2
Choice 3
Choice 4
Choice 5
Choice 6
Choice 7
Choice 8
Choice 9
Choice 10

First Slide  Second Slide
May clinicians refuse to treat a patient?

1. Yes
2. No
Ethical Evaluation

• Under what circumstances may clinicians refuse to treat a patient?
  – To benefit their patients (when no treatment is in their medical best interest)
  – To be true to their own moral views or their consciences
  – To meet the interests of larger numbers of other patients or the interests of the greater society
Ethical Evaluation

- Futility – the bioethics literature acknowledges at least three senses of futility:
  - When a treatment simply won’t work (e.g., antibiotics for a viral infection)
  - Quantitative futility: the likelihood of success of a treatment is extremely remote (CPR for a severely debilitated, imminently dying patient)
  - Qualitative futility: when clinicians judge the quality of life after an intervention or the burdens of treatment to be greater than the benefits
If treatments will be withdrawn, should the doctors broach organ donation as an option?

1. Yes
2. No

- Yes: 87%
- No: 13%
Decoupling: what is it and does it really help increase consent to organ donation?

_Siminoff LA, Lawrence RH, Zhang A._

School of Medicine, Case Western Reserve University, Cleveland, Ohio, USA.

Although the notion of decoupling is simple and potentially controllable by organ donation requestors, evidence to date of its potential has been inconsistent. The impact of the timing of requests was analyzed using data from a study of organ donor-eligible patients and their families (N = 420), involving 9 trauma hospitals located in southwest Pennsylvania and northeast Ohio. In-depth interviews where conducted with family members, healthcare professionals, and organ procurement organization staff involved in the process. Only a weak effect was found for the impact of timing on the decision using a bivariate, correlational analysis. Moreover, we found that raising the issue before rather than after the pronouncement of death was most strongly associated with consent to donation. This effect disappeared after examining decoupling in relation to other factors. However, active consideration of the patient's donation wishes and a clear understanding of the families' initial inclination toward donation were associated with consent to organ donation.

PMID: 11993071 [PubMed - indexed for MEDLINE]
I found the use of the videos engaging and a good learning experience...

1. Strongly Agree
2. Agree
3. Disagree
4. Strongly Disagree
I found the use of the clicker technology engaging and a good learning experience...

1. Strongly Agree
2. Agree
3. Disagree
4. Strongly Disagree
I found the use of the learning methods to engage my critical thinking abilities to resolve ethical problems...

1. Strongly Agree
2. Agree
3. Disagree
4. Strongly Disagree
References


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