Adding Context to Student Assignments: A Change Project

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The Physical Therapist Assistant (PTA) program at Anne Arundel Community College (AACC) has shifted much of its intro level courseware to distance learning delivery (advanced lab and practical courseware remains hands-on with the instructors). Although the college has a full time multimedia specialist on hand to assist instructors migrate courses to Blackboard (their current LMS), there has been no proactive outreach program to educate instructors how to leverage technology in their conversion to a distance learning approach.

For example, the PTA program's PTA102: Physical Therapist Assistant 1 course was previously a live in class instructor led experience. The instructor, always a qualified and licensed Physical Therapist, would engage new PTA students with stories from the field, using these stories to tie key concepts from their readings to real-life patients. In the shift to online learning, the stories have been lost. Learners access their readings from their course home page and then answer application-level questions based on reading. Their answers are then submitted to the instructor for review.

My brother, David Thomas, is the Program Director of AACC's PTA program (technically, he is the Program Manager of the Chesapeake Consortium for Higher Education; the group that sponsors the PTA programs at Anne Arundel Community College, College of Southern Maryland, and Chesapeake College). When he showed me his latest online version of the PTA102 course, I expressed my concern about the lack of context in the assignments. Leveraging Bloom et al.'s Taxonomy of the Cognitive Domain, students were providing knowledge-level responses to measure application-level objectives. Also, for an entry level course in the PTA program, students were getting little to no "flavor" of being a PTA. As a result, when students advance to the PTA2 course (where they start working in the lab), there is an abrupt transition as they now are considering patients.

Although quite interested in improving the course (and using those improvements as models in other courses in the program), David expressed the following concerns / constraints:

- David was skeptical that PowerPoint has the functionality to achieve what I sketched out for him.
- The learners are first year students, so cannot understand typical notations they would find in a patient file.
- Using real patient files would violate HIPAA (Health Insurance Portability and Accountability Act of 1996 Privacy and Security Rules).
- There is no current funding to support courseware development or modifications,

so all work will be pro-bono.

- Any solution must be built in Microsoft Office Suite (specifically, Word, PowerPoint, and/or Excel) so that it can be maintained by David and his staff.

The purpose of this project was to:

- Re-introduce context to the entry level courses that have migrated to distance learning delivery.
- Shift evaluation strategies to match the cognitive level of the objectives.
- Demonstrate that a greater understanding of PowerPoint (e.g., leveraging branching, using layouts beyond the built-in styles) would allow more interactive and engaging courseware.
- Achieve buy-in and adoption of a more interactive and engaging courseware design.

Intervention

I structured my intervention based on the Innovation-Decision Process Model (Surry & Ely, 2001), so that phases of the intervention will actually guide the client through the stages of interacting with an innovation:

Stage	Task / Deliverable
Knowledge *(potential adopters find out about an innovation and gain a basic understanding of what it is and how it works)*	Met with David Thomas and discussed how PowerPoint could be used in an innovative way to provide alternative treatments to their current approach to enrich the learner engagement and bring their assessment strategy from knowledge-based to application based (Bloom et al., 1956).
Persuasion *(potential adopters form a positive or negative impression of the innovation)*	Created a proof of concept demonstrating how PowerPoint could be used to increase context within the program's constraints.
Decision *(the innovation is actually adopted or rejected)*	Created an interactive case study to replace a current assignment.
Implementation *(the innovation is actually used)*	Incorporate the interactive case study into the next course offering
Confirmation *(adopter seeks information about the innovation and either continues or discontinues use of the innovation)*	Evaluate effectiveness of interactive case study.

Note: *The Implementation and Confirmation phases of this project will occur after the conclusion of the INTE 6750 Current Trends and Issues in Instructional Technology. This study focused on the Knowledge through Decision stages.*

Meeting / PowerPoint Demo (Knowledge Stage)

My strategy was to build a basic PowerPoint deck of less than 10 slides, and then add some links to demonstrate less used functionality of PowerPoint. Once the Program Director understood the branching technology, I opened another deck with more complex use of branching used to conduct an "interview" by clicking on questions and branching to a slide with the answer to that question.

I would love to report that we had an "aHa!" moment, but that just did not occur (yet!). The Program Director was just not able to make the leap between the general content I was demonstrating and the material in the PTA program. He did agree to allow me to move on to create a Proof of Concept.

Proof of Concept (Persuasion Stage)

I met with the Program Director to collect the current materials being used (see Appendix A: Example Case Study for an example of the current approach) and get a better sense of the job of the Physical Therapist Assistant's job. We discussed patient files, x-rays, discussions with the patient, and programming the patient's treatment. I used these four categories to break down a case (see Appendix B: Proof of Concept).

Review of the Proof of Concept resulted in the aHa! I had hoped for during the initial demo. I believe seeing his actual content and context broke through the barrier to mutual understanding. The Program Director showed the new Proof of Concept to some of the instructors in the program, and it generated a brainstorming session.

His team realized that the PTA's main interaction with the patient at this point should be limited to the exploration of their patient file. They still expressed the concern that their students would not be able to comprehend a patient file, as it would include test results and industry jargon they are not familiar with during their 1st year. This feedback would yield a paradigm shift between the Proof of Concept and the Interactive Case Study.

Interactive Case Study (Decision Stage)

The new treatment would focus on the exploration of a patient file, followed by working in their teams to complete a set of questions. These questions relate to the original ones provided, but now have been tailored to match the case, contextualizing them. Also, instead of basic knowledge questions (e.g., fill in the blank to complete the sentence from the reading), the questions require the students to apply the reading to the specific patient in the case study.

I used PhotoShop to mock up a folder background, then used a combination of photos and scans to create the layered elements that would create the look and feel of a patient file.

Upon my request, the Program Director created a mock patient file with realistic information and data, and then notate the jargon or other information the students would not understand. I created images resembling Post-It notes and typed the provided comments using MarkerSD font to resemble handwriting, then placed them on close-ups of the sheets in the patient file. To finalize the look and feel, I selected a common blue ink color and drew circles and arrows free-hand in Photoshop. The end result kept the metaphor intact (see Appendix C: Proof of Concept).

In one review cycle, we were able to modify some of the text in the patient files and make some tweaks to the Post-Its. After these revisions were made, the final Interactive Case Study was PDF'd (i.e., converted to an Adobe Acrobat or PDF file) and posted in alignment with their process for distribution.

Evaluation

The evaluation plan was to have instructors and some students in the program review the Interactive Case Study and provide Level 1 data. Upon seeing the final product, the Program Director showed it to some of the instructors; who provided glowing praise and stated no further review was necessary. They unanimously agreed to incorporate the new case study into the Fall program.

The Program Director then shared the Interactive Case Study with his Dean, who provided a small stipend to pay for conversion of the remaining two case studies before Fall semester begins (we have already started development of the remaining Case Studies).

I mentioned I would still like to collect official Level 1 and Level 2 data from the program, and was told by the Program Director it would not be a high priority, but he would "see what he could do."

Findings

Although I have not been able to evaluate the program officially using a Level 1 and Level 2 strategy, the goals of the study have actually still been met:

Project Goal	Status
Re-introduce context to the entry level courses that have migrated to distance learning delivery.	Accomplished
Shift evaluation strategies to match the cognitive level of the objectives.	Accomplished
Demonstrate that a greater understanding of PowerPoint (e.g., leveraging branching, using layouts beyond the built-in styles) would allow more interactive and engaging courseware.	Accomplished
Achieve buy-in and adoption of a more interactive and engaging courseware design.	Accomplished

Conclusion

I am not used to declaring victory on a course before a single class of learners have completed it, even in its pilot form. But revisiting the goals of this intervention, I realize the overarching goal was not to implement a course, but rather to change the self-limiting perception the faculty of the AACC – the false perception they do not have the tools needed to create interactive online activities for their program.

Most projects I work on have goals of learner achievement and performance improvement, and somewhere along the way I had forgotten that success on a project is actually measured against the project's goals, even when they are not driven by a course's Level 1s and 2s, and not even by Level 3s.

Once all three interactive case studies have been implemented, I still have high hopes that the Program Director and his team of instructors will re-engage me to discuss other ways their Microsoft Office toolset could be leveraged in innovative ways to further improve their students' learning experience.

References

Bloom, B. S., Engelhart, M. D., Furst, E. J., Hill, W. H., & Krathwohl, D. R. (1956). Taxonomy of educational objectives: the classification of educational goals; Handbook I: Cognitive Domain New York, Longmans, Green, 1956.

Kirkpatrick, D. L., & Kirkpatrick, J. D. (2006). Evaluating training programs (3rd ed.). San Francisco, CA: Berrett-Koehler.

Surry, D. W., & Ely, D. P. (2001). Adoption, diffusion, implementation, and institutionalization of educational innovations. In R. Reiser & J. V. Dempsey (Eds.), *Trends and issues in instructional design and technology*. Upper Saddle River, NJ: Prentice-Hall. Draft online: http://www.southalabama.edu/coe/bset/surry/papers/adoption/chap.htm

Appendix A: Example Case Study

This is a sample "case study" from the original course:

PTA 102: Case Study One
Due: February 25, 2011

Joe is a weekend warrior on the tennis court. 5 days ago, while playing tennis, he fell and "twisted his right ankle." Joe described his pain as "severe" at the time of the injury.
He was driven to the Emergency Room and was told by the physician that he had a First-degree inversion sprain. He was given a soft splint and was referred to PT for treatment.

Case related questions:

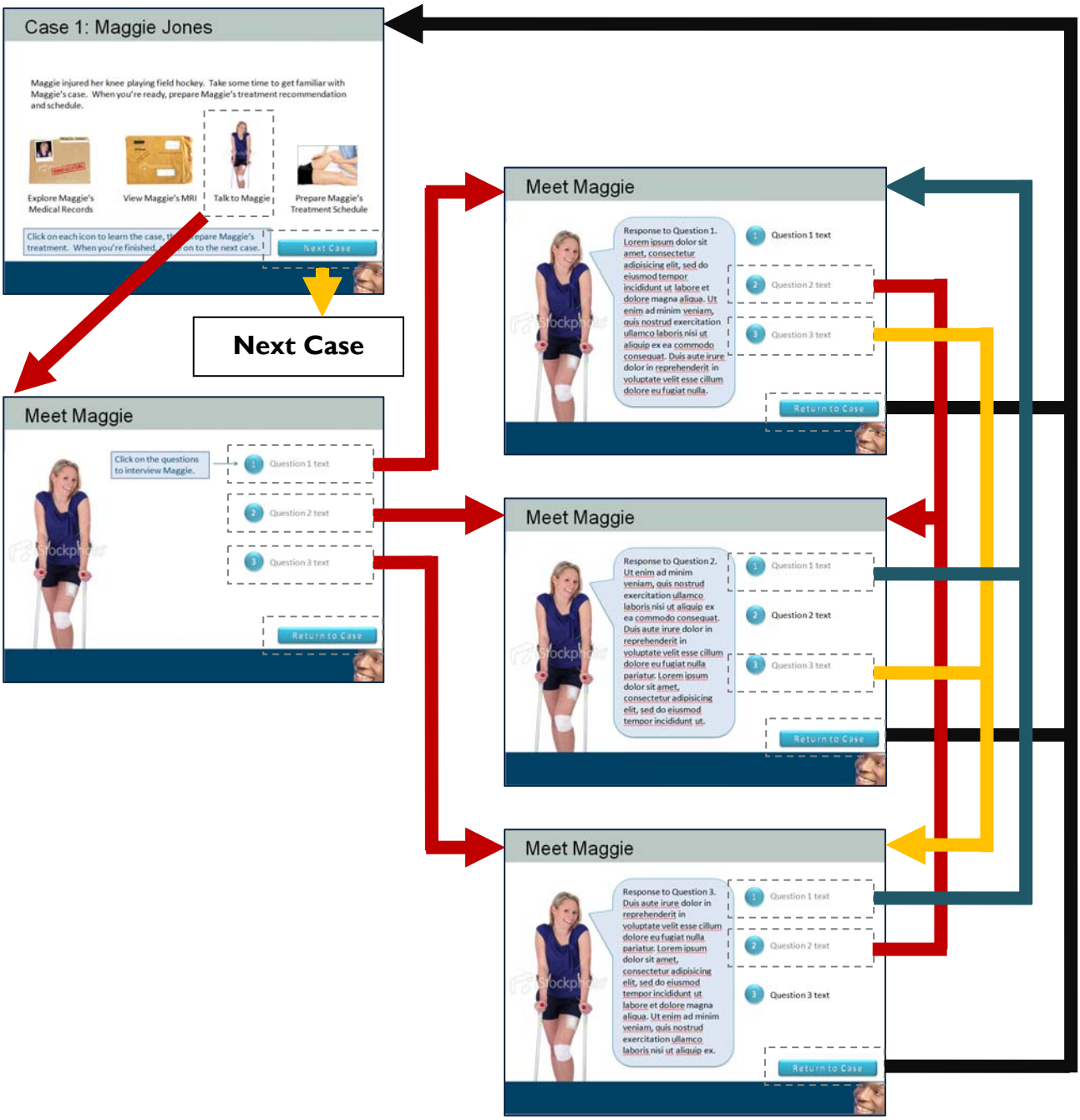
1. The term "first-degree inversion sprain" is the pt's _____.
2. Of the 5 elements of the patient/client management model, which have been completed by the PT prior to your first treatment as the PTA.
3. List 3 important questions that the PT should have asked Joe about his injury?
4. What are the signs and symptoms of an acute ankle sprain?
5. Which aspect of the ankle (medial or lateral) is traumatized with an inversion sprain? What anatomical structures are involved with an inversion sprain?
6. Ice is used to help decrease inflammation.
   a. What is inflammation?
   b. What causes inflammation?
   c. Define hyperemia.
   d. How does the release of histamine affect area of trauma?
   e. Describe how PTs and PTAs measure inflammation.
7. Briefly describe how Joe's "weight bearing as tolerated" status will affect your selection of exercises.
8. List 4 exercises you will use within the PT Plan of care for AROM.
9. List 2 isometric exercises you will incorporate into the patient's home exercise program.
10. Describe how you will know if Joe is making progress with the PT you are providing.

c:\users\ken\documents\cu-denver\inte6750\changeproposal\case study 1 - joe - answer key.docx

Appendix B: Proof of Concept

The Proof of Concept was programmed in PowerPoint. From the main case page, the learner can click on a folder to explore the patient's case study, click on an envelope to read an x-ray, a picture of the patient to ask the patient questions, or a treatment still to program the patient's treatment schedule.

An example of the deeper interactivity is shown below – the learner can click on questions to interview the patient; when they are finished, they can return to the case.



Appendix C: Interactive Case Study

One of the existing case studies was selected as the model. Unrealistic elements were removed (e.g., Physical Therapy Assistants (PTAs) do not interview the patient; they do, however, review the patient's file and Physical Therapist's (PT's) notes).

To overcome the concern that the 1st year students will not understand the patient file and PT's notes, I had the Chief create a mock patient file and then mark it up with a pen, writing comments he would provide to the 1st year students reading the file. I turned these notes into "Post-It" notes, keeping with the overall feel of the folder and paperwork.