Final Reflection Paper

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IDT 8030: Design of Blended Online Learning Environments

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Introduction

The Canvas course I designed for IDT 8030 is called Developmental and Behavioral Pediatrics Residency Rotation. This course was created with a subject matter expert, Dr. Karen Mason, who is the coordinator of the pediatric residency program in the Division of Developmental and Behavioral Pediatrics (DDBP) at Cincinnati Children's Hospital Medical Center (CCHMC). In a pediatric residency, all residents must complete a rotation in developmental and behavioral pediatrics (DBP), which is then tested on the American Board of Pediatrics (ABP) General Pediatrics Qualifying Exam (generally referred to as "the Boards"). Depending on the residency program, learners are in their first-, second-, or third-year of a residency in categorical pediatrics, Medicine/Pediatrics, Pediatrics/Human Genetics, Pediatrics/Neurology, Pediatrics/Rehabilitation Medicine, and Triple Board Psychiatry. Historically, all of the components of the DBP rotation have been in-person, including lectures, case discussions, and clinical experiences. This meant that if learners had scheduling conflicts (such as Continuity Clinic), they often missed out on important information.

COVID-19 and CCHMC meeting size restrictions were the impetus for a reimagining of the non-clinical parts of the DBP rotation, which is where this course comes in. The course was designed to be used as part of a blended learning course of study that combines the Canvas modules with residents' clinical experiences during their four-week rotation. For the purposes of IDT 8030, only three of the five planned modules were developed. The three modules help residents learn the skills and information necessary for mastery of three of the entrustable professional activities (EPAs) set by DDBP: typical development, ADHD, and behavior management. There are four course-level learning objectives:

CLO 1. Define typical child development and associated skills and behaviors.

CLO 2. Identify atypical child development and compare against typical developmental milestones.

CLO 3. Choose appropriate support services, medications, and therapies based on observations, family interviews, and environmental reports.

CLO 4. Create a patient- and family-specific treatment plan.

Each of the module learning outcomes are aligned to the course learning objectives, as shown in Table 1. The module learning objectives directed the selection of the learning activities and instructional materials including readings, external websites, videos, lectures, media, and assessments (discussion boards, quizzes, etc.).

Table 1

Module Learning Objectives

	Aligned Course Learning Objective			
Module Learning Objective	CLO 1	CLO 2	CLO 3	CLO 4
Based on an observation of a child, you will be able to analyze the behaviors and the tasks completed in order to assess the child's developmental level and/or age.	X	X		
You will evaluate family interviews and preferences to rank two different options to manage ADHD symptoms and describe the context-specific potential risks, benefits, side effects, and adverse effects.		X	X	X
You will assess the severity of the behavioral issue, availability of services, and family preferences to create a child- and family-specific behavior management plan.		X	X	X

Keller's ARCS Model of Motivation

According to Keller (2010), instructional design must include motivational design if we want learners to be motivated and engaged in the learning process. Keller's ARCS Model of

Motivation (1984) identifies the four major dimensions of human motivation: attention, relevance, confidence, and satisfaction. By incorporating these four dimensions into the instructional design process, instructional designers can create a learning experience that is both engaging and motivating. These four dimensions were incorporated throughout the Developmental and Behavioral Pediatrics Residency Rotation Canvas course.

Attention

Keller (2010) defines attention as "capturing the interest of learners [and] stimulating the curiosity to learn" (p. 45). There are three strategies to gain the learner's attention: perceptual arousal, inquiry arousal, and variability. In the development of the Canvas course, all three strategies were used, although the strategies used varied by the module. Real-world examples are included in every module since the course is designed as part of a blended learning rotation that is essential for learner success on the Boards, and the learning is directly applicable to learners' in-person clinical experiences, which addresses perceptual arousal.

The second attention strategy is inquiry arousal which includes active participation and inquiry. Active participation is incorporated throughout the course in the form of case studies and discussions. In the case studies in Modules 2 and 3, learners are given information about a patient and then develop their own treatment plan given what they have learned from the coursework as well as their clinical experiences. Additionally, in Module 2 the learner simulates (through the use of video and an external website) what it is like to have ADHD, putting the learner in a role-playing situation. Inquiry activities are also used. For example, in Module 1, learners begin the module by trying to match developmental milestones with the correct ages. This activity is naturally challenging and is intended to leave the learner with questions as they begin the module on typical development.

The final component of attention is variability. In order to keep the learner engaged in an online setting, a wide variety of activities were incorporated into the course. While it is impossible to avoid readings in the course (due to the subject level and topics), every module incorporates additional media, such as audio lessons, podcasts, videos, screencasts, and external modules. In the feedback I received from Adrianna Bailey (2022) on Module 3, she noted that there were readings in the module that did not seem to be interacted with in any way. This was similar to the feedback I received from Kristen Nichols (2022) and Dustin Muncy (2022) in Module 1. In my revised modules, I worked to make it clear to the learner the purpose of each activity by connecting the readings to their final activity (a discussion board) as well as the on-going case study they were examining.

One of the challenges with developing this course is that while the online component is important, learners will be discussing and applying their learning in their clinical experiences with preceptors, which makes this course somewhat of a "flipped" class. During scheduled portfolio times, the learner is completing readings, videos, and other activities, which they then take and apply in a real-world setting with patients, sometimes on the same day. The preceptor observes their patient visit and listens to their assessment and plan, giving in-the-moment feedback and helping them connect their online learning with what they are seeing. While I have tried to incorporate different activities to engage the learner with the content throughout the course, I have also tried to be cognizant of the demands of the in-person component of my blended course.

Relevance

Relevance is how the learner relates what they are learning to their lives and lived experiences (Keller, 2010). The three components of relevance are goal orientation, motive

matching, and familiarity. The focus of the design of the course was on goal orientation and familiarity. Goal orientation is a major component of the motivational design for this course. All learners in this course are pediatric residents who will be taking the General Pediatric Qualifying Examination in the near future, and all of the topics covered in the course modules are tested subjects. For this reason, there is a high level of perceived future usefulness; while the exact time residents will take their Boards depends on their specific program, all learners will need to know this information to be successful. Additionally, all learners are also seeing patients in DDBP clinics during their developmental and behavioral pediatrics rotation. This means that the information also has a high level of perceived present worth: what learners are learning about in the online modules is the what they will see in clinic.

The other relevance component incorporated in the Canvas course is familiarity. Strategies for familiarity include linking current learning to previous experience and modeling, both of which were used in the course design. In Module 1, learners begin with a pre-assessment so that they are able to make connections between new information and what they already know. Throughout the course, information and concepts from previous modules are revisited so the learner is able to contextualize what they are learning in terms of what they have previously learned. Modeling is a major part of the course and is the focus of the video and screencast lessons in Module 2 and the screencast lesson in Module 3. In Module 2, the video lesson models for the learner how to apply the knowledge from the module to a conversation with families about starting medication to treat ADHD. The screencast about ADHD stimulant medications also models how to apply the ADHD Medications Infographic. In the final module, the screencast models how to apply the Ohio Minds Matter algorithm for disruptive behavior and

aggression. By seeing models of how to apply the content they are learning to their professional practice, learners are able to see how the content they are learning is useful and relevant.

Confidence

Building learners' confidence means "helping the learners believe/feel that they will succeed and control their success" (Keller, 2010, p. 45). Confidence building strategies include learning requirements, success opportunities, and personal control, all of which were included in the development of the course. To make the learning requirements clear, each module begins with a module overview, where the topics and module learning objectives are explained, and learners are given a description of the content and learning activities as well as the purpose and importance of the module. By making the learning requirements clear, learners are able to focus on the learning.

Another strategy to build confidence is success opportunities, which means giving the learner multiple opportunities at success and giving clear, specific feedback to help orient the learner. In the design of each module, multiple activities were incorporated so the learner has multiple opportunities for success throughout the module. Additionally, feedback is incorporated into various activities (such as the pre-assessment and the Early Childhood Health Optimization module in Module 1) so that learners are able to self-assess their progress toward the goal. Confidence is similarly built by giving the learner control over their success. An example of this is the use of case studies and discussion boards such as in Modules 2 and 3, which give the learner the opportunities to think critically and develop their own response to the topic posed.

Satisfaction

Keller defines satisfaction as "reinforcing accomplishment with rewards (internal and external)" (2010, p. 45). The three strategies for supporting learner satisfaction are natural

consequences, positive consequences, and equity. Satisfaction was the most challenging dimension to incorporate into the Developmental and Behavioral Pediatrics Rotation course because it was challenging to find relevant, meaningful ways to generate satisfaction. Of the three strategies, natural consequences and equity are embedded throughout the course. An example of how natural consequences are used in the course is the final discussion boards in Modules 2 and 3. A case study discussion board is the culminating activity of each module, where the learner is required to synthesize what they have learned over the course of the module and apply it critically to a real-world example. Users use similar critical thinking skills in the Module 1 Assessment, where they watch video observations of a child and use their acquired knowledge of developmental milestones to assess the child's age. By requiring the learner to use the skills they have gained in a module, learners have a meaningful, natural opportunity to apply their learning.

Equity is another strategy to generate learner satisfaction. Equity is an important component of ensuring that the learner feels that their successes are equal to those of their peers in the course. In the Canvas course, equity is provided in each module by giving consistent expectations and assessments. Modules are set up to require completion of all components before the next module opens, which means that all learners must be exposed to the same content and complete the same assignments before the next module opens. This was a feature noted by Dustin Muncy (2022) that both helps the learner understand how to navigate the module as well as ensuring that all components of the module are completed. I intentionally sought feedback from peers about whether to have all learning activities on a single page (as they are in the revised course) or separate pages (one per learning activity), but the feedback was mixed. This was a piece of feedback I was interested in because I was curious if a single page was

overwhelming and worried that learners may potentially be able to skip over activities if everything is presented on one page, which would impact the equity of the course. Muncy (2022) suggested that it might chunk up the content more effectively, while Alaina Peters (2022) thought that it was a better choice to have learners not having to click through multiple pages of content in each module. Ultimately, I decided to keep all learning activities on a single page for ease of navigation.

Media

Before I started creating my course in Canvas, I found developing the media components to be overwhelming. It was hard to think about the different components separate from the course, and I struggled to identify topics that would be suitable for some of the mediums, especially an audio lesson. As I developed my course and actually organized the different learning activities, it became easier to identify where a media lesson would fit seamlessly, which also made improving my original artifacts more intuitive and natural.

Audio Lesson

I created an audio lesson on screening and surveillance for Module 1 in my course. This was initially the hardest media artifact to create; however, after listening to my peers' artifacts, I had a better understanding of how to organize and edit my lesson. Based on my feedback from my original audio lesson, I rewrote the introduction of the lesson to include a case study from my subject matter expert, in order to better engage the learner's attention. When I rerecorded my audio lesson, I also chose a different recording platform (Audacity) and used an external microphone, which resulted in better audio quality. I took the opportunity while rerecording to incorporate more pauses into my speaking, which chunked the material more effectively. Based on the feedback received, I also incorporated additional sound effects into the audio lesson to

break up the content and engage the learner. The final product is a more engaging, easier-to-listen-to lesson. An audio lesson was an ideal environment for the information because there was no need for any visuals; choosing an audio-only environment for the lesson decreased the learners' cognitive load so they could focus on the importance of the topic.

Video Lesson

I ultimately recorded two videos for this course. The first video is a course introduction by the subject matter expert and course instructor, Dr. Karen Mason. That video is in the introductory modules. In the video, Dr. Mason introduces herself and talks about the purpose of the class. While it is a video, the introduction video was not intended to be a video lesson, but rather, to introduce the instructor and help the learner orient themselves to the course topics and purpose.

My video lesson is in Module 2. The lesson is near the end of the learning activities, after learners have watched a screencast about stimulant medications used to treat ADHD. This video, which models a conversation with a family who is considering beginning medication, flows naturally from the medications overview. The final learning activity in the module is the ADHD Case Study Discussion Board, where the learner will suggest two possible options for treatment. By having the learner participate in the case study after the model conversation, the learner has a better understanding of how to structure the conversation, as well as the factors that they need to consider in their treatment options.

I had to record my video lesson again so that it would be in a more appropriate setting for the course. The video now takes place in a clinic room at CCHMC, which is where residents would actually be having the conversation the video models. The purpose of the video lesson is to model a conversation between a doctor (the subject matter expert, Dr. Mason) and a parent

(portrayed by me) who are talking about starting a child on medication for ADHD. By changing the setting, I made the video more meaningful for the learner; they now have a replicable model on which to base their own conversations with families.

In my original version of the video lesson, one of my reviewers noted that the subtitles were sometimes hard to read due to the color of the shirt they were superimposed on (Johnson, 2022). To address this, I changed the background of the subtitles in the final version, which makes them easier to read and also focuses the attention on the subtitles when they appear. Although I received feedback about not being on camera in the video lesson, I decided not to include myself in the video because I felt strongly that the most important person in the video is the doctor who is demonstrating how the conversation might go when talking to families about ADHD medications, which is where the focus needs to be. Since body language is an important part of a patient interview and visit, a video lesson was the best choice for this content.

Screencast Lesson

For my revised course, I ended up creating four different screencasts (one in each module), although the screencast in Module 1 does not meet the screencast lesson requirements since only one program is used. In the introductory module, there is a course navigation screencast that helps the learner understand the course setup and navigation. I included a screencast in my initial version of the introductory module but decided to rerecord the screencast after finishing the course to ensure that the navigation was accurate to how the final course was designed. There is also a screencast in Module 1 of the *Developmental Milestones in Practice* talk that Dr. Mason gives to residents. I recorded, edited, and produced the PowerPoint and screencast, but Dr. Mason designed the content. Since this screencast is only a screencast of a PowerPoint presentation, it does not meet the course requirements for a screencast lesson. The

screencast is situated in the middle of Module 1, after learners have read and watched videos about the developmental milestones. The lecture discusses how developmental milestones are assessed, which leads in to the next learning activity about screening tools such as Gesell Figures and the Goodenough-Harris Draw-a-Person Test.

The screencast in Module 2 is an overview of stimulant medications available to treat ADHD. The screencast examines an infographic included in the module, so to incorporate a second program (something that was missing from the initial version), I added a part to the video showing how to find the infographic in the Canvas module. The original version of the screencast was glitchy and seemed to lag, so I used Kaltura Capture for this version, which worked much better. One piece of feedback I received about my initial version of the screencast was to add more visuals to the slides, such as including the drug logos (Bennett, 2022; Kemen, 2022). After discussing it with Dr. Mason, the final version does *not* include additional visuals for two reasons. First, the most important part for prescribing purposes is the drug name, not the proprietary name. Showing the drug logo would not necessarily be helpful for learners since what they need to know is the drug name. Secondly, the goal of the screencast is to help learners understand the different ADHD medications available and how to use the infographic. Dr. Mason thought that including additional images could be confusing because they would not be on the infographic learners would actually be using in clinic (K. Mason, personal communication, February 26, 2022). The screencast is situated in the middle of Module 2, after learners have learned about assessments for ADHD and the guidelines for treatment. The location of this screencast is intentionally immediately before the video lesson on how to talk about ADHD medications with families so that the drug information is fresh in their minds for the next learning activity.

There are two screencasts included in Module 3, but only one was created for this course. The *Common Behavior Problems* screencast was previously recorded for the DBP rotation. The final screencast I created for this course models how to apply the Disruptive Behavior and Aggression Algorithm from Ohio Minds Matter. I designed the PowerPoint (based on the algorithm), recorded, edited, and produced the screencast for this module. Since the screencast was created as I was designing Module 3, I was able to take all of the lesson I've learned from lesson creation in this course and apply them to the video. I kept the PowerPoint very simple, used Kaltura Capture to record, and ensured that the audio levels were appropriate before recording. This made for a much smoother recording and editing process. The screencast lesson is situated in the second half of Module 3 as the topic turns towards less typical behavior issues and disorders. In the previous learning activity, the learner reads about different disruptive disorders. This screencast then introduces the learner to a resource for assessing and treating those disorders. The next learning activity helps the learner contextualize what they learned about the algorithm in the second part of a case study that is used throughout the module to help focus the learner.

Conclusion

IDT 8030 has given me a deeper appreciation for the choices that instructional designers make to design effective, engaging, and meaningful online courses. In the past two years with online learning necessitated by COVID-19, the focus has seemed to be on throwing things together on a learning management system so students are at least being exposed to content, but as my experiences suggested, and this course has solidified, that is not effective online teaching. Effective online teaching and course creation requires careful planning and development of all aspects of a course, from the learner analysis to the summative assessment to all the pieces in

between such as the learning objectives and learning activities. Furthermore, effective teaching and learning requires a focus on learners' motivation. While I had previously learned about Keller's ARCS Model of Motivation, I think the structure of this course, where we focused on each of the four components separately before combining them in our module development was very effective. I have a better understanding of the strategies and what they can look like in online teaching and learning. This has helped me in my own professional experiences as I have created things for my own classroom – I have a deeper understanding of how to build motivating strategies into the course itself.

This is my final course in the Instructional Design and Technology Masters program. In designing a course in Canvas, I wanted to challenge myself to apply the different skills I have learned in my course in the IDT program. In thinking of a topic for a course, I wanted to try something completely outside of my comfort zone (medical education), so I decided to work with a subject matter expert I knew to develop a course. Working with a subject matter expert has had its unique challenges as I have sometimes struggled with the limitations of the Canvas in designing a course that met all of the subject matter expert's expectations, but it has also been extremely rewarding to receive feedback throughout the design process as the course has come to fruition. Moving forward, I am taking away lessons about organization, such as starting a project by having a list of every recording that need to be created (which would have streamlined the screencasting process tremendously) and defining symbols for a course from the outset (so I don't have to keep going back and forth between modules to figure out what I had done previously), that I think will serve me well in my future instructional design endeavors. My biggest takeaway from this course is that meaningful learning comes from effective online teaching, which starts with motivating, engaging instructional design.

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