

Reflecting on the Master's IDT Program

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Like a builder pours the footers as a first task to constructing a home, an instructional designer considers the appropriate learning theory before designing a learning experience. When building a learning environment, I generally rely on constructivist learning theory. However, though I see myself as a constructivist, I lean into other theoretical foundations depending on the problem and target learners. **Alignment** as in the building trades is a central concept in instructional design. Just as the foundation walls of a building stably sit upon the footers, an instructional design model aligns with the learning theory. In fact, alignment does not stop with the instructional design model. This is where alignment becomes specific to the learning goals as outcomes and objectives are developed based on the learning needs of the target learners. And alignment continues as the ID considers formative and summative assessments to be sure that they are in step with the desired outcomes.

I have learned that the instructional designer does not create in a vacuum. Instructional designers must consider the goals of the client and the needs of individual learners regardless of their learning challenges. Therefore, keeping in mind **multiple means of representation** is an important part of the design process when making **UDL** decisions about learning objects, multimedia sources, and prototypes. Though every step is essential when designing instruction, **evaluating** the instructional design and **analyzing data** is crucial for revising the design to serve the target learner. Instructional design, therefore, is a **cyclical and iterative process** aimed at meeting the learners' needs.

The Instructional Design and Technology Master's program challenged me with five program outcomes and criteria that I met in different courses and at times throughout the program.

Program Outcome 1

In IDT 7150 Educational Game Design, I worked collaboratively with peers and solidified my belief that a constructivist approach is the most meaningful way for me to personally learn as my teammates and I divided work, asked for help from one another and formed our individual understanding of the content. In the Ed Game Design course, I discovered pedagogical **practices in the instructional design and development process** for effective game design that includes the alignment of learning outcomes as well as the adaptation for learning styles. I walked away from the course knowing that e-adventure games work best when there are steps along the way to solve problems and complete tasks. In this course I applied my understanding of outcomes/objectives that I learned in IDT 8010 Instructional Design. I also used my schema from IDT 7100 Designing Online Assessments to resee assessments in game design as challenges within the game. My team and I incorporated and aligned the challenges with the outcomes to create an e-adventure game about picking up trash and recycling. Moreover, I enjoyed working with undergraduate education majors and another graduate student from a DAAP program.

During my IDT 7180 internship at the Cincinnati Nature Center (CNC), I was first introduced to **aligning evaluation to an instructional design model** before formally learning about it in the Science of Learning course. Following the lead of a PhD student, another ID intern, I **applied learning theory and practice** to address the problem of inactivity and incompleteness of an online course called Ripple Effects. The course originally designed for in-person instruction was now online and dependent on the commitment of learners to participate. At the time of the internship, I did not fully understand that the MOOC (Massive Open Online Course) was a type of community of learners (CoL) until I later realized it in the Learning Science and Technology course. The PhD intern introduced me to an **instructional design model** used in her evaluation of the problem and shared a helpful source to follow. The MOOC model (Shah, V., et al., 2022) was the PhD student's solution to the problem. The principle of "multiple ways to participate" (Bielaczyc, et. Al, 1999) suggests CoL's provide different entry points for community

members to choose as an entrance to the course. The MOOC model we used offered four options for engagement. So, I followed the PhD's lead and applied the learner-centered model to design a small portion of the course while finishing my internship at the CNC (Shah, V., et.al., 2022).

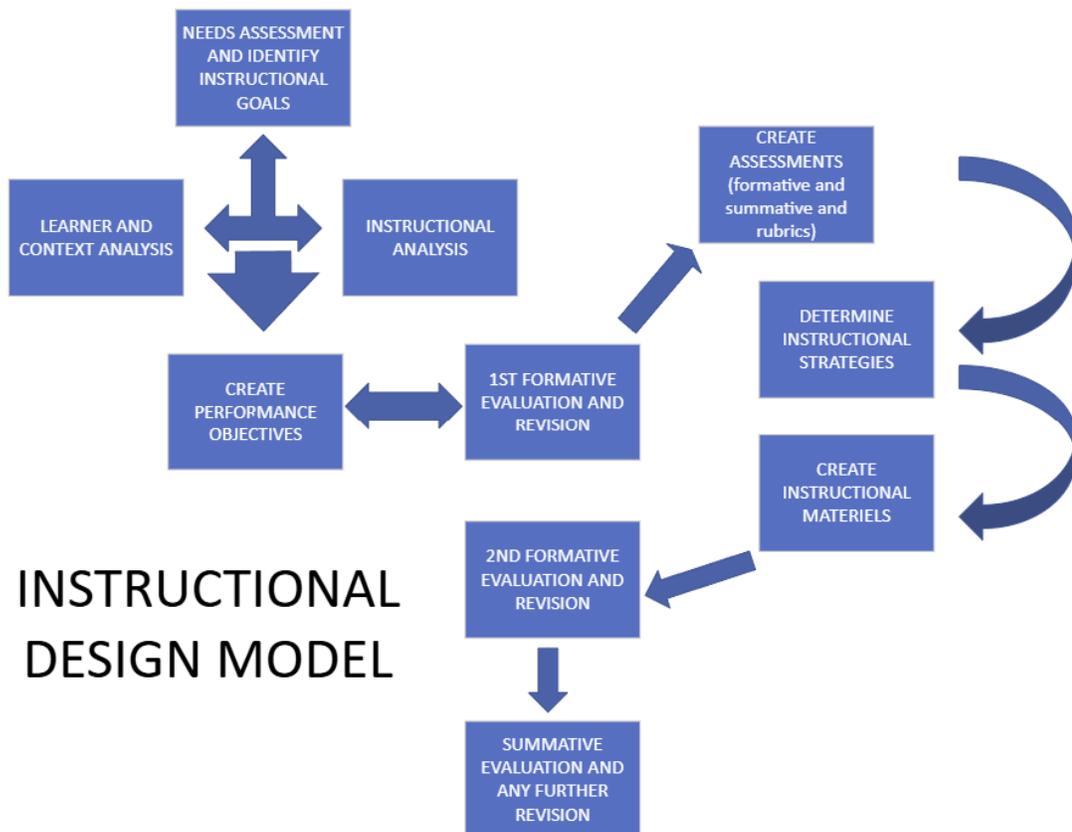
When I had the chance to use an **instructional design model in evaluation with primary sources**, I thought about returning to the CNC internship experience, but realized that the solution needed to be authentic to me. It was not fair to take someone else's idea and reuse it, so I tackled a new authentic problem. Based on Grounded Practice and the Design (Hannafin, M,et.al., 1997), I was required to complete a researched solution to a learning problem in IDT 8020 Learning Science and Technology course. For this final project, I evaluated how to incorporate antisemitism into a DEI program used within the Cincinnati Arts Wave community. First, I analyzed and researched pedagogical solutions, and then I designed an answer. I chose the KRec instructional framework, learning principles, as my remedy. I discovered antisemitism does not fit neatly into DEI principles. However, the antisemitic problem could be addressed through programing that uses a relearning approach to address learned and embedded misconceptions and stereotyping from prior learning.

I had also **applied learning theories to artifact design and development** throughout the program but most intentionally near the end of the program while I was taking the IDT 8020 Learning Science and Technology. The more conscious understanding of learning theory proved helpful during the evaluation of my mobile learning application when I was concerned about cognitive load and user interface. Finding learning theorists Merriënboer & Sweller (2005) who conclude that the intrinsic nature of learning may be affected by the extraneous cognitive load, helped me to rethink my apps' user interface. I knew critical thinking (the apps' topic and name) by nature creates a heavy intrinsic load; therefore, the extraneous nature (how the material is being presented) must be lower.

Program Outcome 2

In the IDT 8010 Instructional Design course, Dick and Careys' *Systematic Design of Instruction* (2015) laid before me a "set of eclectic tools" (p.4) and models to consider when designing instruction. Though the systematic design process is complex with many steps and considerations, I realize that it is an essential framework for designing instruction. For my final project, I was tasked with demonstrating my understanding of systematic design. I **applied a systematic process to design instructional strategies that meet identified learning contexts and needs** (see figure 1). In fact, I eventually applied my instructional design model to spring training in my work with college admissions professional staff. In addition, I also created a program for spring training in Canvas, using the component parts of a course created while in the IDT 8030 Blended and Online Learning Environments class.

Figure 1 ID Model for Admissions Training



In IDT 7100 Designing Online Assessments, I used Wiggins & McTighe's (2005) seminal work, *Understanding by Design* to outline a final assessment portfolio. Wiggins and McTighe (2005) say that "backward design calls for us to operationalize our goals or standards in terms of assessments evidence as we begin to plan a unit of course" (Ch 1). I believe assessments aligned to the objectives function in several different ways. First, formative assessments, no matter how small, help the instructor and learner know what is learned when used before, during or after instruction. For example, the discussion boards in Canvas served as formative assessments, helping me to assess my knowledge during this program. Assessments also help in scaffolding outcomes whether they are formative or summative. Instead of loading all the outcomes/assessments onto a learner at once, they can be scaffolded into modules as building blocks for learning. Finally, assessments function to help the learner to own their learning. My philosophy has further developed to argue that assessments are the core of learning design. Not the activities that a learner completes, not the book they read, but the assessments that are aligned to the learning outcomes/course objectives are central to learning.

From the IDT 7150 Educational Game Design and in the IDT 7170 Mobile Learning courses, I wholeheartedly adopted the belief that the instructional design process is **iterative** and never linear. **This is an important learning for me to carry into my instructional design freelance world.** In the Instructional Design course, I realized that after the instructional strategies are considered and the materials are created, it is time for the instructional designer to test the design. This step requires the instructional designer to work with a target audience member as they walk through the instructional design. While the learner is engaging in the lesson, the ID observes, notes and asks the learner questions to help the designer identify places for revision. **I was able to complete this process with my mobile learning application I created and showcase in my portfolio.**

Program Outcome 3

One of my most intentional and important lessons for me during the IDT 7120 Tools for Online Learning Creation and Assessment course was in visual design awareness. Not only did I read Julie Dirksen's *Design for How People Learn*, but I also picked up Robin Williams' *Non-Designer's Design Book*. I wanted to better understand design and how people learn based on the design. I continued to apply what I learned in this course and through these texts to the Mobile Learning course and the Game design course. Most of all, I intend to carry this knowledge into my future ID consulting work.

I also learned to question throughout the design process how the target audience would best receive the Instruction. I could not have done this work without my team and classmates who offered feedback with each iteration. In Tools for Online Learning, based on advice from peers I **considered ways to better meet their needs** and changed a stretched image and adjusted a couple of other images to make them more PowerPoint authentic looking. I tried my best to incorporate the design principles of alignment and repetition while decreasing the size of a stretched slide.

I also **created a real-world application** using Articulate Storyline for the admissions recruiters with my learning object in the IDT 7120 Tools for Online Learning course. After discovering Cathy Moore's blog, I adopted a story-telling scenario approach that puts the learner in the shoes of the main character who must solve a problem. Throughout the activity other characters are introduced to give the main character advice and feedback. Also, I included job aids for reference to help the user make decisions.

However, this is not the only course that gave me opportunities to create **real-world applications**. In the Educational Games course my teammates and I created a river e-adventure for young teens and in the Mobile Learning course, the mobile learning application was designed for pre-med students. The admissions spring training was designed for the IDT 8030 Design of Blended and Online Learning Environments course. Overall, I learned with each course that when one has an

authentic target audience, she also has the opportunity for evaluating the instruction to improve it, a pivotal part of the ID process.

In addition to the real-world application, I also learned to use branching software that needed to **function without error**. Pre-planning was essential. With the help of wireframing, storyboarding, Twine and other branching software, I was able to keep the story detangled, but again peer review with each iteration caught errors that I fixed each time. For example, for the Storyline learning object, I made the options on the screen not clickable until after the narration on each slide. This suggested change was added to prevent the learner from skipping ahead.

Program Outcome 4

In IDT 7100 Online Learning and Assessment course, I **collected data on learning technologies using standard deviation and measures of central tendency methods**. For this course, I borrowed the data from another course gradebook. I also used these assessment methods again in IDT 8130 Master's Project where I evaluated my mobile learning application with 15 target participants. In each IDT course the data raised questions about gaps during the measurement analysis. The data from the Master's project gave me the opportunity to **perform data analysis with a high level of methodological rigor**. I planned my evaluation during the fall semester after researching and finding a measurement tool designed specifically for user experience and cognitive load. During the spring semester I implemented that evaluation plan. I stretched far with this experience to learn how to organize, read and **describe data analysis with sufficient detail** to be implemented by others. I worked with charts, tables, and figures to show the reader what I was also telling them in words. At the end of the analysis, the data supplied me with answers to my evaluation question.

Program Outcome 5

Each course I took during the IDT program offered opportunities to **analyze current research and emerging trends in learning technologies**. The tech showcase through the SAMR lens in IDT 7130

Teaching with Technology revealed a new world of possible online learning tools. I put these tools into my tool bag for future design work. I realized in IDT 8020 Learning Science and Technology course that learning environments have evolved from in-person learning to online environments of choice. I was intrigued to discover the possibilities that computer supported collaborative learning (CSCL) affords the learner:

- (1) engage in a joint task,
- (2) communicate,
- (3) share resources,
- (4) engage in productive collaborative learning processes,
- (5) engage in co-construction,
- (6) monitor and regulate collaborative learning,
- (7) find and build groups and communities (Jeong & Hmelo-Silver, 2016)

Also, in Teaching with Technology, I **reviewed literature on emerging trends in learning technologies**. I was excited to learn that though different from digital gaming, virtual reality (VR) has crossed over into digital games for learning as an emerging trend. In the virtual game world, the learner experiences their presence within the gaming environment called spatial presence. Spatial presence occurs when the learner suspends their disbelief and feels as though they are in a virtual environment (Uz-Bilgin and Thompson, 2022). When I researched educational games, I learned and **synthesized theories and findings across literature**. I found Smith and Abrams (2019) discussing and questioning the effectiveness of digital games for learners from poorer socioeconomic communities and the learner with accessibility needs (auditory, visual, cognitive, speech and neurological disabilities and impairments). Then I concluded there needed to be a more personalized game design approach to create smart gamified environments that recognize student's learning needs based on their playing behaviors (Denden, et.al, 2021)

The final project in Learning Science required me to identify a need and goal and identify psychological foundations learning theories underlying the issue. It also required that I **review literature on emerging trends in learning technologies** and **synthesize theories and findings across literature**. I believe I understand better what I need to do if I can design an antisemitism awareness program that is to live alongside DEI programing. I now know based on Schema theory, activating prior knowledge along with using the Knowledge Revision Components (KreC) instructional design principles to override misconceptions work best with refutation texts (Driscoll & Bruner, 2022). Schroeder & Kucera (2022) meta-analysis and qualitative reviews showed that when pitting misconceptions next to refutational texts, using multimedia principles has been successful in revising prior knowledge. Refutational texts can be visual and written texts. Therefore, I think using visual representations along with succinct language in PowerPoint, or if affordable with the grant, an authoring tool such as Rise, will provide the multimedia dimension the project leaders desire to have.

The opportunities, information, theoretical and design knowledge learned, and artifacts created during my three years in the IDT program have changed the way I see learning and instruction, and it has helped me to transition from a teacher into an instructional designer prepared to enter the IDT consulting space. I am grateful for the experience and for the amazing people I met along the way.

References

- Bielaczyc, K. & Collins, A. (1999, February) [Learning communities in classrooms: Advancing knowledge for a lifetime](#)[Links to an external site.](#) *NAASP Bulletin*, 4 - 10.
- Denden, M., Tlili, A., Essalmi, F., Jemni, M., Chen, N., & Burgos, D. (2021). Effects of gender and personality differences on students' perception of game design elements in educational gamification. *International Journal of Human-Computer Studies*, 154, 102674.
<https://doi.org/10.1016/j.ijhcs.2021.102674>
- Dick, Walter, Lou, Carey, & James O. Carey. (2015). *The Systematic Design of Instruction*. 8th edition.
- Hannafin, M. J., Hannafin, K. M., Land, S. M., & Oliver, K. (1997). Grounded practice and the design of constructivist learning environments. *Educational technology research and development*, 45, 101-117.
- Moore, C. (n.d.). *Design training scenarios that your learners love*. Cathy Moore. <https://blog.cathy-moore.com/how-to-design-scenario-based-training/>
- Jeong, H., & Hmelo-Silver, C. E. (2016). Seven affordances of computer-supported collaborative learning: How to support collaborative learning? how can technologies help? *Educational Psychologist*, 51(2), 247–265. <https://doi.org/10.1080/00461520.2016.1158654>
- Kendeou, P. (2024). A theory of knowledge revision: The development of the KReC framework. *Educational Psychology Review*, 36(2), 44. <https://doi.org/10.1007/s10648-024-09885-y>
- Merriënboer, J. J. G., & Sweller, J. (2005). Cognitive Load Theory and Complex Learning: Recent Developments and Future Directions. *Educational Psychology Review*, 17(2), 147-177.
doi:10.1007/S10648-005-3951-0
- Schroeder, N.L., Kucera, A.C. Refutation Text Facilitates Learning: a Meta-Analysis of Between-Subjects Experiments. *Educ Psychol Rev* 34, 957–987 (2022). [https://doi.org/10.1007/s10648-021-09656-](https://doi.org/10.1007/s10648-021-09656-z)

Training design - Cathy Moore. (n.d.). *Training design - Cathy Moore*. Training Design - Cathy Moore.

<https://blog.cathy-moore.com/>

Smith, K., & Abrams, S. S. (2019). Gamification and accessibility. *Campus-Wide Information Systems*, 36(2), 104-123. <https://doi.org/10.1108/IJILT-06-2018-0061>

Uz-Bilgin Cigdem, & Thompson, M. (2022). Processing presence: how users develop spatial presence through an immersive virtual reality game. *Virtual Reality*, 26(2), 649-658. <https://doi-org.uc.idm.oclc.org/10.1007/s10055-021-00528-z>

Shah, V., Murthy, S., Warriem, J., Sahasrabudhe, S., Banerjee, G., & Iyer, S. (2022). Learner-centric MOOC model: a pedagogical design model towards active learner participation and higher completion rates. AECT, 25 January, (pp. 263-288). Springer.

Wiggins, G., & McTighe, J. (2005). *Understanding By Design* (2nd Expanded). Assn. for Supervision & Curriculum Development. chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://educationaltechnology.net/wp-content/uploads/2016/01/backward-design.pdf

