Evidence of Standards Achievement

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ETEC 5981: e-Portfolio

December 4, 2020

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This document details how the selected artifacts demonstrate the AECT Standards as adopted by ETEC.

Standard 1: Content Knowledge

1.1 Create

Several of the artifacts selected for this portfolio illustrate the ability to create materials and environments using a systems approach. Creating an infographic required the use of C.A.R.P. as well as type, color, shape, depth and space (Lohr, 2008). Developing an instructional design model required adherence to A.D.D.I.E. (Culatta, 2018). Following the steps laid out in Wiggins & McTighe's *Understanding by Design* (2005) model was essential in developing a curriculum map. I would not have been able to develop a technology strategic plan without working through a S.W.O.T. analysis and a needs assessment (Witkin & Altschuld, 1995). Lastly, I would not have been able to develop a corporate training observation tool had I not studied and adapted the Danielson Framework (Danielson, 2007) to fit the needs of the project.

1.2 Use

Most of artifacts selected for the purposes of this Evidence of Standards Achievement document were not focused on the student except for the curriculum map. The creation of the curriculum map forced the consideration and implementation of different technological resources and processes that support learning. Some of the technologies represented in the planning for the class are blogs, vlogs, live streams, web sites, YouTube videos and more. Each of these technologies were selected for a specific function within the lesson to promote learning and boost student engagement.

1.3 Assessing/Evaluating

Three of the artifacts selected are designed to include certain points to assess and evaluate effective integration of appropriate technologies and instructional materials. The instructional design model was developed to specifically include a pre- and post-training evaluation that provides insight not only to student learning, but training effectiveness. The curriculum map demonstrates different assessment opportunities to gauge the effectiveness of the technologies selected for the lesson. And the technology strategic plan has a built-in evaluation schedule to determine the effectiveness of the plan's viability and success as it relates to selected technologies.

1.4 Managing

The one artifact that forced the management of people, process, physical infrastructures, and financial resources to achieve a predetermined goal had to be the technology strategic plan project. Project stakeholders were selected and held accountable for deliverables, processes had to be followed in conducting meetings, and physical infrastructure and financial resources had to be considered in the application of technological changes to the organization.

1.5 Ethics

The last subset of Standard 1 is focused on demonstrating contemporary professional ethics of the field per AECT Code. This is seen in the development of the corporate training observation tool. The development of this tool was to be subject agnostic and does not allow for subjective feelings to enter the evaluation. Either the subject meets the criteria for the grade or does not. There is no room for unethical behavior on the side of the evaluator and forces him/her to evaluate the subject strictly on the criteria laid out in the tool.

Standard 2: Content Pedagogy

2.1 Create

The pedagogical approach to all the selected artifacts was a constructivist approach (Spector, 2016) with a focus on the 21st Century Learning Framework (Applied Education Systems, 2020). The 4Cs of Leaning & Innovation (Critical Thinking, Communication, Collaboration, and Creativity) were the guiding principles behind all artifacts. The infographic created to promote education surrounding the world's lack of access to clean water demonstrated all 4Cs. For the instructional design model to work effectively, the content development team must dig in and experience the content and employ the 4Cs to be successful. The curriculum map was meticulous about the designed activities and technologies used so that students are gaining experience by "doing" with different information, media and technology. For the technology strategic plan (TCP) to be successful, the stakeholders had to be engaged in the process through creative, brainstorming activities.

2.2 Use

Part of Standard 2 seeks to identify the implementation of appropriate educational technologies and processes based on appropriate content pedagogy. The use of the selected pedagogical approach can be seen in the technology and activities (hands-on activities, blogs, vlogs, etc.) selected for the curriculum map project. The TCP incorporated different planning activities that encouraged the participants to be physically present contributors to the process, encouraging them to learn along the way. The idea of "doing" teaching and learning are present in the corporate training observation tool as well as promoting the use of the 4Cs.

2.3 Assessing/Evaluating

Three of the artifacts selected demonstrated the ability to assess the adequacy of learning and the evaluation of the instruction and implementation of technologies and processes. The ID model contains a pre-and post-test to evaluate the efficacy of the instruction. The curriculum map incorporates several assessment activities to assess not only the learner's progress through the material, but also the effectiveness of the curriculum. Finally, the TCP encourages evaluation of the existing plan at predetermined time frames to assess progress of the plan and incorporate new plans if needed.

2.4 Managing

Both the curriculum map and the corporate evaluation tool are examples of managing processes and resources to provide supportive learning communities, create flexible and diverse learning environments, and demonstrate appropriate content pedagogy. This is reflected in the inclusive activities selected for the curriculum map so that all students, regardless of ability, could participate. The development of a corporate community is Domain 2 in the corporate training observation tool so that learners feel connected and striving for the same goal.

2.5 Ethics

Diversity is a key component in the infographic and the curriculum map. Being able to step outside of our safe little world and discover how others interact in the world is the main point of the infographic developed. The curriculum map designed seeks to expose student to several different ways for them to interact with technology and explore diverse areas within technology trades that they might not have previously considered.

Standard 3: Learning Environments

3.1 Create

Creating instructional design products based on learning principles and research-based best practices is evident in four of the selected artifacts. The infographic was created by adhering to principles of visual literacy and Mayer's multimedia research (Lohr, 2008). Following the guiding principles of instruction design, A.D.D.I.E. (Culatta, 2018), and adapting other instructional design models, I was able to construct the Ricky Bobby ID Model. The curriculum map project was developed in accordance to the Backwards Design principle developed by Wiggins & McTighe (2005). The Danielson Framework (Danielson, 2007) and its 4 Domains provide a foundation for the corporate training observation tool (CTOT).

3.2 Use

The curriculum map, the technology strategic plan, and the CTOT were all selected as artifacts because they demonstrate appropriate processes and resources that provide optimal conditions for learning based on principles, theories, and effective practices. Several activities within the curriculum map encourages "learning by doing" whether in-person or distance learning. The technology strategic plan demonstrates appropriate processes by utilizing a S.W.O.T. analysis and a Needs Assessment to determine the parameters of the plan and projects needed. Domain 3 in the CTOT includes sub-domains Using Appropriate Techniques and Engaging Students to encourage optimal conditions for learning.

3.3 Assessing/Evaluating

Four of the selected artifacts use multiple assessment strategies to collect data for informing decisions to improve instructional practice, learner outcomes, and the learning environment. The ID Model uses multiple assessments throughout the development lifecycle as

well as pre- and post-instruction evaluations. The curriculum map employs multiple types of assessments (discussions, quizzes, blogs, etc) to assess the quality of instruction and student learning. A built-in assessment schedule ensures the technology strategic plan remains on track and is successful. As an evaluation tool, the CTOT is created to assess instruction practice, learner outcomes and the learning environment.

3.4 Managing

The technology strategic plan includes a section that specifically addresses mechanisms or plans for maintaining the technology infrastructure to improve learning and performance. A network plan, a disaster recovery/business continuity plan, and streaming services are identified as requiring the need for maintenance.

3.5 Ethics

The curriculum map and the CTOT encourage ethical practices within the classroom. All resources used in developing the curriculum or required of the students promote the respect for copyright and Fair Use. The CTOT evaluates the design of instructional content to ensure ethical practices are followed in the construction of educational content.

3.6 Diversity

The infographic was created to convey educational content through images, and it is intended that a diverse group of individuals should learn from the content presented. The curriculum map was developed to include activities that are accessible to all students.

Standard 4: Professional Knowledge and Skills

4.1 Collaboration

Four artifacts selected demonstrate the ability to collaborate with peers and subject matter experts. The ID Model requires collaboration through the different phases and sprints of the

development lifecycle of the instructional content to analyze the learners, develop and design instruction and evaluate its impact on learners. The theme of collaboration runs through all 4 Domains of the corporate training observation tool (CTOT). Corporate trainers are evaluated on their ability to work with development teams and potential students to ensure success. Working through the Technology Strategic Plan process required collaboration with several stakeholders to ensure the success of the plan. The ETEC literature review demonstrates the ability to consult other subject matter experts and synthesize their findings, which would be used to advocate for using serious games as a supplement to an existing pedagogical approach to increase educational effectiveness.

4.2 Leadership

Demonstrating leadership is seen in the Curriculum Map, technology strategic plan, the CTOT, and the ETEC literature review. The Curriculum Map requires leadership in developing an instructional plan that adheres to defined standards and guidelines. Developing and leading the process around the technology strategic plan demonstrates the ability to manage a project over a long period of time to achieve specific goals as they relate to the plan. Being able to identify and implement new technologies and processes in corporate training education is what Domain 4, Education, is all about in the CTOT. Authoring the ETEC literature review demonstrates a willingness to lead in developing alternate training methods at the corporate level.

4.3 Reflection

The e-portfolio website was developed to address this indicator. Additional information can be found clicking the link.

4.4 Assessing/Evaluating

Regarding the design and development of assessment and evaluation plans that align with learning goals and instructional activities, two of the artifacts selected support this sub-standard. The curriculum map contains a section for each lesson wherein assessment and evaluation plans are developed to measure learning as they relate to the goals outlined in the lesson. The CTOT is, itself, an assessment plan designed to evaluate a corporate trainer across 4 Domains: Planning and Preparation, Corporate Strategy, Instruction, and Education.

4.5 Ethics

The idea of demonstrating ethical behavior within the applicable cultural context during all aspects of work with respect for diversity of learners in each setting can be found in the infographic, the ID model, and the curriculum map. The development of the infographic required the study of different cultures and then sharing those findings with a wider group of individuals. The ID model developed requires the Instructional Analyst to work not only with a diverse group of teams but also with a diverse group of learners when documenting the needs of the instruction being developed. The curriculum map was built to adhere to ISTE Standards (International Society for Technology in Education, n.d.) for curriculum development, and, as such, promote diversity and ethical behavior in all aspects of work, regardless of the student's background.

Standard 5: Research

5.1 Theoretical Foundations

The subject of the ETEC Literature Review was the effectiveness of serious games and simulations in corporate training. The theoretical foundation for this is increasing knowledge transfer by providing safe environments where students can apply newly learned content.

According to Dobrovolny (2006), “Learning is the process of personalizing new information and that process continues after learners ‘complete’ their instruction” (p. 161). *Safe environments* are defined as environments wherein failure is an option and one that is expected so that students can learn valuable lessons from those failures. Games and simulations provide this type of environment for students (Douglas-Lenders, Holland, & Allen, 2017). These 2 theories combined to provide the foundation for the literature review and would be the guiding principle in the selection of articles, books, studies, research, etc. that was included in the review.

In addition to the ETEC Literature Review, the Instructional Design Model has a theoretical basis in Successive Approximation Model (SAM), Lot Like Agile Management Approach (LLAMA), Rapid Prototyping, Rapid Instructional Design, and other Agile instructional models.

5.2 Methods

The method used to conduct this literature review consisted of first defining the terms included which were games, simulations, simulation games and serious games. Once the terms were properly defined, the search for literature began. A spreadsheet modeled after Beck & Eno’s (2012) methods spreadsheet was used to document all data related to the search which included author, title, date, country of origin, technology used, an evaluation of the high points of the article, and whether the result of the article showed a positive or negative view of games and simulations in corporate training. This method was crucial in keeping all the sources organized and categorized.

The Instructional Design Model utilized the A.D.D.I.E. approach in making sure each phase was covered before a sprint could be finished. This ensured a fully functioning artifact at the end of each sprint.

5.3 Assessing/Evaluating

More than 30 sources were evaluated in for the purposes of this review. Searches were limited to the following keywords: games and simulations in corporate training, and games and simulations in business training. The search was also limited to sources from within the past 23 years. Selection criteria also narrowed the pool of resources to the following databases: ERIC, LearnTechLib, ProQuest, JSTOR, and Google Scholar. Several sources were discarded because the subject was not clearly related to the topic. Another assessment strategy that proved beneficial was to evaluate the sources chronologically to determine if technological advancements in games and simulations had any effect on the outcome.

When developing the ID Model, there were several existing models that were discarded from being utilized in the foundation of the Ricky Bobby Model due to their inability to move fast. Most of the rejected models followed a waterfall approach instead of an agile approach making it necessary for each preceding phase to complete prior to beginning the next. This was not ideal for the Ricky Bobby model.

5.4 Ethics

The research conducted throughout this process followed all APA 6th edition guidelines regarding citations and structure. The goal was to ensure all contributors were correctly credited for the research provided. Additional professional guidelines and procedures that were followed included using a diverse set of sources. Studies selected covered 17 different countries and included several different data collection techniques.

Ethics & Diversity

6.1 Ethics

Throughout my time in the University of Arkansas's ETEC program, one of the constants has been consistent review and application of ethical use of not just data but copyrighted content. When necessary and required by copyright law, all materials that contain Fair Use materials are cited, attributing credit to the author/creator of the resources used. Existing images were curated from online sources and used in parts of the Design Project Infographic, the Instructional Design Model, and various presentations for the Technology Strategic Plan and all contributions are clearly cited. In the ETEC Literature Review, all data and studies were cited according to APA 6th edition guidelines. In the Curriculum Map project, all existing, pre-built resources included in the map were either pulled and cited as fair use or used with the express permission of the author. The only time an image was used, and not created by me, that was not cited is when the author specifically stated citation was not necessary for use.

All images used without an attribution across all artifacts were sourced from Unsplash.com. The license agreement as set forth by this company is very similar to a CC-0 license (Creative Commons, 2014). All images could be downloaded and used for free, for commercial and non-commercial purposes, and no permission is needed to use the image. The only difference is that images from Unsplash.com cannot be used to create a similar or competing site to Unsplash.com (Unsplash, 2018).

6.2 Diversity

Diversity is another principle that is woven throughout all the identified artifacts. The infographic project explores water facts of developing countries and educates users that may never have to live in such conditions. The ID Model project and the Technology Strategic Plan

are built around team environments that encourages collaboration between individuals that could come from various multicultural backgrounds. The curriculum map project consists of several activities that can be shared across cultural boundaries to include students from all ages and backgrounds. Studies spanning 17 different countries around the globe were used to build the ETEC literature review.

Each artifact was also constructed with a mindfulness on accessibility. Millions of people around the globe must deal with an accessibility issue that prevents them from consuming educational content the same way a student without accessibility issues would consume content. Such accessibility issues could include vision impairments, mobility impairments, or hearing impairments. These are just a few that could prevent a knowledge transfer from occurring in a student. The Curriculum Map, Technology Strategic Plan, Corporate Training Observation Tool, and ETEC Literature Review were built using the proper headings, hierarchies, alt text, etc. (Microsoft Support, 2019) so that screen readers could accurately read the content for those struggling with a vision impairment. When video is used (i.e. The ID Model), closed caption subtitles are used for those with hearing impairments. For website artifacts (i.e. the ePortfolio), the P.O.U.R. acronym was used to make sure the sites were Perceivable, Operable, Understandable, and Robust (Henry & Dick, 2018). All these techniques allowed the content created to be accessible to a larger, diverse audience.

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