IST 626 Midterm Exam Questions

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IST 626: Advanced Instructional Design

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Week 1

Essay Question (Week 1)

Pick an instructional design model highlighted by a fellow classmate in their post informed by Week 1 readings. Discuss its key elements. Apply that model to a design challenge, describing how your chosen framework might be utilized to provide a solution for an imaginary client. Make note of how this model maps onto the umbrella ADDIE/ISD model.

Grading Criteria (Week 1)

- Displays an understanding of the key components of chosen instructional design model. (3 pts)
- Provides a "real-life" scenario and utilizes the model to provide a possible solution. (4 pts)
- Addresses the overarching ADDIE model, noting how it applies to the chosen instructional design model. (2 pts)

Essay Answer (Week 1)

Three of my classmates – Eric Li, Kathleen Simmons, and Ian Mason – chose to address the AGILE instructional design model. This semester's rapid design and development challenge sparked my interest in learning more. Though this model was originally intended for software development, "it can be applied to most projects regardless of the industry" (Gastaldello, 2021, para. 43).

As Farrington (2013) observes, it's nigh impossible to identify an instructional design model "that you cannot subsume under the ADDIE model" (para. 10). AGILE is no exception with all stages of the umbrella ADDIE model represented. The letters in AGILE stand for Align, Get set, Iterate and Implement, Leverage, and Evaluate (Pappas, 2015, para. 3). Strictly linear application of ADDIE is rejected by AGILE practitioners, who instead opt for short design and development sprints. Iterative evaluations of implemented products inform redesign and further development (Gastaldello, 2021).

The "Align" stage most readily falls under ADDIE's "Analysis" and strikes me as very similar to the first of the Six Disciplines ("6D's"): "Define business outcomes". In their recommended framework for optimizing corporate learning initiative success, Pollack et al. (2015) propose that agreeing on a definition of success is arguably the most important step to get right (p. 47). Neibert (2013) concurs in her discussion of AGILE, stating that "Organizations with the capacity to see change before it happens will be more successful" (para. 4). Initial cooperative analysis to identify joint goals allows project work to support tangible needs.

The "Get set" stage of AGILE aligns with both the "Analysis" and "Design" stages of ADDIE. Rapid task analysis (RTA) identifies critical performance tasks, and critical skills analysis (CSA) provides a way to rank those tasks by criticality (Neibert, 2013, Step Two: Get Set). Rapidly gathered assessment information informs design decisions.

"Iterate and Implement" falls under the "Development" and "Implementation" stages of ADDIE. Swiftly developed products are implemented with the goal of gathering further information to inform continuing design.

The "E" in both AGILE and ADDIE stands for "Evaluation." Evaluation is woven into each iteration in the AGILE process. Each new and improved version of the product is subjected to critical evaluation. Repetitious assessments reveal issues, mitigating the risk of an end-of-the line complete redesign (Pappas, 2015, para. 12).

AGILE is ideal for time-limited projects. Short design bursts facilitate swift pivots. Frequent, iterative assessments allow feedback to inform improvement.

Proposed design challenge: You are contracted by a hospital to rapidly create training for members of a surgical team on how to use a new robotic surgical tool safely and effectively. The goal of this project is to tease out unidentified concerns to determine if this tool is worth the hospital's investment.

Align: Arrange to meet with key stakeholders (surgery department manager, nursing manager, lead surgeons, nursing representative, technician representative, surgical tool representatives, etc.). Personally tour the surgical area with staff members and tool representatives to align all parties' understanding. With these stakeholders, identify project goals. These might include more efficient surgeries (reduced time in the operating room) and reduced error rate by way of a more precise tool, which will ultimately result in improved patient satisfaction scores.

Get set: Alongside product representatives and surgical team members, conduct rapid task analysis (RTA) to identify all tasks that must be completed for the tool to be used safely and effectively. Allow surgical team members' knowledge of the operating room's protocols to inform the analysis. Conduct critical skills analysis (CSA) with all parties represented to rank the importance of tasks identified in RTA. Design a plan for implementation.

Iterate and Implement: Create "chunked" training for each RTA task in the order that the CSA identified. Arrange for surgical team members to complete short training bursts in the surgical suite with immediate hands-on practice. Short and spaced practice will contribute to long-term learning and allow for iterative improvements. Communicate to team members that mistakes and learning in this space are expected. Make every effort to make these simulations a safe space where feedback is encouraged. Swiftly implement updates to training based on feedback. Repeat short training bursts with each new iteration.

Note: It will be important to have "aligned" well with management to facilitate smooth and effective "iteration and implementation." If needed, flexibly return to the "align" stage of AGILE to communicate the value and importance of training for patient outcomes and satisfaction scores, which drive hospital revenue. Make clear the benefits to the organization.

Leverage: Throughout the AGILE process, "leverage" technology, influential people, and relevant resources. If, in the "align" or "get set" phases, you note that a nursing representative

holds sway, leverage that individual's influence. If you see that a particular training software is widely utilized, leverage staff familiarity with this tool to render your training more efficient.

Evaluate: Evaluation takes place frequently. After each training session, evaluate results against success parameters identified in the "Align" stage. Repeat these evaluations after each successive sprint.

With its emphasis on iterative assessment of "chunked" course segments in "sprints," AGILE is adaptable to a variety of settings (Gastaldello, 2021, para. 5 – 6). The greatest challenge presented by AGILE is the demand for a dedicated team (Gastaldello, 2021, "The cons"). In a hospital environment, it can be extremely difficult to gather all desired representatives at a particular time. However, I see AGILE as a flexible framework to address this challenge. The short time commitments of iterative implementation will increase the likelihood that individuals will be able to commit. Attention during these short meetings will hopefully remain fresh. "Transfer" of what is learned will be facilitated via repetitious engagement with tools and involved participants will feel a personal investment in the success of a project whose implementation they supported.

References (Week 1)

Farrington, J. (2013). *My good friend ADDIE*. J. Farrington Consulting. https://www.jfarrington.com/2013/11/my-good-friend-addie/

Gastaldello, G. (2021, Sept 20). *The agile product development process and methodology explained*. In the loop. https://maze.co/collections/product-development/agile/#:~:text=Agile%20product%20development%20refers%20to%20the%20process%20of%20building%20a,feedback%20and%20make%20changes%20accordingly

Neibert, J. (2013, Nov 6). *Agile instructional design: Get in the performance zone.* Learning Guild. https://www.learningguild.com/articles/1300/agile-instructional-design-get-in-the-performance-zone/

Pappas, C. (2015, April 19). *The power of AGILE instructional design approach.* eLearning Industry. https://elearningindustry.com/the-power-of-agile-instructional-design-approach

Pollock, R. V. H., Jefferson, A., & Wick, C. W. (2015). *The six disciplines of breakthrough learning: How to turn training and development into business results*. Center for Creative Leadership.

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Week 2

Short Answer Question (Week 2)

Your client, the United States Air Force, would like you to create a training that prepares its participants to skillfully deescalate international conflicts with cultural sensitivity. You would like to ensure you are the same page with the client. How might the first of the Six Disciplines help you accomplish this goal?

Grading Criteria (Week 2)

- Displays an understanding of the first of the "6 D's." (2 pts)
- Notes one to two benefits of "Defining Business Outcomes" in the context of the design challenge. (4 pts)

Week 2 Short Answer Response (Week 2)

The first of the Six Disciplines ("6 D's") – "Define the Business Outcomes" – asserts the value of starting "with the end in mind" (Pollock et al., 2015, p. 44). For the presented case, the desired business outcomes of creating of a culturally sensitive de-escalation training might include:

- Improved international relations
- More efficient communication
- Fewer incidents that require management intervention

Stakeholders must be included in the conversations that develop a "clear statement of expected business outcomes" (Pollack et al., 2015, p. 52). What is the status that spurred the request for training? What data (frequency and duration of communications, incident report frequency, quality of communication measures) are available against which to measure changes that result from the proposed training? How will training outcomes be measured – by way of reduced incident reports or increased positive feedback from key contacts? Surveys, interviews, and observation will further support your analysis (p. 63). Gathering this information and clearly ascertaining client goals optimizes the likelihood of success before charging into the design stage.

Facilitating communication to identify goals and bringing your instructional design expertise to the table are foundational but familiarizing yourself with the terminology and culture of the U.S. Air Force will maximize success (p. 53). Being able to speak in the client's language will not only accelerate conversation, but will also communicate your dedication, inspiring trust. Fostering relationships from the outset sets you up for success.

References (Week 2)

Pollock, R. V. H., Jefferson, A., & Wick, C. W. (2015). *The six disciplines of breakthrough learning: How to turn training and development into business results*. Center for Creative Leadership.

Week 3

Short Answer Question (Week 3)

Gagne's content types provide a helpful way to organize training into categories. One of these content types is "Cognitive Strategies," which address "how to *manage our own learning*" (Farrington, 2014a, para. 14). Provide an example of a cognitive strategy that you have used. How might that strategy be implemented to support training future audiences?

Grading Criteria (Week 3)

- A specific type of cognitive strategy is described. Student elaborates to demonstrate understanding. (3 pts)
- A personal example of a cognitive strategy is provided. (1 pt)
- Future application of this cognitive strategy is addressed. (1 pt)

Short Answer Response (Week 3)

I find information organization in the form of a mnemonic very useful. In high school English I enjoyed inventing stories or creating connections to remember the definitions of vocabulary words. "Anachronism" is "a person or thing that is chronologically out of place" (Merriam Webster, 2023a)? I'd imagine a girl named Ana chronologically misplaced in a setting with lots of crows. The adjective "sagacious" means "of keen and farsighted penetration and judgment"? (Merriam-Webster, 2023b). I'd make the connection to the word "sage," whose definition I already knew.

As I create trainings, if there is a piece of information that must be immediately reproduceable [a "Part-task Practice" component of a 4C/ID program, for example (van Merrienboer, 2019, p. 7)], facilitating connections will help organize new information. Does the student need to remember that the steps are (1) clear the surface, (2) attach a sheet, and (3) transfer fresh items? I would present this information in an organized mnemonic:

C: Clear the surface
A: Attach a sheet
T: Transfer fresh items

Providing already organized information will support learning, but asking students to implement their own organizational cognitive strategies will also serve them. To do this, I might present the challenge of creating their own mnemonic, challenge them to create a mind map, encourage them to underline key terms, or ask them to elaborate on principle with a personal example (Farrington, 2014b, para. 7).

References (Week 3)

Farrington, J. (2014a). *Here's why I love content types: And you should too*. J. Farrington Consulting. https://www.jfarrington.com/2014/02/heres-why-i-love-content-types-and-you-should-too/

Farrington, J. (2014b). *Learning how to learn*. J. Farrington Consulting. https://www.jfarrington.com/2014/05/learning-how-to-learn/

Merriam-Webster. (2023a). *Anachronism*. Merriam-Webster, Incorporated. https://www.merriam-webster.com/dictionary/anachronism

Merriam-Webster. (2023b). *Sagacious*. Merriam-Webster, Incorporated. https://www.merriam-webster.com/dictionary/sagacious

van Merrienboer, J.J.G. (2019). The four-component instructional design model: An overview of its main design principles. *School of Health Professions Education.* https://www.4cid.org/wp-content/uploads/2021/04/vanmerrienboer-4cid-overview-of-main-design-principles-2021.pdf

Week 4

Sequencing Question (Week 4)

A training delivered to a corporate client teaches its participants how to market a product to potential investors. It begins with a robotic recording of course objectives, followed by a three-hour lecture without breaks. The recorded lecture includes unrelated animations, meant to increase interest. Training materials are set aside, and students are then tested on content one month later.

To maximize learning and application of corporate training content, Pollack, Jefferson, and Wick (2015) describe a sequence of "key steps" for training delivery that, if implemented, may have saved this poorly delivered training. Please put these steps, listed below, in order.

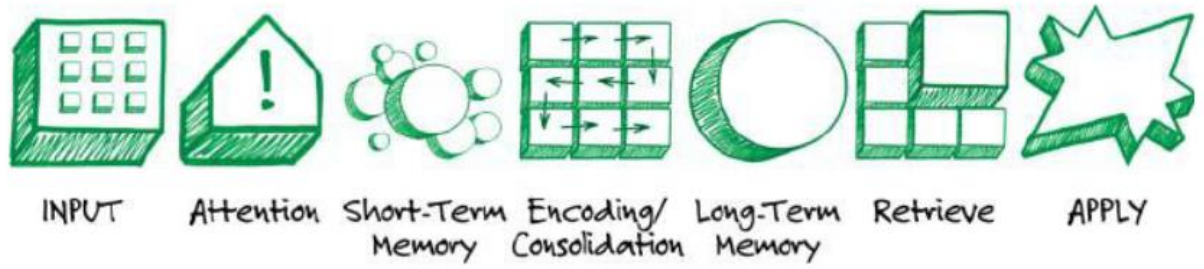
(For 3 extra credit points, describe three major bottlenecks of training delivery the described training walked into).

Attention
Encoding/Consolidation
Apply
Retrieve
Input
Short-Term Memory
Long-Term Memory

Sequencing Answer (Week 4)

Input
Attention
Short-Term Memory
Encoding/Consolidation
Long-Term Memory
Retrieve
Apply

FIGURE D3.4. A MODEL OF THE KEY STEPS IN LEARNING AND APPLICATION



(Pollock et al., 2015, p. 113)

Bottleneck 1: Attention (Pollack et al, 2015, p. 114 - 115)

- The limitations of the human attention span were not considered in this long training that didn't include breaks. Additionally, Gagne's "Nine Steps of Instruction" step number one ("Gain attention") was ignored. Content was delivered monotonously without creating relevant interest.

Bottleneck 2: Working Memory (Pollack et al., 2015, p. 119)

- The content likely overloaded working memory. Too much information was delivered at one time. Extraneous graphics distracted from the actual content, further overloading the brain's capacity to process.

Bottleneck 3: Encoding and Consolidation (Pollack et al., 2015, p. 121)

- No effort was made to "enhance encoding, foster long-term memory, [or] facilitate subsequent retrieval" (Pollack et al., 2015, p. 121). No active engagement was required, and there was marked lack of "advance organizers" (Pollack et al., 2015, p. 122). The time between training and testing might have been better utilized by asking participants to personally elaborate on concepts and to periodically return to content by referring to a provided "advance organizer" job aid.

References (Week 4)

Pollock, R. V. H., Jefferson, A., & Wick, C. W. (2015). *The six disciplines of breakthrough learning: How to turn training and development into business results*. Center for Creative Leadership.

Week 5

Multiple Choice Question (Week 5)

Programmed Instruction, originally developed by B. F. Skinner in the 1920s and 1930s, is a behaviorist learning model characterized by essential principles (Pappas, 2014, para 1).

Five-year-old Kara is learning to tie her shoes. She watches her mother, her sister, and her aunt demonstrate this skill. At school, her teacher expects her to be able to perform this skill, but Kara is unable. Implementing which list of Programmed Instruction principles recommended by B. F. Skinner would have helped Kara to learn to tie her shoes at home?

a) Active learning, immediate feedback, small steps, self-pacing, learner verification
b) Active learning, a consistent role model, small steps, learner verification
c) An accessible job aid, small steps, a consistent role model, self-pacing, learner verification
d) Instructor-led pacing, active learning, immediate feedback, small steps, learner verification

Multiple Choice Question Answer (Week 5)

a) Active learning, immediate feedback, small steps, self-pacing, learner verification (Pappas, 2014, para. 5 – 9)

References (Week 5)

Pappas, C. (2014, May 13). *Instructional design models and theories: Programmed instruction educational model.* eLearning Industry. https://elearningindustry.com/programmed-instruction-educational-model

Week 6

Matching Question (Week 6)

You are working with medical subject matter experts (SMEs) to create a job aid that supports nurses learning how to safely insert and confirm placement of feeding tubes. Match the criterion with the method used to meet that criterion.

Good Performance Support Criterion

- Truly represents "best practices" (Pollock et al., 2015, p. 205)
- Consistent with and reinforces methods used during instruction (Pollock et al., 2015, p. 204)
- Introduce and use performance support throughout the training (Pollock et al., 2015, p. 203)

Method to meet criterion:

- "Crowdsource" information by requesting nurses who routinely perform the task to contribute.
- Ensure the same terminology used to describe feeding tube parts during the training are used in the job aid.
- Ensure that you schedule job aid creation meetings with SMEs before the training is delivered.

Matching Question Answers (Week 6)

Criterion 1: Introduce and use performance support throughout the training.
Criterion 1 method: Ensure that you schedule job aid creation meetings with SMEs before the training is delivered.

Criterion 2: Consistent with and reinforces methods used during instruction
Criterion 2 method: Ensure the same terminology used to describe feeding tube parts during the training are used in the job aid.

Criterion 3: Truly represents "best practices"
Criterion 3 method: "Crowdsource" information by requesting nurses who routinely perform the task to contribute.

References (Week 6)

Pollock, R. V. H., Jefferson, A., & Wick, C. W. (2015). *The six disciplines of breakthrough learning: How to turn training and development into business results*. Center for Creative Leadership.