

Signature Assignment

EDIT 5055

Context

Teachers have traditionally struggled to effectively apply digital technologies in the classroom (Reid, 2014; Tondeur et al. 2016). Although many believed the incoming group of “digital natives” would fix the problem, scholars have suggested the younger generation of teachers continues to struggle with using technologies for teaching and learning (Kirschner & van Merriënboer, 2013). The COVID-19 pandemic forced more teachers to use newer technologies, but the rapid change during a stressful period often resulted in less-than-ideal uses of digital technologies for teaching and learning (Hodges et al., 2020).

Project Overview

Your challenge is to design an instructional program to help today’s teachers effectively leverage new technologies for teaching and learning. You will need to conduct research and analysis to understand the problem, explore potential solutions, create a comprehensive implementation plan, and outline an evaluation plan.

You will then create a website that tells a story about your design experience.

Project Outline

To help you focus your project, we will break it into several parts which we will work through together. Each of the parts will be completed through various assignments in Moodle.

The final product (website) will be a separate assignment due at the end of the semester. Please submit your final assignment to both Moodle and LiveText.

Understanding: Learner, Context, and Needs Assessment

Learning about the current state.

1. Needs assessment and analysis:
 - a. Collect data on current challenges teachers have with technology:
 - i. Distribute a survey to teachers you know; analyze and share the results with your group
 - ii. Identify and review a recent research article on teacher technology use. Write a paragraph summary and share with your group.
 - b. Summarize the core needs:
 - i. What are the core needs?
 - ii. Why do these needs exist?
2. Learner Analysis:

- a. Interview and, if possible, observe a current teacher (See Appendix A for information to collect)
- b. Complete an empathy map based on your interview and observations (see Appendix A)
- c. Using what you learned from your interview as well as survey results, make a persona for an imaginary learner using [this Canva template](#). The learner does not need to match the teacher you interviewed, but it should include information you gained through your interview. Complete a persona description and share with your group.

Exploring: Problem Framing; Task/Content Analysis

Describing the desired state and framing the problem.

Based on the needs analysis, determine where you think would be the best place to start to help teachers use technology more effectively. To keep our project manageable, focus the core learning outcome on *one* of the [ISTE Standards for Teachers](#). You may start with a large category (learner, leader, etc.) but I recommend going even smaller and choosing just one element (1a, 1b, etc.).

1. Problem Framing
 - a. In your group, share what ISTE standard you have selected for your core outcome (each group member may select their own standard)
 - b. As a group, share and revise individual problem statements
 - c. Choose one of the methods below for further exploring your problem statement and share the result with your group. More information on each is provided in [chapter 6 of Design for Learning](#).
 - i. Storyboard
 - ii. KWL Chart
 - iii. Design conjecture map
 - iv. Root cause analysis (5 Whys chart)
2. Content Analysis: in many instructional design projects, the designer is working in an unfamiliar content area. They collaborate with experts to better understand the intricacies of the subject. In our practice here, you likely already have some expertise in the content area. To deepen this expertise, please **analyze the ISTE standard** you selected for your focus:
 - a. Analyze each part of the standard—define each major term and summarize the standard in your own words
 - b. Identify a scholarly journal article that gives more information about the standard and why it is important
 - c. Summarize your analysis in a post in your team forum

Creating: Learning Outcomes, Ideation, and Prototyping

Making a plan for going from the current to desired state

1. Write learning outcomes: choose a domain model such as Bloom's Taxonomy or the learning domains described [in the textbook](#). Write a set of learning outcomes using the model.

2. Ideation: complete the [Wrong Theory Protocol](#) (see Appendix C) and share your responses with your group
3. Prototyping: Create two prototypes of your design, each using a different prototyping method:
 - a. First, create a hand-drawn prototype with words and images. You may also use post-it notes or index cards to record pieces and put them in different orders. Share with your group for feedback.
 - b. After receiving feedback on your first prototype, create a second prototype that incorporates the feedback you received. This prototype should be mid-fidelity. Try using slides, a storyboard, a tool like Padlet or Miro, or anything else you would like
 - c. Share your second prototype with a teacher and receive feedback from them.
 - d. Share your second prototype and teacher feedback with your group.

Evaluating: Assessment and Evaluation Plan

Determining whether your design is effective

Make an evaluation plan by listing:

- Outcomes to evaluate
- Evidence to collect to evaluate these outcomes
- When and how you would collect each type of evidence
- How you would determine whether the design was successful

Your evaluation plan should include enough detail that another designer could carry it out after implementing your design.

Design Reflection

Reflect on your experience completing this design project. To start, look back on all your work. Re-read conversations you had with others, decisions you made, etc.

Consider questions such as:

- What decisions did I make and why?
- What did and didn't work?
- What was the hardest part? Easiest part?
- What will I do different next time?
- What did I learn by doing the design project?

You may share your reflection through writing, video, audio, infographic, a collage, or any other medium you choose. If your product isn't self-explanatory (for example, if it is an abstract collage), please include a brief paragraph explaining the meaning behind it.

Final Product

For your final signature assignment, create a website that tells the story of your design process.

On your website, include experiences, artifacts, etc. of each part of the process. Include your own reflections on your design decision making.

Also include your final design description and evaluation plan.

The website does not need to be complicated. You may use any website builder tool, including Google Sites. The goal is to bring all your ideas together in one place so others can learn about your design process and experience.

Be sure to address these topics:

- Needs analysis
- Learner analysis
- Content analysis (analysis of ISTE standard)
- Learning outcomes
- Project framing
- Prototyping
- Evaluation plan
- Design reflection, including design decisions and judgments

Grading Criteria

Your project will be evaluated based on the following:

- Management: Application of needs assessment and analysis
- Management: Application of learner analysis, including the use of personas to understand users
- Management: Understanding of project content (ISTE standard)
- Management: appropriate use of learning objectives
- Design: Implementation of project framing
- Design: Website communicates story to user
- Design: Website demonstrates reflection on design decisions and judgments
- Utilization: Effective application of prototyping
- Utilization: Includes appropriate and detailed evaluation plan
- Utilization: All elements of website are accessible to general internet users

References

Hodges, C., Moore, S., Lockee, B., & Bond, A. (2020). The difference between emergency remote teaching and online learning. *Educause Review*.

Kirschner, P. A., & van Merriënboer, J. J. G. (2013). Do Learners Really Know Best? Urban Legends in Education. *Educational Psychologist*, 48(3), 169–183. <https://doi.org/10.1080/00461520.2013.804395>

Reid, P. (2014). Categories for barriers to adoption of instructional technologies. *Education and Information Technologies*, 19(2), 383–407. <https://doi.org/10.1007/s10639-012-9222-z>

Tondeur, J., van Braak, J., Siddiq, F., & Scherer, R. (2016). Time for a new approach to prepare future teachers for educational technology use: Its meaning and measurement. *Computers & Education, 94*, 134–150. <https://doi.org/10.1016/j.compedu.2015.11.009>

Appendix A: Needs/Learner Analysis Information to Collect

This list is intended to help you focus your information gathering activities. They are not interview or survey questions, though some might be turned into questions.

Personal information:

- Family/Cultural background

Professional Information:

- Teacher education certification route (traditional, alternative certification, etc.)
- Employment background
- Teaching history
- Professional goals

School context:

- Type of school (public, private, etc.)
- Size of school
- Grade level/subject area

Personal Technology Use

- What devices do they regularly use?
- What programs do they use?
- How would they describe their comfort with using technology for everyday tasks?

Educational Technology Use

- What devices, programs, etc. do they use in the classroom?
- What are their goals with educational technology use?
- How would they describe their comfort with technology in the classroom?

Pedagogical Beliefs*

- How do they believe learning occurs?
- How do they view their role as a teacher?

Technology Beliefs*

- What role do they see technology playing the classroom?
- Why do they think they should/shouldn't use technology?

Barriers to Technology Use*

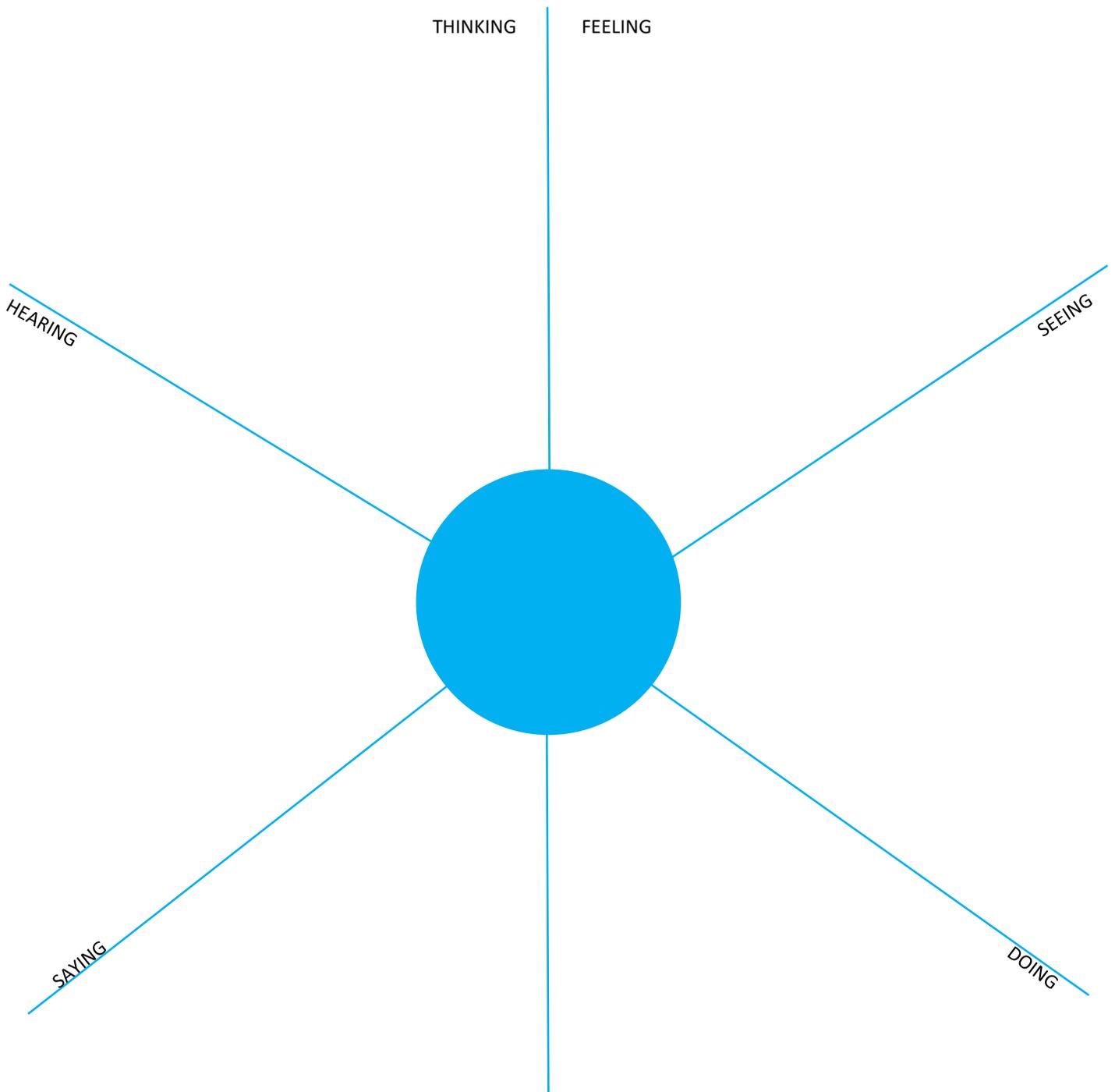
- What gets in the way of effective technology use?

*You will likely need to ask various questions and analyze responses to understand this information. For example, you might ask teachers what they see as the ideal learning context or what the most effective teachers do. You might ask what their vision is for technology in the classroom or what challenges they

find when they try to use digital technologies. Use their responses to make inferences to answer these questions.

Appendix B: Empathy Map

INSTRUCTIONS: An empathy map is a thinking tool that helps you put yourself in the place of another person (such as a student or client) so you can understand how they might respond to different situations. Observe someone for whom you want to develop empathy. As you watch them write down what they are doing, seeing, saying, and hearing. Also imagine what they're thinking and feeling. Write down as many insights as possible for each category.



Wrong Theory Protocol

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Conceptual Design Deliverables

Stakeholder needs

What needs will your design solution address?

Constraints & design requirements

What constraints do you need to attend to?

Problem definition

Briefly describe the design problem you are trying to solve.

Wrong theory design

Look back over the needs, constraints and requirements you have identified. Now violate these! Your task is to come up with *the worst possible design*, one that violates constraints and does not address needs. It should both harm and humiliate.

1. Sketch and label your ideas below.
2. Be ready to share your design and defend why it is the **absolute worst**.

Generate beneficial ideas

Don't focus on trying to get the best idea. Instead be open and generative. Suspend judgment: don't discount or eliminate any ideas at this point. Try to come up with different ways to meet the needs you identified, not just minor variations of the same solution. Here are a few ways to come up with ideas:

- Think about the category of the problem you are solving and then investigate how others have solved similar problems. For instance, if you need to come up with a way to close a cat carrier, do a google image search of lids to get ideas. But don't get stuck in what others have done.
- Try role playing. Imagine you are the stakeholder. What do you want?
- Sketch lots of ideas freeform. Use stick figures or simple diagrams, not detailed pictures.

Document your ideation process.