Effects of Choice Boards in Teacher Education on AI

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A Capstone Presented to the Teachers College Faculty

of Western Governors University

October 16, 2024

Abstract

This research studies the impact of UDL based choice boards in an e-learning module that teaches K-12 educators the basics of artificial intelligence to aid in lesson plan preparation. The study explores two main questions: (1) How does implementing UDL based choice boards affect adult learner perceptions of the e-learning experience in adult education? (2) How does implementing UDL based choice boards for the e-learning design affect learner's knowledge about artificial intelligence? These questions were studied during an e-learning module at Jefferson Elementary, a pseudonym for the school, where the principal and vice principal were the stakeholders during this study.

A mixed-methods approach was applied throughout this study. Qualitative data was collected from an end of module survey the participants completed over their experience using choice boards as a form of learning. Quantitative data was collected from a pre-test and post-test taken during the module showing the growth participants had over artificial intelligence. The findings suggest that choice boards are an effective tool for enhancing adult learners' knowledge and improving their perceptions of the e-learning experience. However, the study's small sample size and potential biases are limitations to the study.

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Chapter 1: Introduction

Instructional Problem

K-5 educators at Jefferson Elementary, pseudonym for school, have a skill gap in the basics of artificial intelligence. They want to close this gap to shorten the time when preparing lessons for their students.

Research Topic

My topic is teaching the basics of artificial intelligence to teachers. I will use an e-learning module that utilizes choice boards to impact teachers experience during the instructional unit of artificial intelligence. This topic is necessary to investigate because artificial intelligence can help shorten the time it takes teachers to prepare lessons. The research findings could impact the learning environment by showing that choice boards are a viable instructional strategy that can be used in adult education.

Research Questions

1. How does implementing UDL based choice boards affect adult learner perceptions of the e-learning experience in adult education? This will be measured using a survey at the end of the module.
2. How does implementing UDL based choice boards for the e-learning design affect learner's knowledge about artificial intelligence? This will be measured using a pre and post test about artificial intelligence.

Research Purpose

The purpose of the research study is to examine how an e-learning module with enhanced UDL practices, such as choice boards, impact adult learner perceptions of the e-learning experience and their knowledge about artificial intelligence.

Chapter 2: Literature Review

Introduction to the Literature Review

The study aims to see how utilizing an e-learning module would increase teacher's knowledge on artificial intelligence. The researcher reviewed current literature to familiarize himself with current literature on artificial intelligence and utilizing choice boards in education. The upcoming literature review will discuss the potentials and challenges in AI for education, ways to implement AI in the classroom, and utilizing choice boards to teach.

Potentials and Challenges in AI for Education

Throughout the world, people view AI in many ways. Some accept the use of it in and out of education, while others still view it as something obscure. Studies show that teachers view AI to have the following potentials and challenges when it comes to using it in education.

A concern rising in the education community for AI is that most teachers are not AI literate. AI literacy refers to individuals having the knowledge and skills to understand the basics of artificial intelligence (Eduardo Leria, 2024). Teachers tend to be uninterested in learning about AI, or they may lack the knowledge about technology that is needed in using AI within the classroom (Ismail Celik, 2022).

Another challenge in AI for education, is some AI tools do not have up to date or reliable information to provide to teachers (Ismail Celik, 2022). For example, ChatGPT utilizes a large language model that pulls information from a specific database. ChatGPT is only trained on this database and does not gather information from other places causing it to occasionally provide outdated or inaccurate information (Geesje van den Berg, 2023). ChatGPT, and other chatbots, can also have biases based off the training database that can lead to inaccuracies (Abdullahi Yusuf, 2024). Teachers must check all artificial intelligence tools for their accuracy and biases.

A potential that AI has in education is the ability to help teachers prepare lessons. Artificial intelligence tools can help teachers create personalized lesson plans for their students. These tools can personalize learning based on the prompts and tasks the teachers input into the system (Lin, 2022). An example of this in use, is in an English Language Learner classroom where a teacher needs to have flexible and customizable lessons for each individual student. AI can take a lesson plan idea and help the teacher brainstorm ways to differentiate or scaffold the lesson to better fit their students (Al-kresheh, 2024).

Another potential with AI in education is with chatbots like ChatGPT. They can provide things such as vocabulary for lessons, define vocabulary, give examples for differentiation, create poetry, and much more (Hinman, 2024). ChatGPT can also create assessment and provide individualized feedback for students lessoning the time it takes teachers to complete this process (Lin, 2022). Chatbots can also act as another teacher or tutor where students ask questions, and it can provide immediate feedback (Annus, 2024; Bahar Graefen, 2024). All of these uses of chatbots will allow teacher preparation time to be shortened.

Ways to Implement AI in the Classroom

"Technology does not revolutionize education;" teachers are the ones who get to select the tools and the way that artificial intelligence is used within the classroom (Bailey, 2023, p. 29). AI can range in its abilities when implementing it into the classroom. Along with the differentiation and lesson planning, mentioned earlier, teachers can also use AI to help with engagement strategies. One way is by using interactive quiz platforms like Quizizz or Kahoot to create interactive game-like quizzes for students (McLeon, 2024).

Teachers can also use text-to-image generators, such as Canva, to increase engagement. These images can help with student comprehension and increase the accessibility of print

materials. An advantage of using Canva's text-to-image generator is that Canva does not claim any licensing or copyrights over any of the images it generates. This allows teachers to use an AI generated images without worry of copyright infringement (Cacicio & Riggs, 2023).

Teachers can also use AI chatbots to help with student engagement. For example, a teacher could ask AI to "create a mind map" of a specific historical event or to help students brainstorm essay topics (Lawless, 2024, p. 48). Chatbots can also create activities such as debates, interviews, short stories, and choose your own adventures for the classroom to aid in student engagement (Lawless, 2024).

Furthermore, teachers can utilize various websites and apps that have AI built in. Websites like MagicSchool.ai and Brisk Teaching have a multitude of tools teachers can use to create activities, translate resources, differentiate reading levels, and more. Character AI is an interactive chatbot that teachers can manipulate to become any character in a book or in history to create interactive interviews in class (Rachael Patrick, 2024). Synthesia, another AI tool, can help teachers create videos based off the text they input (Cacicio & Riggs, 2023). This tool can help teachers differentiate and make their lessons more accessible.

Utilizing Choice Boards to Teach

Using choice boards in education allows teachers to give their learners multiple means of representation of the content being presented. This gives the learners different ways to interact with the content (Bastoni, Goldammer, Perez, Schwab, & Vobornik, 2023). Choice boards allow for the individualization and differentiation of instructional materials. Learners can choose the pathway of their own learning (Buechel, 2023). AI tools mentioned earlier, such as, Synthesia, ChatGPT, Canva, etc. can help teachers create choice boards for differentiation within their classroom.

Conclusion

Overall, the research done for this literature review pertained to artificial intelligence within the realm of education. It covered the potentials and challenges teachers face with AI, how teachers can use AI to develop lessons and use it for engagement, and how differentiated choice boards give students multiple means of representation of the content presented. Multiple articles researched gave examples of AI tools that most teachers do not currently know about. These tools informed the literature review that was completed and will inform the e-learning module. The researcher learned that there is a significant amount of research on artificial intelligence, but there is a limited amount of research on artificial intelligence in education. The research study presented will add to the limited body of literature that is present on artificial intelligence in education. The AI tools, potentials, challenges, uses of AI, and choice boards will all inform the e-learning module.

Chapter 3: Research Methodology

Instructional Problem Overview

I observed educators at Jefferson Elementary School throughout the 2023-2024 school year take hours to prepare lesson plans for their students. Several of these educators spent 10 to 20 plus hours outside of their normal contract hours doing so. I gathered this information from observations, informal conversations, and my prior knowledge of these teachers. I learned that these teachers wanted to learn about using artificial intelligence to help shorten their prep time, but most did not know how to use it. They currently have a skill gap in artificial intelligence in education and want to close it.

Potential Solutions

The first potential e-learning solution is a Canvas e-learning module that includes choice boards within three sections. The sections would be as follows: Acquire Knowledge, Make Meaning, and Share Your Learning. The Make Meaning section of the module would have learners practice using AI and make meaning of the knowledge they just learned. Lastly, the Share Your Learning section would have learners choose how they want to share the knowledge they just experienced. An advantage of implementing this solution is learners will be able to progress through the module with a choose your own adventure type model for their learning and be more in control of how they learn. A challenge for this solution is that not all individuals participating in the e-learning module might not enjoy learning via choice boards and might want more instructor facilitation. To address this challenge, the instructor will be readily available to learners as they need via email or teams.

The second e-learning solution is a module using Canvas that includes learner collaboration and discussion. This module would include videos, text about artificial intelligence

for learners to read, and discussion boards for learners to collaborate with one another. An advantage of this solution is that learners can collaborate with one another during the e-learning module. A challenge of this solution is learners might need more one-on-one support since there is not much practice or direct teacher instruction. To address this challenge, the instructor will be readily available via teams or email.

A third e-learning solution is having a hybrid module, hosted in Canvas, for learners. The instructor would host a mini-lesson via teams for the first twenty minutes of the e-learning module, then learners will work and practice using AI on their own. An advantage of this solution is the instructor is available immediately to all learners. A challenge of this solution is getting all learners to log onto teams at the same time for the beginning of the module. To address this challenge, the mini lesson will be recorded and posted in Canvas for those unable to participate.

The e-learning solution that was chosen to address the instructional problem is the first solution that includes three sections split into Acquire Knowledge, Make Meaning, and Share Your Learning. This was chosen over the other two solutions because the module is based on Universal Design for Learning principles. This will be able to address as many learners' needs as possible. This solution will allow learners to be in charge of their own learning. Unlike the third solution, this solution will allow learners to complete the module at their own pace and on their own time.

E-Learning Unit of Instruction Description

The e-learning module used in this research is titled *Reshaping Learning with Generative AI.* This module is designed to give educators the foundational knowledge of

generative AI. Educators will learn the basics and practice using generative AI tools. The target audience is educators.

The learning goal of the module is learners will be able to explain generative AI and how it can be used in education. There are four learning objectives tied to the learning goal:

1. Learners will be able to explain what generative AI is;

2. Learners will be able to explain at least two ways to use generative AI in the classroom;

3. Learners will be able to create prompts using chatbots like ChatGPT; and

4. Learners will be able to create materials for lessons using generative AI tools.

The first two learning objectives will be measured through both formative and summative assessments where learners will have to write or explain generative AI and how it can be used. The third learning objective will be measured during a formative assessment where learners practice creating prompts using ChatGPT and must submit examples of their work. The fourth learning objective will be measured after learners have explored and practiced using generative AI tools through a formative assessment. This formative assessment will have learners submit screenshots of their work to Canvas.

In the e-learning module, one learning need that is anticipated by the adult learners is the need to apply the skills they are learning in a contextual manner. This will occur during the Share Your Learning section of the module where learners will practice using ChatGPT and other AI tools to create materials. They will be able to use these AI tools and materials in their classrooms later. The second adult learner need that is anticipated is the need for flexibility. This need will

be met using choice boards and the module being at the learner's own pace. The choice boards will allow the users flexibility because they will be able to choose the pathway for their learning. Learners will be able to learn from visuals, articles, videos, or a mixture of all three at their own discretion.

Throughout this module, several learning technology tools are utilized. One technology tool that is utilized in the module is ChatGPT. Learners will copy and past a pre-written prompt into ChatGPT. This prompt will tell ChatGPT to become a tutor on prompt engineering. As learners' type in prompts, it will give the learner immediate feedback and suggestions on improvements. Another technology tool that is utilized is Canva. Learners will use Canva to practice generating images from text. They will then be able to use these images later in their own lesson plans. Both the use of ChatGPT and Canva's text-to-image generator help learners reach the learning goal because both tools are ways that generative AI can be used in education.

This e-learning solution addresses the instructional problem of teachers not having the basic knowledge of artificial intelligence and wanting to shorten prep time. The module has teachers learn the basics of generative AI, explore tools, and create resources using AI for their lessons. This teaches educators artificial intelligence can indeed help shorten their lesson plan preparation time.

Research Methodology

Method

The research method that will be used during this research will be a mixed method. The researcher will collect qualitative data on the learners' experience using choice boards. This will help answer the research question of "How does implementing UDL based choice boards affect adult learner perceptions of the e-learning experience in adult education?" This will be measured

using an online survey at the end of the e-learning solution. Quantitative data will be collected to determine how the use of choice boards affects the knowledge learners gain from the e-learning solution. This will be measured with a pre- and post-test that learners will complete.

Participants/Stakeholders

The participants taking part in this research will be K-12 teachers. There will be 8-10 participants in this research. Participants will be chosen by asking for volunteers at Jefferson Elementary via email. These participants will then complete a consent form and the e-learning module.

The stakeholders are the principal and assistant principal at Jefferson Elementary. These stakeholders are interested in this research because it pertains to the teachers on their campus. It will teach their teachers about artificial intelligence and help shorten the time it takes to prepare lesson plans. This will then give the teachers more time to focus on their students and the school community.

Data Collection Instrument(s)

The first data collection instrument will be a post-survey that will consist of four open-ended questions. These questions will have learners reflect on their experience during the e-learning solution and using the choice boards. This data collection tool will align to and gather information for the research question “How does implementing UDL based choice boards affect adult learner perceptions of the e-learning experience in adult education?”

The second data collection instrument will be pre- and post- test that consists of ten questions that directly relate to the content covered and the learning objectives. The pre-test and post-test will be identical to one another. The tests will consist of two open-ended questions, six multiple choice questions, one fill in the blank question, and one matching question. This data

collection tool will align to and gather information for the research question “How does implementing UDL based choice boards for the e-learning design affect learner’s knowledge about artificial intelligence?”

Data Analysis Technique(s)

Descriptive statistics will be used to analyze the quantitative data that is collected. This will be done by computing the average of all scores on the pre-test and computing the average of all the scores on the post-test. The researcher will then subtract the two averages to determine the average growth rate of the learners.

Coding will be used to analyze the qualitative data that is collected. This will be done by finding the main ideas from all the responses on the post-survey. The researcher will then use these main ideas to generate themes about the data.

Expected Timeline

The expected timeline for this research is October 5, 2024, to October 20, 2024.

Data Security and Confidentiality

Data will be kept secure by redacting all information about Jefferson Elementary and the teachers participating in the research study. This includes all personally identifiable information. The learning management system Canvas also holds a privacy policy where they will not sell any users personally identifiable information to anyone. Jefferson Elementary is also a pseudonym for the school. Electronic documents will be saved on a password protected and encrypted hard drive. All paper documents will be stored in a secured lock box. The paper documents will be destroyed in three years.

Conclusion

A total of 8-10 participants from Jefferson Elementary will be selected on a voluntary basis. They will be informed via email about the research. They will then participate in an e-learning solution with choice boards over artificial intelligence. Both qualitative and quantitative data will be collected causing this to be a mixed research method. The data will be collected using a pre-test, post-test, and a post-survey. The research will then use descriptive statistics and coding to analyze the data collected.

Chapter 4: Results

Summary of Research

K-5 educators at Jefferson Elementary School had a gap in their knowledge of artificial intelligence with the hopes of reducing their lesson plan preparation time. The research focuses on teaching AI basics to teachers using choice boards within an e-learning module. The participants are K-12 teachers from the school that were selected on a voluntary basis. The stakeholders are the principal and assistant principal who support the initiative to enhance teaching efficiency and reduce planning time for their teachers. The research was completed using a mixed-research method. Quantitative was collected using a pre- and post-test that measured the participants' knowledge growth percentage. Qualitative data was collected during a post-survey participants filled out with open-ended questions regarding their experience with choice boards during the module.

Summary of Results

Description of the Data

Quantitative data was collected using a pre-test and post-test the participants completed during the e-learning module. The test measured the AI knowledge level of participants before and after the module. Data was collected over ten questions, multiple choice and open-ended, learners answered. Each question was scored out of ten points for a total score of 100 on each test. The end data collected was the average score of all participants on each test.

Qualitative data was collected after the module was completed from a post-survey the participants completed. During the survey, the participants answered four open-ended questions

relating to their experience of using choice boards throughout the e-learning module. The data collected was the responses each participant submitted.

Visual Representation of the Data

Figure 1 Pre-Test Data

Figure 2 Post-Test Data

Figure 3 Post-Survey Data

Post-Survey

Question 1: Describe your experience in this e-learning module.	
S1	*I enjoyed it. I learned a lot of really applicable things that I then used during the next week with my students.*
S2	*This was quick and easy to follow.*
S3	*Lots to take in, but did find a few things I could use.*
S4	*This module was insightful without being overwhelming. It provided resources relatable to current educators.*
S5	*This experience was useful and relevant to teaching.*

Question 2: Describe your experience with the use of choice boards as a learning strategy in this module.	
S1	*I liked the choice boards because I think it is more inclusive for different learning types.*
S2	*I liked the choice boards because I can pick what I wanted to learn about.*
S3	*I like having a choice.*
S4	*I liked this opportunity to explore what spoke to me and what I felt could be beneficial for me and my students.*
S5	*I enjoyed the use of choice boards while learning. I was able to choose how I wanted to learn.*

Question 3: Do you think the choice boards had an impact on your learning? Explain.	
S1	*Yes, it created a user-led experience which let me choose what and how I wanted to learn*
S2	*Yes. It gives options for different learning styles.*
S3	*Yes, because I don't have to learn about things that will not be helpful to me.*
S4	*I think so. You are getting a say in what you are doing.*
S5	*Yes it gave me options on what and how I wanted to learn.*

Question 4: Would you complete another e-learning experience if it had choice boards? Explain.	
S1	*Yes. See previous answers. It gave an opportunity to be in charge of my learning and takeaways.*
S2	*Yes. I did really like the options.*
S3	*Sure, I liked the choice boards*
S4	*I would think so. It can expand ideas if we share with others.*
S5	*Yes.*

Interpretation of Data

Descriptive statistics was used to analyze the quantitative data from both the pre-test and post-test. The learning management system Canvas calculated the average for all participants for the two tests. The average score for the pre-test is 49% and the average score for the post-test is 72%. The researcher then subtracted the average score of the pre-test from the average score of the post-test to get determine the average growth percentage of the participants. On average, participants knowledge about AI increased by 23%.

Coding was used to analyze the qualitative data collected from the post-survey questions. The researcher reviewed all the responses on the post-survey. After this, the researcher identified main ideas from the qualitative data collected. The researcher then generated two themes based off the main ideas. The two the themes are as follows:

1. Choice boards made learning the material relevant and applicable to participants. They are able to transfer the knowledge into their classroom.
2. Choice boards allowed the participants to be in charge of what they wanted to learn and how they learned it.

Bias

The researcher recognized bias by examining the participant selection and data collection methods to ensure bias was not present. To minimize bias during the participant selection, participants were chosen on a voluntary basis and were not asked for their age, gender, race, or age. To minimize bias during data collection, all participants were assigned a student number instead of their name being associated with their data.

Proposed Iteration(s) of E-Learning Solution

Effects of the E-Learning Solution

The e-learning solution helped close the skill gap of AI basics for the teachers that participated in the research study. This allowed the teachers to gain new ideas and tools to aid them in their planning. To successfully close the knowledge gap at the school, all teachers would need to participate in the e-learning module.

Redesign

The e-learning module would be redesigned by ensuring all material from the pre-test and post-test are accurately covered. The questions should be reworded to ensure they align properly to the content of the module.

The research methodology for the new design would still be a mixed research method. It would include three refinements to enhance the representativeness and trustworthiness of the data. The first area of refinement is the questions on the post-survey. They are currently only open-ended questions. In the refinement process, the researcher should add a rating scale to the survey to ensure both qualitative and quantitative data are collected from the survey. Having quantitative and qualitative data coinciding can lead to more insights from the data and the research being studied (Keegan, 2012). Adding a rating scale to the post-survey would enhance the research by giving the researcher statistical data to measure the research question of "How does implementing UDL based choice boards affect adult learner perceptions of the e-learning experience in adult education?"

The second area of refinement is the questions answered during the pre-test and post-test. Based on the feedback given by the participants and stakeholders some questions had poor wording. This could have caused some of the participants to answer the questions incorrectly. This refinement would enhance the enhance the research by allowing more accurate data to be collected.

The third area of refinement is the participant selection process. Based on the data from the participants, some already knew some basics of AI and were not beginners. The researcher should include a question about the participants' current knowledge of AI during the participant sign up. This will not deny anyone into the research study, it would only label them with no little

to no knowledge, moderate knowledge, or expert knowledge of AI. This would allow the researcher to understand the amount of knowledge gained from the e-learning module and be able to compare the groups of participants to each other.

Chapter 5: Discussion

Conclusion(s) Based on Results

The results of this research study showed that using UDL-based choice boards significantly improved K-5 teachers' knowledge on AI for those who participated. There was an average increase of 23% from the pre-test to the post-test. Choice boards effectively caused an increase in AI knowledge among the participants. Based on the qualitative data from the post-survey, teachers' perceptions of e-learning were positively impacted. Participants stated they enjoyed the use of choice boards because it gave them flexibility and relevance to their current career field.

These findings are significant for the instructional setting at Jefferson Elementary because their teacher's lacked knowledge on AI and wanted to reduce their time preparing lessons. The use of choice boards addressed this, allowing teacher to learn AI tools that will help streamline their instructional time and practices. This study demonstrates that choice boards are a valuable tool in adult education. They are an effective way to improve teacher knowledge, give flexibility, and provide relevance to the learners. However, the study itself is inconclusive because there was a low number of participants involved in the study.

Limitations

A limitation to this study is a small sample size. The number of individuals that participated in the study was only five. This is not a large enough of a sample to provide any major conclusions.

Another limitation to this study is the potential availability bias. This bias is due some individuals in the study having experience with the material being covered in the e-learning module. This caused some individuals to score high on the pre-test and have minimal growth on

the post-test, skewing the quantitative data being collected. This bias would be minimized by the third refinement allowing the researcher to view growth based off the prior knowledge level of the participants.

Implications of Research on Educational Practice

Design Principles

The design principles based on this research are as follows:

1. Utilize instructional and visual design elements that support diverse learners including multiple means of representation, multiple means of engagement, and multiple means of action and expression.
2. Create safe structured and unstructured learning for adult learners to have flexibility in their learning.
3. Utilize design elements that create a relevant learning experience for the adult learners.

Implications

The implications of this research are UDL based elements, such as choice boards, can have a positive impact in the world of adult education. They allow adult learners control over their learning, gives them flexibility, and can also give the adult learners relevance. These are due to the learners being able to choose what they are learning about and only focus on what they need.

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Appendix A

Description of the E-Learning Module

The e-learning module used in this research is titled *Reshaping Learning with Generative AI.* This module is designed to give educators the foundational knowledge of generative AI. Educators will learn the basics and practice using generative AI tools. The target audience is educators.

The learning goal of the module is learners will be able to explain generative AI and how it can be used in education. There are four learning objectives tied to the learning goal:

1. Learners will be able to explain what generative AI is.

2. Learners will be able to explain at least two ways to use generative AI in the classroom.

3. Learners will be able to create prompts using chatbots like ChatGPT; and

4. Learners will be able to create materials for lessons using generative AI tools.

The first two learning objectives will be measured through both formative and summative assessments where learners will have to write or explain generative AI and how it can be used. The third learning objective will be measured during a formative assessment where learners practice creating prompts using ChatGPT and must submit examples of their work. The fourth learning objective will be measured after learners have explored and practiced using generative AI tools through a formative assessment. This formative assessment will have learners submit screenshots of their work to Canvas.

In the e-learning module, one learning need that is anticipated by the adult learners is the need to apply the skills they are learning in a contextual manner. This will occur during the Share Your Learning section of the module where learners will practice using ChatGPT and other AI tools to create materials. They will be able to use these AI tools and materials in their classrooms later. The second adult learner need that is anticipated is the need for flexibility. This need will be met using choice boards and the module being at the learner's own pace. The choice boards will allow the users flexibility because they will be able to choose the pathway for their learning. Learners will be able to learn from visuals, articles, videos, or a mixture of all three at their own discretion.

Throughout this module, several learning technology tools are utilized. One technology tool that is utilized in the module is ChatGPT. Learners will copy and past a pre-written prompt into ChatGPT. This prompt will tell ChatGPT to become a tutor on prompt engineering. As learners' type in prompts, it will give the learner immediate feedback and suggestions on improvements. Another technology tool that is utilized is Canva. Learners will use Canva to practice generating images from text. They will then be able to use these images later in their own lesson plans. Both the use of ChatGPT and Canva's text-to-image generator help learners reach the learning goal because both tools are ways that generative AI can be used in education.

This e-learning solution addresses the instructional problem of teachers not having the basic knowledge of artificial intelligence and wanting to shorten prep time. The module has teachers learn the basics of generative AI, explore tools, and create resources using AI for their lessons. This teaches educators artificial intelligence can indeed help shorten their lesson plan preparation time.

Figure 4 Module Outline

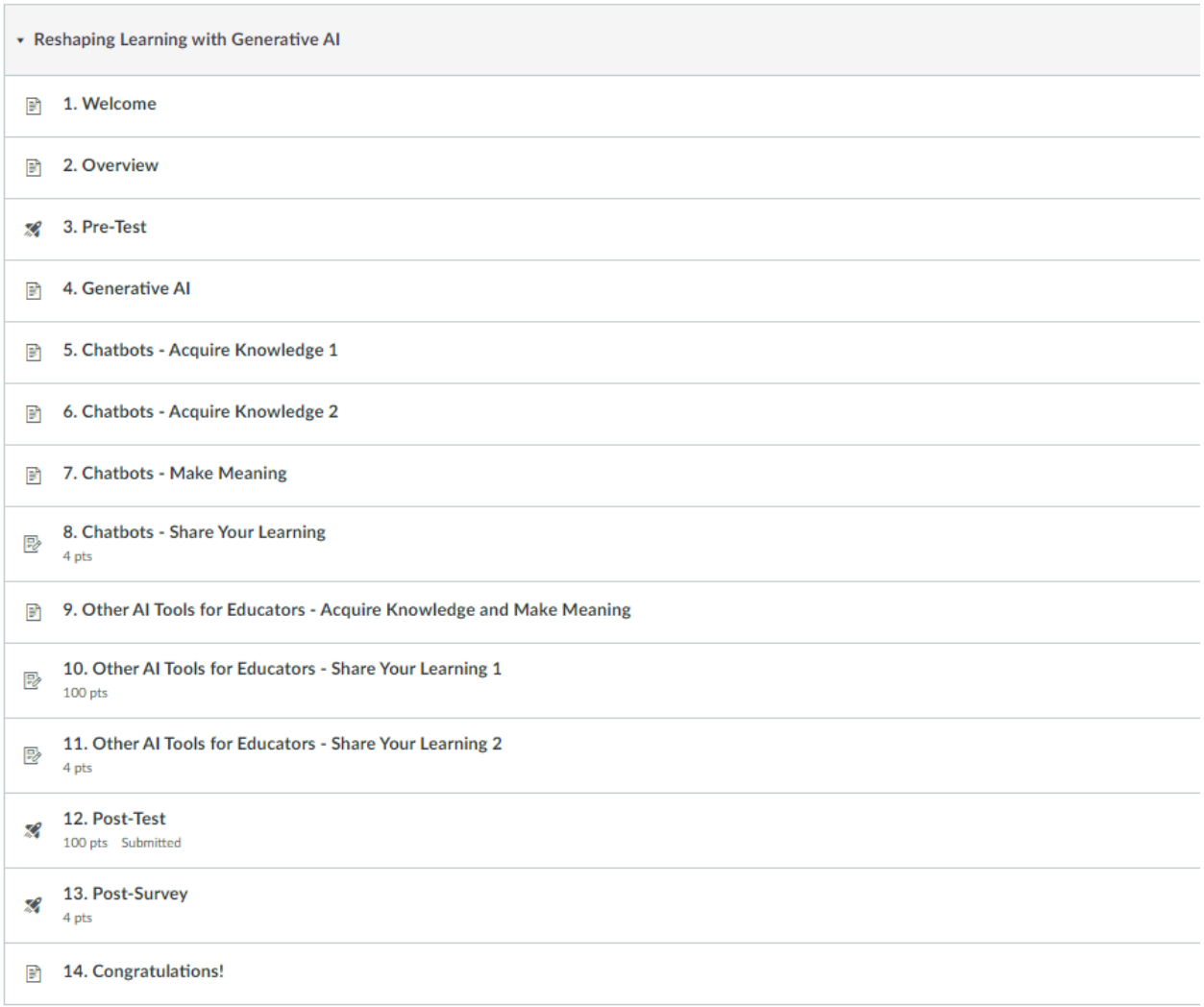


Figure 5 Choice Board 1

Chatbots - Acquire Knowledge

Directions: Acquire information about AI chatbots by completing one or more items from each column. Click on an image to learn more.

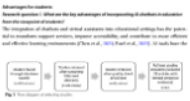
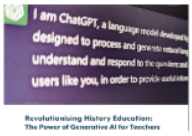
	Potentials and Challenges	Prompt Engineering
Infographic		
Article	Read the advantages of students, educators, and concerns 	
Video		

Figure 6 Choice Board 2

Other AI Tools for Educators - Share Your Learning 2

Directions: Discuss at least one or more of the AI tools you just learned about. What was interesting? How will you use this in your classroom?

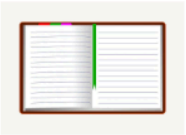
Create a poster on paper or in Canva	Create a video	Write a journal entry
		

Figure 7 Choice Board 3

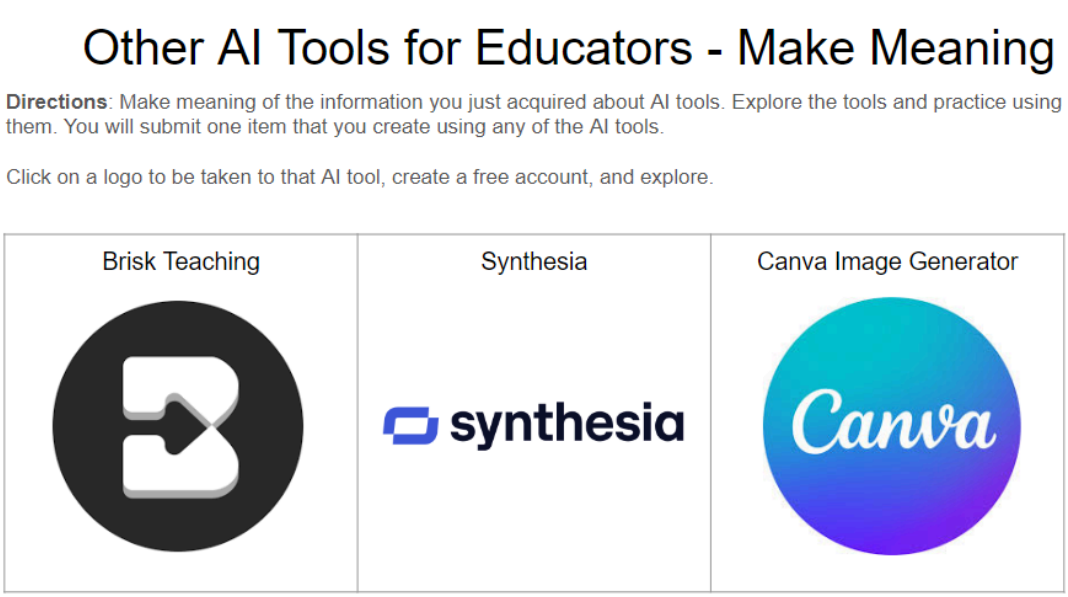


Figure 8 Choice Board 4

Figure 9 Choice Board 5

Other AI Tools for Educators - Share Your Learning 2

Directions: Discuss at least one or more of the AI tools you just learned about. What was interesting? How will you use this in your classroom?

Create a poster on paper or in Canva	Create a video	Write a journal entry
		

Appendix B

Data Collection Tools

Figure 10 Post-Survey

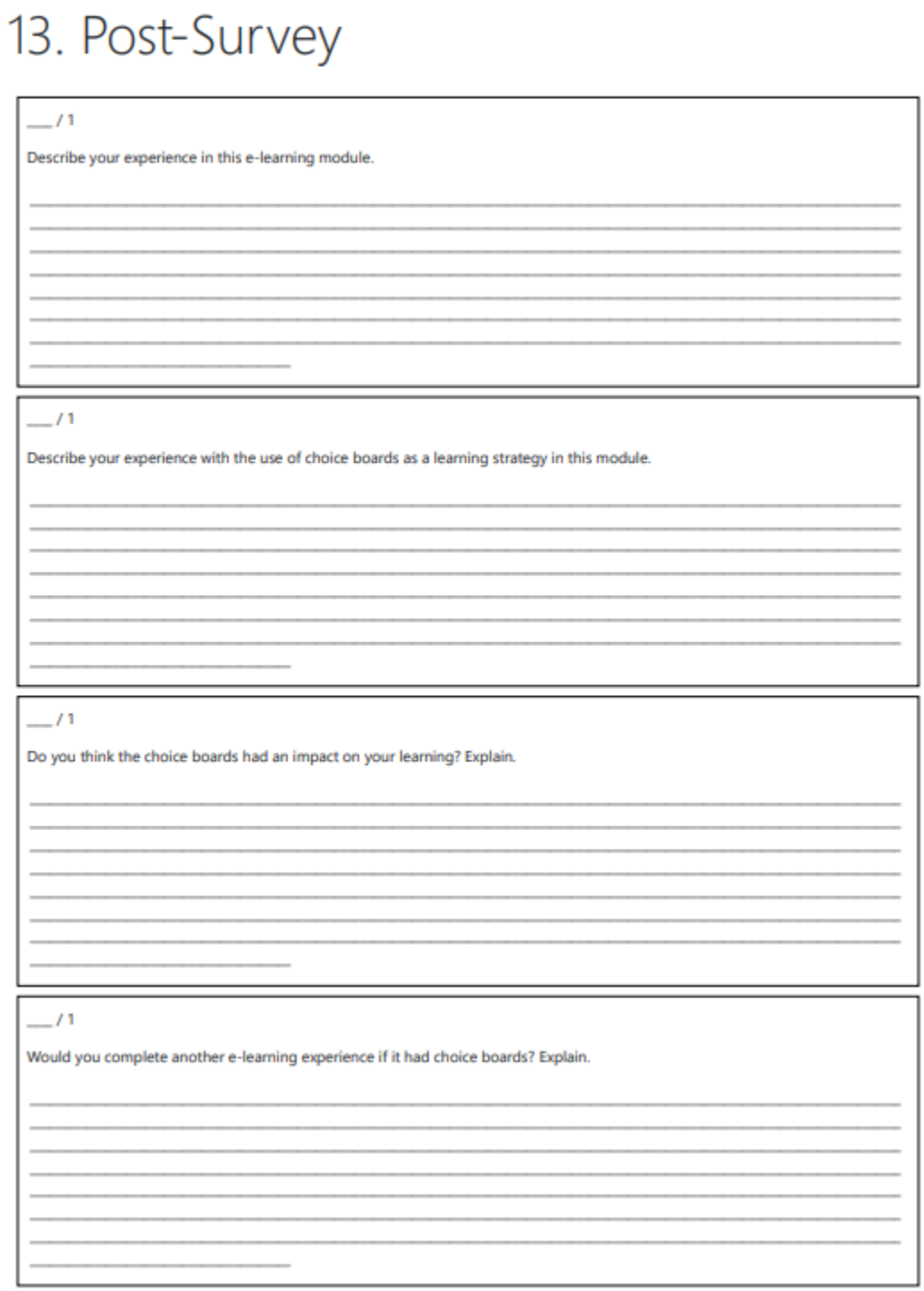


Figure 11 Pre-Test

3. Pre-Test

This is a pre-test. You may not know the answers to all questions. Complete the questions to the best of your knowledge. It is okay to say you do not know an answer.

___ / 10

Explain what generative AI is.

___ / 10

Explain two ways you can use generative AI in the classroom.

___ / 10

Which of the following are the challenges of AI chatbots in education?

- ☐ Chatbots cannot help differentiate lesson plans.
- ☐ Chatbots have limited information.
- ☐ Students can use chatbots for academic dishonesty.
- ☐ Chatbots can produce false or inaccurate information.

___ / 10

Which of the following are examples of AI chatbots?

- ☐ Microsoft Copilot
- ☐ Google Gemini
- ☐ Canva
- ☐ ChatGPT

___ / 10

What is a prompt in regards to artificial intelligence?

- ○ The answers AI gives.
- ○ The topic for an essay.
- ○ The parameters for a search engine.
- ○ The type in request or task.

___ / 10

What does RISEN stand for? Fill in the blanks.

R - _____

I - _____

S - _____

E - _____

N - _____

___ / 10

Which of the following is a benefit from using Canva's text-to-image generator?

- ○ Canva does not own any of the licensing or copyrights to an of the generated images.
- ○ Canva's text-to-image generator only costs $3.75 per month for educators.
- ○ There are no benefits to using Canva's text-to-image generator.
- ○ Canva can create presentation in the text-to-image generator.

___ / 10

Match the following AI tools to their function.

Synthesia ○	○ An AI tool that can create videos based off text that is given.
ChatGPT ○	○ A chatbot that can act as a tutor, gather information from a database, give student feedback, and much more.
Brisk Teaching ○	○ A Google Chrome extension that can create resources based off of any webpage or video.

___ / 10

Which of the following characteristics refer to AI chatbot?

- ☐ Chatbots can have inaccurate information and the information must be checked for accuracies.
- ☐ Chatbots can act as a tutor for students.
- ☐ Chatbots are designed to mimic human conversations.
- ☐ Chatbots search for Google for information.
- ☐ Chatbots are based on large language models.

___ / 10

Why is AI data security and privacy important when working with students?

- ○ AI does not have privacy policies.
- ○ AI collects student data.
- ○ AI is specialized in tasks for student engagement.
- ○ AI does not collect any data on students.

Figure 12 Post-Test

12. Post-Test

___ / 10

Explain what generative AI is.

___ / 10

Explain two ways you can use generative AI in the classroom.

___ / 10

Which of the following are the challenges of AI chatbots in education?

- ☐ Students can use chatbots for academic dishonesty.
- ☐ Chatbots have limited information.
- ☐ Chatbots cannot help differentiate lesson plans.
- ☐ Chatbots can produce false or inaccurate information.

___ / 10

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- ☐ Canva
- ☐ Microsoft Copilot
- ☐ ChatGPT

___ / 10

What is a prompt in regards to artificial intelligence?

- ○ The parameters for a search engine.
- ○ The topic for an essay.
- ○ The type in request or task.
- ○ The answers AI gives.

___ / 10

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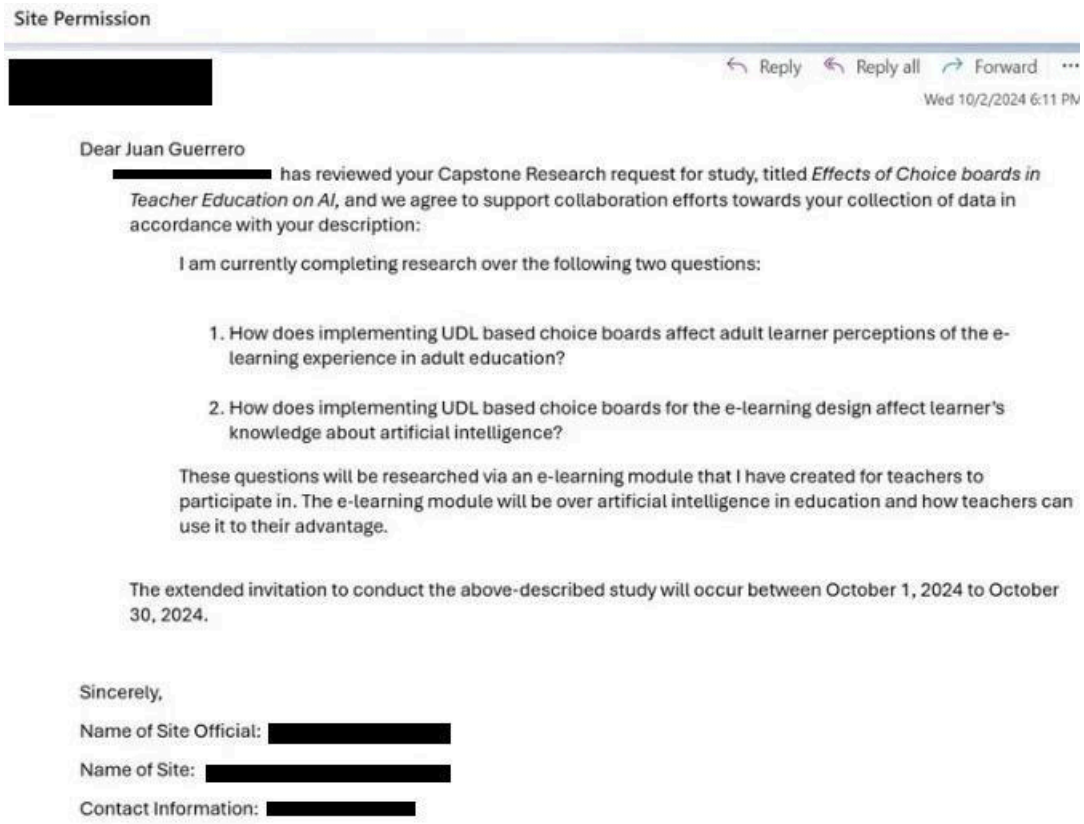
Appendix C

Figure 13 Site Permission



Site Permission

[redacted] Reply Reply all Forward ...

Wed 10/2/2024 6:11 PM

Dear Juan Guerrero

[redacted] has reviewed your Capstone Research request for study, titled *Effects of Choice boards in Teacher Education on AI*, and we agree to support collaboration efforts towards your collection of data in accordance with your description:

I am currently completing research over the following two questions:

1. How does implementing UDL based choice boards affect adult learner perceptions of the e-learning experience in adult education?
2. How does implementing UDL based choice boards for the e-learning design affect learner's knowledge about artificial intelligence?

These questions will be researched via an e-learning module that I have created for teachers to participate in. The e-learning module will be over artificial intelligence in education and how teachers can use it to their advantage.

The extended invitation to conduct the above-described study will occur between October 1, 2024 to October 30, 2024.

Sincerely,

Name of Site Official: [redacted]

Name of Site: [redacted]

Contact Information: [redacted]