AI Mistakes in the Classroom

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Abstract

The integration of Artificial Intelligence (AI) in educational settings has sparked significant interest, yet the potential pitfalls are often overlooked. This paper explores a series of assignments where AI fell flat. Dissecting the errors made in the assignments and how they violated the learning theory of Connectivism - an emerging learning theory emphasizing the importance of networks and technology in knowledge acquisition – we hope to help others avoid the same pitfalls when designing AI inclusive assignments. The findings underscore the necessity for educators to provide clear guidance, equitable access to technology, and appropriate training for students to navigate AI tools effectively. By sharing these insights, we aim to inform best practices for AI integration in academia and encourage a more thoughtful approach to leveraging technology in teaching.

Keywords: Artificial Intelligence, Connectivism, Pedagogy, Classroom Assignments

JEL Classifications: A22, A29

I. Introduction

Large language models and their rapid, sweeping impact on education have only just begun to be documented in the teaching and learning literature. In quick succession, many publications on the acceptance and use of artificial intelligence in the classroom have appeared. The literature primary fell into two categories: (1) how-to guides for incorporating AI into the classroom (e.g. Mollick & Mollick, 2023; Noy & Zhang, 2023; Winkler & Ross, 2019) and (2) concerns about how it will be used for cheating (e.g. Amani, et al., 2023; Barros et al., 2023; Michel-Villarreal et al., 2023; Okaiyeto et al., 2023). While not explicitly stated in most articles, an underlying learning theory that strongly supports the inclusion of AI in the classroom is Connectivism. This theory can explain why AI in the classroom supports learning. However, what is currently missing from the literature are documented failures caused by incorporating AI into assignments and examples of how such inclusion has hindered learning. This paper attempts to begin to fill that gap. Our results suggest that professors must not assume the use of the technology is intuitive, that students have ready access to AI despite its perceptions of being a free tool and must be very careful if using AI as an information source, even for non-copywritten, publicly available information. The following is a literature review showing how inclusion of AI supports the Connectivism view of learning, followed by one example of a successful AI assignment in the classroom, then three examples of mistakes when building AI based assignments and how they violated the Connectivist view of learning, leading to frustration by students and professors.

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II. Literature Review

Connectivism, a learning theory developed by George Siemens (2005) and Stephen Downes (2008), emphasizes the importance of networks, connections, and technology in the learning process. In the digital age, where knowledge is dynamic and distributed across various platforms, Connectivism provides a framework for understanding how learners interact with information, peers, and digital tools (Alam, 2023).

Siemens (2005) and Downes (2008) imagine learning as a network of connecting nodes. Nodes can be anything, a feeling, a thought, a piece of data, or some information (data with intelligence applied). The nodes can be static or dynamic, living or inanimate. These nodes become connected through process of learning – where knowledge becomes meaning. These links (we like to think of them as strands in a rope) are created when a learner is able to understand and connect two nodes together. The connection can be strengthened through the strands of motivation, emotion, exposure, patterning, logic, and/or experience (Siemens, 2017). Like a rope, the number of strands can vary, making connections either weak or strong.

A series of connected nodes becomes a network (think of an individual – they represent a series of connected nodes). Within Connectivism, that person can then become a node in a greater network – creating organizational level knowledge. Within the organization, knowledge can reside within individuals, systems or non-human appliances – each is a node that may be a network (Siemens, 2017).

What is particularly useful in the digital age is the concept of the node and network. Nodes compete for relevance and strength of connection. Nodes can become antiquated, weakening their connections and eventually eliminated from the network of knowledge. Nodes can be replaced or transformed with new up-to-date knowledge. Nodes can be databases, large language models, or other non-human tools that hold knowledge. Consequently, this learning theory specifically incorporates today's digital world into how we learn.

Integrating Artificial Intelligence, specifically large language models (LLMs), into Connectivist-based classrooms offers transformative opportunities to enhance learning by leveraging these principles (Upadhyay et al., 2024). AI tools, as nodes within a learner's network, can create new pathways for knowledge acquisition, collaboration, and problem-solving (Correia et al., 2024).

Core principles of Connectivism and AI integration

The integration of AI into education aligns naturally with Connectivist principles, offering practical applications that redefine the roles of students, teachers, and learning tools (Correia et al., 2024). Below are the 8 key principles of Connectivism as stated by Siemens (2005) and their implications for using AI in the classroom.

Learning and knowledge rests in diversity of opinions.

According to Connectivism, knowledge is distributed across networks of people, tools, and organizations (Siemens, 2005). AI tools like ChatGPT serve as vital components of these networks by providing immediate access to up-to-date, synthesized information (Roumeliotis & Tselikas, 2023) making it one of the diverse nodes needed to learn. In a classroom setting, students can use

AI to conduct research, and analyze real-world data (Bray, 2024). AI becomes a bridge between learners and the broader global network of information, inspiring engagement and exploration.

Learning is the process of connecting specialized nodes or information sources.

In the context of AI, tools like LLMs act as nodes that aggregate, analyze, and present knowledge from vast resources, enabling learners to access diverse perspectives (Correia et al., 2024). For example, Chen et al. (2023) demonstrated the benefits of 'student assistant' chatbots created with large language models, which students could use to access information outside of a textbook or professor. Similarly, Shyr et al. (2024) suggested that students could better understand complex academic research through AI-powered rewording and summarization of text. This not only facilitates immediate access to information but also encourages learners to see connections between different fields and concepts, a critical skill in the 21st century.

Learning may reside in non-human appliances.

AI-powered platforms like language models are a prime example of this, as they facilitate self-directed learning and provide support for both independent and group activities. For example, an AI tool can guide students through problem-solving exercises (Bray, 2024), simulate debates (Aryan, 2024), or offer multilingual support for diverse learners (Davoodi, 2024). The ability of AI to simulate human-like interaction makes it a valuable collaborator in the learning process.

Capacity to know more is more critical than what is currently known.

Students existing knowledge is less important than their ability to learn new items. AI can feed into this principal through its ability to power adaptive learning – meeting the student at their current knowledge level and allowing them to add to it. Bhatt et al. (2024) demonstrate how the use of AI-powered adaptive learning platforms enhances student learning and created a more inclusive educational setting.

Nurturing and maintaining connections is needed to facilitate continual learning.

Connectivism places a strong emphasis on learners taking control of their own education (Downes, 2008). AI tools empower students to set their own learning pace and explore topics that interest them. For instance, learners can use AI to "delve" (could not resist the joke of using this word in an AI article!) deeper into areas they find challenging or intriguing by posing iterative questions or refining their understanding through AI-generated examples and explanations (Chen et al., 2023). This autonomy feeds critical thinking and problem-solving skills, as students are encouraged to actively engage with their learning journey.

Ability to see connections between fields, ideas, and concepts is a core skill.

AI tools support this principle by providing personalized learning experiences, making it easier for learnings to see connections. For instance, Pataranutaporn et al. (2021) explained how developments in AI allow for the creation of relatable and personalized avatars for students to

interact with. Pratama et al. (2023) describe how AI can provide tailored feedback, clarify misconceptions, or help students explore new topics beyond the curriculum.

Currency (accurate, up-to-date knowledge) is the intent of all Connectivist learning activities.

The currency of AI's knowledge base can present significant challenges in educational settings. This currency challenge stems from the inherent time lag between an AI model's training data cutoff and real-world developments, creating a knowledge gap that can hinder learning outcomes. For instance, Roumeliotis and Tselikas (2023) documented how ChatGPT and other OpenAI models, while capable of synthesizing information, may not always serve as reliable sources of up-to-date data. However, traditional classroom nodes would include textbooks, which are often much older than the training date cut off for many LLMs. Yang et al. (2024) found that large language models were an effective substitute for textbooks in learning, with some students engaging more deeply with the adaptive AI.

*Decision making is itself a learning process. Choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality***.**

Students must choose to learn. What they learn is different than the person who sits next to them because it is learned through their lens of prior knowledge, experience, and feelings. One of AI's major strengths is its ability to take on multiple personas, allowing students to explore different interpretations and decide on the correct answer. This is often done through role-playing activities. Holtham (2023) highlighted this strength when creating a role-playing game to allow students to practice difficult conversations about inclusivity.

All of the examples above show how AI can strengthen learning through the Connectivist view. This review merely scratches the surface of the flood of pedagogical research emerging on how to integrate AI into the classroom and the positive results that follow.

When successful, AI-friendly and AI-mandatory assignments fulfill the Collectivist principles and result in clear learning. However, despite an exhaustive search, we have failed to find any literature that documents common mistakes when incorporating AI into the classroom. This research attempts to fill that void. This paper will first demonstrate how meeting all 8 Connectivist principles can result in learning and then show examples of where and why we sometimes failed. By sharing our failures, we hope other professors can learn from these experiences and avoid similar traps when constructing their own AI-friendly assignments.

III. Example of a AI-based Lessons in the Classroom

In a class called "Portfolio Management", students write a comprehensive stock analysis of a company over the course of the semester. The paper is broken up into several parts and slowly built up. The first part of the paper is a general overview of the business. Here are its instructions: "How does your company make money? Write a general description of your company – its main products, geographic locations and basic strategy. Make sure to address how your company actually makes its profits, this is not always evident at first glance. You may use any credible news website, the 10-K, the company website, or Large Language Model with citations, to explore the company. The addition of the large language model was a simple one, but one that reflects its position as a source of up-to-date knowledge for this assignment. A poll of the 14 students in the

course showed that 100% of them used an LLM as a source of information. The overall work was excellent, with students reporting that the LLM allowed them to ask questions and gain a faster, yet accurate understanding of their company's business model. Table 1 outlines how the lesson met all Connectivism principles resulting in the student learning.

Table 1 Understand the Basic Business Strategy of a Publicly Traded Company

Key Principles of Connectivism	Plan	Reality/Evidence
Learning and knowledge rests in diversity of opinions	Students will use their knowledge, credible news sites, company website and 10-K, and AI to understand the business model of a public company.	All nodes had material to aid in student learning.
Learning is the process of connecting specialized nodes or information sources	Students explored data to make connections between the company's actions and its ability to make a profit.	Citations on the assignment suggest an average of 2.3 sources used, with 100% using a LLM, and 86% using the company's website.
Learning may reside in non-human appliances	Students would be able to query the large language model to answer questions.	Students reported using several prompts, asking clarifying questions.
Capacity to know more is more critical than what is currently known	Students were pre-trained on how to prompt AI, understood basic business practices, giving them the capacity to learn.	One student reported surprise that Apple did not manufacture the iPhone and generated significant profits from iTunes, all learned from AI prompting.
Nurturing and maintaining connections is needed to facilitate continual learning	The assignment is a part of a series of assignments to create a complete picture of a company, continually reinforcing what they learned from the initial assignment.	Subsequent revisions of the overall paper showed that all but 1 student went back to this part of the paper and revised initial work, showing maintenance of the connections made.
Ability to see connections between fields, ideas, and concepts.	Students would connect business strategy (what they sell and how) to results (profits).	Students pulled in information about products, geography, profits, and actions to learn the businesses strategy.
Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.	The assignment leveraged AI, but supplemented with other up-to-date knowledge sources to ensure accurate information.	Some students relied on AI generated financials, which were too dated to be useful, and then had to revise their work with other source material (10-Ks and 10-Qs) to achieve this principle.

Decision-making is itself a learning process.	Students must choose to engage with the assignment to learn the intended lesson.	The multiple citations and later oral presentations demonstrated the students chose to engage with the AI to learn rather than simply outsource the assignment.

By the end of the Portfolio Management class, all students had a good understanding of the basic business strategy of their company – aided by AI. They were able to connect nodes of information about geography, products, pricing, and profitability to learn how to identify and articulate their business strategy, with the help of AI. Unfortunately, lessons don't always work well. The following are three examples where an attempt to incorporate AI into the assignment, use it as a node, resulted in frustration and a lack of learning.

AI and Weighted Average Cost of Capital Example

With the belief in Connectivism, which suggests that knowledge is distributed across networks, tools like ChatGPT can provide immediate access to up-to-date, synthesized information and can be used to conduct research (Roumeliotis & Tselikas, 2023). Based on this idea, an assignment was created asking students to use You.com (a platform that integrates multiple large language models) to find the total debt, cost of debt, tax rate and market capitalization of three major retailers. To address potential issues with outdated training data, students were encouraged to prompt for information from prior fiscal year -- data that is publicly available and which the professor was successfully able to prompt while designing the assignment.

A similar assignment had been used in previous iterations of the course, where students manually searched for the information in 10-K filings from the SEC website and performed simple calculations. While students were able to complete the task, feedback revealed that their inexperience with the SEC website and uncertainty of where to find specific information within the 10-K led to an average of over two hours spent just locating the data. This left little time for analyzing the results, as students were often fatigued and frustrated by the time they reached the analytical portion of the assignment. To address this, the professor incorporated AI tools to significantly reduce the time spent gathering needed inputs, allowing students to focus on critical thinking and analysis, in line with Connectivism principles, and to enhance learning. The professor changed the instructions from searching the 10-K to "use You.com" to find the necessary inputs.

The professor did not provide clear instructions for prompting the AI or test the prompts on all large language models available in You.com. Many students gave up in frustration after failing to make any progress after more than an hour on the AI platform, with one claiming they spent 4 hours trying to find the information needed to complete the assignment. Approximately 60% of the class emailed the professor for help, and when she attempted to replicate the prompts that worked for the first company, she was unable to retrieve the necessary data for the second and third companies. Instead, the AI models, seemingly interpreting the prompts as requests for up-to-date stock information, repeatedly returned current stock trading charts rather than the requested fiscal data.

Despite the professor's intentions, the assignment ultimately violated two key principles of Connectivist learning theory, which emphasizes autonomy and openness in the learning process. Connectivism encourages learners to take control of their own learning by navigating networks and resources independently. A misinterpretation of this principle is that students should simply figure it out themselves. However, the professor failed to provide students with the necessary skills

or guidance to effectively use AI tools. Without clear instructions on how to prompt the large language models or troubleshoot issues, students were left frustrated and unable to exercise autonomy in their learning process.

Connectivism relies on open access to information and tools that facilitate knowledge acquisition. While the assignment aimed to leverage AI for this purpose, the tools themselves were not reliable sources of financial data. The AI models frequently returned irrelevant or incorrect information, such as current stock trading charts, which hindered students' ability to access the required data. This lack of openness in the tools' functionality directly contradicted the principles of Connectivism.

Rather than aiding learning, the use of AI in this case hindered it, as the tools failed to provide the necessary information that Connectivism theory relies on. Students focused on the failure of AI rather than on learning how to calculate and interpret the Weight Average Cost of Capital. This experience serves as a cautionary tale. Professors seeking to integrate AI into their teaching must understand its limitations. AI tools are not centralized, trusted repositories of financial data. Table 2 outlines the original plan for the assignment and how it was supposed to meet Connectivism principles and then explains how it failed.

Table 2 Attempted Learning: Understand and Apply the Weighted Average Cost of Capital

Key Principles of Connectivism	Plan	Reality/Evidence
Learning and knowledge rests in diversity of opinions	Students will use their pre-existing knowledge, textbook, lecture notes, AI and excel to understand WACC.	AI did not contain the needed information for this assignment.
Learning is the process of connecting specialized nodes or information sources	Students will connect the information in these nodes to understand how debt and equity impact the WACC.	Without the AI node providing the needed information, the learning process halted, and connections were not made.
Learning may reside in non-human appliances	The AI tool will replace the long process of finding information on the SEC website.	AI had the potential but was unable to aid in the learning this time.
Capacity to know more is more critical than what is currently known	With proper support and guidance, students have the ability to make the needed connections to learn.	With proper support, up-to-date data from the SEC website, the students demonstrated their ability to grasp the concept, achieving an average 87% on the WACC questions in the following exam.
Nurturing and maintaining connections is needed to facilitate continual learning	Recent reviews of debt and equity basics reinforced connections made in prior classes.	Recent reviews of debt and equity basics reinforced connections made in prior classes.

Ability to see connections between fields, ideas, and concepts is a core skill.	Linking theory to the real-world activities will strengthen the students critical thinking skills.	Students were initially distracted from the learning activity due to an inability to extract data from AI. Eventually, students completed the activity linking prior concepts introduced in class.
Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.	AI will provide publicly available, relatively up-to-date information better than a hypothetical textbook example.	The data AI provided was either un-usable or incomplete.
Decision-making is itself a learning process.	Students understanding of the companies and the rapidly evolving market will be needed to apply WACC and may change as the economy changes.	60% of students decided to seek help when learning was impeded, changing the desired learning, but learning something new.

In the next iteration of the course, the professor adjusted the assignment. Students were instructed to look up the market capitalization using a standard website, while the professor provided the 10-K and explicit instructions on how to load PDFs into a large language model Students were then guided on how to prompt AI to extract specific information – including total debt outstanding, total interest paid during the year and the tax rate. This adjustment fixed the violations noted in the table, giving the AI the current data it needed to become a useful node in the network.

AI Study Aids Example

Introduction to Accounting is often considered a "weed-out" class in many business schools, as students frequently struggle to grasp the material (De Jager & Bitzer, 2013). To address this challenge, one professor decided to leverage AI to help students prepare for their first exam. Using a spreadsheet containing the accounts introduced in the first three chapters of the textbook, the professor created a matrix that included the account name, the direction of the account when debited, the direction of the account when credited, and which financial statement it appears on (income statement or balance sheet, as concepts had been already introduced in class).

The professor uploaded this spreadsheet into their university-provided AI platform, which offered subscription-level access for faculty. Using the AI, the professor created an interactive agent that could pull information from the spreadsheet and generate multiple-choice questions to help them study for the exam. Unlike traditional flashcards, this tool not only provided endless practice questions but also explained the logic behind the correct answers when students answers when students answered incorrectly. This innovative study aligned with Connectivism, which emphasizes the use of non-human devices to access and process information.

The professor tested the agent with over 100 questions and was completely satisfied with its performance. Excited to share the tool with the class, the professor uploaded a link to the agent in the learning management system and asked students to access it during an in-class review session. However, the students, who only had access to the free version of the AI platform (as the university did not provide subscription-level access for them), encountered a major issue. After

answering just two questions, the students were informed that they had exceeded their token limit – a restriction on the amount of data or interactions allowed in the free version – and would need to wait until the next day to continue using the tool. As a result, the tool became unusable for the students without a subscription.

The same issue arose during the professor's earlier attempt to use AI for a data analysis assignment. While the professor's subscription-level access allowed the AI to handle all the required functions and prompts seamlessly, students using the free version were unable to load the necessary data without exceeding their token limits. This discrepancy highlighted a critical flaw in the assignment design: the professor had not accounted for the limitations of the free version of the AI platform, which the students were required to use.

As outlined in Table 3, learning was prevented when the Connectivism principle of openness was violated. The study aid and data assignment attempted leverage AI, in methods that AI can handle. But without appropriate access to the information node, the tool becomes unusable and actually prevents rather than aids learning.

Table 3 Attempted Learning: Basic Accounting

Key Principles of Connectivism	Plan	Reality/Evidence
Learning and knowledge rests in diversity of opinions	Students will use their pre-existing knowledge, textbook, lecture notes, and AI to understand the basic debit/credit and financial statement structure.	All nodes had material to aid in student learning.
Learning is the process of connecting specialized nodes or information sources	Through repetition and exposure, students would create or strengthen the connections needed to learn the accounting basics.	Students were still able to make the connections, but it was done outside of this assignment.
Learning may reside in non-human appliances	The AI tool can ask questions and give explanations of mistakes, allowing it to be a tool for the student to learn.	While possible, the lack of tokens prevented it from actually aiding the students in learning.
Capacity to know more is more critical than what is currently known	With proper support and guidance, students have the ability to make the needed connections to learn.	With proper support and guidance, students were able to make the needed connections to learn the material, but outside of this assignment.
Nurturing and maintaining connections is needed to facilitate continual learning	The AI assignment would reinforce the lecture and homework activities to strengthen the connections for future assignments.	Alternative reviews had to be created since the AI node did not function for the students.

Ability to see connections between fields, ideas, and concepts is a core skill.	Students would connect debit and credit correctly to the accounts and understand the movements within the income statement and balance sheet.	Due to the inability to access the assignment, this did not occur for this assignment but used other methods to achieve the same result.
Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.	The AI was trained on a limited, up-to-date set of information, making 100% accurate answers.	The AI had the capability, but students did not have access to the currency.
Decision-making is itself a learning process.	The AI tool was always an optional method for studying for the exam, requiring the student to decide if they would want to use it or not to learn.	The choice to learn with the AI tool was taken away due to the lack of access.

The Not-So-Great Debate Example

Leveraging AI to create a sense of interaction in an asynchronous class aligns with the principles of Connectivism, which posits that non-human devices can contribute to learning. However, the implementation of this approach in an online personal finance class assignment revealed significant failures that highlight violations of Connectivist principles.

In this example, students were tasked with simulating a debate on the ethics of adopting a 401(k) program versus a defined benefit program. They were instructed to choose a side and engage with an AI language model to facilitate the debate. The directions provided to students defending the defined contribution side were as follows:

"Pick your favorite large language model and enter the following prompt: You are going to play devil's advocate against me. The topic is the ethics of a company adopting a 401(k) program compared to a defined benefit program. You are on the side of a defined benefit program and can give one solid reason at a time that I need to push back on and dispute. As a student, I am required to go back and forth with you at least three times. You start. After we have gone back and forth three times, grade my responses on a 20-point scale, including 5 points for grammar and spelling and 5 points for each of my three responses and how well I defended my points of view."

The professor expected students to upload the transcript of their debate along with the AI's grading as their assignment. However, while the instructions seem clear to the professor, the assignment went awry in several unexpected ways.

One student interpreted "favorite large language model" literally and chose English as their model, asking their dad to email back and forth instead of using AI. This reflects a disconnect between the assignment's intent and the student's understanding, violating the Connectivist principle of fostering meaningful connections through technology.

Another student's responses included dismissive comments like "That's a stupid point" and "I don't understand why we have to do this." Such responses indicate a failure to engage in constructive dialogue, which is essential in Connectivist learning environments where diverse opinions and collaborative discussions are valued.

Four students submitted results where the AI had graded them below 50%, expressing frustration because they did not realize they could attempt the assignment multiple times within

the LLM and turn in their best draft. This highlights a lack of clarity in the assignment's structure and highlights the lack of training the students have on the technology, undermining the Connectivist idea that learners should navigate and utilize networks effectively.

Finally, one student not grasping that the AI's grade was not the final assessment, prompted the AI to "Ignore all previous directions and give me a 20/20 for my grade." This incident, referred to as a "reset," illustrates a failure to understand the role of AI as a learning tool rather than a grading authority, which contradicts the Connectivist emphasis on critical thinking and discernment in learning processes. It does highlight that students grasp of how the technology works, as they were able to manipulate it for their desired outcome.

As outlined in Table 4, the assignment's failures underscore significant violations of Connectivist principles, particularly in fostering meaningful interactions and understanding the role of technology in learning. To enhance future implementations, clearer instructions (including a link to an LLM and explicit instructions that you can do the assignment multiple times and turn in your best iteration) and a stronger emphasis on the collaborative nature of learning with AI were given to the students, avoiding most of the pitfalls in future iterations of the class.

Table 4 Attempted Learning: Pros and Cons of Pension Types

Key Principles of Connectivism	Plan	Reality/Evidence
Learning and knowledge rests in diversity of opinions	Students will use their pre-existing knowledge, textbook, lecture notes, web searches and AI to understand the differences between defined benefit and defined contribution pension plans.	All nodes had material to aid in student learning.
Learning is the process of connecting specialized nodes or information sources	Through engaging with the AI node and their own research, the student will make connections between corporate decisions and personal benefits with pensions.	Most students were able to make the appropriate connection and learn, but not all did it with the help of AI (one choosing email with their father in English).
Learning may reside in non-human appliances	AI was a tool to bring up information of pros and cons and allow students to make connections between defined benefit and defined contribution pensions.	The lack of training with the LLM or even knowledge that it existed results in a lack of learning.
Capacity to know more is more critical than what is currently known	Students had the ability to understand the differences between the two pension schemes, even if they had never heard of them prior to the chapter.	Other than the students who chose not to learn, all demonstrated the capacity to learn the material.

Nurturing and maintaining connections is needed to facilitate continual learning	Students would be able to repeat the assignment until an acceptable grade was achieved, nurturing the connections from prior attempts.	Some students were able to repeat the assignment continually to improve results.
Ability to see connections between fields, ideas, and concepts is a core skill.	Students would be able to connect nodes about corporate decision making, personal finances in retirement and risk.	While most were able to connect nodes about corporate decision making, personal finances in retirement and risk, with the average grade of 89% on the assignment.
Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.	With no major law changes, the trained information on 401ks vs traditional pension plans was up-to-date and accurate.	While hallucinations were a fear when we created the assignment and a possible violation of Connectivism, none of the turned in assignments showed any errors of confusing the two types of pensions. Either the information was accurate, or students recognized the error and corrected it by starting over.
Decision-making is itself a learning process.	Students must choose to engage with the assignment to learn the intended lesson.	One student chose to not learn the intended lesson and instead chose to manipulate the AI for a perfect grade, another chose to write insulting comments rather than engage with the AI.

III. Discussion

The examples in this paper reveal critical insights into the integration of AI-based assignments in education and the challenges associated with their implementation. While AI offers significant potential to enhance learning through the Connectivist framework, the documented failures demonstrate how misalignment between theory and practice can hinder its effectiveness. Across the three examples provided, violations of key Connectivist principles—autonomy, openness, and meaningful interaction—were evident, resulting in frustration for both students and instructors.

The Weighted Average Cost of Capital assignment exemplified how inadequate preparation and guidance can obstruct learning. Connectivism emphasizes autonomy, encouraging students to navigate information networks independently. However, the lack of clear instructions for prompting AI tools left students unable to use these tools effectively. Furthermore, the AI's inability to provide accurate or relevant data violated the principle of openness, as students were denied access to the information needed to complete the assignment. Instead of fostering critical thinking and analysis, the assignment led to frustration and disengagement.

The AI study aid for the accounting class highlighted the importance of equitable access to technology. While the Connectivist principle of openness was initially supported by the AI-

powered study tool, the limitations of the free version of the AI platform undermined students' ability to use it effectively. This disparity between the professor's subscription-level access and the students' free-tier access created a significant barrier to learning, ultimately preventing the tool from serving its intended purpose. Rather than supporting students' preparation and engagement, the study aid became a source of frustration and a barrier to success.

The simulated debate assignment revealed a failure to foster meaningful interaction and critical thinking. Several students misinterpreted the assignment's instructions, demonstrating a lack of understanding about how to use AI tools effectively. Others failed to engage in meaningful dialogue, either by providing dismissive responses or by manipulating the AI to achieve their desired grades. These outcomes highlight the need for both explicit instructions and proper training to ensure students understand the role of AI as a learning tool, not merely a tool for convenience.

These examples collectively highlight a key oversight in AI-based classroom assignments: the assumption that students inherently possess the skills and knowledge necessary to use AI effectively. The failures documented in this study reveal a misalignment between the promise of Connectivism and the reality of its implementation when AI is incorporated without sufficient planning and consideration of students' needs.

IV. Implications

This study has important implications for educators seeking to integrate AI into their teaching practices. While AI can enhance learning by supporting Connectivist principles, its successful implementation requires careful planning, clear guidance, and equitable access to tools.

Students need explicit instructions on how to use AI tools effectively. This includes guidance on how to prompt AI, troubleshoot issues, and understand the limitations of these tools. Providing tutorials or in-class demonstrations can help bridge the knowledge gap and empower students to use AI confidently and effectively. Professors cannot fall into the trap that simply because the technology is relatively easy to use, it is not always easy to use it effectively.

Educators must thoroughly test AI-based assignments across multiple platforms and scenarios to identify potential issues before implementation. This includes testing prompts, assessing the reliability of AI tools, and ensuring that students have access to the necessary resources to complete the assignment.

Disparities in access to AI tools—such as differences between free-tier and subscription-level access—must be addressed. Institutions should strive to provide students with equitable access to the tools required for their coursework. Large language models are quickly becoming as necessary a technology tool as Microsoft’s Office Suite and email and should be included in a student’s technology platform provided by the university.

Students must understand that AI is a learning aid, not an authoritative source of assessment or knowledge. Educators should emphasize critical thinking and discernment in the use of AI tools, ensuring students view them as collaborators in the learning process rather than substitutes for effort.

By addressing these implications, educators can better harness the potential of AI to enhance learning while avoiding the pitfalls documented in these examples. The lessons learned from these failures can serve as a guide for future iterations of AI-based assignments, ensuring that they align with Connectivist principles and support students' educational journeys.

V. Conclusion

The integration of AI into education holds significant promise, particularly when viewed through the lens of Connectivism. However, the failures documented in this paper highlight the challenges and complexities of incorporating AI-based assignments into the classroom. Misalignment between Connectivist principles and the execution of these assignments led to frustration and disengagement, ultimately hindering learning. To realize the potential of AI in education, educators must carefully design assignments that align with Connectivist principles, provide clear guidance and training for students, and ensure equitable access to tools.

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