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**RESEARCH ARTICLE**

# AI-Assisted Academia: Unveiling Doctoral Students' Perspectives on Dissertation in Practice Innovation

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| ARTICLE INFO | ABSTRACT |
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| | This action research study explores 73 doctoral students' perceptions of using Generative Artificial Intelligence (GAI) throughout their research journey in one educational doctorate (Ed.D) program. The first phase employed surveys, while the second incorporated semi-structured focus group interviews based on the survey data from a diverse sample of students across educational disciplines currently enrolled in the university's educational leadership doctoral program. In the study's first phase, the survey quantified educators' familiarity with, attitudes towards, perceived challenges, ethical considerations, and benefits of using GAI in doctoral research. The exploration of GAI in this practitioner-inspired doctoral program has uncovered essential insights into integrating emerging technologies in advanced academic settings. This study has highlighted the complexities and considerations accompanying the use of GAI tools in doctoral research, underscoring the need for a balanced approach aware of both the advantages and the challenges inherent in their adoption and offers possible solutions to increase ethical usage of GAI. |

## 1. Introduction

Generative artificial intelligence (GAI), Large Language Models (LLMs) or Generative AI tools change the calculus of knowledge work automation; their ability to produce human-like writing, images, audio, or video in response to plain English text prompts means that they can collaborate with human partners to generate content that represents practical work (Pavlik, 2023). GAI has evolved tremendously since the inception of the 1950's. The first real example of machine learning is thought to be an invention called Theseus by inventor Claude Shannon, who declared his "toy" could traverse through complex mazes using "artificial intelligence" (Mollick, 2024). Others including scientist Allan Turning and

Massachusetts Institute of Technology professor John McCarthy began to postulate that artificial intelligence could be used to program computers to solve logic problems (Mollick, 2024). By the late 2010's artificial intelligence was being used to complete single tasks, i.e. voice recognition – speech-to-text; recognize faces, and predictive AI which can assist with supply chain and demand. According to Ethan Mollick (2024), University of Pennsylvania business professor and GAI expert, states this General Purpose Technology (GPT) is a once in a lifetime technology advancement similar to the steam power or the internet (p. xv). Mollick posits that this technology will be integrated across all industries and be part of all aspects of life. Other types of technology such as computers or cellular phones

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have taken decades to become mainstream. However, GAI, LLMs have taken only a few short years to become very efficient and utilized in many industries (Mollick, 2024).

This innovative technology has transformed many industries, and recently, GAI has disrupted the educational landscape as it was previously perceived, especially that of academic research (Wong, 2024). Ethical considerations including privacy, malefeince, equity, and pedagogical appropriateness should be considered (Adams et al., 2023). Professors express the need to revamp their courses to make the "AI proof as students just use the tool to answer their assignments and have not fully digested the content. Sixty percent of educators globally say GAI literacy will be an essential ability for employment soon (Lee et al., 2024). At publication of this article, it is reported (Mortensen, 2024) that there are approximately 180.5 million users of ChatGPT, and that ChatGPT is drawing 100 million users per week!

As with many sectors of academia, such is posited in medical research and writing GAI has increased in popularity and should be adopted as a viable method for research and writing (Golan et al., 2023). GAI has also gained tremendous momentum within the doctoral community (Chan, 2024). Could the use of these tools enhance the dissertation research process? What are the implementation and ethical considerations? The purpose of this study is to explore doctoral students' perceptions of using GAI throughout their research process at one Ed.D. practitioner doctorate-inspired university. Generative artificial intelligence can be useful through multiple facets including brainstorming, acquiring peer reviewed articles, and data analysis (Owoahene Acheampong & Nyaaba, 2024). While it can enhance the level of research a doctoral student can conduct, there are a few delimitations including ethical practice and accuracy (Lund et al., 2023).

### *1.1.* Background

All higher education programs have been altered with the onset of GAI as a writing and research "assistant" in the fall of 2022 (Chan, 2024). This current university educational doctorate program is no different. This study takes place at a small private, non-profit institution located in the southeastern United States and is part of an educational doctoral consortium that seeks to distinguish itself from Ph.D. programs. This Ed.D. program is considered a practitioner's doctorate, and most students are already working in the field of k-12 or higher education and are looking solve "problems of practice" in their day job using "improvement science" or action research.

In the spring of 2023, the university's teaching excellence committee and GAI taskforce provided professors with four different suggested statements to add to their syllabi. The suggested statements include: No GAI use, GAI permitted on designated assignments, GAI permitted as a brainstorming tool, and GAI encouraged. The GAI taskforce also provided

explanations for each GAI demarcation. In addition, the taskforce created professional development opportunities for the faculty to explore GAI and discuss the implementation in different fields of study. These professional learning communities (PLCs) offered faculty early adoption suggestions. These PLCs continue to evolve to include cutting edge enhancements to GAI.

The college of education has embraced the last syllabi statement (GAI is encouraged) and has included it at all levels (undergraduate, graduate, and doctoral). The epistemological lens of this institution's education professors is, "you better embrace it and learn to use it, otherwise you will become obsolete. "Your students will be using it, so you better know how it works so you can teach them the correct and ethical way to use it!" The professors that teach in the doctoral program all express encouragement in using GAI and discuss those ethical uses which include but not limited to, using GAI as a writing improvement tool, a third investigator to analyze the data, brainstorming partner to get unstuck writing. Two professors (authors of this article) have modeled how to use GAI on dissertation work and created assignments that require its use, while reiterating the ethical uses.

The current cross-sectional two-phase mixed method action research seeks to uncover the essence of GAI implementation by doctoral students in this university. In the first phase the researchers sent out emails to all doctoral students in six different cohorts currently enrolled in the university's educational doctorate program. At the end of the survey, participants were asked if they would like to participate in a focus group to discuss the survey's findings. The study's second phase included focus groups to discuss the survey results.

### *1.2.* Theoretical Framework

This research investigation is anchored in the Technological Acceptance Model (TAM) as articulated by Davis in 1989. The Technological Acceptance Model (TAM), introduced by Fred Davis in 1989, is a theoretical framework used to understand how users accept and use technology. It posits that two primary factors—perceived usefulness (how a technology improves performance) and perceived ease of use (how effortless it is to use)—influence an individual's intention to use a system and their actual usage behavior. TAM has been widely applied in studies of technology adoption to predict and explain user behavior regarding various technologies. Its simplicity and adaptability have made it a foundational model in technology acceptance research.

This framework is pivotal for examining how doctoral students perceive and integrate Generative Artificial Intelligence (GAI) tools throughout the various phases of their dissertation work—identifying their problems of practice, designing their research methodology, and in the analysis and presentation of their findings. TAM posits that two primary

factors—perceived usefulness and perceived ease of use—determine an individual's intention to use technology, which in turn affects actual usage behaviors (Baytak, 2023; Davis, 1989).

In the context of this study, perceived usefulness directly correlates with the doctoral students' recognition of GAI as a potent tool for enhancing the rigor and breadth of their research through sophisticated data analysis capabilities, access to extensive literature, and streamlined synthesis of complex concepts. Perceived ease of use, meanwhile, pertains to the user-friendly nature of GAI platforms which can significantly reduce the cognitive load of doctoral candidates, allowing them to focus more on creative and critical aspects of their research.

Given the transformative implications of GAI highlighted in recent studies—such as those by Chan (2024) indicating a rapid adoption among educators—this model aptly frames our exploration into how doctoral students navigate the integration of these advanced technologies in academic settings fraught with both ethical concerns and the pressure to produce high-quality scholarly work.

Moreover, the TAM is extended by integrating insights from the social psychology's Theory of Reasoned Action (TRA) to understand the social and normative pressures that influence students' technology adoption decisions (Ajzen & Fishbein, 1980; Fishbein, 1967, 1980; Fishbein & Ajzen, 1975). These theories collectively provide a robust analytical lens to dissect the behavioral intention behind GAI usage, addressing the overarching problem of practice: the need to balance technological efficacy with ethical considerations and academic integrity in doctoral research.

The significance of this study lies in its integration of the Technology Acceptance Model (TAM) and the Theory of Reasoned Action (TRA) to explore the behavioral intentions behind Generative AI (GAI) adoption in doctoral research. This approach highlights how social and normative pressures shape technology adoption while addressing critical issues related to balancing technological efficacy with ethical considerations and academic integrity. Similar studies have examined technology adoption behaviors using TAM and TRA frameworks. For example, Venkatesh et al. (2018) extended the Unified Theory of Acceptance and Use of Technology (UTAUT) to incorporate consumer technology acceptance factors, providing a robust model for analyzing technology usage intentions. Similarly, Teo (2019) assessed the measurement equivalence of TAM and TRA constructs in understanding students' and teachers' technology usage intentions. Recent work by Zhou and Brown (2015) explored educational technology adoption in higher education, focusing on e-learning platforms, while Alyoussef (2021) applied an extended TAM to investigate mobile learning adoption. These studies offer valuable insights into technology acceptance, and by focusing specifically on GAI in doctoral research, this study contributes to advancing both theoretical understanding and practical application in higher education contexts. This study sought to use TAM to investigate doctoral students GAI learning adoption.

## 2. Method

This study was conducted in accordance with ethical standards and approved by the Lynn University Institutional Review Board under approval number 23.14, dated January 30, 2024. All participants were provided informed consent as the first question of the survey and were not permitted to move forward in the survey unless they understood the ethical considerations and agreed to them, ensuring their voluntary participation and understanding of the research purpose, procedures, and their rights, in accordance with ethical guidelines.

### 2.1. Participants and Study Design

The study sample comprised six cohorts and 73 doctoral students from a small private university in the United States Southeast region that is a founding member of the Carnegie Project on the Educational Doctorate (CPED); which is a group of Ed.D programs that seek to distinguish themselves from Ph.D. programs. The study was approved by the university's institutional review board. This research was part of a larger study surveying all levels of education majors. Doctoral students were extracted from the larger data set for this paper and research analysis. For this study, all participants were enrolled in a doctorate program focusing on educational leadership. Participants ranged from first-year cohort members to third-year cohort members, and they all worked in the field of education, kindergarten through 12th grade, non-profit human resources, and higher education administration. Participants were selected purposefully to ensure the researchers focused on examining the perception of the institution's doctoral students' use of GAI within their dissertation process, which is the context of this study. The study employed a convenient sampling method and students self-selected to participate. The doctoral students were sent an email with the link to the survey and sent a reminder a week later. The last statement of the survey asked the participants if they would be interested in being part of a focus group in the second phase of the study to explore the survey's findings. Doctoral students also self-selected to participate in the focus group phase.

This mixed-method, explanatory, two-phase (Creswell & Clark, 2017), convenient sample, action research (Mertler, 2019) first employed surveys. Then the second phase incorporated semi-structured focus group interviews based on the survey data to gather data from a diverse sample of students across various educational disciplines currently in the educational leadership doctoral program at this private non-profit university. In the first phase of the study, the survey quantified educators' familiarity with, attitudes towards, and

perceived challenges, ethical considerations, and benefits of using GAI in education. The survey was first generated with assistance from ChatGPT (OpenAI, 2024) and tweaked by the researchers. The survey incorporated Likert-scale questions to measure experience and perception levels with GAI to include areas such as familiarity with GAI, knowledge of GAI, impact on dissertation workload, professional development, and ethical considerations to gather insights. Survey questions included, "I am familiar with generative AI technologies and their applications in education," "I keep. up to date with the latest educational AI technologies," and "I am aware of the ethical considerations involved in the use of AI for educational purposes." Likert scale choices included: strongly agree (5), somewhat agree (4), neither agree nor disagree (3), somewhat disagree (2), strongly disagree (1).

A Cronbach's Alpha was run to measure the internal consistency of the Likert scale questions on GAI perceptions. The survey instrument measured a reliability coefficient of α

= .748; numbers closer to one have "good" internal consistency; therefore, this score is considered high internal consistency (Taber, 2018). A power analysis was completed to determine the internal consistency and reliability of the sample size. The sample size confidence level was set at 0.95. The power analysis concluded that the sample set needed to be at least 31 participants for validation. There were 33 participants in the sample size confidence level was satisfied.

The age range of survey participants was 26 to 65, with ages 39 and 51 having three participants each. All participants were enrolled in the doctoral program at the small private university. Figure 1 illustrates the age range of the 31 doctoral students who self-selected to take the survey.

### 2.1.1. Demographics

Figure 1 illustrates the age range of the doctoral participants who completed the GAI perceptions survey.
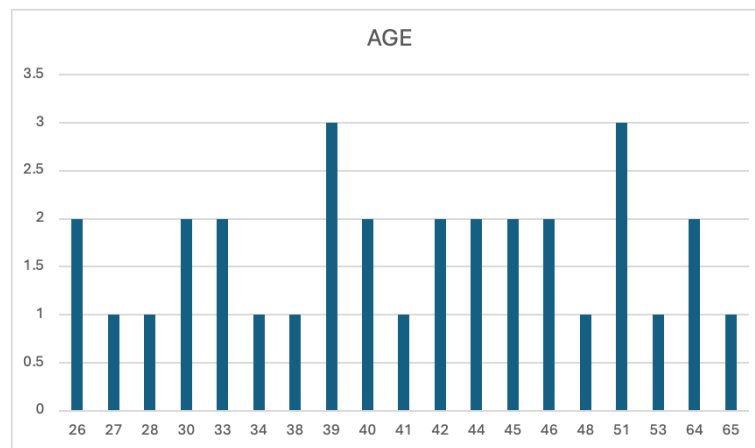


**Figure 1.** Age of doctoral participants and distribution.

The participants' years of experience in education ranged from one year to 30 years. Participants with five years of experience in education were the largest group at four with 18

years of experience representing the second largest number at three. Figure 2 illustrates the distribution of the doctoral participants' years of experience in the education field.
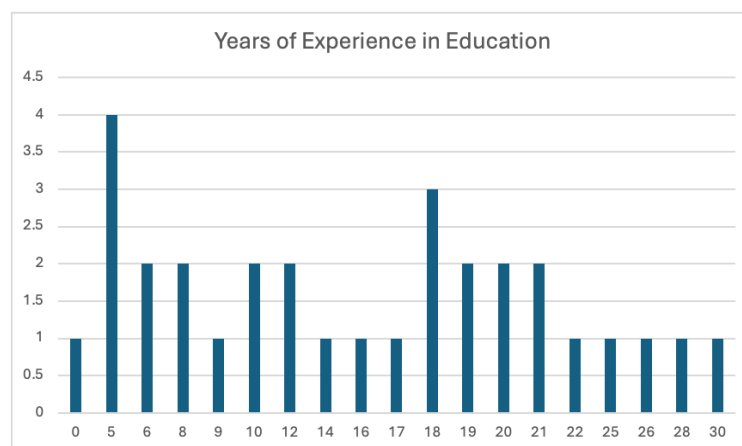


**Figure 2.** Years of experience in the education field.

In the second phase, focus group interviews provided deeper insights into educators' experiences, concerns, and recommendations for effectively incorporating GAI into their doctoral research writing. Thirteen semi-structured questions were developed by the researchers based on the survey findings. As method used by Creswell and Clark (2017), the researchers reviewed the results of the survey individually and then together and agreed upon the list of questions. The researchers were interested in discovering doctoral students' GAI perceptions of the results and how they used GAI in their doctoral courses, drafting their dissertations, and analyzing their data.

### 2.2. Data Collection and Analysis

In the first phase of the study, participants were emailed the survey link, and an informed consent form was used as the first question of the survey. The email and the informed consent outlined the research purpose, participation, anonymity, and confidentiality protocols. A week after the initial email, another message was dispatched. In the survey's final question, students were inquired whether they had an interest in discussing the application of generative AI within educational contexts, especially in relation to dissertation research, analysis, and writing, and were encouraged to get in touch with the authors if so.

In the study's second phase, the participants self-selected and emailed the researchers stating their desire to participate in a focus group. Focus groups were conducted via Zoom and the recording and transcription features were utilized. The Zoom platform stated the meeting was being recorded and transcribed and participants had to acknowledge continuing it. Verbal and written informed consent were completed for each participant in each focus group.

In phase one, the researchers used the Statistical Package for Social Science (SPSS) to complete quantitative analysis. The survey analysis included descriptive statistics and Pearson *r* correlations between age and familiarity, ethical considerations, and implementation/usage with GAI as well as years of experience in education and familiarity, ethical considerations, and implementation/usage with GAI. For phase two both researchers independently organized into codes and then trimmed down to themes (Creswell & Clark, 2017) for the two focus groups. Then the researchers compared their themes to look for common themes. The researchers then completed a third step and input each transcript into ChatGPT and prompted it to uncover three to five themes. The last step was to triangulate the survey results with the themes. For triangulation, the researchers collaborated on the essence of the meaning of the themes and the survey results. As an added step the researchers entered both sets of data into their customized research analysis ChatGPT.

## 3. Findings

### 3.1. Phase 1

In phase one, 42% of all doctoral students completed the survey. Thirty-one participants out of all 73 doctoral students completed the entire survey, and two stopped halfway through, so their data was deleted. The survey took on average four minutes and twelve seconds to complete. Not all survey questions are reported in this paper.

In the first four questions, participants were asked to evaluate their level of familiarity with GAI. Table 1 represents the means (*M*) and standard deviation (*SD*) of each question. The median of the participants' familiarity with GAI technologies was "somewhat disagree". Their keeping up with the latest developments was "neither agree/nor disagree". Their opinion on GAI enhancing learning was "disagree", while the participants could "neither agree nor disagree" on integrating GAI into their research.

**Table 1.** Familiarity with Generative AI.

| Question | N | M | SD |
|---|---|---|---|
| I am familiar with GAI technologies | 31 | 2.29 | 1.346 |
| I keep up to date with latest developments In GAI technologies | 31 | 3.26 | 1.182 |
| I believe GAI can enhance learning | 31 | 1.74 | 1.064 |
| I feel confident to integrate GAI tools into my research | 31 | 2.68 | 1.194 |

Strongly Agree=5; Somewhat Agree=4; Neither Agree/Nor Disagree=3; Somewhat Disagree=2; Strongly Disagree=1.

In the second set of questions, ethical considerations were discussed. Participants were not concerned about the ethical considerations, but did not feel prepared to address ethical considerations. Table 2 illustrates participants' perceptions of ethical considerations.

In the third set of questions, implementation, application, and productivity using GAI were addressed. While participants felt like they had received sufficient GAI training they did not believe GAI would reduce workload, nor did they think GAI would be equally accessible for all students. Participants could not agree or disagree that GAI infrastructure barriers would be an issue. Table 3 depicts the participants' perceptions of implementation, application, and productivity of GAI.

**Table 2.** Ethical considerations with Generative AI.

| Question | N | M | SD |
|---|---|---|---|
| I am concerned about ethical implications of GAI | 31 | 2.06 | 0.680 |
| I am worried about the potential misuse of GAI | 31 | 1.87 | 0.846 |
| I am aware of the ethical considerations involved in use of GAI for educational purposes | 31 | 2.13 | 0.846 |
| I feel prepared to address ethical dilemmas that may arise from using GAI | 31 | 3.06 | 1.153 |
| I am concerned that GAI could perpetuate existing bias in educational materials | 31 | 2.48 | 0.851 |

Strongly Agree=5; Somewhat Agree=4; Neither Agree/Nor Disagree=3; Somewhat Disagree=2; Strongly Disagree=1.

**Table 3.** Perceptions of implementation, application, and productivity of GAI.

| Question | N | M | SD |
|---|---|---|---|
| I think GAI can reduce the workload by automating routine tasks | 31 | 1.81 | 0.946 |
| I think GAI has the potential to improve educational outcomes | 31 | 1.97 | 0.836 |
| I have received sufficient training to use GAI | 31 | 3.77 | 1.283 |
| Ongoing professional development is necessary to educators skilled in GAI | 31 | 1.16 | 0.374 |
| I think GAI tools will be equally accessible to all students regardless of background or abilities | 31 | 2.77 | 1.230 |
| I am prepared to continually update my GAI skills | 31 | 1.84 | 1.128 |
| Integrating GAI into teaching practices will promote greater autonomy and critical thinking skills | 31 | 2.55 | 0.995 |
| I face significant technical and infrastructure barriers when trying to integrate GAI into research analysis | 31 | 2.90 | 0.908 |

Strongly Agree=5; Somewhat Agree=4; Neither Agree/Nor Disagree=3; Somewhat Disagree=2; Strongly Disagree=1.

### 3.1.1. Pearson r correlations

Pearson r correlations were conducted with length of time in education as well as age on the three constructs, familiarity with GAI, ethical considerations with GAI, and usage and implementation of GAI.

A Pearson *r* correlation analysis was conducted to examine the relationship between age and perceptions of generative AI among participants. The results indicated a moderate, negative correlation between age and positive perceptions of GAI *(r =* -.032, *p < .*05), suggesting that older participants tended to have a less positive view of GAI than younger participants.

A Pearson *r* correlation analysis was conducted to examine the relationship between years of experience in education and perceptions of GAI among participants. The results indicated a moderate, negative correlation between years of experience and positive perceptions of GAI *(r =* -.006, *p < .*05), suggesting that the longer participants had been in education, they tended to have a less positive view of GAI than younger participants. There were no significant correlations between age and GAI ethical considerations (*r =* .124, *p > .*05). There were no significant correlations between years in education and GAI ethical considerations (*r =* .468, *p > .*05). There were no significant correlations between age and GAI usage and implementation (*r =* .569, *p > .*05). There were no significant correlations between years in education and GAI usage and implementation (*r =* .756, *p > .*05).

### 3.2. Phase 2

Based on the quantitative results, the researchers conducted two focus groups. Focus Group 1 and Group 2 consisted of three participants each who took the survey. Table 5 displays the semi-structured focus group questions asked of each focus group.

### 3.2.1. Focus group participants' demographics

All focus group participants were survey participants who self-select to participate in the focus groups. Each focus group session was approximately 45 minutes long and conducted on the ZOOM platform. The ZOOM AI transcription device was utilized in addition to the ZOOM recording feature and an additional iPhone memo recording application. All participants signed an informed consent and emailed it back to one of the researchers. The participants were then asked if they had any questions about the interview. All participants' first language was English. The focus group semi-structured questions were shared on the screen, and the researchers alternated reading the questions to the group. The demographics of each focus group member are represented in Table 4. It should be noted that all names are pseudonyms.

**Table 4.** Focus group demographics.

| Focus Group # | Profession Level | Position |
|---|---|---|
| **Focus Group 1** | | |
| Destiny | K-12 | Education Consultant |
| John | 9-12 | High School ELA Teacher |
| London | K-8 | Charter School Principal |
| **Focus Group 2** | | |
| Calbert | K-5 | Public Elementary Principal |
| Jasmine | K-5 | Public Elementary Principal |
| Paula | Higher Ed. | Higher Ed Staff |
| Sara | K-5 | Public Elementary Teacher Leader |

**Table 5.** Focus group questions.

| |
|---|
| 1. What is your experience using Generative Al (Gen AI) with your dissertation work |
| 2. How do you feel Al tools impact the quality and efficiency of your research? |
| 3. If you are using Gen Al on Gen Al which platforms, are you using, and why? |
| 4. From the survey we found there was a correlation between age and use of GenAl, in other words, the older someone was the less enthusiastic they were to the use of GenAl, why do you think we received this result? |
| 5. From the survey we found there was a correlation between the number of years in education and use of GenAl, in other words, the longer the participant was in education the less enthusiastic they were to the use of GenAl, why do you think we received this result? |
| 6. Even though the mean average was 2.29 (disagree) for being familiar with Gen Al the mean average for keeping up to date with the latest developments with educational Al was 3.26 (agree) - why did we receive this result? |
| 7. We received a disagree - strongly disagree mean average (1.47 M) for believing that GenAl can enhance learning experiences. Why did we receive this result? |
| 8. While we received low means for knowing about and using GenAl we received a mean score 2.09 for participants being concerned about the ethical considerations of using Al in dissertation writing. Why did we receive this result? |
| 9. Participants on average (1.81 M) disagreed that GenAl can reduce the workload of educators by automating routine work. Why did we receive this result? |
| 10. Participants are not worried about the potential misuse of Gen Al in doctoral work - they disagreed with being worried (1.87 M). Why did we receive this result? |
| 11. Participants feel prepared to address ethical dilemmas (3.6 M) and agree (3.77 M) they feel they have received sufficient training to use Gen Al |
| 12. Can you describe any specific instances where Al has either supported or hindered your research? How? |
| 13. Is there anything else you would like to share regarding using GenAl in your doctoral program and dissertation writing and analysis? |

### 3.2.2. Researcher focus group observations

Focus group one took place on a Saturday afternoon after many participants had completed their doctoral class for the day. Focus group two was conducted on a Sunday afternoon after the students' doctoral classes had finished for the weekend. It was observed that a few participants took this opportunity to learn more about GAI as they stated they had either not used it or used it very little, such as writing difficult emails for work. The conversations were robust and thought-provoking. Even though both researchers were the participants doctoral program professors, the participants seemed open and honest about their feelings and usage of GAI.

### 3.2.3. Themes

After the researchers completed their individual organizing, coding, and then generating into themes, they consulted with each other and had comparable results. They then input the transcriptions into ChatGPT 4.0 and received related results. There was consensus with the researchers' essence of the transcripts as well as with ChatGPT. Table 6 displays the themes that were discovered.

**Table 6.** Focus group themes.

| |
|---|
| 1. You still have to research |
| 2. Freeing up brain power – your personal assistant |
| 3. Stay in the know |
| 4. Is it cheating? Be ethical! |
| 5. Fear of the unknown |

### 3.2.3.1. "you still have to do the research!"

When asked about their perceptions of GAI, several participants mentioned that you cannot rely on all the information it puts out. For example, John stated, "*Not all the information it spews at you is correct. As a researcher and a student, you have to go back and verify that research. I'm not just going to use AI just to write a paper for me. You have to be able to articulate the research and understand what it means*" John continued, "*I stopped using some platforms because they were continuously not efficacious and accurate. You can't just take AI and be like, Oh, my God! This is the Holy Grail! No, you have to literally have to open up the files and read what it's trying to tell you*!" John added later, "*I ask AI to prove to me how it is correct, and then it tells me it is my job, do some research*!" Later John stated, "*I never knew certain concepts until AI exposed it to me, then I go back and review videos, documentaries, and journal articles to see if it is correct.*"

Sara added, "*It can be jargony, some of the language can be flowery and over the top and it is like, no, no, no! Like you took it to another level*!" Calbert added, "*I don't know about the*

*quality of the response. I would venture to say it would be based on which app you are using and how you word your prompt.*"

### 3.2.3.2. "freeing up brain power-your personal assistant"

Sara suggested, "*that using AI in her writing for grammar checking, proper tense writing helps because you are freeing up brain power to dig deeper into some of my dissertation topics.*" Calbert stated, "*when a member of our school family passed away and I was so emotional about his passing, that it was hard for me to find the words, where I am usually pretty good. So, I used ChatGPT.*" Paula commented, "*I think from a doctoral research standpoint, for example critical thinking skills, sometimes getting to the answers and responses as fast as possible skips over some of the brain process. I liked the transcript exercise we did, it can be pretty tedious to go through some of the double checking of conversations that we record and allowing AI to help us transcribe – that can be time consuming, and AI helps.*"

Calbert shared*, "there was a critical assignment to do for one of classes, I was working with a partner, and we had to present a new idea, such as our dissertation product, at a school board meeting specifically to the school board members and we did not know where to begin. We watched old school board meetings, and my partner said let's ask ChatGPT to help us and give us an outline of suggestions to use in our presentation to the school board. We bounced ideas off of each other and Chat and we were like, it gave us a different viewpoint that we had not come up with, it was beneficial."* London added, "*So I actually use it a lot, one of my responsibilities is to gather all the school data and present it. I use it to help me look for individual gaps, what could have taken me over two hours to analyze took less than five minutes.*"

London stated*, "I use AI to help with grammar, rewrite a statement, find a better word to express what I really want to say."* John added, "*So my use of AI on my dissertation work, I consider it a personal assistant. I use it when I have writers block, or to detect any bias, or and weakness in my argument, or to offer multiple perspectives, I also dialogue with it to see if what I am doing is wrong or detrimental to society. It also helps me with citations and references, my APA formatting. I wish I had thought it for my dissertation product creation!*" John continued, "*I think it is great for mental health; if you are an introvert and you don't like bothering people, you have a robot right here that is not going to suck you dry! You don't have to be scared to talk to it, it'll talk right back!*"

### 3.2.3.3. "stay in the know"

Calbert explained, "e*very time my child comes home from college, she's got four or five new technology tools I have never heard of. So, I try them out; so, I do think I am keeping up with what is new and try to embrace it. We all going to be exposed to this at a rapid pace, the more you know, the more you grow.*"

Sara added, "*I know for me, the first time, the only time, I have heard of AI is in the doctoral program.*"

Destiny stated, "I *think people need to be properly trained to use AI or developed to use it. Have someone walk you through the steps would be beneficial.*" John, commented, "*it is another thing we need to learn that is added to our plate.*" John added, "*I have not had sufficient training to use generative AI, I am the one who trains myself. I am grabbing other YouTubers and TikTok's and visualizing other experiences and incorporating it into my own.*"

### 3.2.3.4. "is it cheating? be ethical!"

Calbert retorted, "*I've worked so hard, I've read so many books, I've been to so many libraries to get myself to this level of knowledge, and for me to put out a summary, statement, or email takes heart, blood, sweat, tears, years of knowledge and experience! And to have someone who's just starting out speak into a phone and get something comparable is offensive!*" Paula added, "*I know there are instances where students will cheat, and they copy from each other, and I think this is a quick shortcut; I think AI can be seen like that."* Calbert continued, "*I am definitely concerned about copywriting anyone's work, I don't want to take something and not give credit to that person, that source whoever came up with this that's literally not me! And then I worry, if I am doing this, what are other people thinking?*" Sara chimed in, *for me, in this journey of trying to use AI more and being open about it, there is still this lingering about the ethical implications. And is it cheating? Is it plagiarism? Copyright infringement? That ethical dilemma is present.*" Calbert added, "*once you reach this level of education, a doctoral student, has a strong moral and ethical code that you stand by and live by. No one is just trying to get a degree, that would be flippant and lackadaisical at this point.*"

Destiny shared, "*I was introduced to AI from a negative lens. I remember one of my family members saying, oh I don't have to write my paper, I just extracted it from Quillbot, and he went into the other room and came back immediately and said I am done! And I was like, oh, okay so this is for lazy people! Right? I do not want to be known as a lazy person; I want to be known as a hardworking Black woman who is trying her best to get to the end of her dissertation!*" John commented, "*So far, using AI, I'm experiencing a duality with it. It's good and it is also bad.*" John exclaimed, "*It's just a gift and the curse of the human experience that we're experiencing! The cheating has evolved!*" London added, "*I can't take this, this is not my work, that is what I struggle with. I would hate to take something and submit it because it is not my work.*" John added, "*yes, I am figuring out my own moral compass with this. I play devil's advocate with AI. So, I have a full dialogue like I am Socrates or something!*"

### 3.2.3.5. *"fear of the unknown"*

Jasmine stated, "*I think some generations are more comfortable with using technology that others as well as learning new technology, I think some people are just very comfortable with the technology that they're familiar with and not willing or open to try new technologies.*" Calbert added to that conversation, "*The older you are, you're appreciating the little things. And you know you only have so many years left like why do you have to dive into it?*" Paula added, "*I also think it might be the fear of the unknown. Like the way that technology has been misused, for example it can really put someone on edge or make them uneasy about trusting something that can be manipulated.*" "*I also think we found a technology we like and that really works, and now all of sudden we have to use something else, it can be overwhelming,*" exclaimed Jasmine. Sara added, "*It is a learning curve, I see it with our older cohort members. You can definitely see the adaptability gap.*" Paula added, "*I think there's still uncertainty about like, how it is going to uphold our trustworthiness of the work we are doing.*"

London commented, "I *feel that it is the fear of the unknown, with the refusal of individuals to make these transitions to understand AI and the lack of training.*"

## 4. Discussion

The exploration of generative artificial intelligence (GAI) tools within the specific context of this practitioner Ed.D. focused doctoral program unveils a unique interplay between innovation and traditional academic rigor. The participants of this study, doctoral students engaged in this program, provide insights that reflect a microcosm of the broader academic community's engagement with emerging technologies. Aligning with the principles of the Technological Acceptance Model (TAM) and the Theory of Reasoned Action (TRA), this discussion explores the specific contours of GAI utilization within this program, focusing on its perceived utility, ethical considerations, and the nuances of technological adoption amongst its cohort (Davis, 1989; Fishbein & Ajzen, 1975).

### *4.1.* Academic Enhancement within the Doctoral Program

While survey results suggested the doctoral students did not believe the use of GAI would be beneficial in their research, in the focus groups, they did identify notable advantages of integrating GAI into their research practices within this program's parameters. GAI has led to improved data analysis capabilities, providing an avenue for enhanced academic inquiry and a more nuanced examination of complex educational leadership challenges. This finding resonates with prior research, which highlights the transformative potential of GAI in enhancing academic workflows, especially for tasks that require sophisticated data processing and literature synthesis (Lee et al., 2024). The capacity of GAI to offer expedited access

to a wealth of scholarly literature has been particularly valued in a program emphasizing the integration of theory and practice. As supported by Chan (2024), GAI tools like ChatGPT have demonstrated the ability to integrate complex theoretical frameworks into actionable insights, aligning with TAM's construct of perceived usefulness (Davis, 1989).

Equally important is the "perceived ease of use" that GAI provides, which has been embraced by the students in this program. The simplification of labor-intensive tasks, such as organizing citations or summarizing articles, allows them to allocate more time and mental energy to the creative and analytical aspects of their dissertations. These findings align with the research by Baytak (2023), which underscores the role of ease of use in fostering greater acceptance of generative AI tools among students. In a program that prides itself on fostering innovation, product development, and practical impact through scholarly work, such efficiencies are invaluable (Teo, 2019).

### *4.2.* Ethical Considerations in the Doctoral Context

Survey findings found that the doctoral students were not concerned with the ethical considerations, however, the focus groups disagreed with those findings. The deployment of GAI in this doctoral program has not been without ethical dilemmas. Focus group participants voiced substantial concerns about the potential misapplication of GAI tools, such as reinforcing biases in educational resources. These concerns mirror findings in the literature, where issues such as the potential for bias and ethical misuse of AI-generated content have been highlighted as key challenges (Lund et al., 2023). This doctoral program, with its focus on producing educational leaders who are ethical, solution-oriented, and reflective practitioners, has found these concerns particularly resonant. The TRA's perspective on social pressures and normative beliefs informs the program's emphasis on ensuring ethical AI use, ensuring doctoral candidates are equipped to make informed decisions about technology use that align with their professional and ethical standards (Fishbein & Ajzen, 1975; Zhou & Brown, 2015).

### *4.3.* Generational Dynamics and Technological Engagement

In this doctoral program, the varying degrees of enthusiasm for GAI tools underscore a generational divide, with more experienced students displaying greater skepticism. The older the doctoral student was the less likely they were to feel comfortable using GAI. The same finding held true for the longer the survey participant was in education the less likely they were to use GAI. The focus group participants concurred these results. These findings align with research by Wong (2024), which identifies generational differences as a significant factor in the adoption of emerging technologies in higher education. This suggests a need for tailored approaches to technology integration that address the specific concerns and

training needs of different age groups within the program. The hesitance observed among some older students underscores the necessity of providing clear guidelines and robust support systems to ensure that all cohort members can confidently utilize GAI tools to complement their scholarly pursuits (Venkatesh et al., 2018).

In tailoring the integration of GAI to this practitioner doctoral program, it is crucial to foster an environment where technological fluency is seen as complementary to, rather than a replacement for, traditional academic expertise. Bridging the generational gap in technological adoption will require concerted efforts to demonstrate the relevance and benefits of GAI. As noted by Alyoussef (2021), structured support systems can significantly enhance the likelihood of successful adoption by addressing users' specific concerns and providing practical, accessible training. Ensuring that all doctoral students, irrespective of their prior experience, can engage with these tools as competent and ethical scholars will strengthen the program's emphasis on innovation and academic rigor.

### 4.4. Discrency between Survey and Focus Group Findings

It should also be noted that the surveys indicated a generally positive perception of GAI, particularly its utility and ease of use. However, focus group discussions revealed a more nuanced or critical perspective on GAI, including ethical concerns such as bias, plagiarism, or misuse of AI tools. Surveys often yield quantitative or surface-level responses, as participants tend to answer quickly or within structured limits. Focus groups, in contrast, allow participants to elaborate on their concerns, offering richer and more reflective insights (Golan et al., 2023). The focus group participants choose to speak further to the researchers as they were very interested in GAI and the survey findings. They also suggested that some of their fellow doctoral students did not completely understand the survey questions. The discrepancy between the survey results and focus group findings underscores the complexity of GAI adoption in the doctoral program. While quantitative surveys reflect widespread acceptance based on GAI's utility and ease of use, the qualitative focus groups highlight underlying ethical concerns, such as bias and academic integrity. These insights emphasize the importance of a balanced approach that

integrates GAI tools responsibly while upholding ethical and professional standards (Baytak, 2023; Lund et al., 2023).

### 4.5. Limitations

While the study provides meaningful insights into GAI use within this doctoral program, it is not without its limitations. A significant factor to consider is the researchers' prior acquaintance with the study's participants, which could have influenced the responses. Participants might have consciously or unconsciously provided answers they believed the researchers anticipated, potentially leading to response bias.

Also, despite the absence of coercion, the relationship between the researchers and participants might have implicitly influenced students' willingness to participate, potentially affecting their responses' candor. Participants may have understated or overstated their use of GAI based on perceived expectations or social desirability. This dynamic might have led to a reticence to fully disclose their reliance on GAI tools, skewing the data towards socially acceptable responses or perceived norms within the program.

An additional limitation is the small sample size; the inferential correlations should be interpreted with caution and may not be generalizable.

### 4.6. Recommendations

#### 4.6.1. Recommendations for practice

Considering the findings from this investigation into the use of generative artificial intelligence (GAI) within this specific doctoral program, several practical recommendations emerge. These are tailored to enhance the integration of GAI in ways that preserve academic integrity, foster ethical use, and acknowledge the diverse perspectives of the doctoral cohort.

First, it is advisable to establish a formal protocol for GAI use within the doctoral program that addresses ethical considerations explicitly. This protocol should include guidelines for proper attribution, avoiding plagiarism, and steps to mitigate biases in AI-generated content. By setting clear expectations for GAI use, the program can ensure that students are uniformly informed and held to a standard that aligns with the doctoral program's framework values. See Table 7 for an author suggested draft of a Doctoral GAI Compliance Protocol which infuses the Doctoral program self-assessment model.

**Table 7.** Doctoral GAI compliance self-assessment protocol.

| Ethical Use of Generative AI in Doctoral Programs: Compliance Rubric | | | | | |
|---|---|---|---|---|---|
| This rubric is designed to assess the integration and adherence to the ethical guidelines for using Generative Artificial Intelligence (GAI) within the doctoral program. It helps to ensure all doctoral students and faculty maintain high standards of academic integrity and ethical conduct. | | | | | |
| **Criterion** | **Initial: Pre-designing & Pre-developing** | **Developing: Designing & developing** | **Adequate: Implementation** | **Advanced: Experienced** | **Exemplary: More Experienced** |
| **Scope of Use** | GAI use is sporadic and not well integrated into program activities. | GAI tools are used for specific tasks with occasional supervision. | GAI tools are regularly used under established guidelines. | GAI is fully integrated in program activities with clear benefits. | GAI use is innovative, regularly enhancing program outcomes. |
| **Ethical Guidelines** | Basic GAI ethical considerations are discussed with limited practical application. | Ethical GAI guidelines are occasionally incorporated into program operations. | Regular discussions and integration of GAI ethical guidelines in program activities. | Comprehensive application of GAI ethical standards in all aspects of program. | GAI Ethical guidelines shape the program's culture and innovations. |
| **Guidelines for Attribution** | Minimal acknowledgment of GAI contributions in academic work. | Occasional GAI acknowledgment with basic citation. | Regular GAI acknowledgment and proper citation as per APA standards. | Consistent and clear GAI attribution in all academic outputs. | Leading example of GAI ethical attribution practices in academic settings. |
| **Avoiding Plagiarism** | Initial use of all plagiarism including checks without comprehensive understanding. | Increasing use of plagiarism detection tools and understanding of academic integrity. | Systematic use of tools to ensure originality in all submissions. | Proactive measures to instill originality and integrity beyond tool use. | Model for promoting academic originality and integrity in work. |
| **Mitigating Biases** | Basic awareness of potential biases in GAI. | Training on recognizing biases in GAI applications. | Application of diverse tools to minimize biases effectively in GAI use. | Advanced strategies in place to continuously address and mitigate biases in GAI use. | Benchmark for industry standards in bias mitigation in academic GAI use. |
| **Monitoring and Evaluation** | Initial feedback mechanisms of GAI use without regular follow-up. | Periodic reviews of GAI use and ethical compliance. | Annual comprehensive assessments of GAI impacts and ethics. | Continuous monitoring with robust feedback and improvement processes. | Leading-edge practices in monitoring and setting standards for GAI use. |
| **Training and Support** | Basic workshops offered on ethical GAI use. | Regular training sessions with updates on GAI capabilities and ethics. | Comprehensive training programs encompassing all aspects of ethical GAI use. | Ongoing professional development and support for faculty and students on ethical GAI use. | Exemplary support system and educational framework for ethical GAI use. |

**Table 7.** (continued).

| Criterion | Initial: Pre-designing & Pre-developing | Developing: Designing & developing | Adequate: Implementation | Advanced: Experienced | Exemplary: More Experienced |
|---|---|---|---|---|---|
| **Enforcement and Compliance** | Initial policy enforcement measures in place for GAI use. | Developing clearer guidelines and enforcement procedures for GAI use. | Adequate enforcement of GAI policies with regular compliance checks. | Advanced enforcement strategies with clear accountability measures for GAI use. | Exemplary compliance with GAI use, serving as a model for other programs. |
| **Continuous Improvement** | Biennial updates to the protocol based on minimal input of GAI use. | Regular stakeholder engagement for the protocol improvements of GAI use. | Biannual comprehensive reviews and updates to the protocol of GAI use. | Continuous improvement culture of GAI use with stakeholder feedback integrated. | Industry-leading practices in continuous improvement of GAI use and stakeholder engagement. |

Second, the program should consider implementing a comprehensive training module on GAI tools, highlighting their functional aspects, ethical implications, and best practices. Such training could be differentiated to account for the varying levels of technological proficiency within the cohort, ensuring equitable access to knowledge and fostering an inclusive learning environment.

Moreover, mentorship programs can be developed, pairing less technologically savvy students with those more experienced in GAI usage. This peer-learning approach can facilitate knowledge transfer and reduce resistance due to apprehensions surrounding new technologies. In addition, the program could introduce reflective practice assignments that require students to critically assess GAI's role in their research process. Through reflection, students can better understand their biases, AI's potential to influence their work, and the importance of maintaining scholarly rigor.

Lastly, it could be invaluable to develop a feedback loop where students can report their experiences and challenges with GAI. This feedback will enable continuous improvement of the program's approach to GAI integration, ensuring that it remains responsive to students' needs and concerns.

### 4.6.2. Recommendations for research

Further research is essential to build on the preliminary insights gleaned from this study and to refine the integration of GAI within this doctoral program. A multi-pronged approach to future research could yield deeper understandings and more nuanced applications of GAI in educational research contexts.

Subsequent research should seek to overcome the limitations noted in the current study. Employing an anonymous survey administered by an independent research team could help mitigate bias and elicit more candid responses. Additionally, a longitudinal study design may provide a more comprehensive view of how students' perceptions and use of GAI evolve throughout their tenure in the program.

Quantitative research methods, such as usage analytics, could provide an objective measure of how frequently and in what ways GAI tools are being utilized by students. Coupling this data with qualitative insights from interviews or focus groups could enrich the understanding of students' experiences with GAI.

Moreover, comparative studies examining cohorts before and after implementing the aforementioned GAI protocols and training could highlight the effectiveness of these interventions. This could guide best practices for GAI use in doctoral programs, adapting them to the nuances of each unique educational context.

Future studies could evaluate dissertations or other scholarly work produced with the assistance of GAI tools to understand the impact of GAI on the quality of research outcomes. Peer reviews or panel assessments could serve as instruments for gauging GAI-assisted work's scholarly rigor and integrity.

Lastly, exploring the psychological and social dynamics of GAI acceptance and resistance within the cohort could offer insights for better technology integration. This could involve examining the role of individual belief systems, the influence of the program's culture, and the broader social norms that shape students' engagement with technology.

By addressing these practical and research recommendations, this practitioner's doctoral program can more effectively harness the potential of GAI tools to enhance educational research while upholding the program's standards of excellence, ethics, and student empowerment. Such concerted efforts will not only benefit the current doctoral cohorts but will also pave the way for future doctoral candidates

to engage with emerging technologies in informed, responsible, and innovative ways.

## 5. Conclusion

The exploration of generative artificial intelligence (GAI) in this Educational doctoral program has contributed important insights into integrating emerging technologies in advanced academic settings. This study highlighted the complexities and considerations accompanying the use of GAI tools in doctoral research, underscoring the need for a balanced approach cognizant of the advantages and challenges inherent in their adoption.

The program's engagement with GAI underscores an effort to remain at the forefront of educational research methodologies while maintaining the ethical standards central to scholarly work. Through careful consideration of GAI's role in research, this program has taken steps to address the multifaceted nature of technology integration in academia, providing a useful case study for the evolution of doctoral studies in an increasingly digital age.

This study also points to the importance of continuous evaluation and refinement of technology integration strategies within doctoral programs. The willingness to adapt and respond to the needs and concerns of students as they navigate the complexities of GAI is indicative of the program's commitment to an evolving learning environment.

In this context, the conclusions drawn from the study offer a framework for ongoing dialogue and development regarding the use of GAI in academic research. In considering these insights, the program can continue to refine its approach to include GAI as a component of doctoral research, ensuring that such tools are employed judiciously and effectively. The research presented herein is a step toward a deeper understanding of the implications of GAI in doctoral research, and it provides a foundation for future inquiries. As the program continues to integrate GAI tools, it can contribute to the broader conversation on how best to harness these technologies to enhance research quality and educational leadership.

Thus, the study concludes with an acknowledgment of the progress made and an awareness of the road ahead. Through ongoing research, thoughtful application, and critical assessment, doctoral programs can best incorporate new technologies like GAI, all while maintaining the rigorous standards that define academic excellence.

## Compliance with Ethical Standards

This study was conducted in accordance with ethical standards and approved by the Lynn University Institutional Review Board under approval number 23.14, dated January 30, 2024. All participants were provided informed consent as the first question of the survey and were not permitted to move forward in the survey unless they understood the ethical considerations and agreed to them, ensuring their voluntary participation and understanding of the research purpose, procedures, and their rights, in accordance with ethical guidelines.

## Conflict of Interest

The authors have no conflict of interest to declare.

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