Research Study Proposal: Evaluating Graduate Education Students' Self-Efficacy with the Use of Artificial Intelligence Agents in Teaching and Learning

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Version Date: 29 September 2023

Research Study Proposal: Evaluating Graduate Education Students' Self-Efficacy with the Use of Artificial Intelligence Agents in Teaching and Learning

At the onset of the 2023-24 academic year, K12 and higher education institutions are endeavouring to develop policies around the ethical use of artificial intelligence (AI) agents, such as ChatGPT, by students (Cowan, 2023; D'Andrea, 2023; HESA, 2023). Educators are showing increasing interest in integrating AI agents in their courses (Majkowska, 2023). However, there remains a lack of understanding of effective pedagogical practices when using AI agents. This type of anxiety is often seen when introducing new tools and new instructional strategies. Power (2015) demonstrated that educators' confidence with the use of new tools and strategies can be addressed through the use of targeted supports, including professional development with hands-on use of the tools, training on appropriate instructional design and pedagogical strategies, and access to peer-support networks. Developing appropriate targeted supports requires an understanding of gaps in educators' sense of self-efficacy with the use of a given tool or strategy. The Ohio State Teacher's Sense of Efficacy Scale (TSES) (Tschannen-Moran & Woolfolk Hoy, 2001*a*, *b*) is a well-established tool for gauging educators' confidences along the domains of student engagement, instructional strategies, and classroom management. Benton-Borghi (2006) adapted the TSES for the measurement of self-efficacy with the use of inclusive instructional practices. The mTSES instrument (Power, 2015; Power et al., 2014; Power et al., 2016) has also been developed for the measurement of self-efficacy with the use of mobile technologies and mobile learning strategies in the classroom. An adapted version of the TSES instrument could be used to evaluate educators' perceived strengths and weaknesses in the context of using AI agents in their teaching and learning practice.

Statement of the Problem

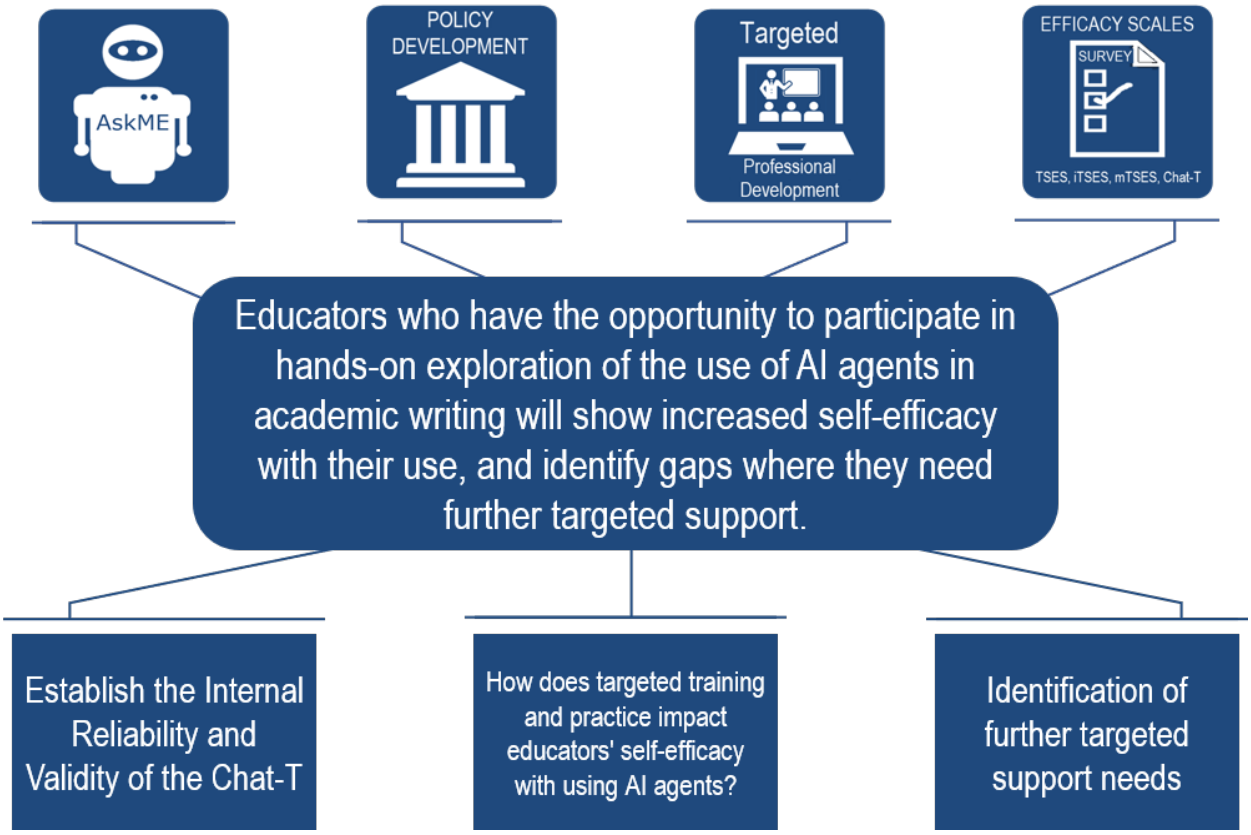
A recent survey has shown that over half of post-secondary students have used AI agents to complete assignments or tests (DeLaire, 2023). D'Andrea (2023) quotes University of Saskatchewan educational ethics research Sarah Eaton who notes that while "[t]here are strong indications from Microsoft and Google that by the end of 2025, AI technologies will be fully integrated into Microsoft Office and the Google Suite of products." But, educators are unprepared for the deep integration of such tools into student activity. Preparing educators to effectively leverage AI agents, and to discourage their misuse, requires targeted supports. This research aims to investigate the use of an adapted version of the TSES, called the ChatGPT Teacher's Sense of Efficacy Scale (Chat-T), to identify gaps in educators' perceptions of efficacy with the use of AI agents such as ChatGPT in their teaching and learning practice.

Conceptual Framework

A conceptual framework can be used to depict a vision of how theoretical concepts and previous research relate to each other, to concepts to be explored, and to the overall purpose of the proposed research (Cohen et al., 2011, p. 117). A conceptual framework helps to ensure that the conduct and reporting of the research efforts are thoroughly, are appropriately grounded, and are able to meet the research objectives (Koro-Ljungberg et al., 2009, p. 687). The conceptual framework for this research study is presented in Figure 1.

Figure 1

Conceptual framework for the Evaluating Graduate Education Students' Self-Efficacy with the Use of Artificial Intelligence Agents in Teaching and Learning research project



Research Questions

1. What is the internal reliability and validity of the Chat-T research instrument?
2. How does targeted training and practice impact educators' perceptions of self-efficacy with the use of AI agents in teaching and learning practice?
3. What additional targeted supports do educators need to increase their confidence with the use of AI agents in teaching and learning practice?

Significance of the Research

This research aims to investigate the impacts of targeted training and a targeted hands-on experience with the use of AI agents, such as Chat GPT, on perceptions of self-efficacy with the use of AI agents in teaching and learning practice amongst graduate Education students. This research also aims to establish the internal reliability and validity of the Chat-T research instrument, adapted from the TSES instrument, and its utility as a tool for gauging the effectiveness of professional development activities and the identification of gaps in confidence requiring further targeted supports. It is anticipated that the results of this research will provide information and a new tool that will be useful to administrators, policymakers, and others involved with planning for and supporting the integration, and effective and ethical use of AI agents in teaching and learning practice.

Proposed Methodology

This research will employ a mixed-methodologies approach, designed to capture both quantitative and qualitative data. In the Fall 2023 term, two anonymous surveys will be distributed to students enrolled in a graduate-level Critical Issues in Education Leadership course at Ontario Tech University. The first survey will include demographic questions about participants' level of experience as an educator, as well as the questions from the Chat-T instrument. This will be used as a pre-test of participants' perceptions of self-efficacy with the use of AI agents, as well as their perceptions of self-efficacy with teaching and learning practice in general (as per the original TSES instrument). After engaging in training sessions exploring the technical use of AI agents, such as Chat GPT, and the current education leadership issues related to the use of such AI agents, students will then complete a four-stage hands-on activity using Chat GPT to generate an essay on an educational leadership issue of their choice. Those stages include:

1. Developing a prompt and using Chat GPT to generate an academic essay.
2. Systematically reviewing the Chat GPT-generated essay for topic relevance, factual errors and/or omissions.
3. Presenting a critique of the use of Chat GPT to generate academic essays based on their findings, including presenting recommendations for education leaders.
4. Revising the Chat GPT-generated essay based on their findings.

The second survey will be administered at the end of the course and will include the same questions as the first survey. This survey will be used as a post-test of participants' perceptions of self-efficacy with the use of AI agents in teaching and learning practice. The second survey will also include open-response questions to collect qualitative data on participants' perceptions of efficacy, intentions to use AI agents in their own practice, and perceived needs for further training and support.

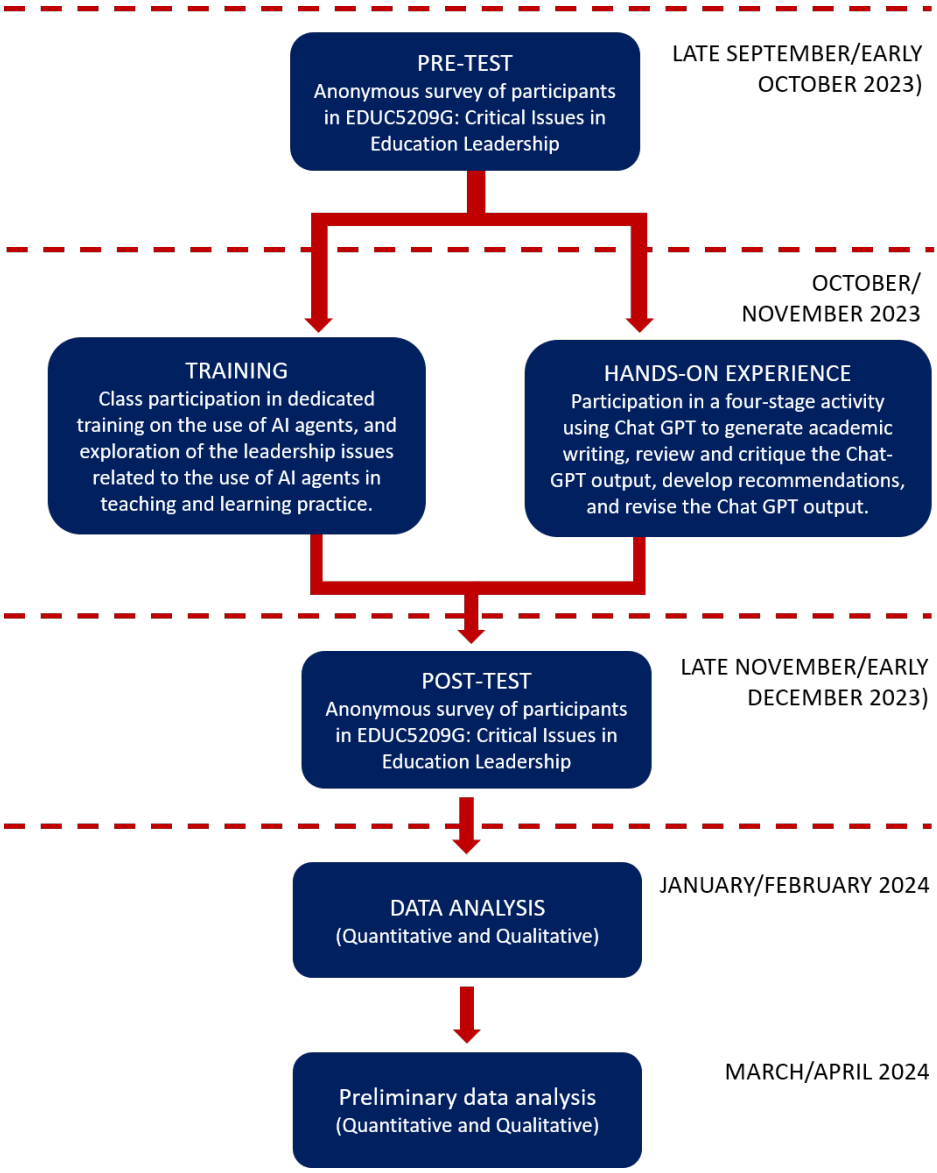
Data from the pre- and post-administrations of the Chat-T instrument will be analyzed using the protocols established by Benton-Borghi (2006) and Power (2015) to determine the internal reliability and validity of the instrument compared to the original TSES. The procedures used by Power (2015), Power et al. (2014), and Power et al. (2016) will be used to measure changes in participants' perceptions of self-efficacy along the domains of student engagement, instructional strategies, and classroom management, between the pre-test and post-test administrations of the Chat-T instrument.

The results of the research study will be prepared for publication as one or more journal articles, and potentially as submissions for conference presentations (anticipated Winter 2024).

The phases and components of the proposed research study are presented in Figure 2.

Figure 2

Research data collection and analysis design



Participant Selection

The target participants for this research will be determined through convenience sampling. Participants will all be graduate-level Education students enrolled in a Critical Issues in Education Leadership course during the Fall 2023 term at Ontario Tech University. Participants will be selected by way of responding to a link to an anonymous online survey made available to students enrolled in the target course. Target participants will be provided with a letter of informed consent, and an opportunity to decline participation, before proceeding to the survey questions. There will be no way for the researcher identify students from responses to the survey instrument.

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Appendix A: Researcher Biography

Rob Power, EdD

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Ontario Tech University
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Dr. Rob Power has been working in Education sector since 2001. His experience includes working as a Technology and Learning Resources, English Language Arts, and Social Studies teacher at the Intermediate / Secondary level in Newfoundland and Labrador. He has also worked as an Information Technology instructor and an Instructional Developer at the post-secondary level, both in Canada and abroad. He has also worked as an Instructional Development Consultant, and the Leader of the Online Learning team with the Fraser Health Authority in British Columbia, Canada. Dr. Power has been developing and teaching undergraduate and graduate-level Education courses for various Canadian universities since 2015, with a focus on Instructional Design and Development, Educational Technology Integration, Technology and the Curriculum, and Mobile Learning. Since 2013, Dr. Power has served in leading roles with the International Association for Mobile Learning (IAmLearn), and he has served as the Chair of the 12th World Conference on Mobile and Contextual Learning (mLearn 2013). He served as President of the Executive Committee of IAmLearn from 2017-2019. In May 2023, Dr. Power was elected Vice-President of the Canadian Network for Innovation in Education (CNIE|RCIE). He is also a founding member of the Pedagogy, Education and Technology Lab (PETL) and the International Research Network for Innovative Sustainable and Seamless Education (IRN-ISSE).

Website: https://www.powerlearningsolutions.com/

Appendix B: Pre-Test and Post Survey Demographic Questions

Notes – Anonymous survey instrument to be delivered to target audience of graduate education students.

Survey Questions

Informed Consent

Include Informed Consent Statement (Appendix E)

1. Do you consent to participate in this research survey? [Yes/No]

Demographic Questions

1. Do you currently work in the education or training sector? [drop down or multiple-choice]

   Options:

   a. Yes
   b. No

2. Your role in the education sector. [drop down or multiple-choice]

   Options:

   a. Classroom teacher (K12)
   b. Support Staff (K12)
   c. Lecturer (Post-Secondary)
   d. Faculty (Post-Secondary)
   e. Support Staff (Post-Secondary)
   f. Training and Development (Workplace)
   g. Support Staff (Workplace)
   h. Other
   i. N/A

2. Your primary teaching area/subject [open response]
3. Years of teaching experience [drop down or multiple-choice]

   Options:

   a. 0 – 1 year
   b. 2 – 5 years
   c. 5 – 10 years
   d. 10 – 15 years
   e. 15 + years

4. Gender [open response]

Appendix C: Post-Test Survey Open-Response Questions

Notes – Anonymous survey instrument questions to be added after the demographic and Chat-T instrument questions for the post-test survey administration.

Survey Questions

Open-Response Questions

1. How do you intend to use AI agents (such as Chat GPT) in your teaching and learning practice? [Open Response}
2. What do you feel are the biggest challenges you will face when using AI agents (such as Chat GPT) in your teaching and learning practice? [Open Response}
3. What additional training or support would you find useful to support your future use of AI agents (such as Chat GPT) in your teaching and learning practice? [Open Response}
4. What additional advice would you provide to education leaders with respect to the use of AI agents (such as Chat GPT) in teaching and learning practice. [Open Response}

Appendix D: Combined Teacher's Sense of Efficacy Scale (TSES) and ChatGPT Teacher's Sense of Efficacy Scale (Chat-T) Survey

Introduction

This questionnaire is designed to help gain a better understanding of your level of comfort with the kinds of tasks that you would need to do when integrating Artificial Intelligence (AI) agents (such as ChatGPT) in teaching and learning activities. Indicate your opinion about each of the statements below.

Teacher Beliefs **How much can you do?**

		Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
1	How much can you do to get through to the most difficult students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2	How much can you do to control disruptive behavior during collaborative learning activities?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
3	How much can you use AI agents (such as ChatGPT) to motivate students who show low interest in school work?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
4	How much can you gauge student comprehension of issues related to content generated using AI agents (such as ChatGPT)?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
5	How much can you use AI agents (such as ChatGPT) to get through to the most difficult students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
6	How well can you respond to difficult	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

	questions from your students?									
7	How much can you do to adjust your lessons to the proper level for individual students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
8	To what extent can you craft good collaborative learning activities for your students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
9	How well can you provide appropriate challenges for very capable students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
10	How well can you respond to defiant students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
11	How much can you do to calm a student who is disruptive?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
12	How much can you use AI agents (such as ChatGPT) to help your students value learning?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
13	How much can you do to get students to follow classroom rules?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
14	How well can you implement alternative (technology-based) strategies using AI agents (such as ChatGPT) in your classroom?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
15	How much can you use a variety of technology-based	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

	assessment strategies?									
16	How much can you use AI agents (such as ChatGPT) to help your students think critically?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
17	To what extent can you make your expectations clear about student behavior?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
18	How much can you gauge student comprehension of what you have taught?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
19	How much can you do to foster student creativity?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
20	How much can you use a variety of assessment strategies?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
21	How well can you implement alternative strategies in your classroom?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
22	How much can you assist families in helping their children do well in school?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
23	How well can you establish a classroom management system with each group of students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
24	How much can you do to improve the understanding of a student who is failing?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

25	How much can you do to help your students think critically?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
26	How much can you do to motivate students who show low interest in school work?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
27	How well can you establish routines to keep activities running smoothly?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
28	How much can you do to help your students value learning?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
29	How much can you use AI agents (such as ChatGPT) to foster student creativity?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
30	How much can you use AI agents (such as ChatGPT) to improve the understanding of a student who is failing?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
31	How much can you use technology to adjust your lessons to the proper level for individual students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
32	To what extent can you provide an alternative explanation or example when students are confused?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
33	How well can you keep a few problem	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

	students from ruining an entire lesson?									
34	How much can you do to get students to believe they can do well in school work?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
35	How much can you do to control disruptive behavior in the classroom?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
36	To what extent can you craft good questions for your students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
37	How well can you keep a few problem students from ruining an entire collaborative learning activity?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
38	How much can you use AI agents (such as ChatGPT) to provide appropriate challenges for very capable students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

Directions for Scoring the combined Teacher's Sense of Efficacy Scale (TSES) and ChatGPT Teacher's Sense of Efficacy Scale (Chat-T)

(adapted from Tschannen-Moran, & Woolfolk Hoy, 2001)

Factor analysis.

It is important to conduct a factor analysis to determine how your participants respond to the questions. We have consistently found three moderately correlated factors: *Efficacy in Student Engagement, Efficacy in Instructional Practices*, and *Efficacy in Classroom Management*, but at times the make-up of the scales varies slightly.

Subscale scores.

To determine the *Efficacy in Student Engagement, Efficacy in Instructional Practices*, *Efficacy in Classroom Management, Efficacy in Student Engagement with AI Agents (such as ChatGPT), Efficacy in Instructional Practices with AI Agents (such as ChatGPT),* and *Efficacy in Classroom Management with AI Agents (such as ChatGPT)* subscale scores, we compute unweighted means of the items that load on each factor. Generally these groupings are:

TSES.

Efficacy in Student Engagement: Items 1, 19, 22, 24, 25, 26, 28, 34

Efficacy in Instructional Strategies: Items 6, 7, 9, 18, 20, 21, 32, 36

Efficacy in Classroom Management: Items 10, 11, 13, 17, 23, 27, 33, 35

Chat-T.

Efficacy in Student Engagement with AI Agents: Items 3, 5, 12, 16, 22, 29, 30, 34

Efficacy in Instructional Strategies with AI Agents: Items 4, 6, 8, 14, 15, 21, 32, 38

Efficacy in Classroom Management with Agents: Items 2, 10, 11, 13, 17, 23, 27, 37

Reliabilities.

In Tschannen-Moran, M., & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing and elusive construct. *Teaching and Teacher Education, 17,* 783-805, the following were found**:**

	Mean	SD	alpha
OSTSES	7.1	.94	.94
Engagement	7.3	1.1	.87
Instruction	7.3	1.1	.91
Management	6.7	1.1	.90

Appendix E: Informed Consent

NOTE – the following is a print copy of the Consent Form. For purposes of the research study, the Consent Form will be distributed and completed via an electronic survey link. A downloadable / printable copy of the research study information letter will also be provided via a link in the electronic survey.

INFORMED CONSENT

Evaluating Graduate Education Students' Self-Efficacy with the Use of Artificial Intelligence Agents in Teaching and Learning

Research Purpose

A recent survey has shown that over half of post-secondary students have used AI agents to complete assignments or tests (DeLaire, 2023). D'Andrea (2023) quotes University of Saskatchewan educational ethics research Sarah Eaton who notes that while "[t]here are strong indications from Microsoft and Google that by the end of 2025, AI technologies will be fully integrated into Microsoft Office and the Google Suite of products." But, educators are unprepared for the deep integration of such tools into student activity. Preparing educators to effectively leverage AI agents, and to discourage their misuse, requires targeted supports. This research aims to investigate the use of an adapted version of the TSES, called the ChatGPT Teacher's Sense of Efficacy Scale (Chat-T), to identify gaps in educators' perceptions of efficacy with the use of AI agents such as ChatGPT in their teaching and learning practice.

Researcher

Dr. Rob Power (Assistant Professor, Education, Cape Breton University / Adjunct Professor, Education, Ontario Tech University).

This study has been reviewed by the University of Ontario Institute of Technology (Ontario Tech University) Research Ethics Board [REB File # 17559] on [*insert date*].

RESEARCH DESCRIPTION

Eligibility Criteria

To participate in this study, you must be a graduate Education student enrolled in EDUC5209G: Critical Issues in Education Leadership in the Fall 2023 term with the Faculty of Education at Ontario Tech University.

What you will be asked to do as part of this research:

You will be asked to complete two online surveys that will collect basic demographic information, as well as information about your perceptions of self-efficacy with the use of artificial intelligence (AI) agents, such as Chat GPT, in your teaching and learning practice. The first survey will be administered early during the Fall 2023 term (before exploring the use of AI agents in EDUC5209G), and should take approximately 10-15 minutes to complete. The second survey will be administered at the end of the course, and should take approximately 15-20 minutes to complete.

Notification of Research Results:

The results of the research study will be prepared for publication as one or more journal articles, and potentially as submissions for conference presentations (anticipated Winter 2024). All students from the EDUC5209G Fall 2023 course section will be advised by email notification, using their @ontariotech.net as listed on the EDUC5209G official class roster, of any forthcoming publications or presentations resulting from this research. You will also be able to find listings of forthcoming publications or presentations resulting from this research at https://www.powerlearningsolutions.com/academic-publications.html and https://www.powerlearningsolutions.com/chat-t.html

Risks and Discomforts:

We foresee minimal risks associated with participation the study, such as possible discomfort in disclosing past and current teaching practices. Your participation in this research study will not impact your participation in EDUC5209G, or your grades on your course assignments.

Benefits of the Research and Benefits to You:
It is hoped that this research study will help researchers, educators, administrators, and policy-makers to be better able to plan for and support the use of AI agents, such as Chat GPT, in teaching and learning practice.

Voluntary Participation:
Your participation in this study is voluntary and you may partake in only those aspects of the study in which you feel comfortable. You may also decide not to be in this study, or to be in the study now, and then change your mind later. You may leave the study at any time without affecting your academic standing, relationship with the institution, or grades in your course. You will be given information that is relevant to your decision to continue or withdraw from participation. To withdraw your participation from a survey as part of this research study, simply close your browser before completing the survey and your responses will not be recorded. Once a survey has been submitted, your responses cannot be withdrawn. Participants will not be provided with incentives or compensation.

Right to Withdraw:
Your participation in the study is completely voluntary and you may choose to cease your participation in this research at any time before or during the data collection phases. You do not need to provide any reason for your decision to withdraw. To withdraw your participation from a survey as part of this research study, simply close your browser before completing the survey and your responses will not be recorded. Once a survey has been submitted, your anonymous responses cannot be withdrawn.

Conflict of Interest:
Researchers have an interest in completing this study. Their interests should not influence your decision to participate in this study.

CONFIDENTIALITY

All information collected is confidential and will only be used as part of research work being carried out by researcher at Ontario Tech University. All data collected will be stored in a secure location. Access to questionnaires will only be granted to the researchers listed above or assistants working directly for them. Data, when reported, will be in aggregate form. No personally identifiable information will be given out at any time.

Your privacy shall be respected. No information about your identity will be shared or published without your permission, unless required by law. Confidentiality will be provided to the fullest extent possible by law, professional practice, and ethical codes of conduct. Please note that confidentiality cannot be guaranteed while data is in transit over the Internet.

Collection of Demographic Information
This research study includes the collection of demographic data which will be aggregated (not individually presented) in an effort to protect your anonymity. Despite best efforts, it is possible that your identity can be determined even when data is aggregated. Certain demographic information will be collected through the initial survey questions. The survey will contain optional questions to collect demographic information such as your role in the education sector, your number of years of teaching experience, and your gender. This information will be used in aggregated form only in any publications resulting from this research study. No personally identifiable information will be given out at any time.

Data Storage
All data will be collected by the researcher, and stored on a password-protected external digital storage device (not connected to the Internet), which will be secured in a locked storage facility for a period of five (5) years after

completion of the research. All data on the digital storage device will be deleted, and the device itself will be reformatted to prevent the recovery of deleted data. Only the researcher will have access to the collected data.

In the unlikely event of a data breach, it will not be possible for personally identifiable information to be obtained through unauthorized access to data collected through the main initial survey.

Participants Rights and Concerns

Please read this consent form carefully and feel free to ask the researcher any questions that you might have about the study. If you have any questions about your rights as a participant in this study, complaints, or adverse events, please contact the Research Ethics Office at (905) 721-8668 ext. 3693 or at researchethics@ontariotechu.ca.

If you have any questions concerning the research study or experience any discomfort related to the study, please contact the researcher Dr. Rob Power at rob.power@ontariotechu.ca.

INFORMED CONSENT

By selecting "**I AGREE**," I acknowledge that I have been informed of the purpose of this research, and agree to participate in this survey.

Note: Should you decide not to participate at this point, select "**I DO NOT WISH TO CONTINUE**," and this survey will end without recording any responses.

Note: **By selecting "I AGREE," this form you do not give up any of your legal rights against the investigators, sponsor or involved institutions for compensation, nor does this form relieve the investigators, sponsor or involved institutions of their legal and professional responsibilities.**

Appendix F: Participant Recruitment Email

Participant Recruitment Email

Date to be sent: To be determined
Sender: Dr. Rob Power
Target audience: Students registered in EDUC5209G for Fall 2023

Subject line: Optional Research Study: Evaluating Graduate Education Students' Self-Efficacy with the Use of Artificial Intelligence Agents in Teaching and Learning

Header: Evaluating Graduate Education Students' Self-Efficacy with the Use of Artificial Intelligence Agents in Teaching and Learning

Body:

This message is being sent on behalf of Dr. Rob Power (Cape Breton University School of Education and Health / OnTechU Faculty of Education). You are invited to participate in an **optional** research study **Evaluating Graduate Education Students' Self-Efficacy with the Use of Artificial Intelligence Agents in Teaching and Learning**. Participation is entirely **voluntary** and there is no obligation nor need to participate if you do not want to do so. Please direct inquiries to Dr. Rob Power (Rob.Power@ontatiotechu.ca).

Participation in this research study will include the completion of two surveys.

If you are interested in participating in this study, please access the survey at [*insert link*].

Note – the full research project information letter and informed consent are available through this survey link and at [*insert link*].

If you have any questions regarding your rights as a participant or have any concerns about this study, please contact:

- Research Ethics Office, Ontario Tech University, at (905) 721-8668 ext. 3693 or at researchethics@ontariotechu.ca.

This study has been reviewed by the University of Ontario Institute of Technology (Ontario Tech University) Research Ethics Board [REB File # 17559] on [*insert date*].

Sincerely,

Dr. Rob Power
Assistant Professor, Education, Cape Breton University
Adjunct Professor, Education, Ontario Tech University