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## PEDAGOGICAL RECOMMENDATIONS FOR LEVERAGING THE USE OF ARTIFICIAL INTELLIGENCE IN WRITING DOCTORAL DISSERTATIONS TO ADDRESS THE EDUCATION ADOPTION GAP [ABSTRACT]

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### ABSTRACT

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| Aim/Purpose | The purpose of this study is to develop tactics for leveraging artificial intelligence (AI) in the writing of doctoral dissertations. These recommendations address the current lack of instructional materials that guide students in effectively and ethically integrating AI into this specific academic task. The paper outlines the challenges students face during the dissertation writing process and identifies specific AI tools that can help overcome these challenges. |
| Background  | Despite AI's potential in doctoral education, its application in drafting dissertation documents remains limited. Students encounter numerous challenges during the writing phases of a doctoral dissertation. Traditional support systems are often slower and more constrained than AI tools, which can address these challenges more efficiently.                                                                                                                                |
| Methodology | As a theoretical piece, the study proposes recommendations for the practical application of Cognitive Load Theory (CLT) as a framework. The paper addresses the challenges inherent in doctoral research and dissertation writing,                                                                                                                                                                                                                                                  |

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|                                   | chief among which is the cognitive transformation that occurs during the writing process. Therefore, employing CLT as the theoretical underpinning is a logical approach.                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Contribution                      | This paper can be a valuable resource for using AI tools in doctoral dissertation writing. It provides a foundational AI literacy, covering core concepts, a brief historical overview, ethical applications, and other important principles. By describing the proper use of AI models and tools, this paper promotes their adoption to help address challenges in dissertation writing. By leveraging AI for writing tasks, students can free their minds from time-intensive, repetitive tasks, allowing them to focus more on analytical and interpretive work.                                                                         |
| Findings                          | Students can effectively use AI tools and models to address challenges they face in writing doctoral dissertations. Tools such as Generative Artificial Intelligence (GenAI) and other specialized applications can significantly enhance the efficiency of the dissertation writing process. Limitations and drawbacks of using AI need to be discussed to help students avoid potential pitfalls.                                                                                                                                                                                                                                         |
| Recommendations for Practitioners | Based on the research, four specific recommendations are proposed for doctoral mentors: (1) provide AI training and ethical guidelines: Integrate training on ethical AI tool usage into doctoral curricula; (2) encourage GenAI for ideation: promote the use of Generative AI (GenAI) for brainstorming and refining research topics; (3) promote AI for literature review and citation – encourage students to use AI tools to assist with literature reviews and ensure citation accuracy; and (4) establish clear AI usage policies: develop and communicate clear institutional policies regarding the use of AI in academic writing. |
| Recommendations for Researchers   | Future research on AI in education should focus on several key areas. First, it is crucial to study AI adoption rates within doctoral programs, examining how institutional policies, training initiatives, and awareness campaigns influence integration. Additionally, research should explore how to prepare faculty advisors to guide students better in the ethical use of AI, potentially through specialized training programs. Finally, a study analyzing AI's impact on the quality and originality of dissertations would provide valuable insights.                                                                              |
| Impact on Society                 | Integrating AI tools into doctoral education could accelerate knowledge creation. By streamlining the dissertation process, AI can reduce student burden and stress, leading to higher completion rates and, consequently, more successful doctoral graduates. Furthermore, an increase in the doctoral completion rate would make more trained educators available to contribute to student success and societal advancement.                                                                                                                                                                                                              |
| Keywords                          | artificial intelligence and doctoral education, artificial intelligence and dissertation writing, leveraging GenAI in dissertation writing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

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