

RESEARCH PROPOSAL

IMPACT OF MODERN TECHNOLOGY ON THE STUDENT PERFORMANCE IN HIGHER EDUCATION

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I. Introduction

In recent years, modern technology has become a common tool in higher education classrooms. The use of technology in education has been shown to have both tremendous positive and negative impacts on student performance. This research proposal aims to investigate the impact of modern technology on student performance in higher education.

Problem Statement

although the use of modern technology in higher education is increasing, there is a lack of deeper understanding of how it affects student performance. While some argue that technology can enhance learning outcomes, others believe it can be a distraction and negatively impact student performance. This research aims to provide empirical evidence that can inform the debate on the role of modern technology in higher education.

For our Research Questions

1. **How does the use of modern technology impact student performance in higher education?** Question 1 is the central focus of the study, and it seeks to investigate the relationship between the use of modern technology and student performance in higher education. Essentially, we are seeking a deeper understanding and aiming to understand the current state of knowledge on this topic.
2. **What are the benefits and drawbacks of using modern technology in higher education?** As technology becomes more prevalent in our daily lives, it is increasingly important to understand its impact on student learning outcomes. While technology has the potential to enhance learning, it can also be a distraction and hinder student performance if not used effectively. This question aims to identify the advantages and disadvantages of using modern technology in the context of higher education.
3. **What are the best practices for integrating technology into higher education to maximize its benefits?** This question aims to identify the most effective ways to integrate modern technology into higher education to optimize student learning and performance. As technology continues to evolve, it is increasingly important for educators to understand how to use it to enhance the learning experience and improve student performance. It is important to identify the most effective

strategies for integrating technology into the learning process to optimize student learning outcomes.

4. **What are the reasons for the discrepancies in the existing several research on the impact of modern technology on student performance in higher education? Is** important because it highlights a key issue in the field of technology integration in higher education. Despite the significant amount of research conducted on this topic, the results and conclusions have been mixed, and there is no clear consensus on the topic. Understanding the reasons behind the discrepancies in the existing literature can help to clarify the current state of knowledge in this area and provide guidance for future research. By identifying the factors that contribute to the variability in research results, we can better understand the limitations of current research and improve the rigor and validity of future research.

Objectives of the Study

1. **To examine the relationship between the use of modern technology and student performance in higher education.** The first objective aims to investigate the relationship between the use of modern technology and student performance in higher education. This will be achieved by collecting both quantitative and qualitative data to provide a more comprehensive understanding of the relationship between technology use and student performance. The quantitative data can provide statistical evidence of the correlation between technology use and academic performance, while qualitative data can provide insights into the factors that affect the effectiveness of technology integration in the learning process.
2. **To identify the benefits and drawbacks of using modern technology in higher education.** For the second objective, in-depth interviews and focus group methods will be used for gathering rich and detailed information about the experiences and perspectives of the participants. By gathering this information, the study can provide a more nuanced understanding of the impact of technology use on student performance and inform the development of best practices for technology integration.
3. **To provide recommendations for best practices in integrating technology into higher education.** And for the final objective, By synthesizing the findings from the previous objectives, the study can provide recommendations for best practices in technology integration that are informed by both qualitative and quantitative data. These recommendations can be used to inform policies and practices for technology integration in higher education and guide the development of training programs for educators.

II. Literature Review

The literature review will be organized into the following sections:

1. **Overview of modern technology in higher education:** This section will provide an overview of the different types of modern technology commonly used in higher education classrooms, including online platforms, software, and hardware.
2. **The impact of modern technology on student learning and performance:** This section will review the existing literature on the impact of modern technology on student learning and performance. It will examine studies that have shown positive impacts, negative impacts, and mixed impacts on student performance.
3. **Theoretical framework:** This section will discuss the theoretical frameworks used in the existing literature to explain the relationship between technology and student performance.
4. **Empirical studies on technology and student performance:** This section will provide an overview of empirical studies that have investigated the impact of modern technology on student performance in higher education.

III. Methodology

Research Design

As may have already been mentioned or evident in previous slides, the research will use a mixed research design, combining both quantitative and qualitative data collection and analysis methods. The study will therefore, consist of two main phases: a quantitative survey and a qualitative data collection phase. The survey will be conducted to gather quantitative data on the use of technology and student performance, while the qualitative data collection will involve in-depth interviews and focus groups to gather more detailed information on the benefits and drawbacks of using technology in higher education.

Population and Sample

Since the focus of this study is to also understand why there are discrepancies or varying results in the many existing research. It will be interesting to spread our research into at least 3 countries selected from 3 continents with varying cultures and approaches. The population for this study, therefore, will be students from Ghana, Belgium and USA who are enrolled in a higher educational institution. A sample of 150 students and teachers from different institutions and different fields of study will be randomly selected (with 50 from each country). For qualitative data collection, a subset of the sample will be selected to participate in interviews or focus groups. Some of these samples may be selected based on identical situations such as field of study, age, experience, and the type of institution. This will assist us in having a deeper understanding on what external factors contribute to the impacts we are studying.

Data Collection Methods

The primary data collection method for quantitative data will be an online survey using Google Forms. The survey will consist of questions on the use of technology in their courses, their perception of its impact on their learning and performance, and demographic information.

Qualitative data will be collected through semi-structured interviews or focus groups with a subset of the survey participants. The questions will explore the experiences and perspectives of students and instructors on the benefits and drawbacks of using technology in higher education and best practices for integrating technology.

Data Analysis Techniques

The quantitative data collected will be analyzed using descriptive statistics and inferential statistics. Descriptive statistics will be used to summarize the characteristics of the sample, and inferential statistics will be used to determine the relationship between the use of technology and student performance (Tabachnick et al, 2019).

the qualitative data collection phase will involve in-depth interviews and focus groups with students and educators to gather more detailed information on the benefits and drawbacks of using technology in higher education. Participants will be selected through purposive sampling, and data will be analyzed using thematic analysis to identify key themes and patterns in the data (Braun & Clarke, 2019).

IV. Privacy Policy and Data Protection

Privacy policy and data protection are critical considerations in any research study that involves collecting personal information from participants. These measures are important for ensuring that participants' rights to privacy and confidentiality are respected and that their personal information is handled in a secure and ethical manner (European Commission, 2018).

In this study, the privacy policy and data protection measures will include the following:

- 1. Informed consent:** Before participating in the study, participants will be provided with a consent form that outlines the purpose of the study, the data collection methods, and the privacy policy. Participants will be asked to provide their informed consent before any data is collected.
- 2. Anonymity:** To protect participants' identities, all personal information collected during the study, such as names and contact details, will be kept confidential and only used for the purposes of the study.
- 3. Data security:** The data collected will be stored on an online cloud secure server with restricted access. Any paper documents will be stored in a locked cabinet or room
- 4. Data retention:** The data collected will be stored for a maximum of 5 years, after which it will be securely destroyed.

V. Risk Assessment

As part of the ethical approval application, a risk assessment will be conducted to identify potential risks and minimize any harm or discomfort that participants may experience during the study. Some potential risks include the following:

1. **Privacy and confidentiality risks:** Participants may be concerned about their personal information being shared or disclosed to unauthorized individuals. To mitigate this risk, all data collected will be kept strictly confidential and secure, and any identifying information will be removed from the final research report.
2. **Psychological risks:** Participants may feel uncomfortable or stressed when answering sensitive or personal questions during the surveys, interviews, or focus groups. To mitigate this risk, participants will be provided with informed consent forms that outline the nature of the study and what their participation will entail. Additionally, participants will be given the option to skip any questions that they do not feel comfortable answering.
3. **Physical risks:** There are no physical risks associated with this study.
4. **Data protection risks:** There is a risk that the data collected may be lost or stolen. To mitigate this risk, all data will be stored securely using password-protected computers till they are loaded to said cloud, and physical copies of data will be stored in a locked cabinet. Data will also be backed up regularly to prevent loss.
5. **Legal risks:** There is a risk that participants may feel uncomfortable with some of the questions or statements made during the study. To mitigate this risk, all participants will be provided with informed consent forms that outline the nature of the study and what their participation will entail.

VI. Timeline of Proposed Activities

1. Develop research questions and objectives - 1 week
2. Conduct a literature review and refine research questions - 2 weeks
3. Develop research methodology and privacy policy - 1 week
4. Obtain necessary approvals from institutional review board (IRB) - 2 weeks
5. Recruit study participants - 3 weeks
6. Collect data through surveys, interviews, and focus groups - 6 weeks
7. Analyze data using qualitative and quantitative methods - 4 weeks
8. Interpret data and write up results - 4 weeks
9. Develop recommendations for best practices - 1 week
10. Write final research report and prepare for presentation - 2 weeks

Overall, the proposed timeline for completing this research proposal is 26 weeks or approximately 6 months. However, it is important to note that the timeline may be subject to change based on unforeseen circumstances, such as delays in obtaining IRB approval or difficulties in recruiting study participants. Therefore, it is important to maintain flexibility and adjust the timeline accordingly as needed.

VII. Results

Presentation and analysis of data

The presentation of data in the results section will involve the use of descriptive and inferential statistics to summarize and analyze the data collected (Field, 2018). Descriptive statistics will be used to describe the characteristics of the sample, such as age, gender, academic performance, and the use of technology. The measures of central tendency, such as mean, median, and mode, and the measures of variability, such as standard deviation and range, will be calculated to summarize the data (Field, 2018). Frequency tables and graphs, such as histograms and pie charts, will also be used to present the data in a clear and concise manner.

Inferential statistics, such as correlation and regression analyses, will be used to determine the relationship between the use of technology and student performance (Field, 2018). These analyses will help to test the hypotheses and answer the research questions. The results of the statistical tests will be reported using appropriate statistical symbols and formulas.

In addition to presenting the statistical results, the findings from the qualitative data, such as the in-depth interviews and focus groups, will also be presented. These findings will be analyzed using content analysis, and the key themes and patterns will be identified and reported (Guest et al., 2012). The quotes from the participants will be used to illustrate the findings and provide context.

VIII. Discussion

The discussion section will present the interpretation of the results, the implications of the findings, and the limitations of the study. The discussion will begin by summarizing the main findings from the data analysis, and then it will provide an interpretation of the results in the context of the research questions and hypotheses.

The discussion will conclude by identifying the limitations of the study, such as the sample size and the generalizability of the findings. Finally, suggestions for future research will be provided, such as exploring the role of specific types of technology in student learning outcomes or investigating the impact of technology on different student populations.

IX. Conclusion

The conclusion of this study will provide a comprehensive summary of the findings and an overall answer to the research questions. The conclusion will also include a discussion of the implications of the study's findings, their significance to the field, and potential directions for future research. It will highlight the key takeaways from the study and their relevance to policymakers, educators, and students.

X. References & Appendix

The reference section will include a list of sources used in the literature review. The appendix will include the questionnaire used in the study and the statistical analysis output.

References

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PLEASE NOTE: This document contains the transcript of the powerpoint presentation's embedded audios. For clarity, it has been structured under headings relating to the powerpoint document. Not all texts are part of the powerpoint presentation. The Headings are mostly skipped but included here for clarity.