

Preference analysis on online learning attributes among senior high school students during the COVID-19 pandemic: A conjoint analysis approach

Jennifer Pasang Consing *

Graduate Program School of Teacher Education, The National Teachers College, Philippines, 629 Nepomuceno St, Quiapo, Manila, 1001 Metro, Manila, Philippines.

World Journal of Advanced Research and Reviews, 2023, 18(03), 1552–1555

Publication history: Received on 17 May 2023; revised on 26 June 2023; accepted on 29 June 2023

Article DOI: <https://doi.org/10.30574/wjarr.2023.18.3.1248>

Abstract

This research investigates the preferences of senior high school students regarding specific online learning attributes during the challenging period of the COVID-19 pandemic.

Keywords: Conjoint analysis; Online learning; COVID=19; Students' preference

1 Introduction

The COVID-19 pandemic has necessitated a rapid shift to online learning for educational institutions worldwide. Understanding the preferences of senior high school students regarding online learning attributes is crucial for providing effective educational management and offering worthwhile educational experiences. This correspondence article presents the findings of a study that utilized a conjoint analysis approach to explore and analyze the preferences of Senior High School students regarding various online learning attributes, specifically focusing on delivery type, assigned tasks, evaluation methods, virtual laboratory utilization, interface layout, and delivery platform.

Objective

The objective of this study was to determine the relative importance of various online learning attributes among senior high school students during the COVID-19 pandemic. By employing a conjoint analysis approach, the study aimed to determine the key factors influencing students' preferences and gain insights into how these attributes collectively contribute to their overall satisfaction with online learning.

2 Material and methods

The research employed a conjoint analysis approach, a quantitative research method that allows for the measurement of attribute importance by presenting respondents with hypothetical scenarios and asking them to make choices or express preferences. Senior high school students was selected through purposive sampling, and they were presented with various combinations of online learning attributes, including different delivery types (synchronous/asynchronous)/mixed, assigned tasks (individual/group), evaluation methods (multiple choice, identification, essay, computation-based, project-based, and matching type), virtual laboratory utilization, interface layout (weekly/course outcome layout), and delivery platforms (Zoom, MS teams, blackboard collaborate). The students were then asked to rate their preferences for each attribute combination by 7-points Likert scale ranging from 1 as "Strongly disagree" and 7 as "Strongly agree".. The collected data were analyzed using appropriate statistical techniques to determine the relative importance of each attribute and the overall preferences of the students.

* Corresponding author: Jennifer Pasang Consing

3 Results and discussion

The findings of the study provided valuable insights into the preferences of senior high school students regarding online learning attributes during the COVID-19 pandemic. The analysis revealed that evaluation was the most significant attribute for the senior high school students, followed by virtual laboratory, delivery type, and delivery platform. The preference was influenced by attributes such as multiple choice evaluation, not requiring virtual laboratories, mixed delivery type (combining synchronous sessions with recorded lectures), and the use of MS Teams as the delivery platform. The study revealed some intriguing insights into the preferences of senior high school students. Notably, the preference for multiple-choice evaluation methods, not requiring virtual laboratories, and a mixed delivery type incorporating synchronous sessions with recorded lectures is noteworthy. Additionally, the use of MS Teams as the preferred delivery platform highlights the importance of user-friendly and accessible interfaces for online learning platforms.

3.1 Implications

The results of this study have significant implications for educational institutions and policymakers striving to provide high-quality online learning experiences for senior high school students during the COVID-19 pandemic and beyond. By understanding the preferences of students, institutions can tailor their online learning programs to meet their needs effectively. Considerations such as offering a mix of synchronous and asynchronous sessions, incorporating engaging assigned tasks, implementing varied evaluation methods, providing virtual laboratory experiences, optimizing interface layouts, and selecting reliable delivery platforms can contribute to enhancing student satisfaction and learning outcomes. Furthermore, this research underscores the importance of continuous monitoring of student preferences and feedback to adapt online learning strategies and ensure ongoing improvement.

3.2 Suggestions

While the study provided valuable insights into the preferences of senior high school students regarding online learning attributes, I would like to suggest an alternative research approach that can complement the findings and contribute to a more comprehensive understanding of the topic. Although the conjoint analysis approach employed by Ong et al. offers significant insights, I propose the inclusion of qualitative research methods, such as focus groups or in-depth interviews, to provide a deeper understanding of the underlying factors shaping students' preferences. Qualitative research methods have the potential to uncover rich and nuanced insights into students' experiences and perceptions of online learning attributes. By engaging in dialogue and allowing participants to share their perspectives, qualitative research can capture the complexities and subtleties of the learning environment that may not be fully captured by quantitative methods alone.

By conducting focus groups or in-depth interviews, researchers can explore the reasons behind students' preferences and gain deeper insights into their experiences with online learning. Qualitative research can uncover subjective factors, such as personal motivations, learning styles, and individual preferences, which may influence students' attitudes towards different attributes of online learning. Additionally, it can reveal unique challenges and opportunities that arise in the online learning context, providing a more holistic understanding of the topic.

Combining qualitative and quantitative research approaches can offer a more comprehensive and triangulated perspective on the preferences of senior high school students during the COVID-19 pandemic. By incorporating qualitative data, researchers can complement the quantitative findings obtained through the conjoint analysis approach and gain a deeper understanding of the underlying factors shaping students' preferences for specific attributes of online learning.

Another suggestion is to measure the correlation between students' preferences and their academic performance to enrich the findings and contribute to a deeper understanding of the topic. By measuring the correlation between students' preferences and their academic performance, researchers can gain insights into how different attributes of online learning impact students' learning outcomes. Examining the relationship between preference and performance can provide valuable information on the effectiveness of various online learning strategies, helping educators and policymakers make data-driven decisions to optimize the learning environment.

To measure this correlation, researchers can collect additional data on students' academic performance, such as grades or standardized test scores, and conduct statistical analyses to assess the relationship between preference and performance. This can be achieved by employing techniques such as regression analysis or correlation coefficients to quantify the strength and direction of the relationship.

By investigating the correlation between students' preferences and academic performance, researchers can identify which attributes of online learning are associated with higher achievement. For example, they may find that students who prefer synchronous learning with recorded lectures perform better academically compared to those who prefer asynchronous learning. These insights can guide educators in tailoring their instructional approaches to enhance students' learning outcomes.

4 Conclusion

In conclusion, this correspondence article presents the findings of a study that employed a conjoint analysis approach to examine the preferences of senior high school students regarding online learning attributes during the COVID-19 pandemic. The study identifies the key attributes that significantly influence student preferences, including delivery type, assigned tasks, evaluation methods, virtual laboratory utilization, interface layout, and delivery platform. The insights gained from this research contribute to the existing knowledge on online learning and provide practical recommendations for educational institutions to enhance the quality of online education. In addition, developing a mixed method (quantitative and qualitative) study as well as investigating the correlation between students' preferences and academic performance were suggested to enhance the quality of online education.

Thank you and hoping that you will be considering this correspondence article for publication in your journal. I believe that the research findings presented in this study will be of interest to the readership of the journal and contribute to the ongoing discourse on online learning during the COVID-19 pandemic.

Compliance with ethical standards

Acknowledgments

I would like to express my sincere appreciation to the following individuals for their invaluable contributions to this research study: **Dr. Dennis G. Caballes and his co-authors:** This correspondence article would not have been possible without their assistance and the foundation provided by their work. Their insights and findings served as a crucial anchor for this study. **Dr. Maria Eliza P. Cruz:** Grateful for her exceptional patience, guidance, and expertise in guiding me throughout this educational research endeavor. Her valuable insights and support have significantly shaped the outcome of this study.

Statement of informed consent

Ethical standards were strictly followed in the research on senior high school students' preferences for online learning attributes during the COVID-19 pandemic. Measures were implemented to protect participants and maintain ethical integrity, including informed consent, confidentiality, and data protection and storage. By upholding these ethical standards, the research aimed to safeguard the rights, welfare, and confidentiality of the participating senior high school students while obtaining valuable insights into their preferences for online learning attributes during the COVID-19 pandemic.

References

- [1] Chen, N.-S., & Jang, S.-J. (2010). Motivation in Online Learning: Testing a Model of Self-Determination Theory. *Computers in Human Behavior*, 26(4), 741-752.
- [2] J.F. Hair. *Multivariate Data Analysis: A Global Perspective*. Pearson, Upper Saddle River (2010)
- [3] M. Kuzmanovic, M. Martic, M. Vujosevic, B. Panic Construction of efficient conjoint experimental design using MCON procedure. *International Journal of Physical Sciences*, 6 (24) (2011), pp. 5659-5670
- [4] M.S. Mok, S.Y. Sohn, Y.H. Ju. Conjoint analysis for intellectual property education. *World Patent Information*, 32 (2) (2010), pp. 129-134,
- [5] A.K. Ong, Y.T. Prasetyo, M.N. Young, J.F. Diaz, T. Chuenyindee, P. Kusonwattana, ..., A.A. Redi. Students' preference analysis on online learning attributes in industrial engineering education during the COVID-19 pandemic: A conjoint analysis approach for sustainable industrial engineers. *Sustainability*, 13 (15) (2021), p. 8339
- [6] Ong, Y.T. Prasetyo, M.A.D. Libiran, Y.M. Lontoc, J.A. Lunaria, A.M. Manalo, ..., A.A.N.P. Redi. Consumer preference analysis on attributes of milk tea: A conjoint analysis approach. *Foods*, 10 (2021), p. 1382

- [7] Y.T. Prasetyo, A.M. Castillo, L.J. Salonga, J.A. Sia, T. Chuenyindee, M.N. Young, ..., A.A. Redi. Factors influencing repurchase intention in drive-through Fast Food: A structural equation modeling approach. *Foods*, 10 (6) (2021), p. 1205
- [8] R. Sethuraman, R.A. Kerin, W.L. Cron. A field study comparing online and offline data collection methods for identifying product attribute preferences using conjoint analysis. *Journal of Business Research*, 58 (5) (2005), pp. 602-610.