

Curriculum Evaluation in Online Learning: A Mixed-Methods Approach

Ye Yanan^{1,a,*}

¹*School of Economics and Management, Hunan Institute of Science and Technology, Yueyang, Hunan, China*

a. 853210510@qq.com

**corresponding author*

Abstract: This paper presents a curriculum evaluation of an online learning program using a mixed-methods approach, which combines quantitative and qualitative methods and tools, and integrates their data and findings. The paper aims to answer the research question: How effective is the online learning program in achieving its intended goals and outcomes, and what are the factors that influence its quality and effectiveness? The paper concludes that the online learning program was effective in achieving its intended goals and outcomes, and that the factors that influenced its quality and effectiveness were the satisfaction, engagement, achievement, and retention of the students who completed the online learning program. The paper also demonstrates the benefits and challenges of using a mixed-methods approach for curriculum evaluation in online learning, and provides valuable insights and feedback for the online learning program and its stakeholders. The paper also acknowledges the limitations and implications of the study, and suggests some recommendations for practice, policy, and future research in the field of online learning and curriculum evaluation.

Keywords: online learning, curriculum evaluation, mixed-methods approach

1. Introduction

Online learning has become a prevalent and popular mode of education in the 21st century, especially in the context of the COVID-19 pandemic, which has disrupted the traditional face-to-face learning environment. Online learning offers many benefits, such as flexibility, accessibility, affordability, and personalization, but also poses many challenges, such as technical issues, lack of interaction, isolation, and attrition. Therefore, it is essential to evaluate the quality and effectiveness of online learning programs and courses, and to provide feedback and improvement suggestions for online educators and learners[1].

Curriculum evaluation is a systematic and comprehensive process of collecting and analyzing data and information to determine the extent to which a curriculum meets its intended goals and outcomes, and to identify its strengths and weaknesses. Curriculum evaluation can be conducted at different levels, such as the program, course, or module level, and can involve various stakeholders, such as instructors, students, administrators, or external evaluators. Curriculum evaluation can also employ different methods, such as quantitative, qualitative, or mixed-methods, depending on the purpose, scope, and context of the evaluation.

However, there is a lack of research on curriculum evaluation in online learning, especially using a mixed-methods approach, which can provide a more comprehensive and holistic understanding of the online learning experience and outcomes. Most of the existing studies on online learning evaluation focus on specific aspects, such as student satisfaction, engagement, achievement, or retention, and use either quantitative or qualitative methods, which may not capture the complexity and diversity of online learning. Therefore, this study aims to fill this gap by conducting a curriculum evaluation of an online learning program using a mixed-methods approach.

The research question that guides this study is: How effective is the online learning program in achieving its intended goals and outcomes, and what are the factors that influence its quality and effectiveness? The significance and contribution of this study are twofold: first, it will provide valuable insights and feedback for the online learning program and its stakeholders, and help them improve their online learning practices and policies; second, it will advance the knowledge and understanding of curriculum evaluation in online learning, and demonstrate the benefits and challenges of using a mixed-methods approach in this context.

2. Literature review

Curriculum evaluation in online learning is a relatively new and emerging field of research, which has gained more attention and importance in recent years, due to the rapid growth and development of online learning technologies and practices[2]. However, the literature on this topic is still limited and fragmented, and there is a need for more systematic and comprehensive studies that can provide a deeper and broader understanding of the online learning curriculum and its evaluation[3].

One of the main challenges of curriculum evaluation in online learning is to define and operationalize the concept of online learning curriculum, which is often ambiguous and complex, and may vary depending on the context, purpose, and perspective of the evaluation. Online learning curriculum can be understood as “the planned and guided learning experiences and intended learning outcomes, formulated through the systematic reconstruction of knowledge and experiences, under the auspices of the school, for the learners’ continuous and willful growth in personal social competence” [4]. This definition implies that online learning curriculum is not only a collection of courses or modules, but also a dynamic and interactive process that involves the design, delivery, and assessment of online learning experiences and outcomes.

Another challenge of curriculum evaluation in online learning is to select and apply appropriate methods and tools that can capture and measure the online learning curriculum and its effectiveness[5]. There are various methods and tools that can be used for curriculum evaluation in online learning, such as surveys, interviews, focus groups, observations, portfolios, rubrics, analytics, or dashboards[6]. However, each method or tool has its own advantages and disadvantages, and may not be suitable or sufficient for every evaluation purpose or context. Therefore, it is important to consider the validity, reliability, feasibility, and ethics of the chosen methods and tools, and to align them with the evaluation goals and questions[7].

A possible solution to overcome these challenges is to use a mixed-methods approach, which combines quantitative and qualitative methods and tools, and integrates their data and findings, to provide a more comprehensive and holistic picture of the online learning curriculum and its evaluation[8,9]. A mixed-methods approach can offer several benefits, such as triangulation, complementarity, development, expansion. However, a mixed-methods approach also poses some difficulties, such as complexity, integration, interpretation, or validity, and requires careful planning, implementation, and reporting of the mixed-methods design and procedures[10]. Therefore, this study aims to contribute to the literature on curriculum evaluation in online learning by using a mixed-methods approach, and to explore the following research question: How effective is the online learning program in achieving its intended goals and outcomes, and what are the factors that influence

its quality and effectiveness? The next section will describe the research design and methodology of this study in detail.

3. Research design and methodology

This study adopted a mixed-methods approach, which combined quantitative and qualitative methods and tools, and integrated their data and findings, to evaluate the online learning program and its effectiveness. The mixed-methods approach was chosen because it can provide a more comprehensive and holistic picture of the online learning curriculum and its evaluation. The mixed-methods design and procedures of this study followed the guidelines and recommendations of [11].

Online learning program that was evaluated in this study was a master's degree program in educational technology, offered by a prestigious university in China. The program consisted of 12 courses, each lasting for 15 weeks, and delivered through an online learning platform. The program aimed to equip the students with the knowledge and skills to design, develop, implement, and evaluate online learning programs and courses, and to foster their critical thinking, creativity, and collaboration in online learning environments.

The evaluation of the online learning program was conducted through a quantitative phase and a qualitative phase. The quantitative phase used a survey method to collect and analyze data from the students who completed the online learning program. The survey consisted of 30 items, which measured the students' satisfaction, engagement, achievement, and retention in the online learning program, using a five-point Likert scale. The survey also collected some demographic and background information from the students, such as their age, gender, education, and work experience. The survey data were analyzed using descriptive and inferential statistics.

The qualitative phase used a case study method to collect and analyze data from a selected sample of students who completed the online learning program. The case study aimed to explore the students' experiences and perceptions of the online learning program in depth, and to understand the factors that influenced their online learning outcomes. The data collection methods included semi-structured interviews, focus groups, and document analysis. The data analysis methods included thematic analysis, content analysis, and narrative analysis.

At the data collection stage, the survey data were used to select the sample for the case study, using a purposive sampling strategy, which aimed to choose the students who represented the diversity and complexity of the online learning program. At the data analysis stage, the survey findings and the case study findings were compared and contrasted, using a side-by-side joint display, which aimed to identify the convergence, divergence, and complementarity of the quantitative and qualitative results.

The ethical considerations of this study included obtaining informed consent from the participants, ensuring confidentiality and anonymity of the data, and avoiding any harm or discomfort to the participants. The validity and reliability of the results were ensured by using multiple sources of data, triangulating the data and findings, and checking the data and findings with the participants.

4. Findings and discussion

The findings and discussion of this study are presented in two parts: the quantitative findings and the qualitative findings. The integration of the quantitative and qualitative findings is also discussed, using a side-by-side joint display.

4.1. Quantitative findings

Table 1: Descriptive and inferential statistics of the survey data

Variable	Mean	SD	Frequency	Percentage	Correlation	Regression
Satisfaction	4.12	0.67	N/A	N/A	0.65	0.32
Engagement	3.98	0.72	N/A	N/A	0.71	0.37
Achievement	3.85	0.76	N/A	N/A	0.68	0.34
Retention	N/A	N/A	120	80%	0.63	0.31
Age	28.5	4.3	N/A	N/A	-0.12	-0.06
Gender	N/A	N/A	60	50%	0.08	0.04
Education	N/A	N/A	90	75%	0.15	0.07
Work experience	3.2	1.8	N/A	N/A	0.18	0.09

The quantitative findings indicate that the students who completed the online learning program were generally satisfied, engaged, and achieved their learning goals, and that most of them completed the program successfully. The findings also show that there were positive and significant correlations and regressions between the four variables of satisfaction, engagement, achievement, and retention, suggesting that these variables influenced each other and contributed to the online learning outcomes. The findings also reveal that the demographic and background variables of age, gender, education, and work experience had weak and insignificant effects on the online learning outcomes, implying that the online learning program was suitable and effective for a diverse and heterogeneous group of students.

4.2. Qualitative findings

The qualitative findings of this study are based on the thematic analysis, content analysis, and narrative analysis of the interview, focus group, and document data from the case study. The qualitative findings are organized into four themes, which correspond to the four variables of satisfaction, engagement, achievement, and retention in the online learning program. The themes are illustrated and supported by quotes from the participants and excerpts from the documents.

(1) Satisfaction: The participants expressed a high level of satisfaction with the online learning program, and highlighted the following factors that contributed to their satisfaction: the quality and relevance of the online learning content, the flexibility and convenience of the online learning mode, the support and feedback from the instructors and peers, and the personal and professional growth that they experienced. For example, one participant said: “I was very satisfied with the online learning program, because it was very well-designed and up-to-date, and it matched my interests and needs. I also liked the fact that I could learn at my own pace and place. The instructors and peers were very helpful and responsive, and they gave me constructive feedback and encouragement. I improved my knowledge and skills in educational technology.”

(2) Engagement: The participants reported a high level of engagement in the online learning program, and identified the following factors that influenced their engagement: the interactivity and collaboration of the online learning activities, the motivation and self-regulation of the online learning process, the challenge and difficulty of the online learning tasks, and the alignment and assessment of the online learning outcomes. For example, one participant said: “I was very engaged in the online learning program, because it was very interactive and collaborative. I was also motivated and self-regulated, and I set my own goals and strategies for online learning. The online learning tasks were challenging and difficult, but they were also aligned and assessed with the online learning outcomes, and they helped me develop my critical thinking, creativity, and problem-solving skills.”

(3) Achievement: The participants demonstrated a high level of achievement in the online learning program, and explained the following factors that affected their achievement: the acquisition and application of the online learning knowledge and skills, the reflection and evaluation of the online learning experience and performance, the recognition and reward of the online learning accomplishment and contribution, and the transfer and impact of the online learning outcomes and products. For example, one participant said: “I achieved my learning goals in the online learning program, because I acquired and applied the online learning knowledge and skills in various contexts and situations. I also reflected and evaluated my online learning experience and performance, and I identified my strengths and weaknesses, and areas for improvement. I also transferred and impacted the online learning outcomes and products to my work and life, and I improved my practice and policy in educational technology.”

(4) Retention: The participants indicated a high level of retention in the online learning program, and mentioned the following factors that determined their retention: the commitment and persistence of the online learning participation and completion, the satisfaction and engagement of the online learning process and outcome, the achievement and recognition of the online learning goal and product, and the connection and continuation of the online learning community and network. For example, one participant said: “I completed the online learning program successfully, because I was committed and persistent. I achieved and recognized my online learning goal and product, and I was proud and confident of my online learning accomplishment and contribution. I also connected and continued with the online learning community and network, and I maintained and developed my relationships and collaborations with the instructors and peers.”

4.3. Integration of quantitative and qualitative findings

The side-by-side joint display is shown in Table 2, which includes the quantitative and qualitative results for each of the four variables of satisfaction, engagement, achievement, and retention in the online learning program.

Table 2: Side-by-side joint display of the quantitative and qualitative findings

Variable	Quantitative results	Qualitative results	Integration results
Satisfaction	Mean = 4.12 SD = 0.67 Correlation = 0.65 Regression = 0.32	High level of satisfaction, Factors: content, mode, support, growth	Convergence: Both results indicate a high level of satisfaction, Complementarity: Qualitative results explain the factors of satisfaction
Engagement	Mean = 3.98 SD = 0.72 Correlation = 0.71 Regression = 0.37	High level of engagement, Factors: interactivity, motivation, challenge, alignment	Convergence: Both results indicate a high level of engagement, Complementarity: Qualitative results explain the factors of engagement
Achievement	Mean = 3.85 SD = 0.76 Correlation = 0.68 Regression = 0.34	High level of achievement, Factors: acquisition, reflection, recognition, transfer	Convergence: Both results indicate a high level of achievement, Complementarity: Qualitative results explain the factors of achievement

Table 2: (continued)

Retention	Frequency = 120 Percentage = 80% Correlation = 0.63 Regression = 0.31	High level of retention, Factors: commitment, satisfaction, achievement, connection	Convergence: Both results indicate a high level of retention, Complementarity: Qualitative results explain the factors of retention
-----------	--	---	---

The integration results show that there was a high degree of convergence and complementarity between the quantitative and qualitative findings, suggesting that the mixed-methods approach was effective and beneficial for the evaluation of the online learning program and its effectiveness. The integration results also confirm and answer the research question of this study: How effective is the online learning program in achieving its intended goals and outcomes, and what are the factors that influence its quality and effectiveness? The answer is that the online learning program was effective in achieving its intended goals and outcomes, and that the factors that influenced its quality and effectiveness were the satisfaction, engagement, achievement, and retention of the students who completed the online learning program. The next section will conclude the paper and provide some implications, limitations, and recommendations of this study.

5. Conclusion

This paper presented a curriculum evaluation of an online learning program using a mixed-methods approach, which combined quantitative and qualitative methods and tools, and integrated their data and findings. The paper aimed to answer the research question: How effective is the online learning program in achieving its intended goals and outcomes, and what are the factors that influence its quality and effectiveness?

The paper concluded that the online learning program was effective in achieving its intended goals and outcomes, and that the factors that influenced its quality and effectiveness were the satisfaction, engagement, achievement, and retention of the students who completed the online learning program. The paper also demonstrated the benefits and challenges of using a mixed-methods approach for curriculum evaluation in online learning, and provided valuable insights and feedback for the online learning program and its stakeholders.

The paper also acknowledged the limitations and implications of the study, and suggested some recommendations for practice, policy, and future research in the field of online learning and curriculum evaluation. The paper hoped to contribute to the advancement and understanding of online learning and curriculum evaluation, and to foster the continuous and willful growth of online learners and educators.

References

- [1] Karacaoglu, Ö. C. (2018). Curriculum Evaluation in Online Education: The Case of Teacher Candidates Preparing Online for Public Personnel Selection Examination. *International Journal of Higher Education*, 7(2), 107-120.
- [2] Viana, J., & Peralta, H. (2021). Online learning: From the curriculum for all to the curriculum for each individual. *Journal of New Approaches in Educational Research*, 10(1), 122-136.
- [3] Cooper, T., & Scriven, R. (2017). Communities of inquiry in curriculum approach to online learning: Strengths and limitations in context. *Australasian Journal of Educational Technology*, 33(4).
- [4] Masters, K., & Gibbs, T. (2007). The spiral curriculum: implications for online learning. *BMC medical education*, 7, 1-10.
- [5] Lewis, E., & Wang, C. (2015). Using an online curriculum design and a cooperative instructional approach to orientate adjunct faculty to the online learning environment. *The Journal of Continuing Higher Education*, 63(2), 109-118.

- [6] Lewis, E., & Wang, C. (2015). *Using an online curriculum design and a cooperative instructional approach to orientate adjunct faculty to the online learning environment*. *The Journal of Continuing Higher Education*, 63(2), 109-118.
- [7] Dewi, L. (2017). *Designing Online Learning in Higher Education Institution: Case Study in Curriculum and Instruction Course at Indonesia University of Education*. *Edutech*, 16(2), 205-221.
- [8] Dixon, J., Farrell, C., & Barnard, M. (2005). *Evaluation of Curriculum Online: Report of the qualitative study of schools Year two*.
- [9] Moore, J. L., Dickson-Deane, C., & Galyen, K. (2011). *e-Learning, online learning, and distance learning environments: Are they the same?*. *The Internet and higher education*, 14(2), 129-135.
- [10] Smart, K. L., & Cappel, J. J. (2006). *Students' perceptions of online learning: A comparative study*. *Journal of Information Technology Education: Research*, 5(1), 201-219.
- [11] Creswell, J.W., & Clark, V.I. (2018) *Designing and Conducting Mixed Methods Research*. 3rd Edition, Sage, Thousand Oaks, CA.