Assessing Learner Satisfaction in Online Courses: Evidence from Public and Private Higher Education Institutions in Surakarta Indonesia

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Abstract. This study aims to measure student satisfaction in participating in online digital learning courses, which focuses on affective and behavioral dimensions, with the addition of a satisfaction dimension as an evaluative component. Students from public and private universities in Surakarta, Indonesia, participated by completing an online questionnaire based on their experiences with Coursera-based courses. The descriptive analysis revealed that students generally had positive perceptions of the online learning experience, particularly regarding the quality of video content, the clarity of the course structure, the fairness of the assessment system, and the responsiveness of support services. In terms of behavioral aspects, students demonstrated active engagement by completing videos and assignments on time and consistently adhering to the course schedule. Furthermore, most respondents expressed overall satisfaction with the flexibility and accessibility of the online learning environment. However, some students reported technical issues, such as inaccessible modules, delays in peer review processes, and difficulties retrieving certificates, which highlight the need to improve support systems to better facilitate the learning process.

Keywords: digital; higher education; MOOCs; online; students satisfaction

INTRODUCTION

Over the past few years, the development of information technology has had a significant impact on learning systems in higher education. The conventional learning model, which relies on face-to-face interaction, is beginning to change as digital technology becomes more widely adopted in the teaching and learning process. One notable innovation that has emerged from this development is the Massive Open Online Course (MOOCs), which is an online

course that allows anyone to participate in learning activities from various locations, without geographical barriers. The materials in MOOCs are typically developed independently by the organizing institutions and can be accessed by participants on a large scale (Wong, 2021).

Platforms such as Coursera are widely utilized as they offer thousands of courses from leading universities across various fields of study. These courses are designed to be completed individually, with learning materials presented in the form of videos, quizzes, readings, and assignments assessed through automated evaluation systems. Despite offering high flexibility, such systems have limitations, particularly in terms of direct interaction between students and instructors. Wong (2021), in a study on pedagogical features of MOOCs, found that approximately 77% of courses did not actively involve instructors, resulting in minimal interaction and learning support.

Several studies suggest that the success of MOOCs should not be measured only by participation rates or certification achievements, but also by student satisfaction with the learning process itself. A study by Ho et al. (2023) conducted in Vietnam, for instance, revealed that students' satisfaction levels with online courses on Coursera were relatively low. Students reported various problems, including a lack of transparency in grading systems, limited technical support, minimal interaction with instructors, and confusion regarding the operation of plagiarism detection software. However, despite the rapid expansion of MOOC-based learning in Indonesia, empirical evidence on student satisfaction in this context remains scarce—especially evidence that disaggregates experiences in universities and examines not only outcomes (e.g., completion) but also process dimensions such as affective experience, study behaviors, and perceived support.

Most previous studies have focused on technical aspects that influence student satisfaction and participation in online learning, such as access to technology, platform features, interactive content, and instructor presence (Gavi, 2024). However, only a few studies have unpacked the forms and dimensions of satisfaction in detail. Building on this gap, this study adopts a three-dimensional lens, encompassing affective, behavioral, and satisfaction aspects. This lens is theoretically grounded in (i) the student engagement framework where emotional (affective) and behavioral engagement are core facets of participation (Fredricks, Blumenfeld, & Paris, 2004); (ii) the Community of Inquiry (CoI) model, which links emotional experience to social/teaching presence and helps explain support-related perceptions in online environments (Garrison, Anderson, & Archer, 2000/2001); and (iii) Expectation–Confirmation Theory (ECT), which conceptualizes satisfaction as the result of expectations and their confirmation through actual performance—including support services and assessment clarity (Bhattacherjee, 2001). In higher-education online learning, developing a comprehensive understanding of how students perceive the value of their learning experience is critical. Such understanding helps determine whether the system provides adequate academic, technical, and social support—conditions that shape affective engagement, study behaviors, and overall satisfaction. Without strong support, digital learning is unlikely to produce high-quality learning.

METHODOLOGY

Research Design

The research was conducted in several stages (Figure 1). First, a comprehensive literature review was undertaken to establish the theoretical foundation and identify relevant variables. This was followed by the development of the research instrument design and the validation of the questionnaire. Data collection was then carried out, and the responses were analyzed using statistical tools. Open-ended responses were coded and thematically analyzed to complement the quantitative findings. Finally, the results were interpreted, and conclusions and recommendations were formulated to enhance the implementation and user experience of MOOCs-based learning among university students.

This study employed a descriptive quantitative research design to investigate university students' satisfaction in participating in online courses utilizing the Massive Open Online Courses (MOOCs) model. The concept of satisfaction in this research was examined through three dimensions: affective, behavioral, and cognitive. These dimensions served as the foundation for developing the research instrument and determining the analytical approach.

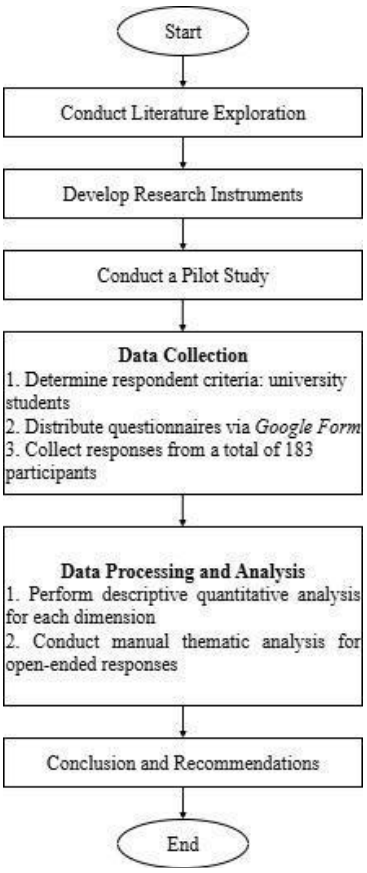

FIGURE 1. Flowchart of research stages

Data were collected through an online questionnaire distributed via Google Forms. The instrument consisted of close-ended items measured on a Likert scale to assess satisfaction levels within the three dimensions, complemented by several open-ended questions to capture students' perspectives and experiences in greater depth. Descriptive statistical methods were applied to identify trends within each dimension, while thematic analysis was conducted on the open-ended responses to provide additional qualitative insights into students' perspectives and experiences.

The target population was active university students in Surakarta who had participated in MOOCs-based courses through the Coursera platform. A purposive sampling technique was employed, with the inclusion criterion being the completion of at least one Coursera course within the previous six months. A total of 183 valid responses were obtained, which was considered sufficient for both descriptive statistical analysis and thematic analysis in accordance with the study's objectives. The sample comprised students from both public and private universities (public = 73% and private = 27%). Participants represented diverse fields of study, including Engineering/Technology = 35%, Business/Economics = 20 %, Social Sciences = 25 %, Education = 15%, Health and Others = 5 %.

Research Variable Identification

This study focuses on three key variables: affective, behavioral, and satisfaction components, which are considered essential in understanding learners' experiences in online learning. The affective dimension includes learners' emotional responses, such as enjoyment, interest, and perceived relevance of content. Ho et al. (2023) highlight that emotional factors like feeling engaged and motivated contribute significantly to learner satisfaction. This aligns with

the findings of Wang et al. (2022) and Deng (2021), who both report that emotional engagement, such as learners' excitement or positive sentiments toward content, enhances course experience and retention.

The behavioral dimension involves active participation, including watching instructional videos, completing assignments on time, and following learning schedules. Wang et al. (2022) emphasize that consistent engagement with course activities reflects strong behavioral involvement. Ho et al. (2023) similarly note that behavioral participation impacts learners' overall satisfaction. The satisfaction dimension represents learners' evaluation of the course, including fulfillment of expectations, content quality, and the effectiveness of technical support. Ho et al. (2023) found that satisfaction is closely tied to course design, platform usability, and support services. Deng (2021) also supports this, showing that learner satisfaction is influenced by emotional responses to content and the stability of the learning platform.

Research Instrument

The instrument used in this study was a closed-ended questionnaire employing a 5-point Likert scale, ranging from "Strongly Disagree" (1) to "Strongly Agree" (5), and was distributed via Google Forms. The items representing the affective, behavioral, and cognitive dimensions were adapted from an instrument previously developed by Ho et al. (2023), which was originally used to measure student satisfaction in Coursera-based online courses.

The questionnaire consisted of three to four statements for each dimension: the affective dimension focused on students' feelings toward course structure and support services; the behavioral dimension assessed student engagement in completing videos and assignments; and the cognitive dimension captured perceptions of content understanding, application ability, and enhancement of critical thinking. In addition to the closed-ended questions, two open-ended items were included to further explore factors that students found satisfying or unsatisfying during their participation in the online course.

Prior to the large-scale distribution of the questionnaire, a pilot study was conducted involving several students who had previously completed online courses. The purpose of this phase was to evaluate the readability, clarity of language, and overall flow of the questionnaire. Feedback obtained from the pilot study was used to refine the wording of several items, ensuring better comprehension among respondents. The questionnaire items for each dimension, along with their corresponding literature sources, are presented in Table 1.

TABLE 1. Questionnaire items

Construct	Item Code	Measure	Source
Affective (A)	A1	The learning videos are interesting	(Ho et al., 2023)
	A2	The course is designed in a structured manner	
	A3	There is a measurable assessment system	
	A4	The learning support servuce facilities are responsive	
Behavioral (B)	B1	I watvh all the learning videos in sequence until completion	
	B2	I complete assignments according to the given assessment criteria	
	B3	I follow and adhere to the learning sequence according to the course schedule	
Satisfaction (S)	S1	I am happy because thus program meets my learning needs and expectations	
	S2	I am satisfied with my learning experience during the program	
	S3	I am satisfied with the technical support services during the program	

To ensure the quality of the measurement instrument, the reliability and validity of the questionnaire were tested using SPSS software. Reliability was assessed using Cronbach's Alpha to determine internal consistency, while validity was evaluated through item-total correlation to confirm whether each item accurately reflected the intended construct.The reliability test showed a Cronbach's Alpha of 0.922, indicating high internal consistency. Validity testing using Pearson correlation showed that all items had corrected item-total correlation values above 0.30 and were statistically significant ($p < 0.001$), confirming that the instrument accurately measured the affective, behavioral, and satisfaction dimensions as intended.

Data Collection Technique

Data were collected using a purposive sampling technique, selecting respondents who met specific criteria. In this study, the respondents were students who had completed at least one MOOCs-based online course within the past six months. The questionnaire was distributed online through social media platforms and student communication groups. Descriptive statistics were used to analyze student responses across the affective, behavioral, and overall satisfaction dimensions. This analysis provided an overview of patterns in students' perceptions of online learning.

RESULTS AND DISCUSSION

Data were analyzed using descriptive statistics to summarize students' perceptions across the affective, behavioral, and satisfaction dimensions, while thematic analysis was conducted on open-ended responses. A total of 183 students from both public and private universities in Surakarta participated, and all responses were included in the analysis. Overall patterns were found to be consistent across institutional types, with descriptive trends indicating generally high satisfaction levels in all three dimensions. The results presented below highlight these dimensional tendencies to provide a clear overview of students' affective engagement, learning behavior, and overall satisfaction.

Affective Dimension

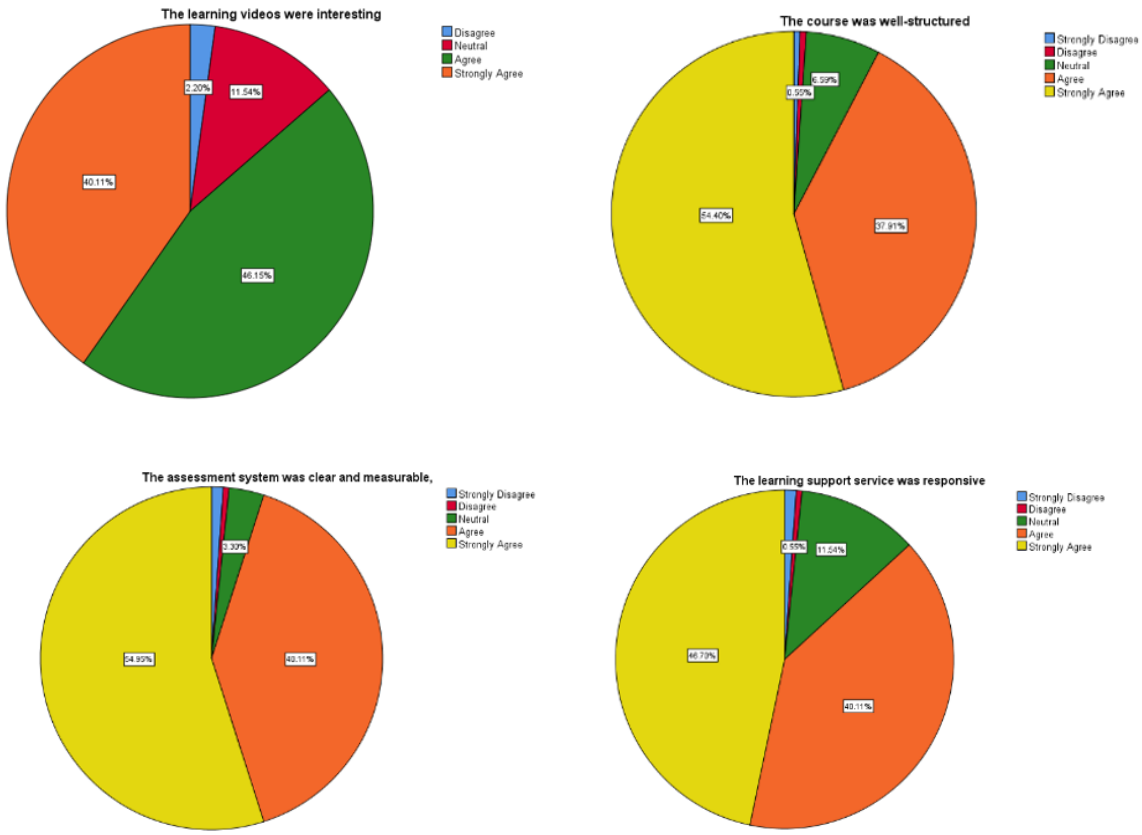

FIGURE 2. Distribution of responses for the affective dimension

Figure 2 shows the distribution of responses for the affective dimension. Approximately 90% of students indicated that the video content was engaging, the course structure was clear and well organized, the assessment system was transparent, and the support services were responsive. This indicates that students experienced positive emotions and felt comfortable throughout the online learning process, suggesting strong affective engagement.

Similar findings were reported by Deng (2021), who found that emotional engagement was the most influential factor in predicting learner satisfaction in MOOCs, surpassing cognitive and behavioral engagement. This is also supported by Martin et al. (2021), who explain that effective course design, including clear content presentation, effective communication, assessment structure, and learner support, can help increase student engagement and make online learning more effective.

Behavioral Dimension

Figure 3 illustrates the behavioral dimension. About 88% of students reported completing all videos, submitting assignments according to grading criteria, and maintaining consistency in following the course schedule. This suggests that students demonstrated disciplined and motivated learning behaviors, which are important for sustaining progress in MOOCs. This aligns with previous findings that emphasize how student motivation can drive adaptive behaviors and increase learning engagement (Singh et al., 2022).

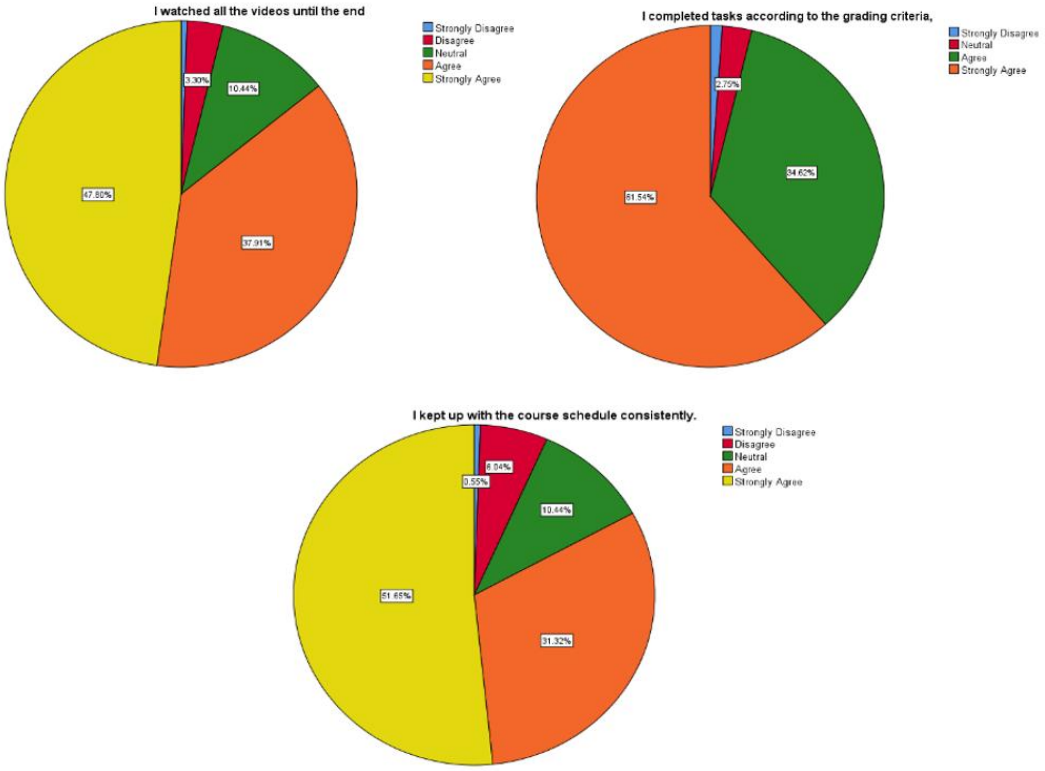

FIGURE 3. Distribution of responses for the behavioral dimension

Satisfaction Dimension

Figure 4 presents the satisfaction dimension. Nearly 89% of students stated that the program met their learning needs and expectations, that they were satisfied with the overall experience, and that the technical support was sufficient. This highlights flexibility and accessibility as central strengths of the program, while also suggesting that technical support, although generally sufficient, is an area that could be further improved. This finding is supported by Albelbisi et al. (2021), who found that system quality, including ease of use, ease of learning, and platform flexibility, has a strong positive impact on student satisfaction in MOOCs.

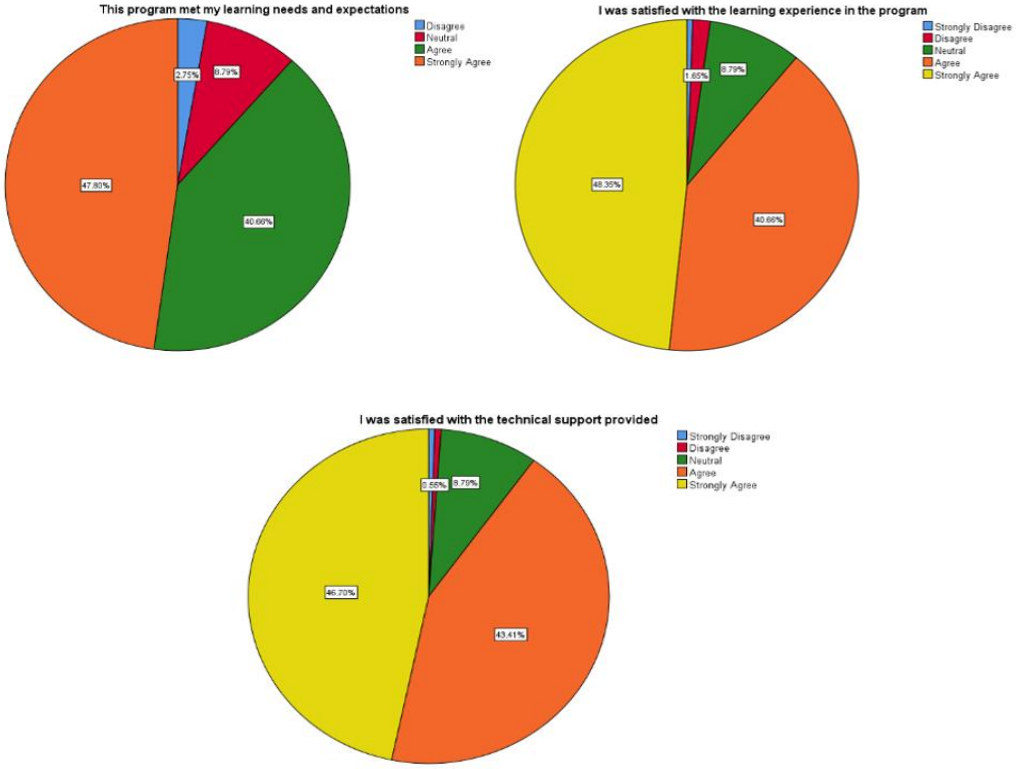

FIGURE 4. Distribution of responses for the satisfaction dimension

Thematic Analysis

Thematic analysis of open-ended responses was conducted using a structured, multi-phase approach as described by Ahmed et al. (2025) and later expanded by Christou (2024) to incorporate AI-assisted coding without replacing human interpretation. The process involved familiarisation with the data, code creation, theme generation, and subsequent theme review. This qualitative procedure was designed to complement the quantitative findings, providing a deeper understanding of the three satisfaction dimensions identified in the survey results.

Thematic analysis of students' open-ended responses identified six main themes (Figure 5) that explain how learners behaved and how satisfied they felt with the online learning program. These qualitative themes correspond closely with the quantitative results. For instance, students' expressions of commitment, discipline, and responsibility reinforce the behavioral dimension, while reports of enjoyment and motivation reflect the affective dimension. Conversely, issues such as technical difficulties, unclear guidance, and limited feedback align with the satisfaction

dimension, revealing areas where expectations were not fully met. This integration of quantitative and qualitative findings highlights that emotional engagement and behavioral consistency significantly contribute to learner satisfaction, while insufficient technical and instructional support can significantly diminish the overall learning experience.

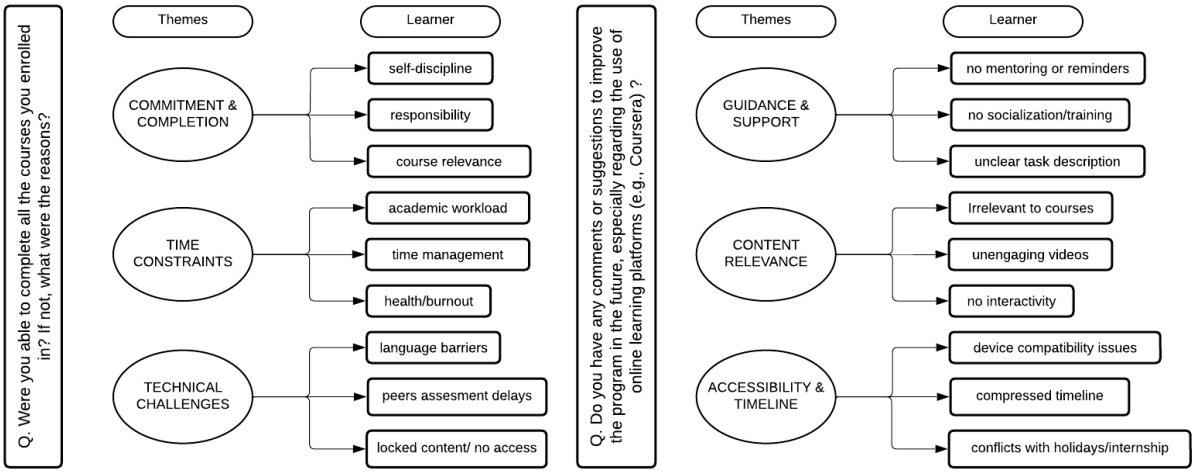

FIGURE 5. Thematic network for analysis of open-ended questions for students

Students' difficulties finishing courses due to final projects, internships, or health issues echo common MOOC challenges around time management and self-regulation reported in other settings (e.g., Vietnam, as in Ho et al., 2023). Similar to those studies, the student respondents valued flexibility yet still struggled to sustain attention and pacing in a self-paced environment—suggesting that flexibility is a necessary but insufficient condition for satisfaction without scaffolds that help students plan, monitor, and adapt their study behaviors. Technical obstacles (module access, peer-review glitches, and delayed certificates) and limited guidance at the outset (unclear task instructions and uncertainty about whom to contact) align with broader findings that perceived support and assessment clarity are decisive factors in determining satisfaction in online courses. Where our results diverge is in the weight students place on early orientation and ongoing, humanized support; this emphasis was repeatedly voiced even when overall course design was positively rated, indicating a stronger demand for process visibility and responsiveness than what many global MOOC studies typically highlight.

Theoretically, the findings extend a three-strand lens that integrates engagement theory (encompassing both affective and behavioral facets), the Community of Inquiry perspective (support/presence), and Expectation–Confirmation Theory (satisfaction). First, they show that affective and behavioral engagement alone do not translate into satisfaction unless students perceive reliable academic and technical support—pointing to a support-as-enabler mechanism that conditions (rather than merely correlates with) satisfaction. Second, they suggest a refinement to ECT in MOOC contexts: expectations are not only confirmed by content quality but also by process assurances (orientation, clear rubrics, timely help). Third, the mixed views on content (too theoretical, not aligned with major issues, and limited real-world cases) indicate that relevance cues function as affective triggers that sustain behavioral engagement—linking content-context fit to the engagement–satisfaction pathway more explicitly than prior work.

Contextually, several Indonesian factors may intensify these dynamics. A mobile-first learning pattern and uneven connectivity heighten the salience of technical reliability (e.g., phone access, platform stability). The academic calendar's clustering of internships and final projects compresses students' available time, increasing the premium on just-in-time guidance and micro-pacing aids. Moreover, culturally shared expectations for clear role signaling and approachable support—often mediated by program administrators or lecturers—may amplify dissatisfaction when help channels are opaque in self-paced, global platforms. Finally, differences in institutional support ecosystems

between public and private universities likely shape the availability of tutoring, troubleshooting, or credit recognition, which can either buffer or magnify technical and structural frictions. Together, these contextual elements help explain why Indonesian students in our sample simultaneously "like the course" yet report lowered satisfaction when support is inconsistent, instructions are ambiguous, technology is unreliable, or examples feel distant from local study programs.

In summary, these results align with those from other contexts in emphasizing the importance of flexibility, relevance, and platform reliability, thereby contributing to a more process-centric, theory-linked account. This account posits that support presence and early orientation mediate the path from affective/behavioral engagement to satisfaction. Practically, this implies that Indonesian HEIs and MOOC partners should pair flexible access with (i) mandatory orientation modules, (ii) clarified assessment rubrics and peer-review norms, (iii) visible, responsive help desks, and (iv) localized case materials—especially during high-pressure academic periods—so that flexibility translates into sustained engagement and, ultimately, satisfaction.

CONCLUSION

This study assesses university students' satisfaction with Coursera-based courses across public and private institutions in Surakarta, Indonesia, showing that satisfaction is shaped by emotional engagement, active participation, and the extent to which course experiences meet expectations; most students viewed course structure, content quality, and platform flexibility positively, yet technical access issues, limited interaction, and insufficient support indicate areas for improvement and the need to align course design with student expectations, accessibility needs, and institutional support systems.

At the same time, several constraints temper interpretation: the descriptive, cross-sectional design precludes causal claims; purposive sampling of recent Coursera users may introduce selection bias toward more motivated or digitally prepared learners; a single-city context and self-reported measures limit external validity and invite common-method bias; and unmeasured institutional differences between public and private (e.g., IT capacity, academic calendars) may confound satisfaction levels. To build on these findings, future work should track learners longitudinally across course phases (including non-completers), employ experimental or quasi-experimental tests of specific supports (e.g., mandatory orientation, clearer rubrics, micro-pacing nudges, responsive help desks), and conduct multi-site comparisons across public/private and urban/non-urban settings; mixed-methods and learning-analytics designs can further clarify how process assurances and locally relevant content mediate the engagement–satisfaction pathway, strengthening both theory and practice for MOOC implementation in Indonesian higher education.

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