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Student Satisfaction in Learning Services: A Systematic Review of Scopus Data-Based Based on the PRISMA Approach (2015-2025)

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ABSTRACT

This study aims to identify and analyze the factors affecting student satisfaction with learning services during the period 2015-2025. This study used a Systematic Literature Review (SLR) approach, following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. A total of 400 articles were identified from Scopus. After the selection, screening, and feasibility evaluation, 27 articles met the inclusion criteria for in-depth analysis. The analysis was carried out on four main focuses, namely: (1) concepts related to student satisfaction, (2) research trends regarding student satisfaction, (3) factors that affect student satisfaction, and (4) the influence of educator-student interaction on satisfaction levels. The study found that student satisfaction was influenced by the quality of teaching, the relevance of the material, learning motivation, and interpersonal support from educators. In addition, the development of online learning technology and student involvement in the learning process have proven to be key factors in increasing satisfaction. These findings make an important contribution to the development of learning service policies and practices that are more student-oriented and adapt to the dynamics of the digital era.

1. Introduction

The quality of learning services has become the main indicator in assessing the effectiveness and credibility of educational institutions in the era of globalization. Building on the significance of student satisfaction outlined earlier, it is evident that in the context of social and technological transformation, educational institutions are required not only to produce academically competent graduates but also to create meaningful, relevant, and satisfying learning experiences for students.

According to Kotler & Keller (2006), customer satisfaction is an emotional response to a comparison between expectations and actual performance received from a service. Therefore, student satisfaction (customer satisfaction) is an important indicator of the extent to which the quality of learning services is consistently implemented. The shift in the global paradigm towards student-centered education emphasizes that the quality of learning cannot be separated from students' subjective experience as service recipients (Ammigan, 2019; Moslehpour et al., 2020). This is reinforced by Kanwar & Sanjeeva (2022), who affirm that student satisfaction surveys are a strategic instrument in evaluating and improving the quality of higher education institutions.

Despite growing recognition, research over the past two decades has produced mixed and sometimes contradictory findings about the factors that most influence student satisfaction. Several studies identify the quality of teaching and educator-student interaction as the main determinants of satisfaction (Ammigan, 2019; Korobova & Starobin, 2015), while other research emphasizes that technology use and learning motivation are equally important, especially in digital learning (Ejubović & Puška, 2019; Wolverson et al., 2020). These inconsistent results show a gap in theoretical and empirical understanding of student satisfaction, particularly in post-pandemic digital education (Pandita & Kiran, 2023).

Many educational institutions have not integrated student satisfaction into academic policy planning and digital learning systems. Most online platforms and Learning Management Systems (LMS) focus on administrative needs rather than on improving meaningful learning (Al-Rahmi et al., 2015; Salam & Farooq, 2020). This creates a gap between institutional policies and students' views of academic service quality. There is an urgent need to systematically study how academic, psychological, social, and technological factors interact to shape student satisfaction in today's digital education environment.

To address this need, various previous studies have attempted to explain the determinants of student satisfaction using theoretical approaches such as expectation disconfirmation theory, the quality of service model (SERVQUAL), and the student engagement framework (Ryan & Deci, 2000; Sharif et al., 2021). However, most research remains partial and fragmented, focusing on a single dimension, such as quality of service, learning motivation, or teacher leadership. There has been little research that integrates these dimensions into a comprehensive and complementary conceptual framework. As a result, it is difficult to construct a conceptual model of student satisfaction that comprehensively explains the relationships among learning experiences, social interactions, and technological adaptation in contemporary higher education. In light of evolving research approaches, it is important to note that over the last decade (2015-2025), research on student satisfaction has shifted from an institutional to an individual, experience-based approach. This new paradigm emphasizes the active role of students as learning subjects, not just recipients of learning services. These changes are reinforced by the growing diversity of international students, global academic mobility, and new expectations for a more inclusive, service-oriented education.

Thus, the study of student satisfaction is no longer only a tool for internal institutional evaluation, but also a strategic indicator in determining the reputation and global competitiveness of universities.

The novelty of this research lies in its efforts to identify, map, and synthesize the development of research on student satisfaction systematically over the last Building on this paradigm shift, the novelty of this research lies in its efforts to systematically identify, map, and synthesize the development of research on student satisfaction over the last ten years (2015-2025) using the Systematic Literature Review (SLR) approach based on the PRISMA framework. tric analysis to identify the relevance of keywords, author collaboration, and the direction of evolution of the research topic, thereby providing an empirical picture of the scientific map in the field of student satisfaction.

Accordingly, the results of this systematic review are expected to make two main contributions. Conceptually, this study enriches the study of student satisfaction by integrating academic, psychological, social, and technological dimensions into one comprehensive analytical framework. In practice, the results of this research are expected to provide an empirical basis for higher education institutions to design policies that improve the quality of academic services, with a focus on the learning experience and student welfare. By understanding the dominant trends and factors that affect student satisfaction, educational institutions can develop strategies that are adaptive to changing digital learning environments.

Based on this background and intended contributions, this study aims to analyze the development of research on student satisfaction in higher education over the past decade. This study specifically seeks to answer four main questions:

1. What are the concepts related to student satisfaction?
2. How have research trends regarding student satisfaction evolved over the past decade?
3. What factors affect student satisfaction in learning services?
4. How does educator–student interaction affect student satisfaction?

By answering these questions, this research is expected to make a significant scientific contribution to the development of student satisfaction theory and the formulation of evidence-based education policies in the era of digital transformation.

2. Methodology

This study uses the Systematic Literature Review (SLR) approach, compiled according to the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA), as explained by Moher et al. (2016). The Systematic Literature Review (SLR) approach was chosen because it can synthesize empirical findings in a transparent and replicable manner, especially in educational research and student satisfaction, which span diverse contexts and variables Låg &

Sæle (2019). This approach was chosen to provide a comprehensive, transparent, and systematic overview of research results on student satisfaction in the context of learning services during the 2015-2025 period.

Article Selection Procedure

The article selection follows four PRISMA stages: identification, screening, eligibility, and inclusion. At the identification stage, 400 articles were retrieved from Publish or Perish (PoP) using the Scopus database. Screening removes duplicates and filters by topic and full-text access. Eligibility checks abstracts and methods for fit. Inclusion results in 27 articles meeting all criteria.

Inclusion and Exclusion Criteria

Inclusion criteria ensure only relevant, high-quality research is analyzed. Exclusion criteria remove articles outside the study's scope. Table 1 summarizes the criteria used.

Table 1. Inclusion and exclusion criteria

Category	Inclusion	Exclusion
Year of Publication	Articles published between 2015–2025	Articles published before 2015 or after 2025
Education Level	Studies focusing only on primary or higher education	Studies focusing on secondary education (lower and upper secondary levels)
Research Focus	Research addressing student satisfaction, academic performance, lecture’s charismatic leaders	Research unrelated to student satisfaction, academic performance, lecture’s charismatic leaders
Article Type	Academic journal articles published in peer-reviewed, indexed journals	Conference proceedings, non-academic reports, editorials, blogs, or book reviews
Language	Articles written in English	Articles written in languages other than English
Access	Articles available in full-text and accessible for data extraction and analysis	Articles available only in abstract form or inaccessible in full
Methodological Clarity	Articles with a clearly stated research design, objectives, and analytical framework	Articles lacking methodological rigor or sufficient empirical data

Data Analysis Procedure

Figure 1 explains that each article that passes the inclusion stage is coded according to the study's characteristics (author, year, context, method, and key findings). The articles were then categorized according to the focus of the research: (1) concepts related to student satisfaction, (2) research trends regarding student satisfaction, (3) factors that affect student satisfaction, and (4) the influence of educator-student interaction on the level of satisfaction. The analysis was carried out with a thematic approach to identify patterns, similarities, and differences in research results. In addition, a bibliometric analysis was conducted using VOSviewer to map dominant

keywords and research trends by year of publication. This approach ensures that the research results have a strong, comprehensive scientific basis and can serve as a reference for developing strategies to increase student satisfaction with learning services.

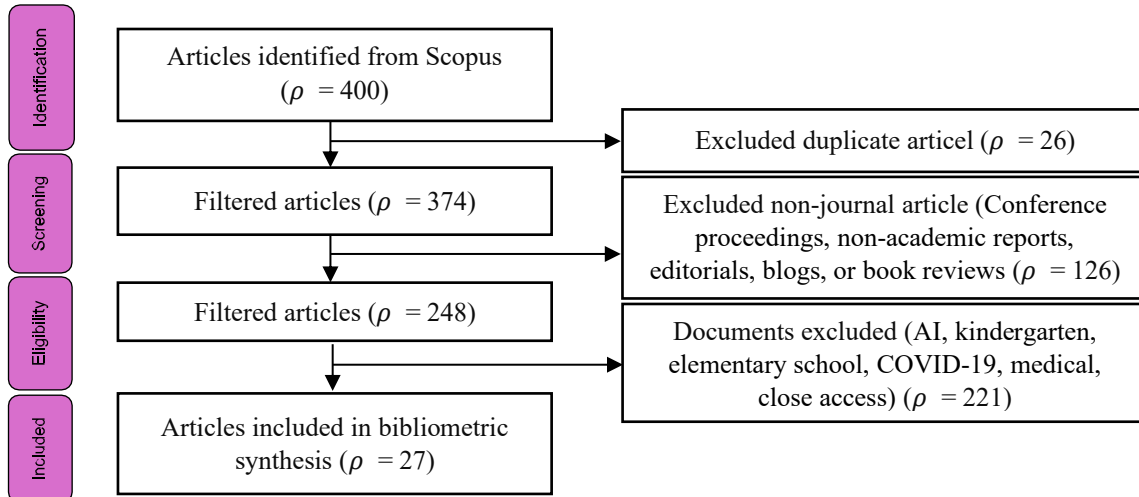


Figure 1. PRISMA flowchart

3. Results and Discussion

Concepts of Student Satisfaction

Figure 2 shows the results of network visualization using the VOSviewer tool, which maps the thematic relationships among keywords in research on student satisfaction in the field of learning services. Each circle (node) represents one keyword that appears in the literature, where the size of the circle indicates the frequency with which the keyword appears. The connecting lines between nodes represent the co-occurrence relationships among the research themes. The colors on the map indicate the formation of conceptually interconnected thematic groups or research clusters.

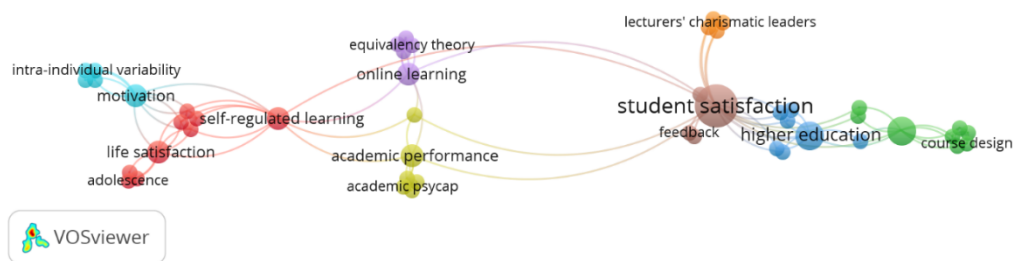


Figure 2. Analysis of keyword co-occurrence clustering network

In general, the keyword "student satisfaction" occupies a central position in the network and is the main node with the highest connectivity. Strong relationships with terms such as "higher education", "feedback", and "course design" form a

major blue-green cluster that describes the research focus on the pedagogic dimension and learning design in colleges. This cluster reflects that most studies highlight how lecture design, feedback strategies, and the use of learning technology contribute to increased student satisfaction. The dominance of the keyword student satisfaction indicates that it is a central construct that connects the pedagogical, psychological, and technological dimensions, as also shown in the research of Ejubović & Puška (2019), Korobova & Starobin (2015), and Pandita & Kiran (2023).

On the left side of the map, a red cluster is formed centered on "self-regulated learning. This cluster is closely related to keywords such as "motivation," "life satisfaction," and "adolescence, which describe the focus of research on the psychological and behavioral aspects of student learning. This topic shows that learning satisfaction is not only influenced by external factors such as the academic environment, but also by students' ability to self-regulate, build motivation, and maintain psychological well-being during the learning process. The relationship between this cluster and "academic performance" and "academic psycap" shows how students' internal factors relate to their academic achievement. Furthermore, in the upper right part of the map, you can see an orange cluster that includes the keyword "lecturers' charismatic leaders". This cluster illustrates the research's attention to the social and leadership dimensions of educators, especially how teachers' charisma, communication styles, and interpersonal abilities can affect students' perceptions of satisfaction. A strong relationship between "lecturers' charismatic leaders", "student satisfaction", and "feedback" indicates that educator leadership and the quality of academic interaction are important components in creating a positive learning experience.

Meanwhile, the cluster on the lower right side in green shows the relationship between "higher education" and "course design, which represents the research theme around learning innovation, curriculum development, and the application of educational technology in supporting teaching effectiveness. This cluster shows that aspects of instructional design and the use of technology are increasingly being considered in improving the quality of the student learning experience. Overall, this map shows that research on student satisfaction is developing in a multidimensional and cross-field direction, covering three main domains: (1) pedagogic aspects and learning design, (2) psychological aspects and student self-regulation, and (3) social aspects and educator leadership. The centrality of "student satisfaction" in the network shows that this issue is the meeting point of various research approaches, whether they focus on individual students, the learning environment, or the teaching system as a whole. Thus, the results of this mapping confirm that the increase in student satisfaction cannot be separated from the synergy between personal, institutional, and relational factors in the context of modern learning services.

Student Satisfaction Research Trends 2015-2025

The development of research on student satisfaction from 2015 to 2025 (Figure 3) shows a significant paradigm evolution. In the early period (2015-2018), research

was dominated by traditional approaches that focused on institutional service quality and teaching effectiveness. The SERVQUAL and HEdPERF models are widely used to measure students' perceptions of the quality of learning services (Moslehpour et al., 2020). The study focused on factors such as the institution's reputation, educators' credibility, and administrative support.

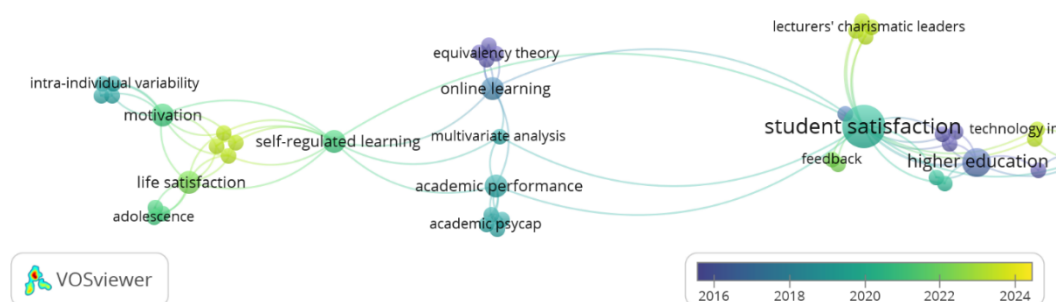


Figure 3. Analysis of keyword co-occurrence time-overlapping network

Research Trends 2015-2025

Entering the second phase (2019-2021), there has been a shift in research focus towards online learning and student psychology. Research by Ejubović & Puška (2019) highlights the role of self-regulation (self-regulated learning) and computer self-efficacy in influencing learning satisfaction. In addition, there is a high interest in motivational theories such as Self-Determination Theory Ryan & Deci (2000) and the Technology Acceptance Model (TAM) to explain how the adoption of learning technologies affects the student experience. The third phase (2022-2025) shows a significant increase in research that emphasizes student engagement and digital satisfaction. Hoque et al. (2023 and Pandita & Kiran (2023) highlight the importance of user interfaces, digital content quality, and user experience in online learning. Research in this phase also emphasizes the balance between technological support and human interaction, especially in the wake of the COVID-19 pandemic.

Bibliometric Synthesis and Trend Map

A bibliometric analysis using VOSviewer reveals five main clusters of interconnected keywords: student satisfaction, online learning, motivation, feedback, and student engagement. The temporal trend map indicates that the research theme is evolving from a focus on service quality and general satisfaction (2015-2018, blue) towards online learning and motivational psychology (2019-2021, green), to more complex topics such as digital engagement and technology adaptation (2022-2025, yellow-orange color). This evolution reflects a shift from an institutional to a student-experience-based paradigm. The linkage between keywords also shows that student satisfaction is now understood as the result of multidimensional interactions between technology, psychology, and the academic environment.

Factors Affecting Student Satisfaction

Academic and Pedagogical Factors

Teaching quality and learning design are the most dominant components in shaping student satisfaction in learning services. Many studies confirm that students feel more satisfied when they receive teaching that is interactive, relevant, and provides space for critical reflection. Ejubović & Puška (2019) highlight that students' ability to organize themselves in the learning process and their high computer self-efficacy significantly increase their academic satisfaction. These findings demonstrate the importance of learning designs that facilitate students' autonomy and self-reflection. Moslehpour et al. (2020) found that the quality of academic and non-academic services plays a significant role in shaping a positive perception of institutions. The quality of interaction with educators, clarity of material delivery, and fair evaluation mechanisms contribute to student satisfaction, especially for international students. Ammigan (2019) also found that academic staff support and an open communication system increase students' loyalty and willingness to recommend their institutions.

In addition, aspects of learning evaluation and assessment clarity are important. In the context of learning evaluation, Unal & Unal (2017) found that students' perceptions of teaching quality and the academic environment significantly affect learning satisfaction. Al-Rahmi et al. (2015) explain that students who receive quick, constructive feedback from educators tend to be more satisfied. This indicates that student satisfaction is not only determined by the content of the lecture material, but also by the way the educator delivers, evaluates, and provides feedback on learning outcomes.

Psychological Factors and Learning Motivation

Psychological factors, such as intrinsic motivation, self-efficacy, and self-regulation, are strongly associated with student satisfaction. According to Self-Determination Theory (Ryan & Deci, 2000), student satisfaction arises when their basic psychological needs are met: autonomy, competence, and connectedness. Zhao et al. (2021) found that perceptions of social support from educators and peers strengthened self-efficacy and increased satisfaction with the learning experience. In line with these findings, Feraco et al. (2023) show that self-regulated learning abilities and soft skills contribute not only to academic achievement but also to overall student satisfaction and well-being. Meanwhile, Wolverton et al. (2020) emphasized that students who have high confidence in their digital abilities are more active in academic discussions and engagement.

Zhang et al. (2021) show that psychological factors are inseparable from the social dimension of learning. Positive relationships with educators and support between students reinforce a sense of connection, which directly increases satisfaction with the learning process. These findings align with Marquez & Long (2021), who argue that the quality of the student-centered learning experience plays an important role

in shaping students' satisfaction with the learning process and outcomes. This is reinforced by Phillips et al. (2017), who asserts that intentionally designed, student-centered learning experiences contribute significantly to student engagement and satisfaction. The findings are reinforced by Guerrero et al. (2022), who show that simulation-based learning and real-life experiences significantly increase students' critical thinking, confidence, and satisfaction with the learning process. Carmona-Halty et al. (2019) emphasized that the quality of the learning environment and the academic support provided by institutions play an important role in shaping the learning experience and student satisfaction. Thus, learning oriented towards social collaboration and emotional support has been shown to be more effective in improving student well-being and satisfaction.

Technology and Environment Factors Online

Advances in educational technology have significantly changed the landscape of student satisfaction. The online learning environment introduces new factors such as ease of access, quality of digital interfaces, and the effectiveness of learning platforms. Pandita & Kiran (2023) found that the quality of digital content and the ease of navigation in online learning systems directly influence student engagement and satisfaction levels. In addition, Al-Rahmi et al. (2015) emphasized that technology-based collaboration encourages students' active participation in the digital learning community. Hoque et al. (2023) noted that integrating technology into the learning process not only enhances learning comfort but also strengthens social relationships between students and educators. Factors such as time flexibility, platform interactivity, and system adaptivity are important indicators of student satisfaction. In the context of online and blended learning, Dziuban et al. (2015) emphasized that student satisfaction is influenced by the alignment among initial expectations, learning engagement, and perceived learning experience. Thus, technology is not only a learning tool but also the primary medium for creating a satisfying learning experience.

Educator-Student Interaction and Its Effect on Satisfaction

The interaction between educators and students is a central aspect in creating a meaningful learning experience and academic satisfaction. These relationships include not only formal classroom communication but also emotional support, academic guidance, and social engagement, all of which strengthen students' motivation to learn. According to the Community of Inquiry theory (Garrison & Arbaugh, 2007), learning success is influenced by three main components: cognitive, social, and teaching presence. These three components are the foundation for explaining how educator-student interaction shapes learning satisfaction.

Types and Quality of Interactions

Korobova & Starobin (2015) assert that strong academic and social interactions between educators and students significantly affect academic satisfaction. Students who feel educators are actively involved in the learning process tend to have a

positive perception of teaching quality. Interactions that involve open dialogue, constructive feedback, and respect for students' views reinforce a sense of belonging and commitment to learning. In line with this, Almeida et al. (2015) emphasized that students' academic and social involvement in the university environment plays an important role in shaping satisfaction and learning success. Krijgsman et al. (2019) show that goal clarification and continuous feedback encourage students to better understand academic expectations, thereby increasing their sense of competence and learning satisfaction. Educators who actively provide personalized feedback not only improve learning outcomes but also strengthen students' emotional attachment to the course.

Interaction in Digital Learning

Digital transformation in learning services has changed the dynamics of interaction between educators and students. In online learning and flipped classroom models, interaction is no longer limited to face-to-face communication but is expanded through interactive digital platforms. Låg & Sæle (2019) found that the flipped classroom model can increase students' active participation and foster more effective two-way relationships. Students feel more engaged when they have the opportunity to interact with educators asynchronously through online forums for discussion and comment. Hazzam & Wilkins (2023) add that the success of digital interaction depends on educators' social and emotional presence. When educators show empathy, humor, and concern for students through digital media, satisfaction levels increase significantly. This aligns with Self-Determination Theory (Ryan & Deci, 2000), which emphasizes the importance of fulfilling the needs for connectedness and autonomy in the learning process.

The Impact of Interaction on Student Satisfaction

Effective interaction between educators and students directly affects students' satisfaction. Ammigan's (2019) research on international students found that interpersonal support and educator responsiveness were strong predictors of overall satisfaction. Students assess that the presence of an easily accessible and responsive educator provides a sense of psychological security and strengthens confidence in learning. In the context of online learning, educators' role as facilitators of interaction is becoming increasingly important. Research by Wahab et al. (2024) confirms that, in a virtual environment, feedback-based interactions and the active presence of educators can replace most of the social functions of conventional classrooms. This suggests that the quality of interpersonal relationships remains a key factor in satisfaction, even as the learning mode changes.

4. Conclusion

This study reviews various factors that affect student satisfaction in the context of learning services in the period 2015-2025. In general, student satisfaction is shaped by three main factors: academic, psychological, and technological. Academic

factors include teaching quality, learning design, and evaluation clarity. Meanwhile, psychological factors are related to intrinsic motivation, social support, and students' confidence in learning. In addition, the development of learning technology also plays an important role in shaping a more flexible, interactive, and engaging learning experience. Interaction between educators and students also emerged as the most consistent factor in increasing satisfaction. Relationships based on empathy, open communication, and constructive feedback have been proven to strengthen students' sense of involvement and trust in the learning process. Research trends over the past decade show a shift from a focus on service quality to a more humanistic, experience-centric approach to digital learning.

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