

The Use of Social Networking Sites in Education: A Systematic Literature Review

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Abstrak

Situs Jejaring Sosial (SNS) muncul sebagai implikasi konsekuensi dari kemajuan teknologi yang berperan penting dalam kehidupan manusia saat ini. Kehadiran Situs Jejaring Sosial (SNS) sebagai teknologi yang berkembang pesat merupakan fenomena global yang memerlukan kajian komprehensif dari berbagai perspektif, dengan pendidikan sebagai salah satu bidang penelitian yang paling relevan. Penggunaan SNS dalam pendidikan perlu dipahami agar lebih memberdayakan mereka dalam kegiatan pembelajaran. Tujuan dari penelitian ini adalah untuk menganalisis sejauh mana SNS digunakan dalam bidang pendidikan, yang bertujuan untuk memberdayakan SNS lebih jauh lagi dalam kegiatan pembelajaran di masa depan. Tinjauan literatur sistematis ini mengacu pada 60 artikel jurnal terindeks Scopus yang telah disesuaikan dengan konsep yang akan dikaji lebih lanjut yaitu SNS dan pendidikan, serta kata kunci yang relevan secara substantif. Penelitian ini menyajikan delapan pertanyaan penelitian mengenai kerangka konseptual, karakteristik artikel jurnal, temuan penelitian, dan pengembangan penelitian. Hasil analisis menunjukkan bahwa penggunaan SNS dalam dunia pendidikan mempunyai peran yang signifikan bagi akademisi dan siswa, serta dapat mendukung kehidupan sosial lembaga pendidikan serta aspek pengajaran, pembelajaran, dan penelitian.

Kata kunci: Edukasi, Social networking sites (SNS), Teknologi, tinjauan literatur sistematis

Abstract

Social Networking Sites (SNS) have emerged as a consequential implication of technological advancements that play an important role in human life today. The presence of Social Networking Sites (SNS) as a rapidly evolving technology constitutes a global phenomenon that warrants comprehensive examination from various perspectives, with education standing out as one of the most pertinent areas of inquiry. It is necessary to understand the usage of SNS in education in order to better empower them within learning activities. The purpose of this study is to analyze extent SNS is used in the field of education, aiming to empower SNS even further in future learning activities. This systematic literature review refers to 60 Scopus-indexed journal articles that have been adjusted to the concept under further review, namely SNS and education, along with substantively relevant keywords. This research presents eight research questions regarding the conceptual framework, characteristics of journal articles, research findings, and research development. The analysis results indicate that the use of SNS in education plays a significant role for academics and students, and it can support the educational institutions' social life and aspects of teaching, learning, and research.

Keywords: Education, Social networking sites (SNS), Systematic literature review, Technology

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1. INTRODUCTION

The emergence of Web 2.0 has triggered a massive technological development, enabling the facilitation of social interactions among its users. One of them is the proliferation of *social networking sites* (SNS). SNS has become a space that allows users to create public and semi-public profiles, compile lists that gather other users' profiles, and view connections made by users within the system (Boyd & Ellison, 2007; Rodríguez-Hoyos et al., 2015). In its development, SNS is used not only for connecting with others but is also utilized in various fields such as marketing, politics, and, similarly, in the realm of education. The utility of SNS in education, especially in the learning process, has become significant because through SNS students can interact more easily with educators and classmates, as well as

acquire new information related to their subjects (Aydin, 2012; Noori et al., 2022). The growing use of SNS in education has triggered the emergence of numerous studies examining the use of SNS for educational purposes. Several studies related to the use of SNS in the field of education have been conducted. The research outlined the research conducted, the reasons for its use, and its impact. Meanwhile, previous study reviewed scholarly literature to discuss the use of Facebook and its potential in the field of education (Manca & Ranieri, 2013). On the other hand, other study discussed research related to micro-blogging in the realm of education (Gao et al., 2012). From the conducted research, it is evident that studies on SNS and education have various focuses. Therefore, it is necessary to conduct an advanced systematic literature review (SLR) on the exploration of SNS and education to gain comprehensive understanding about the recent usage or utilization of SNS in education.

SNS is a networked communication platform where participants have uniquely identifiable profiles consisting of user-generated content, data at the system level, and can articulate public connections visible and traversable by others. It allows users to use, produce, and interact with user-generated content streams provided by their connections on the site. In SNS, users can engage in various activities, such as creating personal profiles, inviting friends to access their profiles, and exchanging emails and instant messages with one another (Appel et al., 2016; Kaplan & Haenlein, 2010). As one of the platforms relying on user contributions, thousands of new accounts are created on SNS every day. Other study mentioned three main reasons why individuals use SNS: to connect with new people, to stay in touch with their friends, and for socializing (Brandtzæg & Heim, 2009). Under the broader umbrella of social media, SNS such as Facebook, MySpace, LinkedIn, and Twitter have a significant impact. The popularity of SNS continues to increase, and it is estimated that the number of SNS users exceeds 1 billion people, accessed in over 180 countries (Shih, 2010). SNS has become a part of everyday life for the majority of internet users, being utilized to form research groups, promote research-based projects, and even provide academic support for distance education. The level of information disclosed on SNS serves as another tool that can facilitate a communication portal between students and educators.

The use of SNS has been widely accepted and applied by organizations, the public, politicians, and media companies in their operational activities. Several libraries in the academic world have adopted SNS to support tasks such as publicity, interacting with library members, and enhancing reference services (Chu & Du, 2013). However, previous study claims that there is very little research on the use or potential use of SNS in the teaching and learning process (Caldwell, 2015). So far, students have only used SNS for social purposes. For example, research by studies that found students use SNS to expand their social networks by seeking new friends, sending messages, and viewing pictures (Stern & Taylor, 2007; Zhao et al., 2008). Meanwhile, other researchers found that students also use SNS to share research notes and discuss subject matter and assignments (Sánchez et al., 2014). In a research conducted by other research students affirmed that Facebook enhanced their participation experience in the courses they attended. Then it is revealed that the use of Facebook in teaching and learning activities can enhance student interactions, thus contributing to an improvement in students' learning performance (Barczyk & Duncan, 2013). Additionally, the use of SNS in schools can create interactive communication channels, allowing students to ask questions to their peers, engage in discussions about ideas and school assignments. This fosters critical thinking among students and makes the learning process more meaningful. The rapid development of communication technology, especially SNS, plays a significant role in human life, particularly in the field of education. Academics and students collaborate using SNS in their learning processes. The purpose of this systematic literature review is to comprehensively understand how and to what extent SNS is used in the field of education, aiming to empower SNS even further in future learning activities.

2. METHODS

This journal article was written using a qualitative approach and the method of systematic literature review. This systematic literature review analyzed 60 Scopus-indexed journal articles that were relevant to the concept under further review, namely SNS and education, along with substantively relevant keywords. The choice of Scopus as the database was based on its superiority, being indexed with over 75 million documents worldwide (Kamal et al., 2022). Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) is used as a guideline for conducting systematic literature reviews. PRISMA has a checklist that includes guidelines for the steps of identification through keyword search, screening through inclusion and exclusion based on predetermined criteria, assessing eligibility, and research inclusion (Page et al., 2021). The research questions (RQ) are categorized into four scopes: 1) Conceptual framework, to understand the development of identified concepts in the journal articles (RQ1); 2) Characteristics of journal articles, to identify the journal quartile (*Q Level*), publication year distribution, geographical distribution, research methods employed, and topics of the journal articles according to their categories (RQ2-RQ6); 3) Research findings, aim to identify both academic and practical aspects discovered in the journal articles; and 4) The potential for research development, to serve as a reference for future studies. Scopes, research questions, and criteria is show in Table 1.

Table 1. Scopes, Research Questions, and Criteria

Scopes	Research Questions	Criteria
Conceptual Framework	RQ1. What are the definitions of the use of SNS in education concepts in various journal articles?	Initial definition and definition development
Journal Articles Characteristics	RQ2. What is the distribution of journals according to their position in the database? RQ3. What is the year distribution of journal articles? RQ4. What is the geographical distribution of journal articles? RQ5. What research methodologies are used in the selected journal articles? RQ6. What are the topics of the articles according to journal category in the database?	Quartile (Q Level) of the journal in the database (Scopus) Year of publication of the article The country where the journal is published The research method used in journal articles Thematic categorization of journals according to the database (Scopus)
Research Findings	RQ7. What are the findings regarding the use of SNS in education in various journal articles?	Findings on journal articles
Research Development	RQ8. What are the limitations of the research that can be identified in the journal article as a reference for further research?	Research development potential

The initial search yielded 489 pieces of literature. After removing duplicated literatures, a total of 335 pieces of literature were obtained. These 335 pieces of literature were then analyzed based on inclusion and exclusion criteria. As a result, 263 journal articles were excluded from the process, leaving 72 journal articles for further consideration. The selected journal articles were then analyzed to assess their relevance to the topic of

discussion. Journal articles that did not address several issues related to the use of SNS in education were manually excluded. This process resulted in the exclusion of 12 journal articles from the list of articles to be synthesized and used to answer the research questions, leaving a total of 60 selected journal articles for further in-depth analysis. PRISMA diagram is shown in Figure 1.

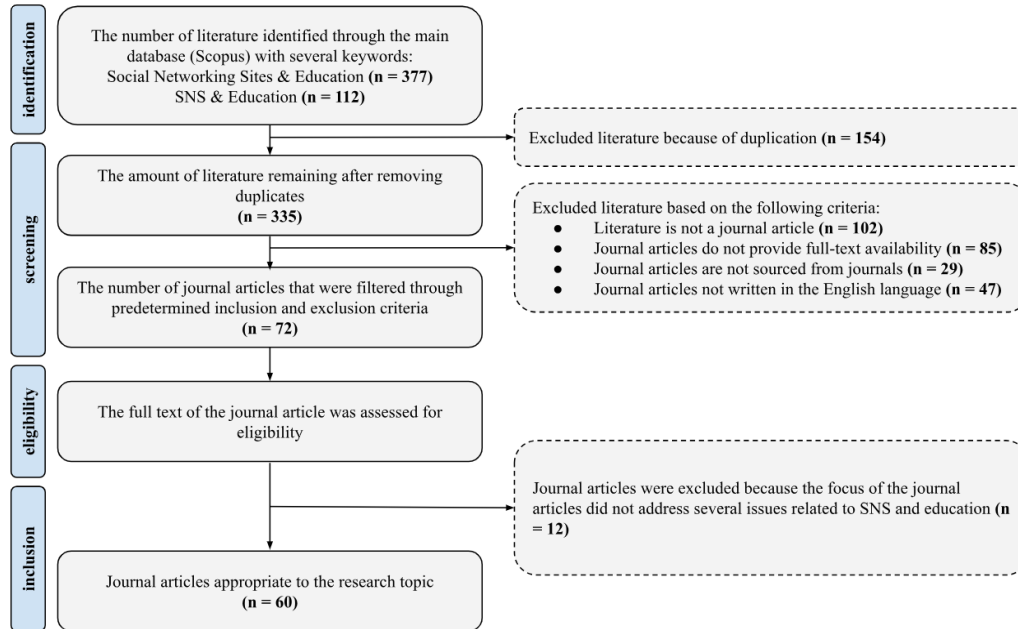


Figure 1. PRISMA Diagram

The remaining 60 journal articles were subjected to systematic review. The systematic review analysis was guided by the predefined research questions. The results of the analysis and the answers to the research questions will be presented in the discussion section, along with the elaboration of findings and conclusions.

3. RESULTS AND DISCUSSION

Results

The Definition of the Use of SNS in Education

Based on the analysis of 60 selected journal articles, the interpretation of the concept of SNS is mostly distinct from the keyword "education". The majority (46.7%) of journal articles interpret SNS as a platform for communication that connects individuals to communicate online. Then, about 21.7% describe SNS as a communication tool supported by internet technology. Approximately 18.3% of the overall journal articles then begin to define SNS and its use in education. The definitions outlined regarding the use of SNS in these journal articles focus on how SNS becomes a supportive tool in the learning process and forms a new ecosystem to assist educators and students in their educational activities. The use of SNS in the teaching and learning system is seen as a new and quite effective approach, creating a new teaching environment that can assist both educators and students in achieving their goals.

Approximately 10.6% of journal articles explain how SNS is referred to as a new method in education. SNS is perceived as a form of exploration, sharing knowledge and references, as well as facilitating virtual and visual connections exchange. The explanation of this SNS concept also illustrates how SNS serves as an accessible and cost-effective alternative learning tool. Only a small portion (1.6%) of journal articles did not elaborate on

the concept of SNS, but its implementation was described through existing case studies. The definition of the concept of using SNS in the field of education in journal articles is still preceded by a general explanation of SNS and its connection to the phenomenon under investigation in the scientific journal.

Distribution of Journals by Q Level

The majority (55%) of scientific journal publications are classified in Q1, the highest rank in Scimago. This implies that each journal and publication undergoes rigorous quality testing through a thorough selection process and *peer-review*. In the SCImago Journal Rank (SJR), Q1 represents journals with the highest SJR values, accounting for 25%. On the other hand, a small portion (3.3%) of scientific journal publications falls into Q4. The distribution review is show in **Figure 2**.

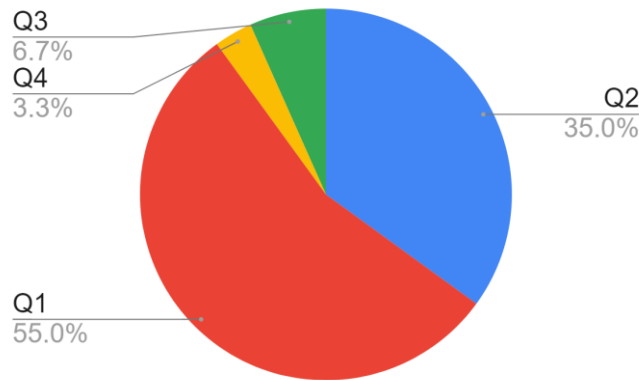


Figure 2. Distribution of Journals by Q Level

Distribution of Journal Articles by Publication Year

Among the 60 analyzed journal articles, the research on the concept of SNS and education started to be explored since 2010. From 2010 to 2012, there was one journal each year focusing on SNS and education. It was only in 2013 that journals examining SNS and education began to show an increasing trend, although still fluctuating. In 2019, the number of journals discussing SNS and education increased to 13.3% of the total number of journal articles. The discussion on SNS and education reached its peak in 2022, comprising a total of 20% of all journal articles. As of June 2023, there have already been two journal articles focused on SNS and education. Distribution of journal articles by publication year is show in **Figure 3**.

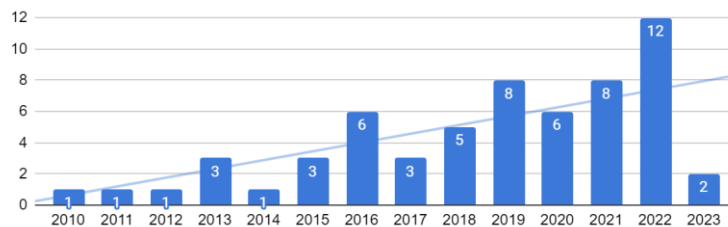


Figure 3. Distribution of Journal Articles by Publication Year

Geographical Distribution of Journal Articles

A total of 17 countries have been identified, with the largest contribution (35.6%) coming from the United Kingdom. On the other hand, the lowest contributions were given by 10 countries with an equal proportion (1.7%), namely Denmark, Ghana, Indonesia, Japan,

Germany, Malaysia, Egypt, New Zealand, Singapore, and Turkey. Geographical Distribution of Journal Articles is show in Figure 4.

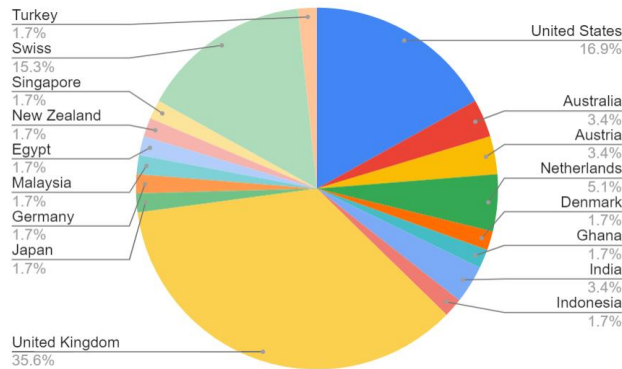


Figure 4. Geographical Distribution of Journal Articles

Research Method Used in Journal Articles

Survey emerged as the most widely used research method in the 60 journal articles, accounting for 31.7%. Conversely, grounded theory, ethnography, and thematic analysis were the least utilized methods, each accounting for 3.3%. Research method used in journal articles is show in Figure 5.

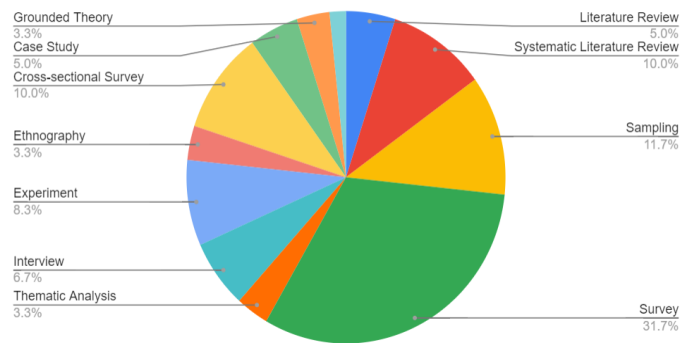


Figure 5. Research Method Used in Journal Articles

Thematic Categorization of Journals

Out of the 60 analyzed journals, the dominance of scientific journal publications falls under the social sciences category, comprising 51.7%. The lowest percentage is in the category of media studies and environmental science, namely 1.7%. Thematic categorization of journals is show in Figure 6.

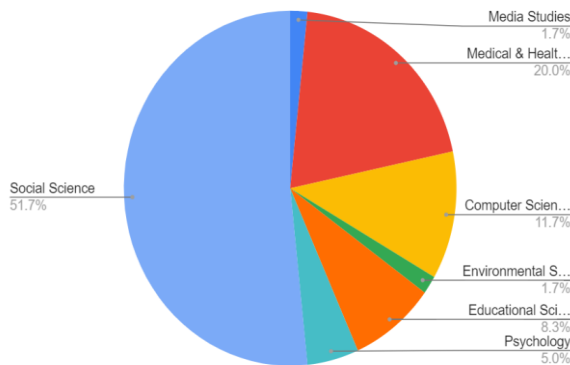


Figure 6. Thematic Categorization of Journals

Discussion

Referring to the majority of journal articles, SNS is described as a platform for communication that connects individuals, and the concept of SNS itself is inseparable from relationships and interactions. These interactions make SNS a direct or indirect support for learning in the realm of education. SNS is seen as a stimulus for creativity, social, and civil benefits in the context of education (Greenhow, 2011; Suti & Sari, 2021). Thus, when this relational concept is combined with academic activities, it will create a behavior of knowledge sharing among students.

The majority of scientific journal publications discussing SNS in education are ranked in the highest quartile, Q1. Journals in the Q1 category are ranked from 1-25 or can be referred to as the top 25 journals. This indicates that each journal and publication has been rigorously reviewed and has proven quality. On the other hand, only a small fraction is in the lowest rank, which is Q4. This indicates that research focusing on SNS in education represents the best comprehensive studies conducted, taking into account several important variables. SNS is crucial as it is one of the most widely used *online* services in the daily lives of the majority of citizens in developed countries (Kalmus et al., 2009; Staksrud et al., 2013). Furthermore, SNS is acknowledged to provide numerous benefits to the majority of its users (Clarke, 2009; Jeong et al., 2018). The rapid development of SNS since its inception in the 1990s has attracted the attention of researchers to conduct in-depth studies.

Since 2010, there has been a growing trend of research on SNS in the field of education. This indicates that studies related to SNS and education are considered important by academics. The dynamic characteristics of SNS due to technological advancements and changing times, as evident during the COVID-19 pandemic, suggest that research in the field of SNS and education needs to be continually conducted to ensure that the utilization of SNS can effectively and efficiently support education (Ng, 2020; Williams, 2022). On the other hand, journals discussing the use of SNS in education are predominantly published in the United Kingdom. This is attributed to how students, teachers, academics, and researchers in the UK recognize the crucial role of technological advancements in education. Despite technology like SNS being often criticized as a threat to education, it has become a valuable asset for communication between parents, teachers, and students in schools and universities. According to the data, as of 2019, 75% of students in the UK had a Facebook account, which they used to participate in discussions and share research materials.

Furthermore, in terms of methodology, surveys are observed to be the most commonly used method. The diversity of data in the field makes the survey methodology a preferred choice for previous research. Surveys are expected to analyze the variations and characteristics of existing findings and ultimately draw conclusions based on the collected data. Meanwhile, the findings of journal articles discussing SNS and education encompass user experiences, such as teachers and students utilizing SNS, factors supporting the effectiveness of education on SNS, as well as the benefits and evaluations of using SNS for education. This indicates that research on SNS and education primarily focuses on implementation, particularly the usage of SNS by students, academics, and institutions (Rodríguez-Hoyos et al., 2015; Williams, 2022). More research is needed to analyze SNS designs from both technological and policymaker perspectives.

One limitation observed in the analyzed journal articles is the restricted access to specific internal SNS data. This limitation arises due to each SNS having its own specific methods and content delivery mechanisms (Guraya et al., 2018; Watkins, 2009). The use of *cross-sectional* studies as a method in several journal articles is also a limitation because the nature of *cross-sectional* studies does not allow for the explanation of causal relationships with the demographic profiles of students and teachers, such as their geographical location and culture, which would require broader research designs and strategies (Doleck et al., 2019;

Valdez et al., 2020). The use of SNS in education can be investigated and analyzed over a long period using a longitudinal perspective, as demonstrated in the research. This research assessed that many studies primarily focused on *cross-sectional* data, thereby widely overlooking the intriguing aspects of longitudinal investigations (Tambunan et al., 2022; Zaccaria et al., 2020).

However, this research has several limitations. It solely relies on one main database, which is Scopus. The research could have captured more journal articles by using additional databases such as The Web of Sciences (WoS) or Thomson Reuters. Another limitation is that the research solely focuses on the use of SNS in education, whereas there are other communication technologies relevant to SNS, such as social media. The use of SNS and social media in education can provide a deeper understanding of the development of the learning process within educational institutions today.

There are several recommendations that can be given for future research. From a theoretical perspective, the advancement of technology and the educational needs have led to the evolving concept of using SNS in education. This necessitates a deeper understanding of the theories and concepts related to SNS to ensure that future research aligns with these developments. From a methodological standpoint, researching SNS in education is intriguing for analysis, and further investigation using longitudinal perspectives could yield more comprehensive results. On the other hand, there are several practical recommendations that professionals such as educators can use to utilize SNS more effectively in the world of education. SNS can be used not only to interact with the school or campus environment but also to establish connections with parents and learning communities. This can help students learn from each other, gain support from their peers, and feel more engaged in their learning process. Furthermore, social networking sites (SNS) can be utilized to advocate for or promote students' voices by providing them with a platform to share their thoughts, ideas, and experiences. This can empower students and enable them to develop their own voice as learners.

4. CONCLUSION

The most relevant findings from this systematic review involve, among others, the conceptual identification of SNS and education that was analyzed and developed. SNS is defined as web-based services that allow individuals to create public or semi-public profiles within a limited system, articulate a list of users with whom they share connections, and view and traverse the list of connections within the system. This definition is used by the majority of journal articles to provide a general explanation of SNS.

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