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Research paper

A Systematic Literature Review: Principle of Hybrid Service Learning Enhance Students' Generic Skills

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Abstract

Hybrid SL is becoming more accepted in contemporary higher learning. The Malaysian Education Blueprint 20152025 is dedicated to the initial activities aimed at improving the educational experiences of students, which would align with the described phenomenon. It is a strategy that adapts learning experiences to the needs of individual students and incorporates learning enhancements through experiential and community-based learning, as well as the use of technology, to gain the necessary skills in the modern era. The academic appropriately conducts a research inquiry into the role of the technology integration principles in the student learning programs of hybrid SL in enhancing the overall abilities of the students significantly. The research target in the future would be hybrid SL models that entail additional community involvement among students, as well as show enhanced generic skills growth and more pleasurable learning experiences among the students.

Keywords: *Hybrid SL; Generic Skills; Principles of SL.*

1. Introduction

A new kind of learning called hybrid SL gives students a customizable learning experience by combining traditional in-person instruction with online learning. Hence, the philosophy of hybrid SL should be opened up in such a way that this approach of learning not only helps in engaging the students with the learning process but also fosters problem-solving skills among the students, like critical analysis and teamwork skills with society, thus equipping them to address graduate employability with real-life challenges. Through the integration of technology, students have the opportunity to gain learning experiences through hybrid SL, developing a deeper understanding of academic subjects as well as inspiring them to apply the knowledge they have acquired in real-world contexts. The purpose of this research article is to explore the principles and various benefits of hybrid SL and the mastery of generic skills, as well as identify best practices for optimizing student learning. Through research conducted through a literature review, it was found that hybrid SL has a positive impact, and improvements should be implemented to increase students' academic achievement. Therefore, the findings from the review of previous articles serve as a fundamental guide for researchers in implementing hybrid SL.

Student Activities through SL and Hybrid SL in Higher Education Student Learning

The integration of hybrid SL through student learning activities, by means of knowledge sharing with the community, helps students enhance their mastery of generic skills through this approach. According to the study [41], learning through online platforms can increase students' interest in a particular subject. Moreover, active student engagement through the implementation of projects with the local community enables students to apply theoretical concepts into practice, thereby providing them with deeper knowledge in their learning [8]. Hybrid SL allows students to carry out their learning activities by integrating technology to implement projects with the community through online platforms. This approach also has a positive impact on students[12]; [14]. The study presented [65] argues that hybrid SL demonstrates potential in enhancing student learning and transforms traditional face-to-face SL into online learning, thus increasing student engagement[4]; [8].

The study [27] shows that students can master SL and receive the development of generic skills in their learning process. Similarly, the study [18] found a positive effect on student engagement and attitudes towards project implementation with the community [10]. Nevertheless, the integration of hybrid SL provides students with the opportunity to enhance their learning mastery through the development of essential generic skills [21]; [6].

Thus, the use of technological platforms suggests that the activities, learning materials, and information resources capture students' attention and stimulate their interest in the fundamentals applied in the project [32]; [2]. Accordingly, hybrid SL not only contributes to the enhancement of academic knowledge but also plays a crucial role in strengthening students' generic skill mastery and preparing them to face the challenges of the professional world [28].

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Based on the review of previous articles, the objective of this study is to identify students' generic skills through their active engagement in hybrid SL. However, this research also aims to determine effective strategies by integrating the hybrid SL approach and providing valuable guidance to educational institutions in offering effective and meaningful learning experiences to students[16].

2. Methodology

The PRISMA diagram is mentioned in the methodology of this study. The PRISMA diagram is used to help with the research process, as it helps to search for more detailed information. The process of information retrieval is divided into various stages, and they are the first stage, the identification, the screening, the eligibility, and the analysis. The PRISMA framework was employed in order to ensure that the article selection process was open and comprehensive. The articles were filtered and filtered according to the inclusion criteria (language and publication year) and then analyzed, and the important theme related to hybrid SL was identified through the thematic analysis in Nvivo 15. The PICO framework has led to the synthesis of data, and the results have been structured so as to emphasize how generic skills can be developed in students through hybrid learning.

2.1. Preliminary phase

By means of designing this study, the PICO concept was used to formulate the research question that would be aimed at discussing the principles of hybrid SL that can be used to improve the generic skills of the students: What are the principles of hybrid SL that boost the development of the generic skills of the students? This research question has been subdivided into various PICO elements, which have been identified to help the search process of the information sources concerning hybrid SL, including students (Population), hybrid (Intervention), SL (Comparison), and generic skills (Outcome) [29]. A thesaurus was used to further refine keywords taken from the titles and abstracts of relevant articles. They were then systematically arranged in a logical grid (Tables 1, 2) for analysis.

Table 1: Initial Logic Grid Aligned with the PICO Elements of the Review Question

Population	Intervention	Comparison	Outcome Measure
Student	Hybrid	SL	Generic skills

Table 2: Logic Grid with Identified Keywords Added

Population	Intervention	Comparison	Outcome Measure
Student	Hybrid Hybrid principle Distance Virtual Blended Mixed-mode Integrated Flexible Multimodal Combined Dual-Format Hybrid Experiential Fusion	SL Community Service Community-Based Experiential Service Civic Engagement Volunteer-Based Applied Community Social Responsibility	Generic skills

2.2. Identification phase

Given that both databases contain over 20,000 article titles, the Web of Science (WoS) and Scopus databases served as the primary sources of data for this investigation. Keywords were matched anywhere against titles, abstracts, and subjects of publications using four essential search strategies (Boolean operator, phrase, truncation, and wildcard) in advance searches (Table 3).

Table 3: Databases and Important Search Terms

Databases	Search Strings
Scopus	TITLE-ABS-KEY((("student") AND ("hybrid" OR "hybrid principle" OR "distance" OR "virtual" OR "blended" OR "mixed-mode" OR "integrated" OR "flexible" OR "multimodal" OR "combined" OR "dual-format" OR "hybrid experiential" OR "fusion") AND ("SL" OR "community service" OR "community-based" OR "experiential service" OR "civic engagement" OR "volunteer-based" OR "applied community" OR "social responsibility" OR "practical service" OR "community engagement" OR "service-focused experiential" OR "real-world community") AND ("skills" OR "competen*" OR "soft skill" OR "transferable" OR "core" OR "essential" OR "interpersonal" OR "key" OR "universal" OR "foundational" OR "non-technical" OR "employability"))).
Web of Science	TS= ((("student") AND ("hybrid" OR "hybrid principle" OR "distance" OR "virtual" OR "blended" OR "mixed-mode" OR "integrated" OR "flexible" OR "multimodal" OR "combined" OR "dual-format" OR "hybrid experiential" OR "fusion") AND ("SL" OR "community service" OR "community-based" OR "experiential service" OR "civic engagement" OR "volunteer-based" OR "applied community" OR "social responsibility" OR "practical service" OR "community engagement" OR "service-focused experiential" OR "real-world community") AND ("skills" OR "competen*" OR "soft skill" OR "transferable" OR "core" OR "essential" OR "interpersonal" OR "key" OR "universal" OR "foundational" OR "non-technical" OR "employability")))

2.3. Screening phase

Numerous criteria are established for inclusion and exclusion. The remaining 46 articles were screened based on language, publication year, and document format (Table 4).

Table 4: Criteria for Inclusion and Exclusion

Inclusion criteria	Exclusion criteria
Academic articles, Year of publication: between the year 2020 and 2024,	systematic literature review, meta-analysis, scoping review, integrative literature review, conference review, book chapter, review, conference review, book, editorial, note, short survey, letter, retracted, and erratum.

English language publication, and Open access

2.4. Eligibility phase

The articles that passed the screening process subsequently underwent a tertiary evaluation—eligibility. Within this evaluation framework, researchers meticulously examined each article to ensure its compliance with the predetermined criteria. A thorough review of the manuscripts was conducted for research deemed significant, culminating in a comprehensive synthesis of the finalized corpus of published studies through qualitative methods. The investigation focused on specific studies addressing the articulated research questions. An initial study of the abstracts preceded a thorough analysis of the complete articles to find pertinent themes and subthemes, which was the first step in the data extraction process. Thematic analysis in NVivo 15 was used for qualitative analysis to clarify themes associated with the hybrid service-learning research topic. Figure 1 shows a flow diagram that explains how PRISMA is applied to the qualitative synthesis of published studies into hybrid SL.

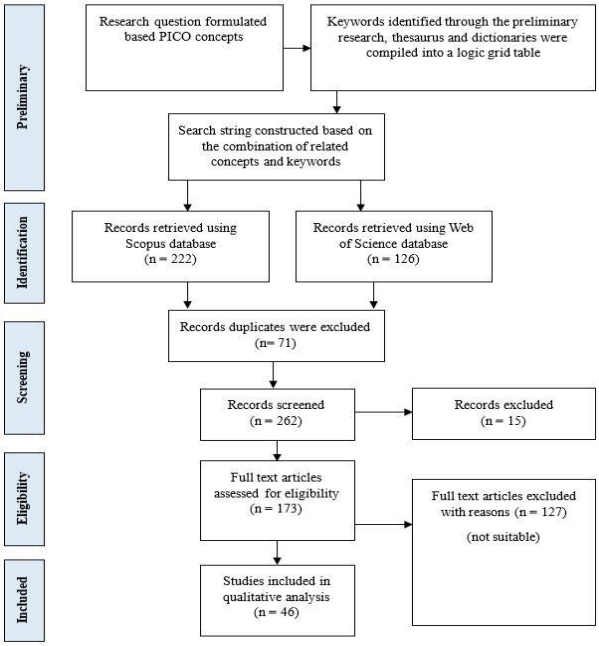

Fig. 1: A Flow Diagram Illustrating How PRISMA Is Applied to the Qualitative Synthesis of Published Studies into Hybrid SL.

Researchers started looking for publications in Scopus and Web of Science after determining the keyword search (search string). The process's outcomes are detailed in Table 5 of the source article, and Table 6 contains bibliographical selections from the database. The methodical procedure for choosing articles for the literature review is depicted in the PRISMA flow diagram (Fig. 1). It comprises detailed stages such as identification, screening, eligibility assessment, and final inclusion of studies. This process guarantees reproducibility and openness in the selection of pertinent papers for the review.

Table 5: Source Article from Database SCOPUS and Web of Science

Source	Author	Number of Articles
Scopus	Al-Wahaibi et al., (2023), Aramburuzabala, et al., (2024), Arcos-Alonso et al., (2020), Asenjo et al., (2021), Awais et al., (2021), Bandi et al., (2024), Barends, (2022), Bharath, (2020), Compare et al., (2022), Compare et al., (2024), Dapena et al., (2022), Domínguez-Lloria et al., (2021), Drewery et al., (2024), Hidayah et al., (2021), Majid et al., (2024), Malotky et al., (2020), Mashfufah et al., (2024), Montiel et al., (2021), Naidoo et al., (2024), Natarajarathinam et al., (2023), Nopiyanto et al., (2023) Novita et al., (2023), O'Connor et al., (2024), Pais et al., (2022), Phakakat et al., (2020), Ramamonjiarivelo et al., (2022), Riaji et al., (2024), Saxton et al., (2024), Scala et al., (2024), Souza-Alonso et al., (2024), Tillett et al., (2024), Wahyuni et al., (2023), Yusof et al., (2021)	33
Web of Science	Alghamdi et al., (2024), Geier et al., (2020), Hill et al., (2023), Holguin-Alvarez et al., (2021), Huang et al., (2022), Jadrić et al., (2024), Sumarmi et al., (2022), Suresh et al., (2022), Tran et al., (2024), Weng et al., (2023), Wolfand et al., (2022), Wren et al., (2021), Yépez-Reyes et al., (2022)	13

Table 6: Publication Venue of Selected Papers in Bibliographical Database

Publication venue/bibliographical databases	Number of Selected Articles
International Journal of Advanced Computer Science and Applications	1
Theory and Practice in Language Studies	1
Sustainability (Switzerland)	3
Cypriot Journal of Educational Sciences	1
FEBS Open Bio	1
Research in Engineering Education Symposium: Connecting Research-Policy-Practice for Transforming Engineering Education	1
Reading & Writing-Journal of the Literacy Association of South Africa	1
Journal of Nonprofit Education and Leadership	1
International Journal of Environmental Research and Public Health	1
Higher Education Research and Development	1
Applied Sciences (Switzerland)	1

Frontiers in Education	2
Academic Journal of Interdisciplinary Studies	1
Journal of Outdoor Recreation, Education, and Leadership	1
International Journal of Emerging Technologies in Learning	1
Frontiers in Psychology	1
European Journal of Educational Research	1
Indian Journal of Information Sources and Services	1
Journal of Microbiology & Biology Education	1
European Journal of Educational Research	1
Education Sciences	3
Journal of Medical Imaging and Radiation Sciences	1
INFORMS Transactions on Education	1
Journal of Physical Education and Sport	1
Higher Education, Skills and Work-Based Learning	1
Technology, Education, Management, Informatics (TEM Journal)	1
Healthcare (Switzerland)	1
Journal of Education and Learning	1
The British Journal of Social Work	1
BMC Medical Education	1
Fire Ecology	1
Pegem Egitim ve Ogretim Dergisi	1
Medical Education Online	1
Natural Sciences Education	1
Universal Access in the Information Society	1
Journal of Higher Education Theory and Practice	1
Rupkatha Journal	1
IEEE Transactions on Education	1
Learning and Teaching in Higher Education: Gulf Perspectives	1
Journal of the Global South	1
International Journal of Emerging Technologies in Learning	1

Following four quality criteria – population (QA1), intervention (QA2), comparative intervention (QA3), and outcome (QA4) – the remaining articles (n=46) completed a rigorous quality assessment (QA) process (Table 7). A three-point rating system was used to evaluate the articles that incorporated the following ratio scale: for unmet quality requirements, yes = 1 score, no = 0 points, and partially met = 0.5 points (Table 8). Based on the [42] procedures and the article's rating techniques that were started [17], Table 8 displays the percentage rate assigned to each article. The majority of research had scores between three and four, as Table 8 demonstrates. As a result, every article passes the 75% threshold and is kept in the systematic review process. Out of the total score of four, seven articles received the highest score of four. Since they fulfill the evaluation requirements, that is equivalent to 100%. Two articles, on the other hand, received the lowest score of 2 out of 2.5, or 50–62.5%. All 46 articles have undergone a quality assessment procedure as a result of this phase.

Table 7: Criteria for Quality Assessment (QA)

QA Criteria	QA Descriptions
QA1. Population	The study examines university students actively participating in SL programs.
QA2. Intervention	Conducting learning through hybrid or online platforms offers flexibility and accessibility, allowing students to engage with course materials and interact with peers and instructors from diverse locations.
QA3. Comparison	SL activities involve structured tasks that combine community service with academic learning, fostering practical skills, social responsibility, and personal growth among participants.
QA4. Outcome Measure	Developing generic skills is essential for preparing individuals to adapt and thrive in various personal and professional contexts. These skills, including communication, teamwork, adaptability, problem-solving, and critical thinking, can be cultivated through intentional and interactive learning activities.

Table 8: Quality Assessment (QA) Scores from Selected Papers

Author(s)	QA1	QA2	QA3	QA4	QA Score	QA%
Alghamdi et al., (2024)	1	1	0	1	3	75%
Aramburuzabala et al., (2024)	1	1	1	1	4	100%
Bandi et al., (2024)	1	0	1	1	3	75%
Compare et al., (2024)	1	0	1	1	3	75%
Drewery et al. (2024)	1	0	1	1	3	75%
Jadrić et al., (2024)	1	0	1	1	3	75%
Majid et al., (2024)	1	1	1	1	4	100%
Mashfufah et al. (2024)	1	0	0.5	1	2.5	65.5%
Naidoo et al., (2024)	1	0	1	1	3	75%
O'Connor et al. (2024)	1	0	1	1	3	75%
Raiji et al. (2024)	1	1	1	1	4	100%
Saxton et al. (2024)	1	1	0	1	3	75%
Scala et al., (2024)	1	0	1	1	3	75%
Souza-Alonso et al., (2024)	1	0	1	1	3	75%
Tillett et al., (2024)	1	0	1	1	3	75%
Tran et al., (2024)	1	1	0	1	3	75%
Al-Wahaibi et al. (2023)	1	0	1	1	3	75%
Hill et al., (2023)	1	0	1	1	3	75%
Natarajarathinam et al. (2023)	1	0	1	1	3	75%
Nopiyanto et al. (2023)	1	0	1	1	3	75%
Novita et al., (2023)	1	1	0	1	3	75%
Wahyuni et al. (2023)	1	0	1	1	3	75%
Weng et al., (2023)	1	1	1	1	4	100%
Barends (2022)	1	0	1	1	3	75%
Compare et al., (2022)	1	1	0	1	3	75%

Dapena et al., (2022)	1	1	1	1	4	100%
Pais et al., (2022)	1	0	1	1	3	75%
Ramamonjiarivelo et al., (2022)	1	1	1	1	4	100%
Huang et al., (2022)	1	0	1	1	3	75%
Sumarmi et al., (2022)	1	0	1	1	3	75%
Suresh et al., (2022)	1	1	1	1	4	100%
Wolfand et al. (2022)	1	0	1	1	3	75%
Yépez-Reyes et al., (2022)	1	0	1	1	3	75%
Asenjo et al., (2021)	1	0	1	1	3	75%
Awais et al., (2021)	1	0	0	1	2	50%
Domínguez-Lloria et al., (2021)	1	1	1	1	4	100%
Hidayah et al. (2021)	1	0	1	1	3	75%
Holguin-Alvarez et al. (2021)	1	1	0	1	3	75%
Montiel et al., (2021)	1	0	1	1	3	75%
Wren (2021)	1	0	1	1	3	75%
Yusof et al., (2021)	1	1	0	1	3	75%
Arcos-Alonso et al., (2020)	1	0	1	1	3	75%
Bharath (2020)	1	1	1	1	4	100%
Geier et al., (2020)	1	1	0	1	3	75%
Phakakat et al., (2020)	1	1	0	1	3	75%
Malotky et al. (2020)	1	0	1	1	3	75%

2.5. Analysis phase

2.5.1. Year of publication

Fig. 2 shows that the number of papers on SL in higher education has increased gradually over the past five years, except for the beginning of 2024, at which is review was conducted.

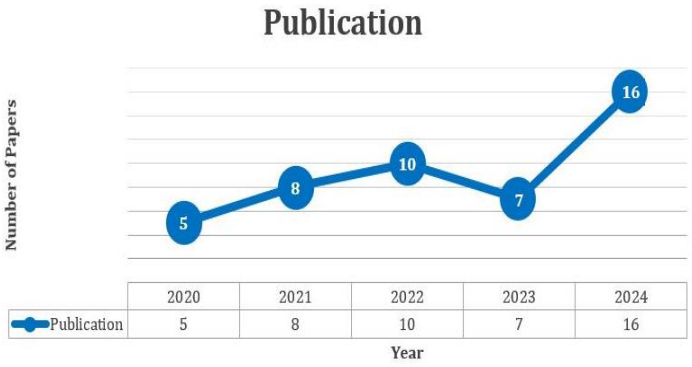

Fig. 2: Distribution by Publication Year.

Fig. 2 presents the distribution of selected studies by publication year, showcasing the increasing focus on hybrid SL over recent years. This figure highlights trends in the academic interest surrounding hybrid learning approaches, which provides insight into the growing importance of integrating technology into SL within higher education.

2.5.2. Data extraction and data synthesis (thematic review)

The analysis generated a total number of themes, calculated and analyzed using NVivo 15, as shown in Table 9. The results in Table 9 indicate several themes identified from the findings of the articles, such as community engagement, digital literacy integration, experiential learning, and skills and competencies.

Table 9: Report Finding After Performing Data Analysis with NVivo and Coding Thematic

Theme	Descriptions	Generic Skills	Number of Articles
Community Engagement	Principle: Ensure meaningful interactions with community partners through virtual and in-person activities. Skill Development: Cultivates empathy, civic responsibility, and cross-cultural competence.	Adaptability, Communication, Global Citizenship, Scholarship, Leadership and Teamworking	27
Digital Literacy Integration	Principle: Utilize online platforms for communication, project management, and resource sharing. Skill Development: Strengthens digital literacy, including proficiency with technology and virtual teamwork. Purpose: Facilitate e-learning and online education. Examples: Coursera, Udemy, Google Classroom, Moodle.	Communication, Critical Thinking,	15
Experiential Learning	Principle: Provide hands-on, real-world experiences in a structured environment. Skill Development: Enhances problem-solving, teamwork, and adaptability as students address real community needs.	Global Citizenship, Scholarship, Leadership and Teamworking	24
Skills and Competencies	Skills and competencies refer to distinct but related concepts, often used interchangeably in professional development and job descriptions.	Adaptability, Communication, Leadership and Teamworking	34

Most articles, based on the findings of the analysis in hybrid SL, focus on community engagement, digital literacy integration, experiential learning, and skills and competencies are also incorporated into student learning. However, there is only minimal integration of online platforms in student SL. The thematic framework of the Principles of Hybrid SL that Enhance Students' Generic Skills is shown in Fig. 3.

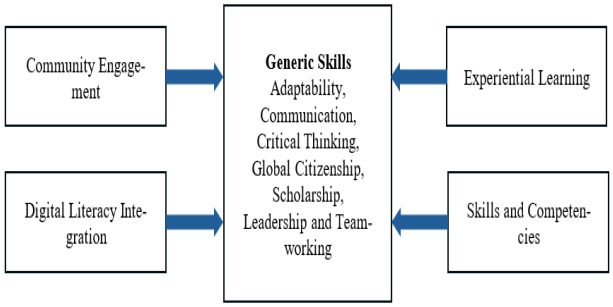

Fig. 3: Thematic Framework of the Principles of Hybrid SL that Enhance Students' Generic Skills.

Based on the principles of hybrid SL is divided into several components, such as Community Engagement, Digital Literacy Integration, Experiential Learning, Skills, and Competencies. The explanation is as follows:

Community Engagement

- Community engagement can be significantly enhanced by combining the use of virtual platforms with student-led initiatives. Virtual platforms, such as Google Meet and WhatsApp, provide cost-effective or even free solutions that allow for easy communication and collaboration between students and community partners. These tools facilitate smooth virtual meetings, discussions, and brainstorming sessions, which break down geographical barriers and allow individuals from different locations to come together without the need for physical presence. By utilizing these platforms, students can lead initiatives that include diverse voices from the community, ensuring that everyone has the opportunity to participate, regardless of their location or resources.
- According to the study [5], SL has an impact on academic courses related to generic skills and actions within student learning. Furthermore, the study highlights that students' engagement with the community creates the learning experience itself, preparing them to face future challenges [34]; [46].

Digital Literacy Integration

- Based on the study [43], it was found that the relationship between community-based learning experiences and the development of critical digital literacy skills demonstrates that learning alongside the community enhances students' critical digital literacy. Furthermore, SL, through online platforms, serves as an intermediary in strengthening this relationship. The study [39] revealed that digital competence within SL assists in improving students' proficiency in utilizing technology to carry out community projects online. For example, Google Classroom aids in the organization of assignments and learning resources, while Zoom enables teaching sessions to be conducted online. Meanwhile, MOOCs offer free courses that support flexible learning at an individual's own pace.

Experiential Learning

- Based on the study conducted [30], student learning experiences act as a catalyst for enhancing graduates' employability in building their careers and strengthening their ability to solve problems in real-world situations. Through learning activities, students are also provided with opportunities to enhance their mastery of generic skills by engaging in community-based projects. For instance, students can contribute their knowledge to organizations involved in community service activities. Through such knowledge-sharing, students can develop a deeper understanding of their learning concepts.
- According to the study presented [71], working collaboratively can create meaningful learning experiences and support the sustainability of community service by establishing networks of cooperation. Furthermore, experiential learning is seen as an effective means to further shape students' civic responsibility and to integrate SL into the context of higher education.

Skills and Competencies

- According to the study [22], it has been argued that skills and competencies in students' learning can increase students' expertise in a particular field, and constantly changing real-world contexts allow them to adapt to these challenges. Through these skills, students can strengthen their understanding of learning and gain valuable learning experiences. Similarly, the present study [1] highlights that building students' skills and competencies for the workforce is important to face the real world.

Development of Generic Skills in Activity Learning

According to the study [40], the development of students' generic skills emphasizes the importance of generic skills in preparing graduates for the labor market of the future. It also highlights the necessity of creative teaching strategies and cooperation between educators, legislators, and industry stakeholders. In the meantime, the study [33] claims that incorporating online activities into in-person programs can boost students' academic achievement and general skill development. As a result, hybrid SL is seen favorably by students, who believe it helps them develop general skills [44]. Table 10 provides an overview of the articles related to generic skills in student learning.

Table 10: Generic Skills

Generic Skills	Descriptions	Number of Articles
Adaptability	Through adapting to real-world situations by responding to new challenges or roles with ease.	4
Communication	Referring to communication both verbally and in writing, as well as active listening through clarity in conveying ideas.	4
Critical Thinking	Ability to analyze situations, evaluate options, and implement solutions effectively.	7
Global Citizenship	Global Citizenship refers to the idea that individuals are part of a broader, interconnected world, and have rights and responsibilities not only to their local communities or nations but also to the global community.	4
Scholarship	The concept of scholarship in generic skills refers to the academic exploration, teaching, and application of transferable skills that are fundamental for success across various disciplines and professional domains. This area of scholarship focuses on how these skills are developed, assessed, and integrated into educational and workplace settings.	3
Leadership and Teamworking	Guiding teams, inspiring others, and taking proactive steps.	4

2.5.3. Research design

Table 11 lists the approaches used in earlier research, which included mixed techniques (19 studies), quantitative methods (16 studies), and qualitative methods (11 studies). Most of the study employed both qualitative and quantitative methods, as well as mixed design approaches.

Table 11: Article by Research Design

Research Design	Authors	Number of articles
Quantitative	Riaji et al., (2024), Ramamonjiarivelo et al., (2022), Mashfufah et al., (2024), Awais et al., (2021), Natarajarathinam et al., (2023), Holguin-Alvarez et al., (2021), Phakakat et al., (2020), Tillett et al., (2024), Wolfand et al., (2022), Jadrić et al., (2024), Nopiyanto et al., (2023), Asenjo et al., (2021), Yépez-Reyes et al., (2022), Novita et al., (2023), Sumarmi et al., (2022), Bharath et al., (2020)	16
Qualitative	Suresh et al., (2022), Compare et al., (2024), Pais et al., (2022), Weng et al., (2023), Saxton et al., (2024), Aramburuzabala et al., (2024), Al-Wahaibi et al., (2023), O'Connor et al., (2024), Naidoo et al., (2024), Tran et al., (2024), Barends et al., (2022)	11
Mixed-methods	Majid et al., (2024), Geier et al., (2020), Domínguez-Lloria et al., (2021), Alghamdi et al., (2024), Bandi et al., (2024), Malotky et al., (2020), Wren et al., (2021), Arcos-Alonso et al., (2020), Dapena et al., (2022), Huang et al., (2022), Wahyuni et al., (2023), Hidayah et al., (2021), Souza-Alonso et al., (2024), Compare et al., (2022), Yusof et al., (2021), Scala et al., (2024), Montiel et al., (2021), Drewery et al., (2024), Hill et al., (2023)	19

2.5.4. Students' perception of hybrid SL

According to Fig. 4, only 31 of the 38 articles on the effects of hybrid SL suggest that students have favorable opinions about the way technology is incorporated into the program. Furthermore, according to seven articles, students have a poor opinion of SL when it comes to community-based project implementation. While hybrid SL has shown positive impacts, it is crucial to consider the barriers some students face, particularly in terms of motivation and engagement. Studies, such as Drewery et al. (2024), suggest that student motivation plays a significant role in their resistance to hybrid SL. Factors such as unclear learning objectives, lack of immediate benefits, and technological difficulties often contribute to negative perceptions. Addressing these challenges requires refining instructional design, offering clear guidance on the real-world application of skills, and ensuring accessible technology for all students. Furthermore, smaller sample sizes and short-term study periods, such as those observed in several reviewed studies, may fail to capture the long-term effects of hybrid SL on students' skill development.

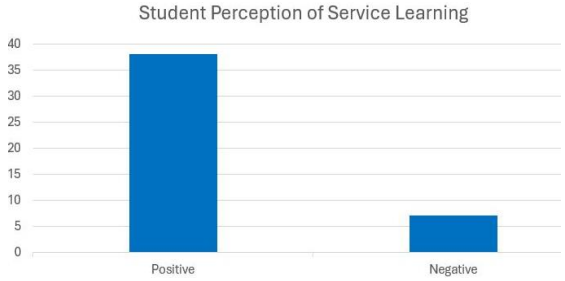

Fig. 4: Perception of Students in SL.

According to Fig. 4, the research results show positive and negative results as per the findings of the students in SL. From a positive perspective, the findings show that SL provides students with the opportunity to engage in real-world learning experiences that promote personal growth, enhance social responsibility, and develop practical skills. Through the implementation of community-based projects, students are able not only to apply their theoretical knowledge in practical contexts but also to face real-world challenges faced by diverse groups within the community. The negative impact indicates that students show a lack of interest in engaging in SL activities, possibly due to difficulties in understanding the concept of the learning approach.

3. Discussion

The study findings revealed several principles identified through the integration of hybrid SL into students' learning activities to increase student engagement, digital literacy, learning experience, as well as mastery of general skills, including skills and competencies. Furthermore, several generic skills were identified, namely adaptability, communication, critical thinking, global citizenship, leadership and teamwork, and academic integrity. Therefore, the results of this research indicated that students demonstrated positive responses toward hybrid SL. Hybrid SL strengthens students' mastery of generic skills, which is in line with the study [9], which demonstrated that the integration of digital learning promotes students' creative and critical skills as well as their professional development. The hybrid SL approach is capable of deepening students' understanding of their learning and provides opportunities to enhance their generic skills.

Student engagement in learning activities can provide them with learning experiences through real-world environments, whether conducted online or face-to-face. On the other hand, online interaction provides advantages such as access to a wider community and the mastery of technology skills. However, both forms of interaction play complementary roles in ensuring a comprehensive and relevant learning experience for students. This study aligns with research [45] and [58], where the learning experience has proven effective through student involvement in the community, offering valuable learning and creating an inclusive learning environment. Nonetheless, this research has had a positive impact on students in terms of their active participation in the community[3]; [7]; [11]; [12]; [31]; [34]; [69].

The integration of student learning through technology can enrich the academic mastery required to collaborate effectively with the community in today's digitally native learning environment. Student learning through integration of technology not only enhances the learning experience but also prepares students with technical skills in their respective fields. In line with the study [56], the integration of technology has clear potential in online student learning to increase student engagement. Therefore, this study shows that the use of technology in education opens up opportunities for lifelong learning, enhancing the mastery of skills and knowledge in real-world environments[21]; [23]; [26]; [55]; [57]; [61].

According to experiential learning, students have the opportunity to apply their theoretical learning knowledge in a community context to solve complex global challenges in the real world. This learning experience not only enhances their critical thinking abilities but also fosters a sense of global citizenship, enabling them to engage with the community and contribute their knowledge from theory to practice. In line with the study proposed [53], the Implementation of SL in higher education can connect academic learning with experiential learning. Therefore, this research assists students in preparing the skills that will be valued in the industry in the future [15]; [20]; [35]; [59]; [62].
Through students' skills and competencies, this refers to the mastery of specific skills within the field of study, such as technical skills, which can enhance students' competencies. A study [66] suggests that the implementation of SL requires a transformation towards innovative learning. Therefore, this finding not only focuses on academic achievement but also refers to the development of skills required by students in the job market [13]; [24]; [25]; [36]; [37]; [46]; [47]; [49]; [50]; [60].
Through students' perceptions of this hybrid SL, it has a positive impact on their motivation and participation in the learning process, resulting in improved overall academic outcomes. The study [27] shows that learning approaches involving technology and practical experiences can enhance students' understanding and develop critical skills, while providing SL opportunities that add value to education. This study has established that the perceptions of students can also indicate that they can learn in a more interactive and collaborative setting, whereby they can share ideas and problem-solving among themselves in the groups [19]; [38]; [48]; [51]; [52]; [63]; [67].
Incorporation of cognitive psychology could also give more insight into the way hybrid SL can impact the cognitive burden and learning of the students. According to cognitive load theory (Sweller, 1988), balancing between online learning and face-to-face learning may maximize the cognitive capacities of the students and avoid overloading them in order to increase engagement. On the same note, the integration of self-regulated learning (Zimmerman, 2000) theories enhances the comprehension of how adaptability and critical thinking skills of the students can develop under hybrid learning.

4. Conclusion

The findings of the systematic literature review of this research indicate that the majority of scholars have been keen on the effects of hybrid SL on the learning process of students. In the case of developing hybrid SL, the incorporation of technology in student learning and shaping of general skills are the two most significant areas that must be highlighted in the aspect of influencing the practice of student learning. This method also aims at giving guidance to the scholars who have been contemplating hybrid SL. One of the weaknesses of the study is the lack of references. This research result also reflects that educational institutions have to make a more comprehensive incorporation of hybrid SL to ensure that the students are not only prepared academically but also competitive in their work after graduating. The implementation of hybrid SL also includes the use of digital tools, online platforms, and the execution of collaborative projects with the community, which enable students to explore theoretical learning concepts in depth as well as develop their interpersonal skills. This approach will expose students to real-world situations that require them to think critically while adapting to the community, thereby enhancing their competitiveness at the global level.
In addressing potential objections to hybrid SL, such as technical constraints, lack of student involvement in the community, and difficulties in engaging students in both physical and online activities, sufficient technical support must be provided, and interactive learning must be developed. Therefore, flexible student learning ensures that active engagement can be achieved through both physical and online modes. Nevertheless, a challenge of Hybrid SL is the limited interaction with the community through the internet, leading to reduced engagement with the community. This is why it is necessary to ensure that the internet connection is provided accordingly to deal with this problem. Future research requires an in-depth exploration of the implications of hybrid SL by developing general skills that can be applied in the real-life context. Hybrid SL could enhance the learning processes and mastery of generic skills on the part of the students. Future research should examine whether artificial intelligence (AI) can be used to tailor hybrid service-learning experiences and to allow students to take adaptive learning journeys depending on student successes and preferences. Besides, virtual reality (VR) may be applied to recreate real-life community interactions to provide students with an intensive learning process. One of the important issues that must be resolved in further research is the scale of hybrid service-learning frameworks, particularly in the low-resource context. It will be important to ensure that there is fair access to technology and internet connectivity to ensure that this is broader.

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