Blended Learning in Malaysian Higher Education: The Use of Web-Based Technologies and ESL Learners' 21st-Century Skills

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Abstract

The evolution of pedagogical approaches in higher education, focusing on the emergence of blended learning (BL) as a promising model that combines traditional face-to-face instruction with technology-mediated online learning. It highlights the importance of 21st-century skills, such as critical thinking and communication, for students' success and the challenges faced in implementing effective BL, such as students' motivation and a lack of a humanised learning environment. This research investigated the effectiveness of BL for ESL learners in Malaysia and its impact on developing 21st-century skills. This qualitative research investigated blended learning in the context of English as a Second Language (ESL) education in Malaysian higher education. Focusing on how effective is BL through innovative web-based technologies for ESL learners, how does BL affect ESL learners' 21st-century skills and to what extent does BL affect ESL learners' 21st-century skills. A semi-structured interview was conducted with five students from a singular cohort programme at a public university in Malaysia and found that there is a notable enhancement of 21st-century skills through BL. While the findings contribute to ESL teaching methods and 21st-century skill development, there were some limitations, including potential subjectivity and biases in self-reported data. Recommendations include future research with larger, diverse samples and extended intervention durations to capture nuanced, long-term effects of BL on 21st-century skills.

Keywords: Blended Learning, Higher Education, Esl Learners, 21st-Century Skills, Web-Based Technologies

Introduction

In the contemporary landscape of higher education, the traditional approaches to teaching and learning are continually evolving to adapt to advancements in technology, shifts in learning paradigms, and the evolving needs of students. One notable educational model that has emerged as a promising means of revolutionising the learning experience is BL. BL combines traditional face-to-face instruction with technology-mediated online learning,

offering innovative learning experiences that expand the horizons of traditional pedagogy. In an era where 21st-century skills are paramount for personal and professional success, acquiring these skills has become critical. Students who lack these skills face substantial challenges in their careers and lives. This concern is further emphasised by the assertion that higher education institutions have been criticised for their role in fostering low performance and a deficiency of 21st-century skills, particularly among English as a Second Language (ESL) learners in Malaysia.

The efficiency of BL practices in tertiary institutions relies heavily on students' learning experiences. Numerous studies have investigated students' BL experiences in various locations in Malaysia, including *Universiti Tenaga Nasional* and Sunway College (Attaran & Zamzani, 2018; Wahid, 2020). These studies have focused on a range of fields, such as nursing, health, and foreign languages. However, there has been a notable gap in the exploration of their experience using BL within the context of ESL. This study aims to fill this gap by delving into ESL learners' experiences with innovative web-based technologies and assessing the effectiveness of BL in enhancing their 21st-century skills. Gathering meaningful qualitative input from learners can offer valuable insights for pedagogical approaches to teaching and fostering 21st-century skills in the ESL context. However, the effective implementation of BL is also exposed to its challenges. Issues related to student motivation, the absence of a humanised learning environment, a lack of a sense of community, and accessibility problems have been identified. ESL learners, in particular, may encounter feelings of isolation due to reduced face-to-face social interaction opportunities within BL environments. An overreliance on technological tools may not always promote the development of creative and critical higher-order thinking skills. Additionally, the availability of vast information through technology raises concerns about plagiarism and a potential reduction in creativity within academic settings.

In the evolving landscape of higher education, pedagogical approaches continually adapt to accommodate advances in technology, shifting learning paradigms, and the changing needs of students. BL, an educational model that melds traditional face-to-face instruction with technology-mediated online learning, has emerged as a promising means of revolutionising the learning experience. It opens doors to innovative learning experiences, broadening the horizons of traditional pedagogy. In an era where 21st-century skills are paramount for personal and professional success, acquiring these skills is paramount. Students without these skills face significant challenges in their careers and lives (Hiong, 2017). Moreover, higher education institutions have been criticised for their role in fostering low performance and a deficiency of 21st-century skills among ESL learners in Malaysia (Siaw 2006). Building on Siaw (2006), it is noteworthy that the landscape of education in Malaysia has seen a significant shift with the Malaysian Ministry of Education (MMoE) taking proactive measures. Since 2013, MMoE has strongly advocated for the integration of 21st-century skills in Malaysian schools. 21st-century skills, which encompass critical thinking, problem-solving, communication, collaboration, creativity, and innovation, must be cultivated early and consistently reinforced through teaching, learning, and co-curricular activities (Greenhill, 2010). In the domain of language acquisition, motivation emerges as a fundamental factor. Intrinsically motivated learners rely less on external stimuli, fostering a deep commitment to their learning journey (Zainon & Yamat, 2021).

Yet, the effective implementation of BL is not without its challenges. Issues such as student motivation, the absence of a humanised learning environment, a lack of a sense of community, and accessibility problems have been identified (Jitendra, Keely, & Lovely 2021). ESL learners engaged in BL might encounter a sense of isolation due to reduced face-to-face social interaction opportunities (Ulfa & Bania 2019). Moreover, an overreliance on technological tools may only sometimes promote creative and critical higher-order thinking skills (Hubackova & Semradova 2016). The availability of vast information through technology also poses the risk of plagiarism and a reduction in creativity within academic settings (Christoff et al. 2009). This research endeavours to address the following critical questions:

1. How effective is blended learning through innovative web-based technologies for ESL learners?
2. How does blended learning affect ESL learners' 21st-century skills?
3. To what extent does blended learning affect ESL learners' 21st-century skills?

Literature Review
Language Learning Theories: Social Constructivism
Social constructivism is a learning theory that emphasises the collaborative nature of learning and the importance of social interaction in the construction of knowledge. In the context of BL for higher education, social constructivism underpins the design and development of teaching and learning activities. It focuses on the co-construction of knowledge and the active involvement of students in the learning process (Learning Theories 2023). BL, also known as 'blended teaching', is strongly manifested in social constructivist pedagogy, as it integrates traditional classroom instruction with online learning activities, thereby providing opportunities for students to learn with and from their peers. This approach supports individual learning styles and the development of 21st century skills such as collaboration, problem solving, creativity, self-regulation, and knowledge building (Szabó & Csépes, 2023). The practical implementations of social constructivism in BL aim to achieve an ideal and personalised combination of traditional and online learning activities, taking into account the individual characteristics of the learners and the learning environment. It also involves the use of digital tools to support collaborative learning and the active construction of meaning by students (Liu et al., 2023).

In the realm of language learning theories, Social Constructivism underscores that learning is an active process of knowledge construction rather than passive acquisition. This theory advocates for instructional approaches that support this construction through social interaction and collaborative activities. It also highlights language's role as the medium for knowledge construction and the contextual nature of language in the learning process (Dorrell, 2022).

Sani and Ismail (2021) found that young Malaysian ESL learners utilise various learning strategies, including compensation and cognitive strategies, which align with Social Constructivism. Compensation strategies, such as seeking support from teachers or peers to overcome communication barriers, illustrate the collaborative essence of learning within the Social Constructivist framework. Moreover, the study indicates that female learners tend to employ more language strategies than their male counterparts, emphasising the social dimension of learning and the impact of interactions on language acquisition.

Furthermore, Social Constructivism in blended learning for higher education not only offers a theoretical foundation for designing teaching and learning activities but also presents a practical framework for enhancing 21st-century skills. This includes integrating traditional and

online learning experiences, engaging in collaborative activities, and leveraging digital tools to create personalised and interactive learning environments. In conclusion, Social Constructivism highlights the importance of social interactions and collaborative learning environments in enhancing language learning strategies, benefiting learners, including young Sarawakian ESL learners, by providing them with opportunities for meaningful dialogues and interactions (Sani & Ismail, 2022).

Overall, Social Constructivism in blended learning for higher education not only offers a theoretical foundation for designing teaching and learning activities but also presents a practical framework for enhancing 21st-century skills. This includes integrating traditional and online learning experiences, engaging in collaborative activities, and leveraging digital tools to create personalised and interactive learning environments.

The Unified Theory of Acceptance and Use of Technology

The Unified Theory of Acceptance and Use of Technology (UTAUT) is a model that helps explain the drivers of acceptance and usage behaviour of new information technologies by users. The four constructs (namely performance expectancy, effort expectancy, social influence, and facilitating conditions) play a significant role in user acceptance. However, the UTAUT model does not directly consider culture as a determinant. Some researchers argue that culture is a direct determinant of behavioural intention, and propose for the model to include culture as the fifth construct (e.g. Jayantha, 2011). UTAUT has been widely applied in various studies with different cultures, places, subjects, and times, and has been developed by researchers to include other relevant variables, such as innovativeness (Toni et al., 2011). While the model has been extensively used, there is a need for further theoretical development in research on technology acceptance and use. It has been tested across different conditions and groups, and is generally robust, but measurement non-invariance should be considered in cross-technology or transnational comparisons (Myung & Songtae, 2011). TAUT has also been successfully applied to web sites used by students in higher education, demonstrating its broad applicability (Schaik, 2009).

Blended Learning

BL has its roots in the broader concept of e-learning, which serves as an umbrella term encompassing various related terms like virtual learning, online learning, virtual classes, mobile learning, and, of course, BL. Different authors provide their definitions of e-learning. Some authors focus on BL as the ability to access learning resources anytime and anywhere using electronic devices such as computers or mobile phones for delivering education or training materials. Naidu (2006), in the context of synchronous and asynchronous learning settings, defines e-learning as an educational process that uses information and communication technology to facilitate learning activities either synchronously or asynchronously. Horton emphasises e-learning as applying information and computer technology to create learning experiences. Learning can occur through various methods, often categorised into face-to-face classroom instruction, virtual learning, and asynchronous and synchronous learning (Chaeruman, Wibawa, & Syahrial, 2018). In today's context, online technologies are mainly employed for virtual and asynchronous learning, while integrating these technologies with traditional classroom instruction is known as BL. BL is sometimes used interchangeably with terms like hybrid, mixed-mode, or flexible learning. The concept of flexible learning, as discussed in this context, is a broad and multifaceted term, and its interpretation can vary significantly, as noted by Hrastinski (2019). The most commonly used

definitions of BL in scientific literature, as per Hrastinski (2019), are those of Graham (2006), which defines it as the combination of face-to-face and computer-mediated instruction, and Garrison and Kanuka (2004), which describe it as the thoughtful integration of classroom and online learning experiences. Based on Maarop and Embi (2016) in Implementation of Blended Learning in Higher Learning Institutions: A Review of the Literature discusses BL concepts and practices within Malaysian higher education institutions. It provides insights into the implementation of BL, challenges faced, success factors and recommendations for designing effective BL programs.

However, Smith and Hill (2019) argue that the definitions of BL are problematic because they lack consensus and cover a wide range of teaching practices, making them somewhat ambiguous. Consequently, BL encompasses all technically supported learning environments, excluding pure online and classroom instruction. Since almost all universities nowadays utilise online learning management systems to provide teaching materials, BL is often referred to as the "new traditional model" or the "new normal" (Dziuban, Graham, Moskal, Norberg, & Sicilia, 2018). Comparing the two definitions, Garrison and Kanuka's (2004) definition is slightly more specific as it emphasises a qualitative aspect, requiring a thoughtful integration of in-person and online learning.

Web-Based Technologies

Web-based technologies refer to a collection of tools, frameworks, and protocols that are used to develop and deliver applications, services, and content over the World Wide Web. These technologies enable users to access and interact with information and services through web browsers on various devices like computers, smartphones, and tablets. Web-based technologies have become an integral part of modern life and are widely used for various purposes, including communication, entertainment, e-commerce, and education. Web-based technologies have evolved significantly since the early days of the Internet, and they continue to shape how users access and interact with information and services online. Somehow, web-based technologies have evolved and made the education fields more accessible and reachable, especially for students and educators. Web-based technologies have the potential to greatly enhance the higher education experience by providing flexible and interactive tools for both educators and students. Hashim (2018) discusses the use of digital technologies in education, showing how they enhance teaching and learning. It discusses how digital tools improve the classroom environment, offer curriculum flexibility, and engage students through interactive methods like video presentations, e-learning, and online training. This integration has made classroom instruction more participatory and expanded access to educational resources beyond traditional methods. Research has extensively explored the effectiveness of web-based technologies. A meta-analysis by Means et al. (2013) revealed that students engaged in these technologies show improvement in academic performance compared to traditional instructional methods. However, challenges related to digital equity and accessibility persist (Ertmer et al. 2012). Despite the benefits, challenges in adopting web-based technologies in education include issues of digital literacy among educators (Mishra & Koehler, 2006) and concerns about data privacy (Selwyn, 2014). Future research should focus on developing strategies to address these challenges and explore emerging technologies such as augmented reality and artificial intelligence in educational contexts.

ESL Learners' 21st-Century Skills

21st-century learning signifies a significant shift in the teaching and learning process. Unlike traditional approaches that focus on having students memorise knowledge provided by the teacher, teaching in the 21st century is centred on empowering students to create and construct knowledge. Sumardi, Rohman, and Wahyudiati (2020) emphasise key aspects of 21st-century learning, which include core subjects, 21st-century themes, learning and innovation skills, information, media, and technology skills, as well as life and career skills. These areas should be integrated within each lesson, aiming to develop well-rounded individuals who possess qualities like balance, resilience, curiosity, principled behaviour, informed decision-making, care for others, patriotism, and effective thinking, communication, and teamwork abilities (Malaysian Ministry of Education, 2012). The Malaysian Ministry of Education (MMOE) has been a strong advocate for the implementation of 21st-century learning skills (21st CLS) in Malaysian schools since 2013. The new Malaysian Education Development Plan has mandated the integration of 21st CLS in the teaching of major subjects such as English and Mathematics. This directive has presented new challenges to teachers, who must now adapt to a different teaching and learning paradigm. Teachers are required to acquire new skills, including leveraging technology to enhance learning, fostering critical thinking in students, and promoting collaborative and self-directed learning (Partnership for 21st Century Skills, No2015). 21st-century learning necessitates explicitly integrating learning strategies, digital competencies, and career-related abilities while teaching major subjects like English (Fandino, 2013; Begum & Liton, 2018). English language classrooms should offer students opportunities to practise and develop skills such as creativity, critical thinking, collaboration, self-direction, and cross-cultural competencies. The Partnership for 21st Century Skills (2015) advocates for explicitly integrating learning and innovation skills, information, media, digital literacy skills, and life and career skills. Successfully implementing 21st CLS in classrooms depends, in part, on teachers' ability to effectively integrate all these elements.

Methodology

Research Design

This research undertook qualitative research, which is a method of investigating social or human issues by constructing a comprehensive and interconnected representation using descriptive language (Creswell, 1994). This approach involves gathering specific perspectives from individuals and conducted in a natural setting.

Research Population and Samples

In qualitative studies, it is important to consider the size of the samples since it would enable the provision of in-depth and rich information about the undertaken phenomenon (Merriam, 2009). Yet, determining the size remains debatable. Some argue that the focus should be on the quality of data (Tor, 2021). Under the purposive sampling criteria, this study selected five students (N=F:3; M:2) from Second to Final-Year undergraduate ESL learners from a public university in Malaysia, consisting of different races, genders, age groups with Band 4 in their MUET. Their selection was determined based on a specific criteria: Phase of studies, ESL learners, and having accumulated a minimum of three semesters of experience in a BL environment. Consequently, these five students were considered well-suited participants for sharing their purposeful experiences in the context of BL.

Research Instruments

Since this study was exclusively qualitative in nature, it employed semi-structured interviews, which are characterised by a flexible and open format that combines both predetermined questions and the opportunity for the interviewer to explore relevant topics in more depth. To facilitate these interviews, the research team developed an interview protocol which consisted of 5 questions to provide a structured discussion framework. These questions mainly consist of the 3 research questions and two follow-up questions constructed during the interview session. The 3 were adapted from Ramalingam, Yunus and Hashim (2022). To ensure accuracy and reliability of the instrument, strategies were employed. Before the interview session, participants were briefed about the purpose of the study to avoid accidental mistakes. The interview questions were sent to an expert for validity and reliability of the questions. The validity and reliability of interview questions were enhanced by repetitively posing questions and obtaining feedback from participants to ensure data saturation. Upon obtaining consent, the interview sessions were recorded using Whatsapp chats and Apple iMessage. The choice of platform allowed subsequent transcriptions that were then screenshot and kept as image documents. To affirm the validity of the research data, it was confirmed by assessing its alignment with the research scope and questions.

Data Collection Procedure

All the interview replies were transcribed once the focus-group interviews were completed. The interviews were conducted using WhatsApp and iMessage chat facilities to gather valuable insights into the participants' experiences with BL using innovative web-based technologies and to assess its impacts on their 21st-century skills. The semi-structured interviews involved 3 pre-designed open questions as structured items. Prior sharing of the questions allowed flexibility and in-depth responses, enabling a comprehensive exploration of the participants' experiences and perspectives in the context of the study. Once responses were obtained, the researchers engaged with several other follow-up questions to further understand. All the feedback and responses were carefully noted from the chat. Using screenshot devices in the telephone, data was kept and described accordingly. This allowed easier analysis of the feedback.

Analysis Procedure

This study employed Braun and Clarke's Thematic Analysis (TA) (2006), comprising six stages. Thematic analysis mainly identifies, analyses inductively, and then reports patterns and themes from the descriptive data collected through interviews. Inductive thematic analysis was employed that enabled flexibility and the provision of a richer interpretation of data. Only relevant statements in the interview were selected as codes to reduce the information, identify the codes, and display the data for the results. The data was collected and analysed while the findings were discussed accordingly.

Upon familiarising with the data, it was then coded, where significant segments are systematically tagged. A winnowing process was executed through repetitive manual iterations and the utilisation of DivoMiner (an AI tool), which serves as a refining and filtering mechanism where it extracted the most significant components from the information, aligning with a code-based approach to thematic analysis. Uniquely tailored to this study, a winnowing process, inspired by Krippendorff (2004), was used to further refine the analysis. This strategic elimination of less relevant elements, executed through manual and AI-assisted reviews, distils the data to focus on the most crucial components. The result is a concentrated

and finely tuned analysis, ready to be presented in the Findings and Discussion sections. The use of DivoMiner ensures the accuracy of identified themes, refining and specifying them for clarity. The final thematic structure is synthesised in the report writing stage, offering a comprehensive narrative of the research outcomes.

The outcomes pertaining to the themes derived from the process of identifying codes through a distinction based on themes, as proposed by previous research (Merriam, 2009), are portrayed in this section. Subsequently, a discussion on the overall results of the study developed. The findings of the research are presented in response to the research questions. Multiple themes and subthemes were recognized throughout the process of identifying codes. Nevertheless, only the primary themes associated with the research questions are elaborated upon in greater detail.

Ethical Consideration

Before the commencement of the study, explicit and understandable information about the research purpose, procedures, and benefits were provided to all participants. All collected data were treated with confidentiality. Participants' identities were made anonymous. In fact, digital data was stored on password-protected laptops and backed up securely to ensure data security. Issuance of participation was made voluntary and the researchers ensured that the study did not interfere with the participants' regular academic activities.

Findings and Discussion

Theme 1: Constructive Experiences

This theme answered Research Question 1 (*How effective is blended learning through innovative web-based technologies for ESL learners?*). The participants shared their thoughts and opinions about the advantages, difficulties and obstacles they faced in classrooms utilising a variety of innovative web-based technology. Most found BL activities to be beneficial, enabling them in developing understanding of their learning, enhancing motivation while (re)discovering new learning strategies. P1 specified that "the experiences are extraordinary … [and] motivate me." BL also provided simple access to resources which are flexible and allowed active involvement in the learning process since it uses creative applications and websites.

"I find it easier to search for the information that I long for. At the same time, it helps me with understanding something about a particular topic even deeper." (P4)
"The online components have added a valuable dimension to my learning journey, enabling me to adapt to a more versatile and interactive approach to education." (P2)

There were plenty of emotional reactions about participating in web-based BL activities. All exhibited favourable affective states when describing their emotions; the ranges cover enjoyable, engaging, interesting and fascinating. However, one expressed discontent, specifying on the difficulties dealing with BL classrooms. He questioned on the lack of exposure to the web-based learning:

"As a learner who only experiences physical classroom learning, it is very hard for me to adapt in the first few months." (P1)

Such challenges and drawbacks of BL in the context of English language learning have also been documented in the literature (e.g. Haytham 2023). However, it is undeniable that difficulties arise in integrating BL into the classroom, especially for students who have not had much experience with digital technologies beforehand.

The participants mainly expressed a range of positive outcomes, citing benefits in comprehension, motivation, and the discovery of new learning strategies. Despite facing initial difficulties, particularly in adapting to web-based learning, participants reported an overall satisfaction, enjoyment and engagement with BL activities. This aligns with existing research on learners' emotional experiences in BL contexts (e.g. Namyssova *et al* 2019). The identified benefits of using BL, such as flexible study opportunities and personalised learning, resonated with the participants' experiences, while challenges related to technological tools and initial adaptation mirrored broader trends outlined in the literature (Namyssova *et al.,* 2019; Ashraf et al., 2021). The synthesis of participants' experiences with existing research underscores the potential effectiveness of BL for ESL learners, emphasising a need for tailored support to address technological challenges and facilitate a seamless transition to web-based learning environments (Zhang & Zou, 2020).

Theme 2: 21st-Century Skills
Under this theme, both Research Question 2 (*How does blended learning affect ESL learners' 21st-century skills?*) and Research Question 3 (*To what extent does blended learning affect ESL learners' 21st-century skills?*) are addressed. Exploring the dynamic intersection of education and technology, this equally emphasises the skills needed by 21st-century learners and the knowledge acquired is crucial for higher-learning institutions when developing relevant curricula (Thiloththama, 2023). For ESL learners to work in a variety of industries, they must be equipped with a variety of 21st-century skills, including leadership, critical thinking, problem solving, decision-making, information management and communication skills among others. Gurkiran (2023) highlights the need for learner-centred approaches and the incorporation of 21st-century skills i.e creativity, critical thinking, collaborative thinking, and communication. In one of the explanations given, an advantage of their BL experiences was the development of soft skills such as critical thinking, collaboration and leadership (P1). To add, some captured essences of BL's impact on 21st-century skills, emphasising that it offers diverse, technology-rich experiences that foster essential skills for our generation – "BL provides diverse, technology-rich experiences that promote essential skills for our generation" (P5).

Findings supported the importance of integrating BL with web-based technologies to enhance students' 21st-century skills, as well as the need for learner-centred approaches to foster creativity, critical thinking, collaborative thinking and communication. This echoes previous research studies (e.g. Ramalingam et al., 2021), which proposed BL with web-based technologies as a promising approach to improve students' 21st-century skills, emphasising the need for suitable pedagogical strategies to enhance active engagement and skill development. What follows are discussions on four subsections as elaboration that come under 21st century skills, which are abilities to promote interactive discourse, to stimulate collaborative learning and nurturing soft skills as well as strengthening digital literacy.

Blended Learning Promotes Interactive Discourse
One participant acknowledges that BL has played a collective role in the development of crucial skills, including digital literacy, adaptability and effective communication. The use of

the term 'collectively' suggests an interactive and collaborative learning environment that enhances various soft skills. Another participant shares a personal perspective, noting increased productivity and confidence. This suggests that the interactive nature of BL has positively impacted the individual learner, fostering a sense of efficacy and efficiency in their academic pursuits.

"have collectively contributed to the development of crucial skills such as digital literacy, adaptability, and effective communication" (P2)
"I find myself being more productive and confident" (P4)

Most participants firmly acknowledged that their soft skills were enhanced by the different web-based BL activities. P2 and P4 responded accordingly, which concurred Hadiyanto et al. (2021) who noted on many teachers' comments on the difficulty of helping learners to foster 21st-century skills. Engaging in BL activities facilitated the acquisition of these skills, as the approach seamlessly integrates both in-person and virtual instruction, offering students valuable opportunities to enhance their 21st-century skills (Yeen-Ju, 2015). Responses from the participants have indicated that BL is able to provide opportunities for students to interact, communicate, present, work in groups, discuss, share ideas, and resources at any location, leading to the intense practice and promotion of soft skills (Kumar et al., 2021).

Blended Learning Stimulates Collaborative Learning
When BL is conceived as enabling the promotion of interactive discourse, this can be seen through collaborative learning activities. The participants believed that participating in BL activities promoted classmate collaboration and team playing. Most declared that the approach aids in completing tasks efficiently while maintaining a supportive and respectful attitude towards team members. Some highlighted a positive influence of BL on their level of communication and teamwork abilities, having "honed communication and teamwork abilities" (P2) through interactions "with classmates and teacher" (P3). The interaction with both classmates and lecturers is seen as instrumental in fostering these essential skills, aligning with the collaborative nature of the learning environment. In the participants' perspective, the combination of face-to-face instruction with online activities in BL proves to be highly effective in enhancing 21st-century skills, specifically critical thinking, collaboration, and digital literacy.
The combination of face-to-face and online activities is particularly effective in improving 21st-century skills, especially through collaborative activities like online groups and discussions. These findings evidently support numerous past studies (e.g. Lopez-Pellisa et al., 2021) which emphasised the benefits of effective communication strategies and collaborative learning approaches in BL environments where it regulates communication (Dakhi et al., 2020), thus promoting collaborative learning. Additionally, the study by Zhang (2020) highlighted the value of meaningful student-to-student communication in a BL setting, regardless of the chosen learning medium.

Blended Learning Nurtures Critical Thinking, Creativity And Problem Solving Skills
One participant acknowledges that BL somehow "enhances thinking" (P1), suggesting a positive influence on cognitive processes. While other participants provided a more elaborate perspective, stating that the "combination of face-to-face interactions and online engagement has resulted in a well-rounded learning experience" (P2). This , in turn, has

contributed to the promotion of creativity, critical thinking and problem solving. The use of terms like 'well-rounded' and 'promoting' suggests a comprehensive and positive impact on various cognitive skills, particularly critical thinking and creativity. This implies that, in the participant's perception, BL contributes to a holistic development that includes problem solving abilities. The other participants stated that BL has made them think critically, indicating a direct and positive influence on their ability to engage in analytical and evaluative thinking processes. It "made me think critically" (P4), and this is possible through the "diverse resources and digital platforms" (P5). In sum, the responses affirm the perception that BL contributes to the cultivation of critical thinking skills and stimulates creativity among ESL learners. Overall participants' comments suggest that the interactive and varied nature of BL may foster a comprehensive set of cognitive skills, including critical thinking, creativity and problem solving.

Clearly BL has been found to nurture critical thinking, creativity, and problem solving skills in ESL learners. This approach provides students with various learning experiences that foster the development of these essential 21st-century skills. Sohaya (2020) conducted a study that emphasised that BL can be an effective strategy for enhancing students' critical thinking abilities, which is crucial for their success in various academic and professional contexts. Islam et al. (2021) supported the positive influence of BL on students' ability to think critically and solve problems, as it provides a dynamic learning environment that encourages students to engage in active learning and collaborative activities. Pachisia (2022) highlighted the potential of BL in fostering students' creativity and problem-solving abilities, as it allows them to explore various learning resources and engage in interactive activities that promote critical thinking and innovation.

Blended Learning Stimulates Expertise in Digital Literacy
The first participant acknowledged that BL influences 21st-century skills, specifically citing improvement in media literacy skills. This implies that the integration of BL contributes to enhanced competencies in understanding and utilising various forms of media. Another interview notes a significant improvement in digital literacy due to the integration of technology in BL. The participant emphasises the ability to navigate and leverage digital tools effectively, highlighting the positive influence of BL on practical digital skills. The other participants express that BL has contributed to increased proficiency in using technology, indicating a positive correlation between BL experiences and the development of digital literacy skills. Overall, the responses highlight the role of BL in stimulating expertise and proficiency in digital literacy.

"it influences 21st century skills. For instance the media literacy skills." (P1)
"The integration of technology has significantly improved my digital literacy, enabling me to navigate and leverage digital tools effectively." (P2)
"It has helped me become more proficient in using technology." (P3)
"And access to digital resources really enhances my digital literacy in some ways possible." (P5)

BL concretely found its ability to stimulate expertise in digital literacy. Faraniza (2021) found that BL can be an effective strategy for enhancing students' digital literacy capabilities, particularly when additional exercises and tutorials are used to help students improve their digital literacy levels. In 2021, Bykova underlined the goal of BL in embodying these goals in

specific learning content and instructional activities, which can enhance students' digital literacy skills. Other than that, Dewi and Fatkhiyani (2021) also highlighted the importance of BL in providing opportunities for students to apply digital literacy skills in real-life contexts, such as online research tools, digital media projects and online communities. BL provides a flexible and customisable educational setting that promotes the development of various digital skills. BL combines physical and online teaching methods to help students become skilled at using, creating and communicating with digital tools and media in various situations and for different purposes. This diverse approach significantly enhances their ability to succeed in the modern period of the 21st-century.

Conclusion

This study delves into the multifaceted effects of BL on ESL learners, with a specific focus on enhancing essential 21st-century skills. By examining the participants' experiences, attitudes, and outcomes, the researchers identified key themes and subthemes that underscore the transformative potential of BL in improving collaboration, communication, critical thinking, creativity, problem-solving, and digital literacy. The findings highlight the adaptable nature of BL, aligning with the dynamic requirements of modern education. Notably, the integration of physical and online activities within the BL model emerges as a crucial factor in developing a comprehensive set of skills among ESL learners. This study contributes valuable insights into the effectiveness of BL as a teaching method, particularly in preparing ESL learners for success in the modern era. Despite these insights, it is crucial to acknowledge certain limitations. The qualitative nature of the research introduces an element of subjectivity, and the findings are context-specific. The sample size and duration of the study may impact the generalizability of results. Future research endeavours should consider larger and more diverse samples to enhance the external validity of the findings. Educators and institutions may continue to explore and refine the use of BL methods to align with the evolving needs of learners in a more digital and collaborative educational setting. As the educational landscape undergoes continuous transformation, the study emphasises the importance of ongoing investigation and improvement in BL approaches. Future research could explore additional dimensions of BL effectiveness and consider longitudinal studies for a more profound understanding of its long-term impact on ESL learners. This collective effort will contribute to shaping effective teaching methodologies that cater to the dynamic demands of contemporary education.

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