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Digital Learning Strategies in the HARMONII Program: Advancing SDGs for ASEAN Students

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Abstract

Objectives: This study aims to analyze the implementation of the HARMONII digital learning program as a short-term international online course. The research focus includes the design, process, and learning outcomes of participants. In addition, the study assesses its impact on digital literacy, cross-cultural competence, and 21st century skills. **Theoretical framework:** The theoretical framework includes the digital transformation of education, technology-based collaborative learning, 21st century competencies, and inclusive education aligned with the SDGs. **Literature review:** A literature review discusses international online learning, digital literacy, cross-cultural collaboration, and the contribution of education to equitable global access and sustainable development. **Methods:** The research uses descriptive qualitative methods through interviews, FGDs, and observations to analyze the design, process, and results of the HARMONII program. **Results:** Results show that the integration of synchronous learning (Zoom), asynchronous (LMS), and informal communication (WhatsApp) creates a collaborative learning environment. The program improves digital literacy, cross-cultural competence, and participants' critical thinking and problem-solving skills. In addition, the program contributes to the achievement of the SDGs through more inclusive access to international education. **Implications:** Short-term online programs can be a scalable model for improving educational inclusivity, global cooperation, and the integration of digital strategies in higher education. **Novelty:** The novelty lies in a short-term digital-based international program model that combines moderate Islamic values, global collaboration, and contribution to the SDGs in an integrated manner.

Keywords: digital learning strategies, harmonious islam in indonesia program, asean students, intercultural competence, sdgs.

INTRODUCTION

The rapid development of information and communication technologies has significantly transformed the lives of adolescents in the ASEAN region. Online learning, social media, and broader internet access have created vast opportunities for education and social interaction. However, the Digital Literacy in Education Systems Across ASEAN survey conducted by UNICEF indicates that although many adolescents have access to digital devices, their ability to leverage technology for learning, critical thinking, and discerning accurate information remains insufficient [1]. A recent study, Assessing Digital Literacy

Skills among Indonesian University Students in the Age of Society 5.0, found that approximately 73% of students fall within the medium category of digital literacy, highlighting the urgent need for systematic capacity building [2]. Similarly, the ASEAN Digital Literacy Programme (ASEAN DLP) reported that although nearly 200,000 individuals have been reached through digital literacy training, significant gaps persist, particularly among disadvantaged communities and in addressing misinformation [3]. This situation raises concerns that weak digital literacy may undermine adolescents' ability to navigate the challenges of the digital era, including disinformation and negative uses of social media [4].

Studies by Knight et al. (2015) reveal that data from PISA 2022 indicate substantial disparities in digital readiness across ASEAN countries. Singapore stands out for its high levels of ICT access and digital preparedness, while Indonesia, the Philippines, and Thailand demonstrate lower levels of readiness, particularly in rural and underdeveloped regions [5]. Another study at the university level developed a scale to measure students' digital literacy and digital resilience in Indonesia, Malaysia, and Timor Leste, highlighting the need for reliable instruments to assess digital competencies across countries [6]. In addition, the SEADS-ADB report emphasized that more than half of ASEAN youth (aged 10–24) have not yet received digital skills education within their school curricula, and that one of the weakest pillars of digital integration in the region is the development of digital skills and talent [7].

Despite existing mappings of digital readiness and the presence of several digital literacy programs in the ASEAN region, significant gaps remain. First, few studies have examined the direct impact of regional-scale digital learning programs on SDG-related indicators among students, as most initiatives have focused on teachers or the general community [8]. Second, limited research has investigated how context-sensitive digital learning designs considering local cultures, infrastructural disparities, and socio-economic inequalities are implemented and evaluated over time. Third, prior research has largely concentrated on general digital literacy, rather than on cross-national collaboration, problem-solving, or the holistic development of 21st-century skills, which are critical in today's globalized and digitalized era [9].

The ASEAN Digital Literacy Programme (ASEAN DLP) is one of the region's flagship initiatives, aiming to enhance digital literacy through training for teachers and youth leaders, the development of multilingual e-learning modules, and public campaigns. While the program has reached nearly 190,000 individuals through workshops and training activities and engaged Master Trainers across ASEAN member states [10], evaluations have predominantly focused on outputs such as the number of workshops and participants, with less attention given to the actual learning processes experienced by students themselves or to the program's connections with SDG outcomes at the local and student-community level [11].

Against this backdrop, it is essential to conduct research that focuses on structured, participatory, and ASEAN-contextualized digital learning strategies, such as the Harmonious Islam in Indonesia (HARMONII) program organized by the Faculty of Islamic Studies, Universitas Islam Sultan Agung (UNISSULA). This study is particularly urgent for three reasons: (a) to ensure equitable access to and quality of digital learning across regions (urban–rural, developed vs. developing countries), (b) to strengthen education's role in shaping 21st-century competencies such as problem-solving, collaboration, digital literacy, and cultural awareness, and (c) to reinforce ASEAN regional cooperation in achieving the SDGs, especially in terms of inclusivity and reducing inequalities [12].

Accordingly, this study aims to analyze how digital learning strategies through the HARMONII program are implemented across diverse ASEAN contexts, to evaluate their impacts on the achievement of SDGs among students, and to identify supporting and inhibiting factors [13]. It is expected that this research will contribute: (1) robust empirical

evidence to guide policymakers in designing effective and equitable digital programs; (2) enriched literature on cross-national digital learning in the ASEAN context; and (3) practical recommendations for educational institutions to adopt digital strategies capable of addressing both local and global challenges in education and sustainable development.

LITERATURE REVIEW

The rapid expansion of digital technologies has significantly transformed contemporary education, particularly in higher education contexts. Digital learning is no longer limited to content delivery but has evolved into an interactive, collaborative, and student-centered process. Scholars emphasize that effective digital learning environments integrate technological tools with pedagogical strategies to foster engagement, critical thinking, and meaningful knowledge construction. Within this context, the Community of Inquiry (CoI) framework highlights the importance of teaching presence, social presence, and cognitive presence in creating effective online learning experiences [13].

Digital literacy has emerged as a crucial competency in the 21st century, encompassing not only technical skills but also the ability to evaluate information critically, communicate effectively, and collaborate across digital platforms. Studies in ASEAN contexts reveal that while access to digital technologies has increased, disparities in digital skills and competencies persist. This gap underscores the need for structured educational programs that enhance digital literacy while promoting higher-order thinking skills such as problem-solving and creativity.

In addition, cross-cultural collaboration has become a key dimension of digital learning, particularly in international or regional programs. Intercultural competence, defined as the ability to communicate and interact effectively across cultural boundaries, is increasingly recognized as an essential outcome of global education. Virtual exchange and online international learning initiatives have been shown to provide opportunities for students to develop cultural awareness, empathy, and collaborative skills without the constraints of physical mobility.

Table 1. Literature Review on Digital Learning and SDGs

Sub-Heading	Key Concepts	Main Findings	Relevance to Study
Digital Learning in Higher Education	Technology-integrated, student-centered learning	Enhances engagement, interaction, and critical thinking through structured platforms	Supports HARMONII's multi-platform strategy (Zoom, LMS, WhatsApp)
Community of Inquiry Framework	Teaching, social, cognitive presence	Effective online learning requires balanced interaction and facilitation	Explains collaborative learning environment in HARMONII
Digital Literacy in ASEAN	Technical, cognitive, and social competencies	Access is increasing, but skill disparities remain significant	Justifies the need for structured digital literacy programs
Intercultural Competence in Online Learning	Cross-cultural communication and collaboration	Virtual exchange fosters global awareness and teamwork skills	Strengthens cross-national collaboration among ASEAN students
Digital Learning and SDGs	SDG 4, SDG 10, SDG 17	Expands access, reduces inequalities,	Aligns HARMONII with sustainable development goals

and promotes
partnerships

Furthermore, the integration of digital learning with the Sustainable Development Goals (SDGs) highlights the strategic role of education in addressing global challenges. Digital learning initiatives contribute to SDG 4 (Quality Education) by expanding access, SDG 10 (Reduced Inequalities) by minimizing barriers to participation, and SDG 17 (Partnerships for the Goals) by fostering international collaboration. However, previous studies often focus on large-scale programs or general digital literacy, leaving a gap in understanding context-specific, short-term international learning models. Therefore, examining programs such as HARMONII provides valuable insights into how digital learning strategies can be designed to support inclusive, collaborative, and sustainable education in the ASEAN context [13].

METHODOLOGY

This study employed a qualitative descriptive approach to explore the experiences and perceptions of participants in the HARMONII program conducted in 2024 and 2025. Participants were selected through purposive sampling and consisted of international students from Indonesia, Malaysia, the Philippines, Syria, Pakistan, and Egypt. Data were collected using semi-structured interviews, focus group discussions (FGDs), and participant observation during synchronous sessions via Zoom, asynchronous interactions through the Learning Management System (sim.unissula.ac.id), and informal communication via WhatsApp groups. Program documents such as activity rundowns, learning materials, and students' collaborative outputs (e.g., posters, concept maps) were also analyzed as secondary data.

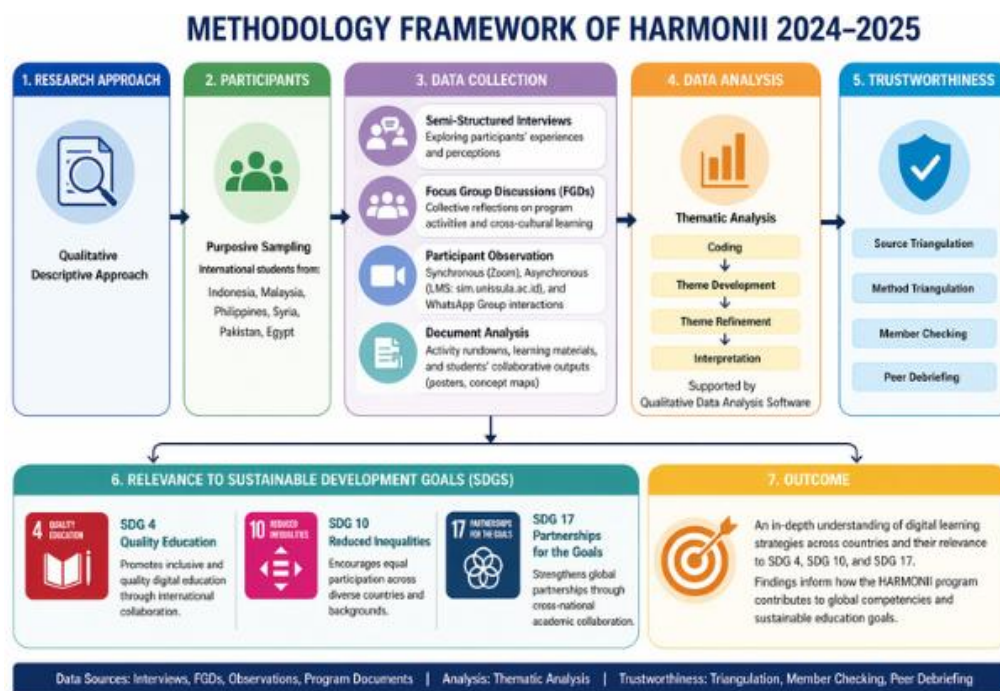


Figure 1. Methodology Framework of Harmonii 2024-2025

Data analysis followed the principles of thematic analysis [14], involving coding, theme development, refinement, and interpretation with the support of qualitative data analysis software. To ensure trustworthiness, the study applied source and method triangulation, member checking, and peer debriefing [15]. This methodological design allowed for an in-depth understanding of digital learning strategies across countries and their relevance to the

achievement of the Sustainable Development Goals, particularly SDG 4 (Quality Education), SDG 10 (Reduced Inequalities), and SDG 17 (Partnerships for the Goals). Based on this methodological framework, the following section presents the key findings derived from interviews, focus group discussions, and observations, highlighting how the HARMONII program contributes to digital learning strategies and their relevance to the Sustainable Development Goals [16].

RESULTS AND DISCUSSION

Description of the HARMONII Program

The Harmonious Islam in Indonesia (HARMONII) program is an online short course organized by the Faculty of Islamic Studies (FAI), Universitas Islam Sultan Agung (UNISSULA), in collaboration with the Office of International Affairs (OIA) [17]. The program has been conducted twice, in 2024 and 2025, reflecting the evolving needs of cross-national learning. In 2024, HARMONII was held from 26 February to 1 March under the theme “Indonesia in Harmony with the Existing Culture in Indonesian Diverse Society.” The program aimed to introduce practices of harmonious Islam within Indonesia’s multicultural context. This aligns with the theory of intercultural competence, which emphasizes the importance of cross-cultural understanding in fostering tolerance and collaboration. Meanwhile, the 2025 edition, conducted from 18 to 21 February, adopted the theme “Religious Education in the Family to Build Digital Resilience,” focusing on strengthening digital literacy, family education, and youth resilience in line with the 21st Century Skills framework and UNESCO’s (2015) agenda on social resilience in the digital era [18].

To better understand the implementation of the program, the following sections describe each edition in detail.

The 2024 edition, under the theme “Harmonious Islam in Indonesia,” emphasized diversity and the coexistence of Islamic practices with local cultural traditions. The program structure, consisting of thematic lectures, discussions, and group assignments, immersed international students in cross-cultural experiences aligned with the framework of intercultural competence [19]. This model functioned as exposure-based internationalization, providing participants with new insights into pluralistic religious practices in Indonesia and broadening their global perspectives [20]. Participation in HARMONII 2024 included 59 international students from Indonesia, the Philippines, Malaysia, China, Japan, and Egypt. Interviews with program organizers revealed that the primary objectives were to introduce the values of harmonious Islam and foster intercultural interactions among both domestic and international participants.

In response to evolving global and regional demands, HARMONII 2025 shifted its focus to contemporary socio-cultural issues, namely family education, youth engagement, and digital literacy. This focus reflects efforts to integrate academic competencies with practical skills for ASEAN youth, in accordance with the 21st-century skills framework [21]. By centering collaborative projects on digital literacy, HARMONII 2025 applied principles of project-based learning, emphasizing active engagement, international collaboration, and the production of tangible outputs such as educational posters and concept maps [22]. The 2025 edition saw an increase in student participation, with 82 students from countries including the Philippines, Syria, Pakistan, Malaysia, and others. This growth supports findings that virtual international exchanges can reach larger student populations than physical mobility, thereby generating broader aggregate impacts [23].

Although the thematic focus evolved from cultural-religious understanding in 2024 to social resilience and digital literacy in 2025, both editions shared core characteristics. Both were short, intensive online courses combining synchronous and asynchronous formats. According to, well-designed short-term programs can still yield significant impacts when

clear instructional objectives and active student participation are emphasized [24]. Thus, HARMONII can be understood as a dual-function model of short-course internationalization: it introduces Indonesia's Islamic identity while simultaneously fostering 21st-century competencies that respond to global educational demands.

Overall, the progression of HARMONII illustrates a responsive, contextually relevant approach to curriculum internationalization at home [25], providing participants with cross-cultural insights, digital skills, and social resilience necessary for the contemporary global landscape.

Digital Learning Strategy of the HARMONII Program

The HARMONII program is conducted entirely online, integrating multiple digital platforms to ensure continuous academic interaction. To facilitate effective synchronous learning, interaction between instructors and participants is conducted via Zoom, which serves as the primary medium for live lectures. This platform enables participants from various countries to access course content, ask questions, and engage in real-time discussions [26]. According to, video conference-based synchronous lectures enhance teaching presence and social presence, two core components of the Community of Inquiry framework [27].

Following these live sessions, participants continue their learning through the Learning Management System (LMS) at sim.unissula.ac.id. The LMS functions as a repository for course materials, an asynchronous discussion forum, and a platform for submitting collaborative assignments across countries. The utilization of the LMS is critical as it fosters deeper cognitive presence through activities such as reading, writing, and reflection [28]. Assert that the quality of the online learning environment, including the management of materials and interactions via the LMS, significantly influences international students' engagement and achievement.

In addition to structured synchronous and asynchronous learning, informal and intensive communication among participants is facilitated via a WhatsApp group. This medium enables rapid information exchange, group task coordination, and social interaction beyond formal sessions [29]. Indicates that WhatsApp can enhance collaboration and extend learning interactions due to its flexible and easily accessible nature. In the context of virtual exchange in ASEAN, the combined use of multiple platforms, Zoom for synchronous sessions, LMS for asynchronous learning, and WhatsApp for intensive communication reflects a digital learning strategy that is adaptive to the needs of cross-national students [30].

Overall, the integration of Zoom, LMS, and WhatsApp groups in HARMONII represents not merely a technical solution but a deliberate pedagogical design that supports the achievement of social, cognitive, and teaching presence within the Community of Inquiry framework. This combination enables online learning to be more participatory, continuous, and aligned with the goals of fostering digital literacy and international collaboration in accordance with the Sustainable Development Goals (SDGs).

Table 2. Role of HARMONII Digital Platforms in the Community of Inquiry

Platform	Primary Function in the HARMONII Program	Relevance to Community of Inquiry (CoI)
Zoom (Synchronous)	Main platform for live lectures, content presentation, real-time discussions, and Q&A sessions with international instructors.	– Teaching presence: instructors guide the learning process. – Social presence: direct interaction among participants from different countries.

LMS sim.unissula.ac.id (Asynchronous)	Repository for course materials, discussion forums, cross-national collaborative assignments, and individual reflection.	– Cognitive presence: participants engage in reading, discussion, and reflection. – Teaching presence: instructors provide feedback through the LMS.
WhatsApp Group (Informal)	Intensive communication, group task coordination, rapid information sharing, and strengthening social bonds.	– Social presence: reinforces social connectedness and sense of community. – Cognitive presence: supports flexible, additional discussion opportunities.

Relevance of the HARMONII Program to the Achievement of SDGs

The Harmonious Islam in Indonesia (HARMONII) program functions not only as a cross-national digital learning initiative but also holds strategic relevance to the global sustainable development agenda. In line with *Transforming Our World: The 2030 Agenda for Sustainable Development* [31], education is recognized as a key enabler for fostering inclusive, equitable, and globally competitive societies. By design, HARMONII operates as an online short course involving students from various ASEAN countries and international partners, thereby directly contributing to several Sustainable Development Goals (SDGs), particularly SDG 4 (Quality Education), SDG 10 (Reduced Inequalities), and SDG 17 (Partnerships for the Goals) [32].

HARMONII and SDG 4: Quality Education

HARMONII significantly contributes to SDG 4 by expanding access to high-quality international education for ASEAN and other global students through digital platforms. Utilizing Zoom for synchronous lectures, LMS sim.unissula.ac.id for asynchronous discussions and assignments, and WhatsApp groups for intensive communication, the program creates a comprehensive and participatory learning experience. This approach aligns with the Community of Inquiry framework, emphasizing the importance of social, cognitive, and teaching presence in online learning [33].

Interviews with participants highlighted accessibility and flexibility as key strengths. Students from the Philippines and Pakistan noted that they could participate in international lectures without incurring travel costs, often a barrier in physical mobility programs. Malaysian participants emphasized that the integration of Zoom and LMS allowed them to review materials and engage in structured group discussions effectively. These findings support prior research indicating that virtual exchange provides broader opportunities for students facing financial or geographic constraints [34].

Program observations also revealed high-quality interactions, particularly during synchronous discussions and cross-national collaborative tasks. Students actively expressed their perspectives despite diverse cultural backgrounds, reinforcing the assertion that the quality of online learning environments positively impacts international student engagement [35]. Moreover, the WhatsApp group facilitated informal, flexible communication, which, according to, enhances motivation and promotes intensive social interaction. In this context, HARMONII exemplifies an innovative digital learning model that broadens access to quality education while fostering an inclusive, participatory, and globally relevant learning environment [36].

HARMONII and SDG 10: Reduced Inequalities

HARMONII also advances SDG 10 by providing equitable learning opportunities for students from diverse countries, economic backgrounds, and academic traditions. The

online format mitigates financial and geographic barriers typically associated with international mobility, aligning with the equity in education framework, which emphasizes equal access to quality education regardless of background [37].

Participant interviews indicated that HARMONII offers a rare opportunity to gain international experience without leaving their home countries. Students from Syria highlighted the limited access to physical mobility programs due to socio-political constraints, while students from rural areas in the Philippines noted that the program enabled collaboration with international peers that would have been impossible due to economic limitations. These observations align with those who underscore that virtual exchange reaches marginalized student groups often excluded from traditional international mobility.

Observations during program sessions revealed that interactions remained active despite differing levels of digital infrastructure among participants. Facilitators provided adaptive measures, such as recording synchronous lectures on the LMS for students with limited internet access, reflecting practical efforts to reduce digital inequalities, which UNESCO (2015) identifies as critical for achieving social justice through education [38].

Thus, HARMONII not only broadens cross-national educational access but also functions as an inclusive platform that narrows disparities among ASEAN and partner-country students, demonstrating the potential of digital short courses as instruments for reducing inequalities in global education.

HARMONII and SDG 17: Partnerships for the Goals

Beyond quality education and reduced inequalities, HARMONII contributes to SDG 17 by strengthening collaborative networks among students, instructors, and educational institutions across countries. The program is designed not merely as a knowledge transfer mechanism but as a platform for building global academic partnerships [39]. Describes this as internationalization at home, where students gain international experiences through digital curricula without physical relocation.

Interviews revealed that cross-national group projects, such as concept map development and educational poster creation, promoted close collaboration and positive interdependence among participants. A Malaysian student emphasized that project success depended not only on task allocation but also on the willingness to understand cultural and working differences, consistent with the concept of intercultural competence, which underscores the importance of communication and collaboration in multicultural contexts.

Program observations also indicated that interactions extended beyond academic discussions to include cultural, traditional, and personal exchanges. This demonstrates that the partnerships formed operate at both academic and social levels, reinforcing a sense of community within ASEAN and globally [40]. Notes that such experiences enhance curriculum internationalization while deepening intercultural understanding.

Consequently, HARMONII serves as a practical example of global partnership practice, contributing to SDG 17. Through digital learning strategies, educational institutions can expand international collaboration networks, strengthen cross-national student solidarity, and produce valuable shared academic outputs.

Synthesis

Overall, the findings indicate that HARMONII is clearly relevant to SDG achievement, particularly SDG 4, SDG 10, and SDG 17. Through a digital learning strategy integrating synchronous lectures via Zoom, asynchronous learning via LMS sim.unissula.ac.id, and intensive communication via WhatsApp, the program provides an inclusive, interactive, and participatory cross-national learning environment.

Its contribution to SDG 4 is evident in expanding access to quality education without geographic or economic barriers, supported by the Community of Inquiry model, ensuring social, cognitive, and teaching presence. Relevance to SDG 10 is reflected in the participation of students from diverse socio-economic and national backgrounds, positioning the program as an instrument for reducing inequalities in international education. Contribution to SDG 17 is realized through cross-national collaborative projects, fostering academic partnerships and enhancing intercultural competence among ASEAN students and global partners [41].

Table 3. Research Findings of the HARMONII Program and Their Relevance to SDGs

Aspect	Findings from Observation & Interviews	Relevance to SDGs	Theoretical/Literature Support
Access to Education (Digital Platforms)	Participants from various countries could attend international lectures without geographic or financial barriers; course materials were accessible for review via the LMS.	SDG 4: Quality Education – expands access to inclusive and high-quality education.	Community of Inquiry (Garrison et al., 2000); Fan & Tian (2022) on online learning environment quality.
Equity of Opportunity	Participants from economically or socio-politically disadvantaged countries (e.g., Syria, rural Philippines) were able to engage actively.	SDG 10: Reduced Inequalities – reduces disparities in access among international students.	OECD (2012) <i>Equity in Education</i> ; Whatley (2024) on the impact of virtual exchange.
International Collaboration	Cross-national group projects (educational posters, concept maps) promoted close cooperation and cross-cultural understanding.	SDG 17: Partnerships for the Goals – builds academic networks and global solidarity.	Knight (2004), <i>Internationalization at Home</i> ; Deardorff (2006) on intercultural competence.
Digital Social Interaction	WhatsApp groups strengthened informal communication, task coordination, and social connections among participants.	Supports SDG 4 & 17 by enhancing social interaction in global learning.	Barhoumi (2015) on the effectiveness of WhatsApp for collaborative learning.
Student Engagement	Participants showed high enthusiasm in synchronous and asynchronous discussions; connectivity challenges were mitigated through recorded lectures.	SDG 4 & 10 – ensures equitable participation even in the presence of technical limitations.	Kang et al. (2022) on online interaction and learning satisfaction.

Therefore, HARMONII represents an innovative practice in digital learning that supports academic goals while making a tangible contribution to the Sustainable Development Agenda. These findings align with recent literature emphasizing the importance of virtual exchange and digital learning in expanding access, promoting equity, and strengthening

global collaboration in higher education [42]. Consequently, the program has potential for replication or further development as a cross-national digital learning model contributing to SDG achievement.

CONCLUSION

The HARMONII 2025 program demonstrates a contextual and innovative model of cross-national digital learning that effectively integrates pedagogical design, technological platforms, and global collaboration among ASEAN students. By combining synchronous sessions via Zoom, asynchronous engagement through a Learning Management System (LMS), and informal interaction using WhatsApp, the program creates a dynamic and interactive learning ecosystem. This integrated approach not only facilitates knowledge exchange but also strengthens social, cognitive, and teaching presence, as emphasized in the Community of Inquiry framework. As a result, participants actively engaged in discussions, collaborative assignments, and intercultural dialogue, reflecting meaningful learning experiences beyond conventional online instruction. The findings indicate that HARMONII significantly contributes to the development of 21st-century competencies, particularly digital literacy, critical thinking, problem-solving, and cross-cultural communication. The short-term yet intensive format of the program encourages focused participation, while multinational group projects promote teamwork, adaptability, and global awareness. These outcomes align with social constructivist perspectives, where knowledge is co-constructed through interaction and collaboration in diverse learning communities. Importantly, the program also demonstrates strong relevance to the Sustainable Development Goals (SDGs). First, it supports SDG 4 by expanding access to quality and inclusive education through digital platforms that overcome geographical and financial barriers. Second, it contributes to SDG 10 by reducing inequalities, enabling students from diverse socio-economic and national backgrounds to participate in international learning experiences. Third, it advances SDG 17 by fostering global partnerships, as evidenced by cross-national collaboration and sustained academic interaction among participants and institutions. Overall, HARMONII represents a scalable and adaptable model for international digital learning in higher education. It highlights the potential of short-term online programs to promote inclusive education, strengthen global competencies, and support sustainable development agendas. Future implementations can further enhance its impact by incorporating longitudinal evaluation and broader institutional partnerships.

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Author Contribution

All authors equally contributed to conceptualization, analysis, writing, revision, and approval of the manuscript.

Conflicts of Interest

The authors declare no conflicts of interest related to this research, publication, or funding.

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