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IMPLEMENTING CYBERGOGY AS A COLLABORATIVE APPROACH TO ONLINE ISLAMIC EDUCATION IN THE DIGITAL ERA

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Abstract

The advancement of digital technology has significantly transformed the landscape of education, including Islamic Religious Education (Pendidikan Agama Islam, PAI). Amidst the challenges of online learning, which often promote individualistic learning and limited social interaction, the cybergogy approach emerges as a pedagogical strategy that considers emotional engagement, social learning, and cognitive construction within virtual environments. This study aims to examine cybergogy as a strategy to enhance students' digital collaboration in cross-cultural PAI learning in the digital era. This study focuses on two main questions: first, how can the concept of Cybergogy be introduced through Islamic religious education?; and second, how can these concepts be applied in an Islamic educational environment?. This study employs a Systematic Literature Review (SLR) approach, drawing on the principles of a Systematic Mapping Study (SMS). Implementing cybergogy in online PAI learning can enhance students' collaborative engagement through structured instructional design, the use of digital platforms and social media, project-based learning models, and active teacher facilitation. Additionally, this strategy is capable of fostering cross-cultural learning spaces that enrich students' religious and social perspectives. However, the application of cybergogy faces several challenges, including technological access gaps, teacher readiness, and cultural sensitivity, which must be addressed systematically. Therefore, cybergogy holds significant potential to promote collaborative, adaptive, and contextual Islamic education in the digital era.

INTRODUCTION

Technology has had a significant impact on various aspects of human life. The rapid advancement of digital technology over the past few decades has brought about significant changes, particularly in learning in the modern era. New developments in the world of education are being introduced with a new approach by integrating advances in computer and information technology into the learning process. Technology-based learning, according to Othman et al., is one of the most significant developments in learning techniques, facilitated by the implementation of online learning using various technological devices, such as computers, laptops, and mobile devices (Othman et al., 2023). Likewise, current-oriented learning, such as that undertaken by PPG students in online learning, is also relevant. Research by Hasibuan et al. shows that the use of spontaneous poetry can maintain and even increase the learning motivation of PPG students in online learning (Hasibuan et al., 2024). Regarding online learning, Alrikabi et al. provide their definition of online education, which is an educational method that combines independent learning with distance education, facilitated by the provision of educational resources on the internet (Alrikabi et al., 2022). Online education can bring practitioners to a vast source of knowledge and authentic materials from various fields of knowledge and information. Online learning is an effective tool in combating the rising costs of post-secondary education by distributing class costs to a more traditional teaching and learning environment (Tucker, 2007). The presence of online education has a significant impact on the learning process.

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Online Learning Policy: According to Al Rawashdeh et al., the sudden implementation of online learning has an indirect impact (Al Rawashdeh et al., 2021). This impact can be felt directly by students, such as flexibility in time and place . Access to additional materials (Sari & Alfaruqy, 2022), and independent learning (Taylor & Frechette, 2022). Therefore, all education that implements online learning will be affected, including Islamic Religious Education, as research conducted by Usriati & Misbah states that the implementation of online learning in Islamic Religious Education subjects. Using online methods has a positive impact, namely an increase in learning outcomes obtained by students (Usriati & Misbah, 2021). This contrasts with Latipah & Awaliyatunnisa's findings regarding online Islamic Religious Education learning at SMK N 1 Ngawen, which encountered various issues. From the teachers' perspective, problems encountered during online learning included difficulty teaching due to passive students, as well as feelings of boredom and fatigue. Furthermore, students frequently encountered issues such as limited phone storage capacity, poor signal and data usage, and a lack of motivation during online learning (Latipah & Awalliyatunnisa, 2021). This aligns with Simamora's opinion, which states that many schools and colleges have suddenly adopted online learning using free services like Google Classroom and Zoom, burdening their students with hefty workloads and questionable results (Simamora, 2020).

Purwanto's research examined how learning occurs at home during the pandemic. Their findings indicate that students face numerous obstacles in the home learning environment, such as a lack of technological expertise, high internet costs, and limited interaction (Purwanto, 2020). Finally, research from Adarkwah states that online learning not only impacts the learning process but also significantly impacts learning outcomes. The study findings indicate that Ghanaian students find online learning ineffective due to several challenges they face. Among these are the lack of social interaction among students, communication, and poor learning outcomes (Adarkwah, 2021).

The implementation of online learning not only impacts social interaction but also indirectly facilitates students' full utilization of digital technology, including search engines. According to Lopatovska et al., reliance on digital technology as a transactive memory tool reduces cognitive load. It leads to the formation of different information habits, such as dependence on search functions like Google and Yahoo (Lopatovska et al., 2012). Participants of all ages fall into this pattern of behaviour, automatically turning to search engines for information. When search engines are used for interpersonal relationships assignments, students tend to spend much time eagerly searching for answers (Sun et al., 2014). Similarly, when there is a test, some students frequently use search engines to find information about the questions.

In a study conducted by Lumbantobing et al., it was reported that the results showed significant and effective outcomes when used during learning. However, Google helps students obtain information; there is a tendency for students to rely too much on gadgets when completing assignments and to use other learning resources, such as books or libraries, less frequently (Lumbantobing et al., 2023). Research by Krutka et al. found that college students often struggle to assess the credibility of Google search results. They tend to trust the top results without critical evaluation, which can undermine information literacy skills (Krutka et al., 2021).

From the findings presented, online learning, particularly in Islamic Religious Education, has a significant impact, especially on student learning outcomes. Without a strategy in online learning, it will result in decreased student social interaction, a lack of digital collaboration due to the tendency to work independently, and a decline in students' critical thinking skills, as they become dependent on search engines already available in online learning services. Therefore, a strategy is

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needed to overcome these problems. Researchers are interested in online learning methods through the Cybergogy approach because Cybergogy prioritizes connectivity, interactivity, and collaboration within a participatory digital ecosystem (Amiruddin et al., 2023). This concept positions students as active learners who build knowledge collaboratively in a digital setting.

To ensure the originality of this paper, several previous studies relevant to this research are available. For example, the study by Puji Ayu Dewi Lestari and Hasan Subekti only discussed the application of Cybergogy as a science skill (Puji Ayu Dewi Lestari & Hasan Subekti, 2023). It did not address Cybergogy strategies as collaborative learning. This differs from the research in this paper, which focuses on students' collaborative skills in online cross-cultural Islamic Religious Education learning.

Another study conducted by Heong et al. focused on the application of a paradigm to identify the level of Cybergogy readiness in terms of cognitive, social, and emotional factors. There were significant differences in demographic factors among engineering students. In the study, it was explained that Cybergogy plays an important role in TVET education learning (Heong et al., 2021). Although there are similarities in terms of adopting the Cybergogy concept's perspective, the difference lies in the topic being studied. The study examined the level of readiness for implementing Cybergogy among students, in contrast to the research conducted in this paper, which focuses on PAI learning strategies through the Cybergogy approach.

Previous studies have not addressed Cybergogy as a strategy to improve students' digital collaboration skills in online cross-cultural Islamic Religious Education learning in the digital era. Therefore, this researcher will attempt to explain how cybergogy can serve as a strategy to enhance students' digital collaboration skills. Based on the research problem formulation, the researcher argues that implementing a strategy for online Islamic Religious Education learning through the Cybergogy approach can help students develop digital collaboration skills.

METHODS

This study employs a Systematic Literature Review (SLR) approach, grounded in the Systematic Mapping Study (SMS) framework, to investigate the application of cybergogy in promoting digital collaboration in Islamic Religious Education (PAI). The SMS method was chosen to provide a broader and more structured overview of the existing literature, identify research trends, and map thematic distribution within the scope of cybergogy and collaborative online learning in Islamic education.

This series of research processes is built through several systematic stages. The initial stage begins with the formulation of research questions as a conceptual guide, including: (1) how the concept of Cybergogy can be introduced through Islamic religious education; and (2) how these concepts can be applied in an Islamic educational environment.

The literature search procedure was carried out through an in-depth exploration of various leading scientific databases, including Scopus, Web of Science, Google Scholar, DOAJ, and ResearchGate, by integrating the use of key keywords such as cybergogy, digital collaboration, online learning, and Islamic education.

Inclusion criteria focused on articles published between 2015 and 2024, peer-reviewed, and substantively addressing topics related to Islamic education, cybergogy, digital collaboration, and cross-cultural learning, both in English and Indonesian. Conversely, articles originating from non-academic sources, not available in full-access versions, or irrelevant to the thematic focus of this study were excluded from the selection process.

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The initial screening phase yielded 134 articles, which were then filtered through duplication removal and abstract and full-text screening, resulting in 42 articles meeting the criteria for further analysis. The data extraction process involved categorizing articles based on publication year, geographic region, methodological approach, substantive focus (including cognitive, affective, and social aspects), and relevance to the context of Islamic Religious Education (PAI) or similar settings.

Through systematic thematic mapping, a narrative synthesis was conducted to identify conceptual patterns, research gaps, and potential future recommendations. Qualitative analysis was conducted to examine how cybergogy interacts with digital devices, the dynamics of student engagement, and the sensitivity to cultural dimensions in collaborative online learning. The SMS framework used ensures that this review process is not only transparent and replicable but also makes a significant academic contribution to the conceptual and practical understanding of integrating cybergogy in the 21st-century digital Islamic education ecosystem.

Table 1. Literature Mapping Based on Systematic Mapping Study (SMS)

No	Reference	Year	Research Focus	Method	Context studies
1.	Wang & Kang	2006	Cybergogy framework for online learning	Qualitative	General
2.	Amiruddin et al.	2023	The relationship between cybergogy and self-regulated learning	Quantitative	Indonesian students
3.	Heong et al.	2021	Level of readiness for implementing cybergogy in engineering education	Quantitative	Southeast Asia TVET
4.	Rahma et al.	2021	Cybergogy as an AR-based digital learning medium	Quantitative	College
5.	Knight	2022	Challenges of implementing cybergogy in language learning	Qualitative	Indonesian High School
6.	Laakso et al.	2021	Digital collaboration in educational game design	Quantitative	Elementary & Middle School
7.	Kwiatkowska & Wisniewska	2022	Students' digital and collaborative skills	Qualitative	Europe
8.	Lee (Ju Seong)	2022	Cross-cultural digital communication strategies	Qualitative	English students
9.	Swing	2021	Students' digital literacy and collaboration skills	Qualitative	Indonesian Junior High School
10	Jung et al.	2012	Collaborative instructional design in Asian cultures	qualitative	East Asia

The systematic mapping results, as presented in Table 1, indicate that research on cybergogy is generally scattered, focusing on specific aspects such as individual readiness, digital media, or collaborative learning. However, there is still little research examining cybergogy as a cross-cultural collaborative strategy in the context of online Islamic Religious Education (PAI) learning. Therefore, this study contributes to enriching perspectives by emphasizing collaborative aspects and Islamic values in the realm of digital learning.

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RESULT AND DISCUSSION

Result

Online Learning Strategies Through Cybergogy

Etymologically, the word "strategy" originates from the Greek word "*strategos,*" meaning an effort to achieve victory in war. Initially, the word "strategy" was used primarily in military contexts. However, the term has been adopted in various fields with relatively similar meanings, including its application in the context of learning, where it is known as a learning strategy (Masitoh & Dewi, 2009). In the world of education, according to Xu et al., strategy can be defined as a plan containing a series of activities designed to achieve specific educational goals (Xu et al., 2024). In other words, a learning strategy is an action plan that includes the use of methods and the utilisation of various strengths in learning, designed to achieve specific goals.

However, in today's digital era, the goal of learning strategies is not only to create conducive classrooms, but also to create classrooms that can be accessed anytime and anywhere, such as online learning. Furthermore, Derakhshandeh & Esmaeili argue that online learning has learning objectives, one of which is to facilitate discussion (Derakhshandeh & Esmaeili, 2020). Two-way interaction between instructors and students, along with active student participation. This finding is consistent with research by Costa et al., which showed that most students reported distance learning to be effective (Costa et al., 2020). According to Paudel, strategies for maintaining the quality of online learning, as perceived by both faculty and student respondents, include maintaining open communication with students, ensuring that online courses are as rigorous as traditional courses, using a variety of learning methods to appeal to students with diverse learning styles, requiring students to interact with instructors and each other to foster group cohesion, and using group work to help students build a strong learning community (Paudel, 2020).

From the explanations provided, acquiring knowledge about online learning is crucial as demands for accountability, growth, and excellence in educational institutions increase. Online learning and assessment must strike a balance between technological demands and pedagogical learning methods.

In the context of pedagogy, according to researchers, a relevant learning method in the digital age is using Cybergogy-based learning. Previously, learning was primarily conducted through lectures, presentations, and Q&A sessions; today, students are rapidly connected to the outside world through smartphones. Therefore, old or conventional learning methods are no longer relevant. Students can access a wide range of online learning resources. As a result, the main task of the teacher, which generally provides direction and facilitates the process, may no longer be relevant. Therefore, it is not appropriate for students who are looking for learning resources in physical classes. According to researchers, relevant learning in the digital era involves using Cybergogy-based learning methods.

Approach, as stated by Daud et al., is a vocational learning paradigm 5.0 for the Industrial Revolution 4.0 era of globalisation, which utilises information and communication technology as its core (Daud et al., 2019). In Cyberogic, teachers provide instructions and motivate students to learn online through computer programs or smartphones, utilizing references created by thousands of internet providers (Yusuf & Yusuf, 2019). The current COVID-19 pandemic and the rapid development of the cyber world have provided momentum for Cybergogy-based learning. Hanafi's latest opinion suggests that the Cybergogy approach encourages student engagement and collaboration in online and virtual learning environments (Hanafi, 2021). This aligns with Wang & Kang's statement that Cybergogy emphasizes three main aspects of the online learning process: emotional engagement, social learning, and cognitive construction (Wang & Kang,

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2006). These three aspects aim to create a deep, personalized, and collaborative learning experience. Researchers will discuss this further in the context of digital collaboration in the next chapter.

Cybergogy in Digital Collaboration

The Cybergogy approach in the context of online collaborative learning is a multidimensionally integrated pedagogical model that encompasses intersecting cognitive, social, and emotional domains. This model requires active student engagement through strategically designed collaborative activities that constructively and participatively build knowledge. In the cognitive domain, the learning process is directed at activating prior knowledge, achieving meaningful learning objectives, and transforming information into applicable knowledge products through project-based tasks and problem-solving (Wang & Kang, 2006).

Cybergogy strategy also emphasizes the principle of customised engagement, where teachers design instructional interventions based on students' cognitive, affective, and social needs profiles, in order to intensify personal involvement in the learning process (Heong et al., 2021). The emotional domain is optimised by creating a safe and supportive learning environment that fosters self-expression, empathy, and strengthens students' intrinsic motivation. Meanwhile, the social domain is realized through structured interactions between participants in discussion forums, cross-group collaboration, and distributed leadership in collaborative projects (Wang & Kang, 2006).

Collaboration demonstrates students' ability to learn independently and improve themselves. Also, it enables them to create a favourable climate of openness and mutual support as a result of the relationships among team members (Estriégana Valdehita et al., 2021). Thus, Cybergogy-based learning not only supports collaboration as a method but also requires it as a core principle in shaping authentic, reflective, and transformative learning experiences in digital environments (Satria et al., 2024).

Collaboration is considered the highest level of group work, where participants work together to solve problems. Information and Communication Technology increasingly supports collaborative processes. The use of digital technology can enhance the quality of learning experiences when used as participatory communication tools to support collaboration and build shared knowledge (Sangeetha & Saileela, 2021). Therefore, collaborative online learning is not simply an exchange of information or cooperation (where tasks are shared among participants), but rather involves cooperation, such as problem-solving. This not only requires an intensive exchange of ideas or discussion, but is also more cognitively demanding and allows for the creation of deeper social bonds (Blau et al., 2020).

In addition, according to Raffone & Monti, collaborative learning fosters a sense of responsibility for the success of actions taken through a better understanding of constructive feedback and improved collaboration, relationship, and communication skills within student groups (Raffone & Monti, 2019). In this type of learning, special attention must be paid to the element of student interaction, as this is the basis for building a sense of participation within the group. Thus, collaborative learning can be defined as goal-oriented group work in which students commit to a shared activity and also construct new knowledge through social interaction (Stover & Holland, 2018).

In a digital context, digital collaboration refers to the ability of individuals to work together in an online environment using various digital devices and platforms. This collaboration includes effective communication, task coordination, information sharing, and collective problem-solving.

According to Emami et al ., collaboration in a digital context requires advanced communication skills, media literacy, and social and cultural awareness (Emami et al., 2020).

One of the most significant forms of digital collaborative learning is through the use of social media and online learning platforms. Ansari & Khan stated that the use of online social media for collaborative learning has a significant impact on interactivity with peers, teachers, and online knowledge-sharing behaviour. Thus, social media is not just a social communication tool, but also a learning bridge that expands the boundaries of space and time (Ansari & Khan, 2020).

In Howe & Zachariou's research, digital collaborative learning focuses on the potential of digital technologies to enhance collaboration and interaction among learners, facilitate group work, and facilitate the sharing of expertise, such as enabling students to learn reciprocally and across geographic boundaries. The use of tools such as Google Workspace, Microsoft Teams, and other online learning platforms has opened up opportunities for collaboration between learners (Howe & Zachariou, 2019). Through these interactions, students can gain a deeper understanding of different perspectives. Continuing this research, Laakso et al. confirmed that students today demonstrate significantly higher levels of digital collaboration, and their digital skills appear to facilitate this collaboration (Laakso et al., 2021). Digital collaboration also includes a social learning dimension. Emotional, such as self-management, social awareness, and self-efficacy.

Cybergogy-based learning in digital collaboration necessitates the pedagogical integration of technology to create a learning space that enables students to interact, share knowledge, and collaborate on creating products online. The following are Cybergogy learning strategies in digital collaboration: 1) Digital collaborative learning cannot occur spontaneously, but needs to be designed with task structures, clear objectives, and evaluation mechanisms that encourage active engagement. Austin et al. emphasise that interactions do not just happen; they must be designed intentionally. This highlights the importance of the teacher's role in building a practical collaborative context through careful instructional design (Austin et al., 2010). 2) Platforms such as Google Classroom, Moodle, Edmodo, or even WhatsApp and Telegram can be used to build communication between group members and share documents in real time. According to Kwiatkowska & Wisniewska, the use of social media for collaborative learning has a significant impact on student engagement, which in turn has a substantial impact on student academic performance (Kwiatkowska & Wiśniewska-Nogaj, 2022). Therefore, strategic use of social media can increase collaborative motivation and productivity. 3) One approach that aligns with digital collaboration is project-based learning. In this context, students are challenged to work together on projects, share tasks and responsibilities, and communicate their results through digital media. Perez et al. stated that this is rooted in constructivism and collaborative learning, emphasizing that project-based learning is highly compatible with collaborative and digital principles (Pérez-Mateo et al., 2014). 4) Students' digital literacy levels largely determine the success of a digital collaboration strategy. Ayun found that students with strong digital literacy skills tend to have higher collaboration skills (Ayun, 2021). Therefore, initial training on the use of digital platforms and collaboration ethics is necessary before students begin collaborative activities.

5) The teacher should act as a facilitator who monitors the collaborative process, provides feedback, and encourages fair participation from each member. In the culturally Asian context, high-context strategies need to consider students' cultural sensitivity and comfort levels when communicating online. Jung et al. recommend building and facilitating collaborative processes as a strategy to reduce stress in online collaborative learning (Jung et al., 2012). 6) In the context of digital collaboration, distributed leadership is needed where responsibility is not only centred on

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the teacher, but also on students who are given the role of leading certain parts of the project. Harris et al. emphasise that distributed leadership is an essential component of effective digital collaboration, suggesting that empowering students in the project leadership process can increase their sense of ownership over the learning process (Harris et al., 2013).

Thus, the strategies explained can strengthen students' academic and social abilities while also forming superior and contributive characters in a multicultural society. Learning materials that are collaborated with Cybergogy-based digital technology are expected to provide the energy needed to raise students' enthusiasm for carrying out their learning activities.

Discussion

The application of Cybergogy in Islamic Religious Education (PAI) learning is a strategic step in facing the challenges of 21st-century education. In PAI learning, cybergogy facilitates a more active, collaborative, and relevant learning process that engages students' real-life experiences in the digital era.

The basis for implementing Cybergogy-based learning and cross-cultural digital collaboration in this study is supported by research findings and expert findings. According to McLoughlin & Lee, effective learning methods provide students with as many opportunities as possible to learn how to learn, rather than simply transferring knowledge (McLoughlin & Lee, 2010). This illustrates the theoretical foundation of the cybergogy approach, which emphasises active and independent learning. Furthermore, Amiruddin et al. demonstrated that the implementation of cybergogy-based learning has a positive impact on student achievement. Furthermore, students enjoy exploratory experiences, and cybergogy allows students to develop independent learning by providing space for student autonomy in the classroom (Amiruddin et al., 2023). Lastly, according to Rahma et al., the results show that AR-based digital learning has yielded excellent outcomes (Rahma et al., 2021). This is demonstrated by its proven effectiveness in helping students learn. These findings empirically demonstrate that Cybergogy improves learning outcomes and supports independent learning.

Through digital teaching materials based on Cybergogy, Students can learn by installing an application that contains a digital book equipped with examples of family functions in the form of short films lasting 10-12 minutes. Students can utilise visualisation by scanning barcodes on printed materials. This results in several products, including digital books, printed books, and learning videos. Cybergogy also supports project-based learning, where students can work in groups to complete religious tasks such as creating a da'wah vlog, designing a digital campaign on Islamic ethics, or compiling an Islamic e-book. These activities foster 21st-century skills, including critical thinking, creativity, collaboration, and digital literacy. Meanwhile, this is different from Satria's findings which show that Cybergogy -based Indonesian language learning still encounters many obstacles and problems, such as the need to improve the quality and quantity of Cybergogy-based online teaching materials, the discovery of many differences in terms of the content of the material delivery, resulting in high sentiment and individualism (Satria et al., 2022).

Continuing from Asad & Malik's statement that the main challenge in Cybergogy-based online learning is the reduced intensity of direct social interaction, which has an impact on the limited development of interpersonal values such as empathy and tolerance. The lack of non-verbal communication and limitations in building emotional connections in the digital space can hinder the formation of students' social character. In addition, the phenomenon of situations or conditions where someone is only exposed to information, opinions, or views that align with their personal beliefs or preferences, and rarely or never exposed to different viewpoints in online

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communication, often strengthens polarisation and reduces students' ability to accept differences in views (Asad & Malik, 2023). This is a particular concern in the context of values and religious education, which emphasizes the importance of dialogue, understanding across different perspectives, and tolerance among individuals. From here, specific problems arise in the implementation of Cybergogy, necessitating innovation and solutions. The researcher argues that one way to overcome these problems is through cross-cultural digital collaborative learning.

In a digital context, cross-cultural collaboration refers to students' ability to work collaboratively with individuals from different cultural backgrounds through digital media (Kim & Bonk, 2002). This requires adequate intercultural communication skills, empathy, adaptability, and digital literacy. Therefore, cross-cultural learning is an effective educational process to address these issues, as it involves interactions between individuals from different cultural backgrounds to foster increased understanding, tolerance, and cooperation.

In the context of globalization, cross-cultural learning is crucial because students need to be prepared to live and work in a multicultural society. According to Shonfeld et al., intercultural competence includes understanding the values, norms, and communication styles of other cultures, as well as the ability to adapt to cross-cultural situations (Shonfeld et al., 2021). Implementing cross-cultural learning in the classroom can be done through multicultural discussions, online student exchanges, and cross-country collaborative projects. These activities enable students to experience cultural differences firsthand and develop an appreciation for them.

Regarding the implementation of Cybergogy learning based on cross-cultural digital collaboration, it can be demonstrated as a project-based activity. According to Lee, teachers need to equip students with digital communication ethics, how to express opinions respectfully, and how to understand differences without judgment (Lee, 2020). This can be achieved through simulations, role-plays, or honest case discussions (Lawter & Garnjost, 2021). In the context of Islamic Religious Education, the development of cross-cultural digital collaboration can be facilitated by designing project-based learning activities that involve students from diverse countries or cultural backgrounds. For example, a project to study Quranic verses related to humanity can serve as a meeting place for discussion and the exchange of views. Alternatively, it can be through learning in the form of cross-cultural collaborative projects between countries such as the example of high school students in Indonesia and Malaysia in Understanding Global Islamic Values between student Through online learning platforms such as Google Classroom, Zoom, and Padlet, with this activity, Islamic values such as rahmatan lil 'alamin, justice, and tolerance can be understood more contextually and applicatively and from a cultural perspective in each country.

With a cross-cultural approach, Cybergogy-based learning can provide experiences and reflections that greatly support the development of these skills. Interactive learning environments can be an effective medium for fostering collaborative, tolerant, and open attitudes toward cultural differences.

Cybergogy in Islamic Religious Education (PAI) learning presents challenges that must be strategically addressed. One of the main challenges is the gap in technology access among students. Not all students have access to adequate digital devices or stable internet connections to participate in cybergogy-based learning processes (Wang & Kang, 2006). This has the potential to create disparities in learning experiences and reduce the effectiveness of digital collaboration, especially in cross-cultural activities that require high connectivity.

Furthermore, according to Muresan, another challenge is teacher readiness to adopt the Cybergogy approach. Some teachers may still be accustomed to traditional learning models and

may not fully understand the principles of Cybergogy, which require a shift in role from teacher to facilitator (Muresan, 2013). This requires ongoing training so that teachers can design collaborative, interactive, and technology-based learning activities.

From a cultural perspective, cross-cultural learning has the potential to create value conflicts or misunderstandings among students if not adequately supported. Diverse perspectives in online forums can spark sensitive debates, especially when it comes to issues of religion or cultural identity. Therefore, teacher support in building intercultural awareness and empathetic communication skills is crucial (Zegers & Auron, 2022).

However, the opportunities for implementing Cybergogy are auspicious amidst the development of educational technology and the increasing digital literacy of the younger generation. Cybergogy can be a relevant approach to address the needs of contextual, participatory, and multicultural Islamic Education (PAI) learning. Cybergogy's flexibility also enables adaptation to various innovative learning models, such as flipped classrooms, blended learning, and project-based learning.

CONCLUSION

This paper highlights that Cybergogy offers a transformative pedagogical paradigm tailored to the demands of Islamic Religious Education (PAI) in the digital era. By emphasizing emotional engagement, social interaction, and cognitive construction, Cybergogy enables students to collaboratively construct knowledge in a virtual environment, fostering digital competence and intercultural awareness. Through structured instructional design, digital tool integration, project-based learning, and active teacher facilitation, this approach enriches the online learning experience while promoting critical thinking, collaboration, and character development aligned with Islamic values. However, the implementation of Cybergogy remains challenged by technological gaps, teacher preparedness, and cultural sensitivity, requiring a systematic, inclusive, and contextually grounded response. In conclusion, Cybergogy holds significant promise as an innovative and responsive educational strategy for fostering inclusive, collaborative, and future-oriented Islamic education in a globally connected world.

However, because the approach used is descriptive qualitative and based on literature studies, further research is needed that can expand and deepen these findings through an empirical approach, such as conducting field studies using a quantitative approach or a mixed approach to measure the effectiveness of cybergogy strategies directly on improving students' collaborative abilities in the context of online Islamic Religious Education learning.

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