

Technology-Enhanced Digital Literacy in the Independent Curriculum for Teaching English in Islamic Early Childhood Education

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Abstract

The Independent curriculum represents a revitalized approach to education aimed at post-pandemic learning recovery. At the early childhood education level, this curriculum prioritizes fundamental skills such as literacy and numeracy over rote memorization techniques. The integration of digital literacy in English learning aligns with the Independent curriculum's emphasis on optimizing child development in accordance with the Child Development Achievement Level Standard (STPPA). This research adopts a research and development approach using the ADDIE model, comprising Analyze, Design, Develop, Implement, and Evaluate phases. Findings indicate that the developed product is valid and suitable for implementing English teaching in early childhood education, as validated by experts including native speakers, ICT specialists, early childhood educators, Independent curriculum specialists, and preschool teachers. Following testing in five early childhood education schools in Central Java, it was concluded that enhancing digital literacy in English learning for young children reflects the aspirations of the Independent curriculum. This initiative successfully encourages active learning, critical thinking, and the development of character aligned with the Pancasila values among students.

Keywords: *Technology; Digital Literacy; Independent Curriculum; Teaching English; Islamic Early Childhood Education*

INTRODUCTION

With English established as the global Lingua Franca, it serves as a crucial communication tool worldwide. Numerous countries have integrated English language education starting at the earliest levels of schooling (Tang, 2020; Gursoy et al., 2017). In recent times, due to rapid developmental progress, children are now being exposed to and learning English from preschool age in Early Childhood Education. Several fundamental reasons highlight why learning English is easier at a young age, particularly that children from 0 to 5 years old are in a "golden age" period before puberty. This critical stage significantly supports optimal child development, impacting their intelligence in later years (ÇiMen & Bal GezegiN, 2021; Nuraeni, 2019). This period is also recognized as the child's linguistic phase, spanning ages 1 to 5 years, which in linguistic terms is called the language acquisition phase, where children naturally acquire language skills as native speakers (Tabassam, 2024). Moreover, Akbari noted that consistent early exposure to a foreign language results in higher language learning achievement. Their research supports the notion that early childhood is the ideal time for children to naturally acquire foreign language proficiency. During this phase, children can learn a foreign language quickly, naturally, and effectively (Akbari, 2015) (Behlol & Anwar, 2011).

In Indonesia's educational context, English is regarded as a foreign language, while Indonesian is used as the lingua franca in schools. Since 2004, Indonesia has implemented Teaching English to Young Learners (TEYL) as a local curriculum subject in primary schools (Daif-Allah & Aljumah, 2020; Intarapanich, 2013). The inclusion of English in the local curriculum suggests that it is taught with varying objectives in different schools. However, the rapid pace of globalization has necessitated significant changes in Indonesia's curriculum and education system to align with global market demands (Gürsoy & Eken, 2018). One notable change is the increasing focus on English as an international foreign language in education. Many schools are now actively designing English language programs as extracurricular activities or additional classes. Parents increasingly believe that English proficiency will enhance their children's educational and career prospects (Drigas & Charami, 2014). These perceptions have led to a rise in the number of TEYL programs in schools, with English becoming a priority subject and a hallmark of some internationally-branded schools. This trend is evident from the growing number of schools across Indonesia that are introducing English classes from early childhood education levels.

Post the COVID-19 pandemic, Indonesia's education system underwent significant transformation. Among these changes was the introduction of the

"Independent Curriculum," aimed at revitalizing learning and focusing on nurturing children's interests and talents from an early age. This curriculum emphasizes essential skills, character building, and student competencies, providing teachers with the flexibility to select, develop, and design diverse teaching materials tailored to student needs (Gilakjani & Sabouri, 2017; Taghizadeh & Hasani Yourdshahi, 2020; Chalikandy, 2013).

Rahayu et al. (2022) highlighted that the Independent Curriculum for early childhood education prioritizes essential skills such as literacy and numeracy over traditional memorization methods. This curriculum adopts a constructivist approach, merging Piaget's and Vygotsky's theories, which focus on children's active engagement with their environment (Uztosun, 2018). In this educational framework, children should be stimulated in all developmental aspects, including religious and moral values, cognitive, physical-motor, social-emotional, language, and arts, to fully achieve the Child Development Achievement Level Standards (STPPA).

Learning English is a crucial part of holistic child development, particularly in the language aspect. The English language curriculum should not only develop linguistic abilities but also cover all six developmental aspects as outlined by the STPPA. Hence, enhancing English literacy is a critical reflection of the PAUD Independent Curriculum (Gilakjani & Sabouri, 2017). In the modern era, literacy encompasses more than reading and writing; it has expanded to include digital literacy. Digital literacy involves the ability to access, evaluate, use, and create information using digital technologies in a responsible, creative, innovative, and critical (Tekin & Baykara, 2023; Intarapanich, 2013).

The PAUD Independent Curriculum is deeply connected to digital literacy, emphasizing the STEAM (Science, Technology, Engineering, Arts, and Mathematics) approach, which prepares students to compete in the digital age. Integrating digital literacy into English language learning represents an innovative strategy to achieve the goals of the PAUD Independent Curriculum. Previous studies, such as those by Adisti (Hyett et al., 2014) have developed effective media for teaching English to young learners. Moreover, research on digital literacy by Bekker et al. (2015), Saud (2021), and Alfia et al. (2021) shows a preference among students for using digital technology in learning English.

Furthermore, studies on the PAUD Independent Curriculum, such as those by Prameswari (2020), Pratikno et al. (2022), and Nursarofah (2022), indicate that this curriculum enhances children's developmental potential, independence, and creativity in critical thinking and problem-solving. Despite the existing research, there is a gap in

studies combining the development of digital literacy for teaching English to early childhood learners within the framework of the PAUD Independent Curriculum. Therefore, this study fills that gap by exploring the integration of digital literacy in PAUD English teaching aligned with the Independent Curriculum to achieve STPPA goals.

Additionally, this study aligns with the National PAUD Standards outlined in the Minister of Education and Culture Regulation No. 137 of 2014, covering the scope of early childhood development. This research aims to develop digital literacy in English language learning for early childhood by adopting the Independent Curriculum. It addresses three main questions: (1) What kind of English learning materials are needed in PAUD based on the Independent Curriculum? (2) How can digital literacy for early childhood English learning be designed and developed according to the Independent Curriculum? (3) What are the outcomes of implementing digital literacy in English learning in PAUD?

This research introduces a novelty aspect by integrating digital literacy into early childhood English education within Indonesia's Independent Curriculum. This approach aims to fill educational gaps and meet the demands of the digital age, where both English proficiency and digital skills are increasingly important. By focusing on STEAM principles, the study helps children develop language skills alongside critical thinking, problem-solving abilities, and creativity. The findings are valuable for educators, policymakers, and stakeholders, offering insights into effective teaching methods that support overall child development according to national standards and global competencies. This prepares young learners to excel in a connected and technology-driven world.

METHODS

This study is a Research and Development project utilizing the ADDIE model, which includes the phases of Analyze, Design, Develop, Implement, and Evaluate. The five phases of the ADDIE design model used in this research are: (1) Conducting a needs analysis for children and teachers in early childhood education through surveys, interviews, and curriculum reviews; (2) Designing the digital literacy framework based on the needs analysis; (3) Creating digital literacy resources in the form of a digital book for early childhood English instruction; (4) Implementing the developed product in early childhood education settings; and (5) Evaluating the effectiveness of the digital literacy product in early childhood English learning (Faculty of Arts and Social Science, University of Malaya, Malaysia & Choy, 2014) (Tobi & Kampen, 2018).

This research involves various stakeholders. During the preliminary research phase, data was collected from the management of the Ikatan Guru RA (IGRA) and Ikatan Guru TK (IGTK) in Central Java, as well as from 75 early childhood education teachers in the region. Respondents were purposively selected and represented various kindergartens throughout Central Java. The primary research sites included five early childhood education institutions: two in Salatiga, one in Semarang Regency, one in Surakarta, and one in Kudus.

Four different instruments were employed in this study. The first instrument was an observation guide in the form of a checklist used for non-participant observation (Khasawneh, 2021). The second instrument was an interview guide containing open-ended questions for the respondents. The third instrument was a questionnaire with both open-ended and closed-ended questions for the respondents and experts. The fourth instrument was a documentation guide used to collect relevant documentation and curriculum materials, such as English teaching syllabi, Daily Learning Implementation Plans (RPPH), and other related curriculum documents.

To ensure the validity of the instruments, the quantitative data from the statement items were tested using the Product Moment Validity Test with Microsoft Excel. The reliability of the quantitative data items was tested using the Alpha Cronbach Reliability Test, also with Microsoft Excel. Additionally, experts provided qualitative validation of the instruments. For validating the digital literacy product for early childhood English learning, experts such as native speakers, ICT specialists, early childhood education professionals, Independent Curriculum experts, and early childhood education teachers were involved (Hyett et al., 2014; Uztosun, 2018).

The data validity in this study was ensured through technique triangulation and source triangulation (Almalki, 2016; Tobi & Kampen, 2018). Data from observations and questionnaires were cross-verified with interviews and documentation using technique triangulation, while information obtained from informants was cross-verified using source triangulation from other informants.

This research project utilized the ADDIE model to develop and implement a digital literacy framework for early childhood English instruction (Tobi & Kampen, 2018). Through rigorous analysis, design, development, implementation, and evaluation phases, the study addressed the needs identified among children and teachers in early childhood education settings across Central Java. Stakeholder engagement was integral, involving Ikatan Guru RA (IGRA) and Ikatan Guru TK (IGTK) management, along with 50 early childhood education teachers. The implementation spanned five educational institutions in Salatiga, Semarang Regency, Surakarta, and

Kudus. The research employed a variety of instruments, including observation guides, interview protocols, questionnaires, and documentation reviews, ensuring comprehensive data collection and validation through technique and source triangulation. This study contributes to enhancing digital literacy in early childhood education, aligning with the Independent Curriculum and addressing the evolving needs of English language instruction in Indonesian educational contexts.

RESULTS AND DISCUSSION

An online questionnaire survey was conducted with 50 respondents to determine the requirements for English learning materials in early childhood education that are in line with the Independent Curriculum. The findings are summarized in Table 1 below.

Table 1. Survey Results Analysis

No	Item	Response
1	Necessary English materials according to the Independent Curriculum	- 45% of respondents indicated a need for materials that adhere to the Child Development Achievement Level Standard (STPPA), covering six areas of child development. - 25% of respondents suggested materials that integrate religious and character education. - 15% of respondents preferred materials that involve practical activities or projects. - 15% of respondents proposed other themes, such as introducing basic vocabulary and suggesting learning activities.
2	Essential English skills	- 75% of respondents emphasized speaking skills. - 20% of respondents highlighted listening skills. - 5% of respondents focused on reading skills.
3	Preferred forms of digital literacy	- 40% of respondents favored digital books. - 35% of respondents chose videos. - 15% of respondents recommended digital posters. - 10% of respondents suggested other forms, such as apps and games.

The survey results highlight the most critical needs and recommendations for English learning materials that align with the Independent Curriculum for early childhood education. Key points include the necessity for literacy materials based on STPPA PAUD indicators, which integrate six developmental aspects: religious and moral values, cognitive, physical motor, social-emotional, language, and arts. This is consistent with the National Standard for Early Childhood Education (Permendikbud No. 137 of 2014).

Teachers prioritize teaching speaking skills to children. The respondents' preferred form of digital literacy is a digital book that includes audio and video elements, providing a diverse and engaging approach to English language learning for young children.

Designing and Developing Digital Literacy

During the design and development phase, several essential steps were undertaken:

(a) **Designing sub-themes for English learning materials:** This involved structuring sub-themes based on an analysis of both the TEYL (Teaching English to Young Learners) curriculum and the early childhood education curriculum, with careful consideration of the STPPA benchmarks. Ten sub-themes were identified, including themes such as: "Let's make friends," "Hello my body," "I love my family," "My meal," "Clean my room," "Let's pray," "My feelings," "Can I help you?," "I love school," and "Indonesia is my country."

(b) **Development of the digital book:** Following the thematic design, the digital book began its development phase, incorporating feedback and insights gathered from the needs analysis stage.

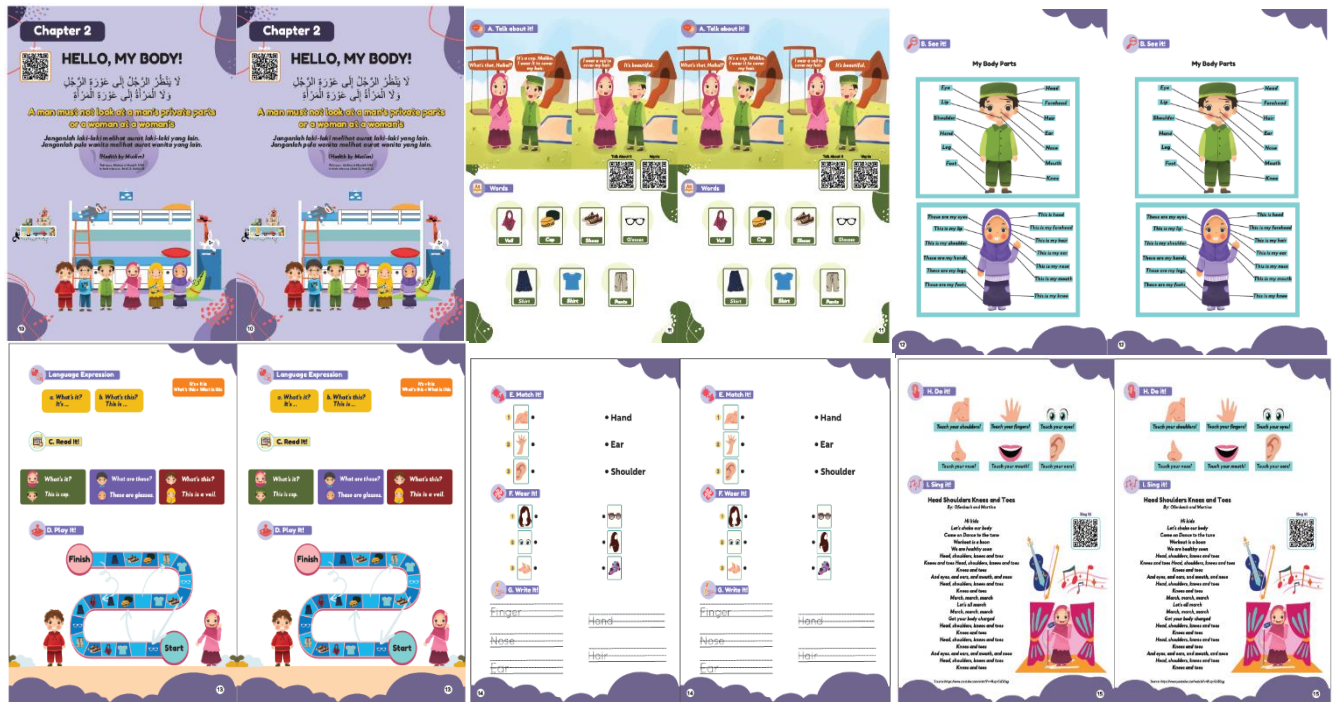
(c) **Validation testing of the product:** Validation involved testing the initial product with a panel of five experts, including a native speaker, ICT specialist, early childhood education expert, Independent Curriculum expert for early childhood education, and PAUD teachers.

(d) **Revision of the second phase of product development:** Based on expert feedback, the second phase underwent revisions to enhance the research product.

(e) **Implementation of the validated digital literacy product:** Once endorsed by all experts, the digital literacy product was prepared for implementation in English language learning across five PAUD schools in Central Java.

Highlighted below are excerpts from the validated digital book as reviewed and approved by the experts.

Figure 1. Documentation of the Product



Implementation of Digital Literacy in Early Childhood English Learning

The entire content of the digital book encompasses the Early Childhood Education National Standards (STPPA) that must be achieved in PAUD, considering the indicators of the Independent Curriculum. Additionally, the learning materials are aligned with TEYL (Teaching English to Young Learners) and the PAUD curriculum. The implementation of Digital Literacy in Early Childhood English Learning The final stage involved implementing the development of digital literacy in English language learning. In this stage, five schools served as testing grounds for implementing the research product: two schools in the Salatiga region, one school in the Semarang Regency, one school in the Surakarta region, and one school in the Kudus region. Throughout the use of this product, continuous observations were made to understand the ongoing conditions and student responses when taught English using this product. Observations showed positive attitudes and enthusiasm among students in learning English.

To strengthen these observations, interviews were conducted with PAUD teachers using the research product in classrooms. The interview results also indicated positive reactions from teachers regarding the research product, such as in the interview with Ms. TS. "The digital book greatly aids us in teaching English because it includes clear audio for reading instructions and serves as our guide when pronouncing specific sentences or vocabulary. Moreover, this book synchronizes with various

aspects of child development, including the introduction to religious moderation that supports moral and religious values, simple readings that are easily understandable by children, artistic elements supplemented with video links, and instructions for children to move like the TPR method, along with interesting dialogues about character education, introducing the Republic of Indonesia (NKRI), and Pancasila, all fitting with the Independent Curriculum, accompanied by visually appealing and colorful images for children." However, observations also noted some challenges in implementing this product, as highlighted by Ms. SM. "The book is excellent, but it would be better if each child had their own copy so they wouldn't have to share. Perhaps a suggestion regarding the art aspect, such as singing, as there are a few songs that are somewhat unfamiliar to us, so we need to learn them first before teaching them to the children."

Based on the observations and interviews with respondents, it can be concluded that the development of digital literacy products aligns with the spirit of the Independent Curriculum in PAUD promoted by the government. The book has been developed in accordance with needs analysis and indicators of the Independent Curriculum, focusing on nurturing children's interests and talents and their enthusiasm for learning English through enjoyable materials. This has been validated by experts who affirmed that the product is valid and suitable for broader use in teaching English to young children. The results of testing the product in five schools also showed positive reactions when used in teaching. However, there are some limitations in this study, such as the lack of in-depth effectiveness testing and technical challenges for teachers in using this digital book, which has not yet been widely distributed to students. Certainly, these aspects provide opportunities for further research to continue evaluating the scientific effectiveness of the research product on student achievement performance.

The results of this developmental research support the constructivist theory using a child-centered approach developed by Vygotsky (Cozma, 2015). Learning English using a digital book makes children creative and independent learners through experiential contexts and critical thinking, which aligns with the goals of the Independent Curriculum. Children not only memorize vocabulary but also engage in enjoyable activities within this digital book, such as role-playing, singing, playing games, listening to short stories, and participating in artistic activities that introduce them to culture, religious moderation, character education, etc., aligning with the Pancasila learner profile in the Independent Curriculum.

Based on the comprehensive process outlined, this study undertook a systematic approach to develop and implement digital literacy for early childhood

English learning, following the ADDIE model (Analyzing, Designing, Developing, Implementing, and Evaluating). Beginning with a needs analysis through an online questionnaire survey involving 50 respondents, the research identified crucial requirements for English learning materials aligned with the Independent Curriculum in early childhood education. The findings emphasized the integration of STPPA PAUD indicators across six developmental aspects, reinforcing the National Standards for Early Childhood Education (Permendikbud No. 137 of 2014). Teachers prioritized speaking skills and endorsed a digital book format with audio and video elements, facilitating engaging English language instruction for young learners.

During the design and development phase, the study structured ten sub-themes for English learning materials, aligning with both TEYL and PAUD curricula while meeting STPPA benchmarks. The subsequent development of the digital book incorporated feedback from experts in native English proficiency, ICT, early childhood education, Independent Curriculum for PAUD, and PAUD teaching. Validation testing ensured the product's alignment with educational goals, leading to revisions that enhanced its efficacy and relevance.

Implementation took place across five PAUD schools in Central Java, validating the product's effectiveness through continuous observation and teacher feedback. Positive student attitudes and teacher reactions underscored the book's alignment with the Independent Curriculum's spirit, fostering enthusiasm and effective learning experiences. However, challenges such as resource distribution and technical proficiency among teachers highlighted areas for improvement and future research.

Overall, this developmental research supports a constructivist approach to early childhood education, echoing Vygotsky's child-centered theory. By integrating digital literacy into English learning, the study enhances critical thinking, creativity, and cultural understanding, integral to the Pancasila learner profile underpinning the Independent Curriculum. The study's findings contribute to ongoing educational discourse and provide a framework for future research into optimizing digital tools for holistic child development and effective English language learning in early childhood education contexts.

CONCLUSION

Based on the investigation findings, the English language learning materials recommended by respondents during the needs analysis stage are literacy materials derived from the STPPA PAUD indicators, which can integrate with six aspects of child development, taking into account character education and a child-centered approach

characteristic of the Independent Curriculum. During the design and development phase of the product, the process began with designing ten sub-themes based on curriculum analysis and respondent needs analysis recommendations. These were subsequently developed and validated by five experts, including a native speaker, ICT expert, early childhood education specialist, Independent Curriculum expert, and PAUD teacher. The validated product was then tested in five PAUD schools in Central Java, demonstrating positive outcomes in early childhood English language learning. Therefore, it is concluded that developing digital literacy for early childhood English learning reflects the objectives of the Independent Curriculum by encouraging students to become active learners, capable of critical thinking, and embodying character traits aligned with the Pancasila learner profile in the Independent Curriculum.

Furthermore, according to the investigation findings, the recommended English language learning materials for early childhood education align with STPPA PAUD indicators and integrate with six aspects of child development, emphasizing character education and a child-centered approach typical of the Independent Curriculum. The design and development phase involved creating ten sub-themes based on curriculum and respondent analyses, subsequently validated by a panel of five experts. Implementation in five PAUD schools in Central Java yielded positive outcomes, supporting early childhood English language learning. However, limitations include the lack of in-depth effectiveness testing and technical challenges faced by teachers using digital books. Future research should consider longitudinal studies, broader geographical sampling, enhanced teacher training, and comparisons with traditional pedagogical methods to further explore the integration of digital literacy in early childhood education.

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