



CONSTRUCTIVISM-BASED QIRO'AH LEARNING MATERIALS WITH LECTORA INSPIRE AT MI ASSALAM LAHAT

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Abstract

This research is motivated by the gap between the potential of interactive media and the reality of qiro'ah instruction in Islamic elementary schools, which remains conventional and lacks holistic integration of constructivist approaches into digital teaching materials. The novelty of this study lies in combining the Contextual Teaching and Learning (CTL) approach grounded in constructivism with Lectora Inspire software to develop qiro'ah instructional materials for madrasah ibtidaiyah. This study aims to develop and test the effectiveness of these materials. The method used is Research and Development (R&D) adapting six stages of the Borg and Gall model, with 25 fifth-grade students of MI Assalam Lahat as the research subjects. Validation results from content experts (96%) and media experts (88%) indicated that the product was highly valid. Field trials demonstrated a significant improvement in learning outcomes, with an average N-Gain score in the medium category and very positive student responses.

Keywords: *instructional materials; qiro'ah; Lectora Inspire; constructivism*

الملخص

ينطلق هذا البحث من الفجوة بين إمكانات الوسائط التفاعلية وواقع تعليم القراءة في المدارس الابتدائية الإسلامية، التي لا تزال تعتمد الأساليب التقليدية وتفتقر إلى التكامل الشامل للمدخل البنائي في المواد التعليمية الرقمية. وتتمثل حداثة هذه الدراسة في الجمع بين مدخل التعليم السياقي القائم على البنائية وبرنامج ليكتورا إنسباير لتطوير مواد تعليم القراءة للمرحلة الابتدائية الإسلامية. وتهدف الدراسة إلى تطوير هذه المواد التعليمية واختبار فاعليتها. وقد اعتمد البحث منهج البحث والتطوير وفق ستة مراحل مُكَيَّفَة من نموذج بورغ وغال، وشملت عينة البحث خمسة وعشرين طالباً من الصف الخامس في المدرسة الابتدائية السلام لاهات. وقد أظهرت نتائج التحقق من خبير المحتوى (96%) وخبير الوسائط (88%) أن المنتج في مستوى صالح جداً، فيما أثبتت التجارب الميدانية تحسناً ملحوظاً في نتائج التعلم، بمتوسط درجة N-Gain في الفئة المتوسطة، مع استجابات إيجابية جداً من الطلاب.

الكلمات المفتاحية: *المواد التعليمية؛ القراءة؛ ليكتورا إنسباير؛ البنائية*

INTRODUCTION

Arabic language learning, specifically qiro'ah (reading) skills, holds a strategic position in shaping students' religious competence in madrasah ibtidaiyah (Islamic elementary schools). Reading skills require students not only to pronounce hijaiyah (Arabic alphabet) letters correctly but also to comprehend textual meaning and relate it to daily contexts (Furoidah & Zuhriyah, 2024). The development of innovative instructional materials serves as a solution to address learning challenges. High-quality instructional materials should be designed based on needs analysis, learner characteristics, and clear instructional objectives. In the context of qiro'ah, instructional materials must be developed systematically and contextually by integrating multimedia elements and student-centered learning approaches (Fajriyah et al., 2025).

One potential digital medium for developing interactive instructional materials is Lectora Inspire. This authoring tool allows developers to organize multimedia content such as text, images, audio, video, animation, and interactive quizzes, without needing to master complex programming languages (Nursidik & Suri, 2018). Previous research indicates that Lectora Inspire is effective in increasing students' motivation and active participation in Arabic language learning (Ali et al., 2023). Furthermore, Hijriyah et al. developed Arabic Vocabulary on Lectora Inspire (AVLI), which proved effective in improving students' vocabulary mastery while demonstrating that Lectora Inspire can be adapted for various aspects of Arabic language learning. Meanwhile, Pramudita et al (Pramudita et al., 2025). developed qiro'ah materials using Moodle-based e-learning with a scientific approach, the results of which showed an increase in students' comprehension of Arabic texts (Mukmin & Hidayah, 2017). Both studies strengthen the argument that the integration of digital technology in qiro'ah learning has significant potential to improve the quality of learning.

Beyond the media aspect, the learning approach also plays a vital role. The constructivism approach, pioneered by Jean Piaget (Piaget, 1970) and further developed by Lev Vygotsky (Vygotsky, 1978), emphasizes that learners actively construct their own knowledge through experiences, social interactions, and environmental engagement (Vygotsky, 1978). In Arabic language learning, this approach provides space for students to link new knowledge with previous experiences, thereby making the learning process more meaningful (Haerullah et al., 2024). By combining the constructivism approach and Lectora Inspire media, it is expected that instructional materials will be created that are not only interactive but also meaningful for students.

Nevertheless, previous studies still possess several limitations. First, they lack long-term evaluation regarding the sustainability of students' reading comprehension after the use of interactive media. Second, the integration of qiro'ah skills with other language skills (listening, speaking, writing) remains partial and not holistic. Third, direct feedback from students as users of the materials is often overlooked in the evaluation process, making it difficult to measure practical effectiveness from the learner's perspective. This study explicitly addresses these gaps by (1) conducting a comprehensive evaluation that includes both pretest-posttest and student satisfaction questionnaires to capture immediate and perceived effectiveness, (2) designing qiro'ah materials that are integrated with vocabulary (mufradat) and contextual exercises, thereby supporting holistic language skill development, and (3) incorporating direct student feedback as a core component of the product feasibility assessment. Thus, this research contributes to filling the void in the literature on constructivism-based digital qiro'ah materials specifically tailored for the Islamic elementary school context.

Based on preliminary observations conducted by the researcher in grade V at MI Assalam Lahat, it was found that students' proficiency in Arabic language learning is categorized as insufficient. This is evident from the lack of active student participation during the learning process, low interest in the delivered materials, and suboptimal learning evaluation results. The instructional methods used still tend to be conventional, dominated by lectures and rote memorization, while the utilization of digital media remains highly limited. This condition indicates a gap between the potential of interactive learning media and the reality of classroom implementation. Consequently, these observation results serve as the primary foundation for the researcher to conduct developmental research on qiro'ah instructional materials using Lectora Inspire based on constructivism. This study aims to develop said instructional materials and evaluate their effectiveness in improving student learning outcomes at MI Assalam Lahat

METHOD

This study is a Research and Development (R&D) project aimed at producing a product in the form of constructivism-based qiro'ah (reading) instructional materials using Lectora Inspire software, as well as testing its effectiveness. The development model used adapts the Borg and Gall steps, which are summarized into six stages: (1) potential and problem identification, (2) data collection, (3) product design, (4) product validation, (5) product revision, and (6) product testing. This simplification was conducted to save time, effort, and costs, while still maintaining the quality of the process and the product.

The research was conducted at MI Assalam Lahat during the 2025/2026 academic year. The research subjects were all 25 students in grade V (saturated sampling), as well as the Arabic language subject teacher as a supporting informant. The selection of grade V was based on two criteria: (1) preliminary observations indicated that students in this grade exhibited the lowest levels of active participation and reading comprehension compared to other grades, and (2) the qiro'ah materials in the existing curriculum for grade V required the most significant

improvement based on teacher interviews. Thus, grade V was chosen purposively as the target group for the product trial.

Research Design and Its Limitation. This study employed a one-group pretest-posttest design, where a single group of students was given a pretest before using the developed materials, followed by a posttest after the intervention. The researcher acknowledges that this design has inherent limitations, including the inability to isolate the treatment effect from external factors such as maturation (students' natural development over time), testing effects (familiarity with the test format), and history effects (other concurrent learning experiences). Therefore, the results of this study should be interpreted as preliminary evidence of effectiveness, and future research using a quasi-experimental design with a control group is strongly recommended.

Instruments and Their Psychometric Properties. The research instruments included: (1) interview guides for teachers, (2) observation sheets, (3) material and media expert validation sheets, (4) student needs and satisfaction questionnaires (using a Likert scale), and (5) pretest and posttest questions (consisting of 5 multiple-choice items, 3 binary-choice items, and 2 matching items) adapted to the qiro'ah materials. To ensure the quality of the quantitative instruments, validity and reliability tests were conducted prior to the main study. Content validity was assessed by two experts (a material expert and a measurement expert), who rated all items as "valid" ($I-CVI \geq 0.80$). For the pretest-posttest items, the Pearson correlation between each item score and the total score ranged from 0.512 to 0.768 (all > 0.3 , indicating acceptable item validity). The reliability of the test was measured using the Kuder-Richardson formula (KR-20) due to the dichotomous nature of some items, yielding a coefficient of 0.81 (high reliability). For the student satisfaction questionnaire (10 items, 5-point Likert scale), Cronbach's Alpha was 0.87, indicating excellent internal consistency.

Data Collection and Analysis Procedures. Data were collected through qualitative and quantitative approaches. Qualitative data were obtained from semi-structured interviews with the teacher, non-participatory observations, and documentation of instructional tools. Quantitative data were obtained from student needs questionnaires, student satisfaction questionnaires, as well as pretest and posttest scores. Qualitative data analysis was performed through four stages: data collection, data reduction, data display, and conclusion drawing. Quantitative data were analyzed using the normality test (Shapiro-Wilk), paired sample t-test, and N-Gain test to determine the improvement in learning outcomes and effectiveness category. Furthermore, expert validation results were calculated using a score percentage formula to determine the product feasibility level.

RESULTS AND DISCUSSION

Product Description

This study produced a constructivism-based qiro'ah instructional product using Lectora Inspire. The product was developed through six stages as described in the Methods section. The product features a bright, child-friendly colour palette with simple, consistent typography. The main menu screen displays three chapter buttons, a pre-test button, a post-test button, and a navigation guide; each button provides audio feedback when clicked. The navigation is linear but includes "Back" and "Next" buttons, allowing students to progress at their own pace, and a progress bar at the top of each screen indicates completion status.

Figure 1. Menu page



Each chapter (for example, Chapter 1: Body Parts) contains five slides: a chapter title and learning objectives, a main reading text with synchronised audio pronunciation, a mufradat (vocabulary) list that includes Arabic words, Latin

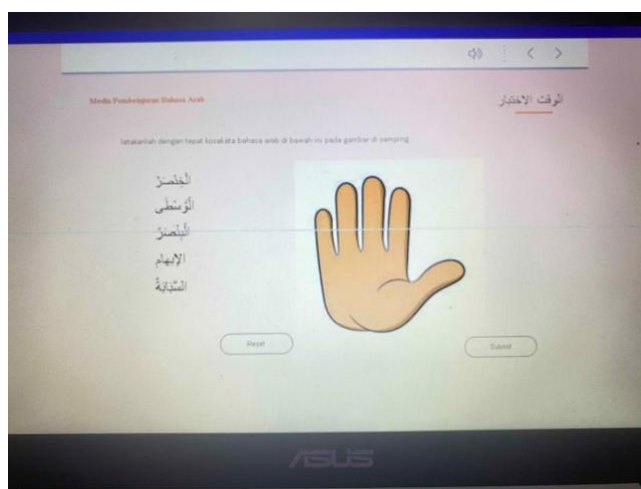
transliteration and Indonesian translations, an interactive quiz (drag-and-drop matching for vocabulary and multiple-choice for comprehension), and a conclusion summary.

Figure 2. Content pages



A sample quiz screen shows students matching Arabic body-part names to corresponding images; correct answers trigger a positive pop-up, while incorrect answers provide the correct answer with a brief explanation. The audio feature allows students to listen to native-like pronunciation repeatedly, supporting autonomous learning. The product is delivered as an HTML5 package, accessible via laptop, tablet, or smartphone without installation, with a file size of approximately 15 MB to accommodate limited school internet bandwidth. All buttons are large enough for touchscreen use, and the mufradat page includes clickable speaker icons.

Figure 3. Exercise page



Effectiveness of the Product

The pretest mean score was 56.48, and the posttest mean score was 81.32, indicating a raw increase of 24.84 points. The paired t-test showed a significant difference (Sig. 0.000). However, the N-Gain score of 0.5758 (medium category) and the N-Gain percentage of 57.58% (fairly effective category) require deeper critical analysis. Several factors explain why the effectiveness is only “fairly effective” rather than high. The trial was conducted in only two 45-minute sessions per week for three weeks, but constructivism-based learning typically needs extended time for exploration, discussion, and reflection. Students simply did not receive enough exposure to the interactive features to fully internalise the material. Infrastructure constraints also played a role: although the school has a computer lab, only ten devices were functional for twenty-five students, forcing students to share devices and reducing individual hands-on time with quizzes and audio features. Some students accessed the product on personal smartphones, but varying screen sizes affected the user experience. Moreover, the posttest included five multiple-choice items, three binary-choice items, and two matching items. While these are appropriate for grade V, they primarily measure lower-order thinking (recall and comprehension) and do not sufficiently assess higher-order thinking skills such as analysis, evaluation, or creation. If the test had included more HOTS items, the

N-Gain might have been lower, but the “fairly effective” rating reflects that the product successfully improved basic comprehension while leaving room for developing critical reading skills. Finally, student prior familiarity with digital learning was limited. Observations revealed that some students were not accustomed to touchscreen-based interactive quizzes; initial hesitation and technical difficulties (for example, accidentally skipping slides) consumed learning time, and although students adapted by the third session, the short trial period limited the full potential of the product.

Theoretical Analysis: Why Lectora Inspire and Constructivism Work for Qiro'ah

The effectiveness of this product can be explained through the lens of constructivist learning theory, particularly Piaget's concepts of assimilation and accommodation and Vygotsky's Zone of Proximal Development (ZPD). In traditional qiro'ah instruction, students passively listen to the teacher reading a text and then repeat in chorus. By contrast, the Lectora Inspire product requires students to actively click, listen, match, and answer. Each time a student matches a vocabulary word to an image, they are assimilating new information into existing cognitive schemas; when they make a mistake and receive corrective feedback, they accommodate by adjusting their understanding. This active process is fundamentally constructivist and leads to deeper retention than rote memorisation.

Although the product is digital, it was implemented in a collaborative classroom setting where students worked in small groups (four to five students per device) as part of the Contextual Teaching and Learning (CTL) approach. The group discussions—arguing over the correct answer, explaining reasoning to peers—provided social scaffolding within the ZPD. Weaker students were supported by stronger peers, and the teacher acted as a facilitator. The product itself also offers digital scaffolding through audio pronunciation, immediate quiz feedback, and navigational cues. This dual scaffolding (social and digital) enhanced comprehension beyond what traditional methods could achieve.

Lectora Inspire integrates text, audio, and visuals. According to Mayer's cognitive theory of multimedia learning, learners process information through separate verbal and visual channels. By presenting Arabic text alongside audio pronunciation and relevant images, the product reduces cognitive load and increases the probability of information transfer to long-term memory. This explains why vocabulary retention (as measured by matching items) was notably higher than comprehension of longer passages.

The product's three themes (body parts, clothing, object benefits) were chosen based on student interviews about their daily lives. When a student reads a sentence such as “أستخدم يدي لكتابة الدرس” (I use my hand to write the lesson), they can immediately relate it to their classroom experience. This contextualisation aligns with the CTL principle of meaningful learning, where new knowledge is anchored to existing experiences, thereby making recall easier.

Critical Discussion: Limitations and Implementation Challenges

Despite the positive outcomes, several limitations must be acknowledged to provide a balanced perspective. Lectora Inspire, while powerful, has constraints: it does not support real-time multiplayer quizzes (like Kahoot!), and its animation capabilities are limited compared to modern HTML5 frameworks. The product's interface, although validated as highly valid (88%), is not fully responsive on very small smartphone screens (below 4.5 inches), and some students reported that buttons felt too small. Future iterations could use more advanced authoring tools or convert to a web app with responsive design.

Teacher readiness also presented a challenge. The classroom teacher, although cooperative, initially expressed anxiety about integrating digital media into qiro'ah lessons because the teacher's role shifted from content transmitter to facilitator—a change that requires new pedagogical skills. In post-study interviews, the teacher noted that managing group discussions while troubleshooting technical issues was difficult. Professional development and ongoing technical support are therefore essential for sustainable adoption.

Digital infrastructure in madrasah ibtidaiyah settings is another concern. MI Assalam Lahat is representative of many Indonesian Islamic elementary schools: limited computers, inconsistent electricity (though not an issue here), and varying student access to smartphones at home. The product was designed as an offline HTML5 package to mitigate internet dependency, but device scarcity remains a barrier. Future research should explore low-cost, low-tech alternatives or hybrid models (for example, teacher-led projection followed by individual worksheets) for schools with severe infrastructure gaps.

Constructivist approaches assume that students are self-regulated and intrinsically motivated. However, grade V students (average age 10–11) still require extrinsic motivation and clear structures. During the trial, a few students attempted to skip the reading text and jump directly to the quiz. The product's linear navigation could be made more flexible, but this would risk students bypassing essential content. Balancing autonomy with guidance remains an ongoing pedagogical tension.

CONCLUSION

This research successfully developed constructivism-based qiro'ah instructional materials using Lectora Inspire through six adapted stages of the Borg and Gall model. The product—covering three thematic chapters with interactive features (audio, vocabulary lists, quizzes)—was validated as highly feasible by material experts (96%) and media experts (88%). The implementation significantly improved student learning outcomes from a pretest mean of 56.48 to a posttest mean of 81.32. The N-Gain score of 0.5758 (fairly effective category) confirms that the materials are fairly effective for enhancing basic reading comprehension in fifth-grade students at MI Assalam Lahat.

Theoretically, this study provides empirical evidence that Piaget's active knowledge construction and Vygotsky's scaffolding can be operationalised through Lectora Inspire, supporting Mayer's dual-coding theory in Arabic reading instruction. Practically, the product serves as a replicable model for creating digital qiro'ah materials, but the moderate effectiveness level highlights that infrastructure, teacher facilitation, and learning time are equally critical.

As recommendations, Teachers should complete a short hands-on training on operating Lectora Inspire outputs, including basic troubleshooting. In class, they should pair students on shared devices with rotating roles (reader, quiz answerer) and allocate at least 60 minutes per session. Future product versions need a teacher dashboard to track individual progress and HOTS-oriented exercises (e.g., sentence sequencing, main idea identification) instead of only matching items. Schools should provide one device for every two students. Researchers should conduct quasi-experimental studies with control groups and delayed posttests to isolate the treatment effect more rigorously.

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