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Designing Interactive E-Books: A Focus Group Study

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Abstract: The design of digital learning resources for specialized domains such as Takaful (Islamic insurance) requires particular attention to usability, cultural sensitivity, and conceptual accessibility. While interactive e-books have gained popularity in education, their application in Islamic finance remains underexplored. This study investigates expert perspectives on the development of an interactive e-book tailored for Takaful education. Using a user-centered design approach, a high-fidelity prototype was evaluated through a focus group discussion with eight subject matter experts from Islamic finance and information communication technology (ICT). The findings revealed that effective content design must include multimedia elements—such as infographics, videos, and audio explanations to support comprehension of abstract concepts. Participants emphasized the importance of contextual relevance, recommending features such as clickable Quranic verses and glossary-linked definitions. Regarding interface design, users appreciated a layout that mirrors traditional reading formats, with consistent navigation and IIUM-aligned visual themes enhancing usability. In terms of interactivity, participants highlighted the value of quizzes with instant feedback, annotation tools, and embedded multimedia for fostering engagement and learner autonomy. These results align with existing literature emphasizing the role of digital glossaries, multimedia integration, and adaptive features in improving reading performance and knowledge retention. This paper contributes to the body of knowledge in educational technology by offering practical design recommendations for culturally responsive and pedagogically sound e-books in the Takaful domain. The insights gained can guide educators, designers, and policymakers in developing effective digital tools for Islamic finance education and public literacy.

Keywords: Interactive e-books, User-centered design, Dijital learning

Introduction

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The digital transformation of educational resources has significantly influenced how learners engage with content, particularly in specialized domains such as Islamic finance. Interactive e-books have emerged as a promising medium in modern education, that offers dynamic features like diverse multimedia components, interactive activities, quizzes, and feedback systems to enhance learner engagement, comprehension, as well as knowledge retention (Dahlan et al., 2024). These features align with principles of human-computer interaction (HCI), emphasizing user-centered design to create intuitive and effective learning tools (Panda, 2024).

Takaful education is characterized by complex terminologies and culturally specific concepts, which the design of interactive e-books presents unique challenges. Ensuring usability, cultural relevance, and accessibility is fundamental to facilitating effective learning experiences. On top of that, studies have highlighted the importance of using simplified language understood by general audience in interactive and multimedia-enhanced tools, which can go into supporting the integration of authentic and real-world materials to improve learning effectiveness. (Mısır, 2018). Despite the potential benefits, there is a lack of research focusing on the design and evaluation of interactive e-books tailored for takaful education. Existing literature predominantly addresses general educational contexts, leaving a gap in understanding how interactive e-books can be optimized for niche domains. This study aims to bridge this gap by exploring expert perspectives on the design considerations for content, interface, and interactivity in a takaful-focused interactive e-book.

Employing a qualitative methodology through focus group discussions with subject-matter experts in Islamic finance and information communication technology, this research seeks to uncover key design principles that enhance learner engagement and understanding. The findings aim to contribute practical guidelines for developing culturally responsive and pedagogically effective interactive e-books in the field of Islamic finance, thereby supporting better public understanding and informed decision-making in this sector.

Interactive E-Books in Education – Key Design Features Enhancing Learning

Interactive e-books have emerged as transformative tools in education, offering dynamic features that enhance learner engagement and comprehension. Their integration of multimedia elements such as videos, animations, infographics, quizzes, and hyperlinks cater to diverse learning styles and promotes active learning through user interaction and immediate feedback. These features align with Mayer's (2021) multimedia learning theory, which emphasizes that learning is improved when information is presented in both verbal and visual formats.

Recent studies underscore the effectiveness of interactive e-books in supporting complex learning processes. Çirakoglu et al. (2022) demonstrated that an interactive e-book developed using the Predict-Observe-Explain (POE) model significantly improved students' conceptual understanding in science education. Similarly, Franco and Bidarra (2022) emphasized that interactive e-books transform passive reading into a more immersive and participatory experience, leading to improved engagement and knowledge retention. These findings support the notion that interactivity through clickable definitions, assessments, embedded media, and personalized navigation enhances learners' control over their own learning process.

In the context of Islamic finance and Takaful education, interactive e-books fulfil a growing need for accessible, accurate, and engaging educational materials. The Islamic Development Bank Institute (2020) introduced a digital learning platform incorporating interactive content, including e-books, to enhance public understanding of Islamic financial instruments. This initiative was particularly effective in reaching global learners and explaining complex Shariah-compliant principles through real-world scenarios and case-based learning. Studies like Mısır (2018) have further argued that digital learning platforms must be tailored in such a way that supports learner inclusion, promotes intercultural sensitivities, as well as acknowledges the cultural differences in society, which would be possible by embracing a learner-centered pedagogy through these digital platforms.

The use of interactive e-books in education, especially in specialized domains like Islamic finance and Takaful, represents a valuable approach to democratizing knowledge. The integration of design features that promote comprehension, accessibility, and cultural relevance has the potential to bridge knowledge gaps and empower learners to make informed decisions in both academic and real-life contexts.

Interactive Elements and Design Features in Educational E-Books

Interactive e-books have become increasingly prominent in educational settings due to their ability to incorporate multimodal content, adaptive learning paths, and learner-controlled navigation. Unlike static PDF

documents, interactive e-books leverage a variety of features such as digital glossaries, self-assessment tools, audiovisual elements, and problem-posing activities, to foster engagement and active learning (Clinton-Lisell et al., 2021). These features are not merely add-ons; when integrated coherently and aligned with pedagogical goals, they enhance comprehension, retention, and critical thinking (Craig et al., 2018; Sung et al., 2018).

Multimedia components such as animations, hotspots, and interactive feedback have been found to boost engagement and improve targeted recall. For example, Zhou and Yadav (2017) observed that preschool learners interacting with visual and auditory hotspots demonstrated increased emotional engagement and specific recall, though overall comprehension gains were more modest. Similarly, Batoon et al. (2018) found that audiovisual content in high school e-books improved students' academic performance, although the potential for distraction remained a consideration. These findings suggest that interactivity can benefit learners across age groups and disciplines when thoughtfully implemented. The inclusion of digital glossaries and collaborative tools also showed strong positive effects. Clinton-Lisell et al. (2021), through a systematic review and meta-analysis, reported that digital glossaries significantly enhanced reading performance, especially when terms were embedded and accessible through hyperlinks. Collaborative features, such as annotation sharing and real-time discussions, supported social learning and deepened understanding particularly in hybrid or online environments. These tools align well with constructivist learning principles, encouraging learners to build and negotiate meaning actively.

Design principles such as adaptive feedback and combination of multiple interactive features are essential for maximizing educational outcomes. For instance, combining quizzes, video explanations, and glossary links allows for differentiated learning and reinforces self-regulated learning strategies (Ericson et al., 2016; Craig et al., 2018). However, studies also caution against overloading learners with too many features, which can lead to cognitive overload or disengagement (Lewin, 2000; Batoon et al., 2018). In the context of Islamic finance and Takaful education, where content often involves specialized vocabulary and ethical frameworks, such interactive features can bridge understanding gaps for public and academic audiences. Features like embedded Quranic verse explanations, audio-visual modeling of risk-sharing processes, and adaptive quizzes can describe complex Shariah-compliant principles, making financial education more accessible and culturally responsive.

Method

This study employed a user-centered design (UCD) approach, aligning with the principles outlined in “ISO 9241” (2025), which emphasize involving users throughout the design and development process to ensure systems meet their needs and are usable and accessible. In e-book design, this approach involves understanding the reader's behaviour, preferences, and needs to create an intuitive and engaging reading experience (Panda, 2024). UCD is particularly effective in specialized domains like Islamic finance, where domain-specific knowledge is crucial for effective design. The research utilized a qualitative focus group method to evaluate a prototype of an interactive e-book designed for Takaful education. Focus groups are a well-established method in HCI research for gathering in-depth insights into user experiences and expectations, especially during the early stages of design.

Participants

Participants were selected using purposive sampling to ensure expertise relevant to the study. The focus group comprised eight subject matter experts, including four Islamic finance scholars and four information and communication technology (ICT) professionals with experience in educational technology design. This interdisciplinary composition facilitated comprehensive feedback on both the content and technical aspects of the e-book prototype.

Materials: Prototype

The primary material for evaluation was a high-fidelity prototype of the interactive e-book, developed using Kotobee. The prototype included features such as interactive quizzes, infographics, and real-world scenarios pertinent to Takaful concepts. These features were incorporated based on best practices in educational e-book design to enhance engagement and learning outcomes. Below are the examples of prototype interface design.

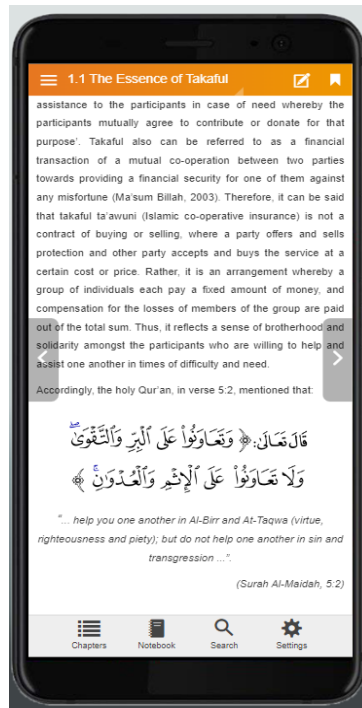


Figure 1. Prototype design for text and Quranic verse

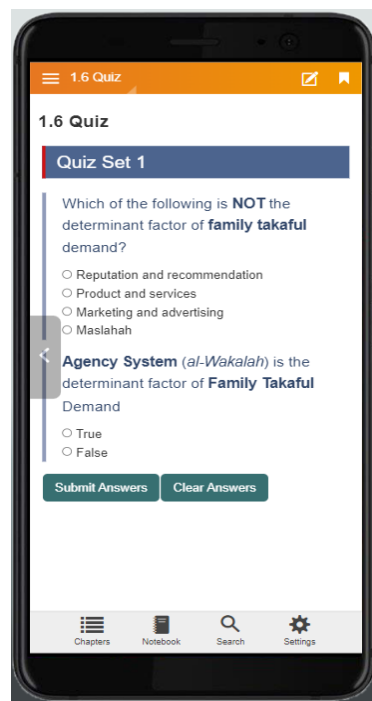


Figure 2. Prototype design quiz page at the end of each chapter

Procedures

The study was conducted in three phases:

1. *Prototype Review*: Participants were given access to the e-book prototype a day prior to the focus group session to allow for thorough review.
2. *Focus Group Discussion*: A 90-minute session was held, moderated by the lead researcher. The discussion was guided by a semi-structured interview protocol focusing on three key areas:

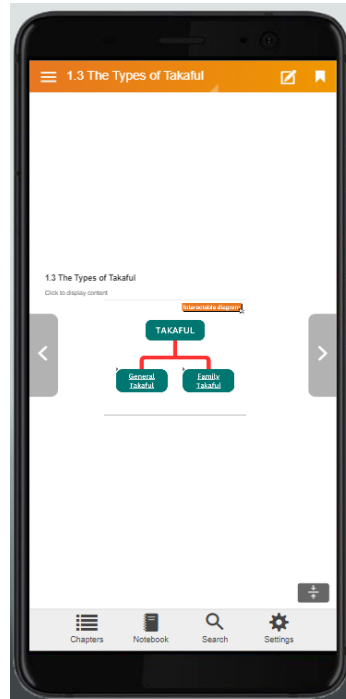


Figure 3. Prototype design for Takaful model – clickable buttons

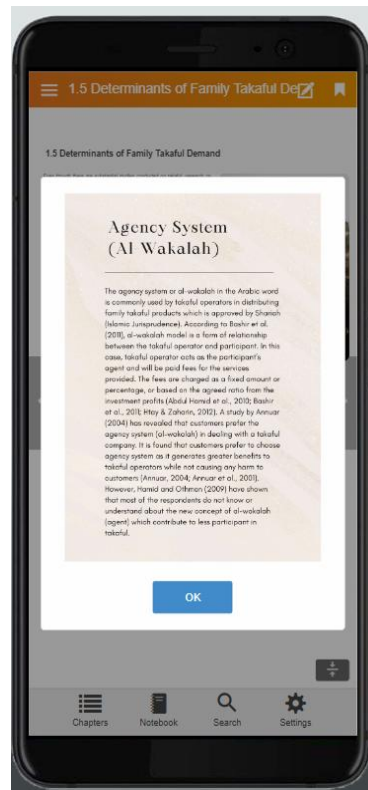


Figure 4. Prototype design for text explanation for the Takaful model – when it is clicked

A. Content Design (Cırakoglu et al., 2022; Dahlan et al., 2024; Mayer, 2021)

- Multimedia sufficiency (text, image, audio)
- Relevance of multimedia to Takaful models
- Attractiveness and suitability of content
- Readability of text
- Appropriateness of content structure (hierarchy)

B. Interface Design (Rogers et al., 2023; Nielsen, 2024; Panda, 2024)

- Ease of use
- Page layout (clean interface, simplicity, flow, spacing)
- Visual consistency (text, buttons, graphics)

C. Interaction (Islamic Development Bank Institute, 2020; Cırakoglu et al., 2022; Dani, 2025)

- Availability of interactive elements (buttons, videos, hyperlinks)
- Assessment tool design (quizzes)
- Authoring support (highlighting, notes, search, bookmarking)

3. *Data Collection*: The session was audio-recorded and transcribed verbatim.

Data Analysis

The data collected from the focus group were analyzed using a thematic approach based on the interview questions, which were organized around three main design aspects: content design, interface design, and interactivity. Responses were reviewed and categorized according to recurring patterns within each theme, allowing the researchers to identify strengths, concerns, and recommendations expressed by the participants. This straightforward analysis method ensured that the evaluation remained aligned with the user-centered design focus of the study and highlighted key areas for improving the e-book prototype.

Results and Discussion

The evaluation of the interactive e-book for Takaful education highlighted three core areas influencing user experience and learning effectiveness: content design, interface design, and interactivity (Table 1).

Table 1. Summary of findings from e-book prototype evaluation

Core areas	Findings
Content design	<ul style="list-style-type: none"> • Multimedia components are generally sufficient, but enhancements (e.g., clickable definitions, audio support) are recommended. • Infographics, video, and animated models are preferred to explain complex Takaful concepts. • Text readability is good, but improvements are needed in consistency (e.g., Arabic terms, Quranic verses). • Users suggested glossary links, hierarchical structure maintenance, and inclusion of institutional branding.
Interface design	<ul style="list-style-type: none"> • Interface is straightforward and easy to use. • Layout mirrors traditional books and supports cognitive flow. • Suggestions include glossary integration, quiz placement at chapter ends, and brand-aligned color schemes. • Design consistency for buttons, text, and images is an area for improvement.
Interaction	<ul style="list-style-type: none"> • Interactivity is adequate but should include more hyperlinks for terms, video/audio for models, and better assessment feedback. • Quizzes should show marks and guide users to relevant chapters. • Authoring tools (highlighting, notes, bookmarking) are positively received. • Suggestions include making content downloadable and publicly accessible.

Discussions

The study revealed that carefully designed content in an interactive e-book significantly enhances the learning experience for users engaging with complex subjects such as Takaful. Participants noted the usefulness of infographics, videos, and animated process models in explaining abstract concepts, which is consistent with Mayer's (2021) cognitive theory of multimedia learning. These multimedia elements reduce cognitive load and enable learners to construct mental models of the content more effectively. These findings are further supported by Batoon et al. (2018), who reported that audio-visual content in interactive e-books positively influenced student grades, particularly in secondary education. However, as noted in the same study and reinforced by Clinton-Lisell et al. (2021), multimedia must be carefully aligned with instructional goals to avoid cognitive overload and distraction. Furthermore, recommendations to include hyperlinked definitions and audio-supported Quranic verses emphasize the importance of contextual relevance and cultural alignment in faith-based financial education. This aligns with Bozkurt and Bozkaya's (2015) criteria, which stress the need for domain-sensitive content structures and glossary functions in digital learning environments.

Interface design was also found to play a critical role in shaping user engagement and learning efficiency. Participants valued the straightforward and familiar layout that mimicked physical books, along with consistent visual elements and IIUM-themed color palettes. These preferences reflect the principles of user-centered design, particularly the importance of consistency, visual hierarchy, and minimal cognitive friction as outlined by Nielsen (2024) and Rogers et al. (2023). Maintaining interface consistency across pages especially in text formatting, button design, and navigation helps users develop predictable mental models of the e-book environment, reducing the time spent figuring out how to interact with content and allowing them to focus on learning instead.

Interactivity further contributed to improving user experience and learner motivation. The participants appreciated features such as clickable terms linked to a glossary, formative quizzes with instant feedback, and annotation tools. These findings align with research by Çirakoğlu et al. (2022), which demonstrated that interactive assessment and feedback mechanisms promote learner autonomy and retention. These preferences are confirmed in the findings of Clinton-Lisell et al. (2021), whose meta-analysis found digital glossaries and collaborative tools to significantly improve reading performance (effect size $g = 0.66$, $p < .001$). Moreover, studies by Craig et al. (2018) and Xu et al. (2020) emphasized that interactive quizzes, hotspots, and feedback mechanisms, when well-integrated, can improve both retention and learner autonomy, is the key to successful digital pedagogy. Similarly, Dani (2025) emphasizes that embedded features like bookmarking and highlighting transform passive reading into active learning.

In the context of Takaful education, where learners often encounter new legal, ethical, and financial frameworks, the combination of multimedia and interactive design allows for deeper conceptual engagement. When features are aligned with specific learning outcomes, as recommended by Sung et al. (2018), they promote critical thinking without increasing cognitive burden. The findings from this study, supported by the broader literature, affirm that a user-centered, culturally aware, and technically sound e-book can serve as a highly effective tool in disseminating Islamic finance knowledge, not only in formal education but also in public outreach and professional upskilling.

Conclusion

This study set out to explore expert perspectives on designing an interactive e-book specifically tailored for Takaful education, with the aim of identifying key principles related to content, interface, and interaction design. Through a user-centered focus group approach, the findings demonstrated that multimedia elements such as infographics, videos, and audio-supported Quranic verses enhance learners' comprehension of abstract Islamic finance concepts. The study also revealed that clear content structure, consistent visual design, and embedded interactivity (quizzes, annotations, hyperlinks) are vital in improving usability, engagement, and learner autonomy—effectively fulfilling the study's objective of informing best practices for culturally responsive and pedagogically sound digital resource development.

These findings offer valuable contributions in educational technology and human-computer interaction, particularly within the niche context of Islamic finance. From an industry and policy perspective, the insights serve as a foundation for instructional designers, EdTech developers, and financial educators to adopt evidence-based strategies in creating digital learning materials that are both accessible and aligned with Islamic values. The e-book prototype developed in this study exemplifies how interactive technologies can democratize

financial literacy and support capacity building in faith-based economic systems, potentially benefiting learners in academic, professional, and community education settings.

Nonetheless, the study has its limitations. The focus group was composed of a small and expert-driven sample, which may not represent the perspectives of general users or learners at various proficiency levels. Additionally, the study's findings are based on prototype evaluation rather than long-term user testing or learning outcome assessments. Future research should involve a broader demographic, including students and public users, and employ mixed-method evaluations to measure cognitive gains, behavioral engagement, and longitudinal impacts. Investigating adaptive learning technologies and personalized content delivery in Islamic financial education could further enrich the design of digital tools in this evolving field.

Scientific Ethics Declaration

* The authors declare that the scientific ethical and legal responsibility of this article published in EPES journal belongs to the authors.

Conflict of Interest

* The authors declare that they have no conflicts of interest

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