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# Arabic Language Learning for Children on the AlefBata Platform

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## Abstract

***Purpose -*** *This article evaluates AlefBata (أ ب ت) by analyzing how its content structure and difficulty progression support early Arabic literacy from letters and ḥarakāt to texts. It also examines whether AlefBata's multimedia and interactivity align with CTML and CLT principles for effective segmentation, scaffolding, and cognitive-load management.*

***Design/methodology/approach -*** *This study employs a descriptive qualitative evaluative design using content analysis and heuristic evaluation of AlefBata's publicly accessible pages across core modules and the FAQ. Data were coded with an operational rubric capturing literacy progression, difficulty/review structures, and CTML/CLT design indicators (e.g., segmentation, coherence, modality, redundancy risk, extraneous-load control, and scaffolding).*

***Findings/results –*** *Findings indicate that AlefBata provides a staged early-literacy pathway, progressing from letters and ḥarakāt to words, sentences, and leveled texts, supported by micro-scaffolding and structured review. From a CTML/CLT lens, segmentation and leveling are key strengths, but the lack of a clear home-learning path increases reliance on adult guidance and interface-level checks require access to logged-in activities.*

***Originality/value -*** *This review offers a theory-driven evaluation of a children's Arabic edtech platform by integrating (a) an early-literacy progression lens and (b) CTML/CLT-based design criteria. It contributes a replicable coding rubric and identifies a practical gap between content architecture and implementation curriculum, informing educators' adoption decisions and guiding future empirical studies on cognitive load and literacy outcomes.*

***Paper type –*** *Research paper*

**Keywords:** *AlefBata Platform, Scaffolding, Difficulty Sequencing.*
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# Introduction

The development of educational technology has expanded the language-learning ecosystem from the classroom into multimodal and interactive learning environments, where text, audio, visuals, and task-based activities can be orchestrated to strengthen language acquisition. From an instructional design perspective, the use of multimedia should not be understood merely as "adding pictures/animations," but rather as an effort to manage the cognitive processes of learning through information selection, the organization of verbal–visual representations, and the integration of new knowledge into existing schemas.[1] In line with this, cognitive load theory emphasizes that instructional materials must account for the limitations of working memory; learning tends to be more effective when irrelevant demands (extraneous load) are reduced and processing that supports schema construction (germane load) is facilitated.[2] In other words, the quality of a digital platform is determined by how it structures the learning experience, not simply by how much content it offers.

In the context of Arabic language learning, the urgency of evaluating digital platforms is even greater because Arabic, as a linguistic and writing system, presents distinctive complexities for beginning learners. Arabic is diglossic: children grow up using spoken varieties (ʻāmiyyah), whereas school literacy is typically developed in Modern Standard Arabic (MSA/fuṣḥā), creating a "linguistic distance" that can affect phonological awareness and early decoding.[3] Moreover, Arabic orthography has unique features: letter forms change by position, diacritics (ḥarakāt/tashkīl) play a critical role in pronunciation and meaning, and word processing is often tied to morphological root–pattern structures. Research on Arabic literacy shows that these orthographic features and variations in vowelization can shape reading development and word-recognition strategies.[4] Consequently, an effective children's Arabic learning platform should integrate phonology–grapheme practice, vocabulary development, comprehension work, and consistent step-by-step scaffolding—not merely isolated "guess the letter" drills.

From a motivational standpoint, children's platforms often rely on "game" elements and gamification. Conceptually, gamification refers to the use of game design elements in non-game contexts to enhance user experience and learning engagement.[5] Empirical studies frequently associate gamification with increased engagement and motivation, yet its effects depend on design quality, context, and user characteristics; negative outcomes such as unhealthy competition or rapidly fading motivation have also been reported.[6] Therefore, a more foundational motivational framework—such as Self-Determination Theory (SDT)—is relevant for examining whether a platform supports basic psychological needs (competence, autonomy, and relatedness) that contribute to more sustained motivation.[7] This is especially important for child learners: being "fun" is not sufficient if it does not translate into stable learning habits and measurable literacy gains.

From the perspective of Computer-Assisted Language Learning (CALL) evaluation, platform analysis should move beyond feature checklists toward theory-informed judgments grounded in language acquisition. One frequently cited framework is a set of six criteria for evaluating CALL tasks: language learning potential, learner fit, meaning

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focus, authenticity, positive impact, and practicality.[8] This framework offers conceptual tools to assess whether activities actually trigger expected SLA processes, whether they fit the learner profile, whether they balance attention to meaning and form, whether they connect to real-world language use, what impacts they have on learners' attitudes and the broader learning ecology, and whether they are feasible in terms of cost, devices, and implementation.

Within this landscape, AlefBata (أ ب ت) is an instructive case for examining a web-based Arabic learning platform for children. The site presents a broad content ecosystem: hundreds of games/lessons for letters–words–sentences, a "sight words" module (100 high-frequency words), more than one thousand interactive exercises, listening practice, a leveled story library, and printable worksheets.[9] At the same time, AlefBata positions itself as a supplementary platform: for parent users, it does not provide a single fixed curriculum (manhaj); learning success depends heavily on parents' ability to select content and monitor children's progress.[10] In addition, there are practical implementation conditions that warrant scrutiny: the platform uses paid subscriptions (with family and school packages) and payments via Stripe;[11] device support constraints (e.g., browser-based use, internet requirements, and limitations in mobile device support) may also affect access and equity of use.[10]

Based on the discussion above, a critical scholarly review of AlefBata is needed to address two demands: (1) a practical demand—to help teachers, parents, and institutions make informed adoption and integration decisions; and (2) a scholarly demand—to strengthen theory-driven evaluation traditions in Arabic edtech (drawing on CTML/CLT, motivation research, and CALL evaluation). This review is positioned to examine the coherence of AlefBata's pedagogical design: how early literacy progression is constructed; how multimedia and gamification are managed so they do not add cognitive burden; how activities create conditions aligned with desired SLA processes; and what practical implications follow for formal and nonformal learning contexts, including madrasah and pesantren.

## Method

This study uses a descriptive qualitative evaluative design, combining content analysis and heuristic evaluation of AlefBata's (أ ب ت) publicly accessible pages. The dataset is documentary, covering menu structure, module descriptions, stated pedagogical aims, and visible level/difficulty labels. Units of analysis focus on early-literacy–relevant modules—Lessons, Letters–Words–Sentences, Sight Words, Stories, Listening, and Worksheets—while Texts and Grammar are treated as progression extensions because they target more advanced literacy and language competence.

The analysis is guided by the Cognitive Theory of Multimedia Learning (CTML) and Cognitive Load Theory (CLT). CTML informs coding for segmentation, coherence, and potential redundancy risks, whereas CLT is used to examine intrinsic-load management via progression/leveling, extraneous-load reduction, and possible split-attention issues. Procedures include mapping the literacy pathway (letters → ḥarakāt → words →

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sentences → texts), coding macro-design features (structure, segmentation, leveling, review) alongside available micro-indicators (e.g., difficulty labels and review markers), and reporting results thematically on progression, CTML/CLT alignment, and instructional implications. Because the study relies on public pages, interface-level verification of multimedia timing, layout, and feedback within paid activities is necessarily limited.

# Result

This study adopts a descriptive qualitative evaluative design to examine AlefBata (أ ب ت) as a web-based Arabic learning platform for children. The overarching aim is to understand how the site's content architecture supports early Arabic literacy development and how its multimedia design can be interpreted through established learning theories.

Data for the analysis are documentary in nature and were collected exclusively from AlefBata's publicly accessible pages. The study therefore focuses on what the platform explicitly presents to prospective users, including its menu structure, module descriptions, pedagogical claims, and any visible labels indicating levels or difficulty.

The evaluation is conducted through two complementary approaches: content analysis and heuristic evaluation. Content analysis is used to map what learning components are present, how they are organized, and what progression logic is claimed. Heuristic evaluation is then applied to appraise the clarity and theoretical plausibility of the platform's design choices as they appear in the public interface and descriptions.

The units of analysis are defined around modules that are directly relevant to early literacy. These include Lessons (ألعاب) as a sequence of short, numbered lessons; Letters–Words–Sentences (حروف وكلمات وجمل) as letter-based learning units; Sight Words ( الكلمات البصرية) as high-frequency word practice; Stories (قصص) as leveled reading materials; Listening (قسم الاستماع) as graded listening exercises; and Worksheets (التمارين التعليمية) as practice activities that extend from letter-level work into more advanced skills.

In addition to these core early-literacy modules, the Texts (نصوص) and Grammar (قواعد) sections are treated as "progression extensions." They are analyzed not as the primary foundation of early literacy, but as indicators of how the platform supports a transition toward higher-level reading comprehension and language knowledge once foundational decoding skills are established.

Two theoretical frameworks guide the operational analysis. The Cognitive Theory of Multimedia Learning (CTML) is used to interpret how the platform structures multimedia input and whether its design supports effective processing through principles such as segmenting and coherence. CTML is also used as a lens for identifying potential redundancy risks when audio and on-screen verbal information may overlap.

Cognitive Load Theory (CLT) is used to examine how the platform appears to manage the limited capacity of working memory. In practice, CLT informs judgments about intrinsic load management through progression and leveling, efforts to minimize extraneous load through clearer task structuring, and potential split-attention issues that could arise from specific instructional formats.

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The analytical procedure begins with mapping the implied literacy progression from letters to ḥarakāt/diacritics, then to word-level and sentence-level work, and finally to text-level comprehension. This mapping is built from module descriptions and any explicit level or difficulty indicators visible on the site, allowing the researcher to infer a staged pathway consistent with early literacy development.

Next, the study codes CTML and CLT indicators at two levels. At the macro-design level, coding targets module architecture, segmentation practices, leveling structures, and review cycles. At the micro-indicative level, coding relies on publicly visible signals such as difficulty labels, skill tags, review markers, and module statements describing how listening or reading tasks are intended to be performed.

Finally, findings are reported as thematic narratives that synthesize evidence across modules. The reporting is organized to address (a) the structure and progression of early literacy content, (b) the alignment of multimedia and interactivity with CTML/CLT principles, and (c) the instructional implications for teachers, parents, and institutions considering adoption.

A key methodological limitation is that the analysis is restricted to public pages. Without full access to paid interactive activities, the study cannot verify fine-grained interface behaviors such as exact text–image placement, audio timing, animation density, and real-time feedback patterns. As a result, conclusions emphasize learning design at the level of content architecture and publicly stated pedagogy rather than detailed usability or micro-interaction performance.

# Discussion

### A. Research Question 1

This analysis indicates that AlefBata's content architecture can be interpreted as a staged early-literacy pathway that aligns with schema formation and the gradual development of reading automaticity. At the macro level, the platform presents a foundational sequence that begins with letter recognition and positional letter forms, progresses to ḥarakāt/tashkīl and pronunciation, and then moves toward reading and writing simple words and composing short sentences.[1] This sequence is theoretically relevant from a cognitive load perspective because early Arabic literacy involves intrinsically complex elements—positional letter-shape variation, dot-based letter contrasts, and diacritics—that are more manageable when decomposed into smaller, progressively ordered units, thereby reducing intrinsic load through sequencing and a gradual increase in element interactivity.[2]

Within this pathway, the integration of "letter → word → sentence" within a single letter-based structure functions as orthography-centered scaffolding. The Letters–Words–Sentences module (حروف وكلمات وجمل) implements a consistent routine for each letter (introductory story → vocabulary → sentence work), and some items include explicit difficulty labels.[3] This design corresponds to the core logic of scaffolding, in which learning support becomes effective when tasks are recruited and simplified initially and then gradually withdrawn as competence increases.[4] In Arabic literacy specifically, such scaffolding is pedagogically consequential because learners must discriminate between

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visually similar letters (e.g., ب/ت/ث; ج/ح/خ) and consolidate grapho-phonological mappings that bind letter forms to speech sounds.[5]

The Sight Words module also supports the development of reading automaticity, although its effectiveness depends on whether it remains anchored in orthographic mapping rather than becoming mere visual memorization. AlefBata provides 100 high-frequency words organized into sets of five with systematic review, aiming to enable children to read quickly "without sounding out."[6] From developmental reading theory, stable sight-word recognition typically emerges through orthographic mapping—systematic connections between graphemes and phonemes (and recurring orthographic patterns) that allow rapid, accurate word identification.[7] When sight-word practice is positioned after a sufficiently stable foundation in letters and ḥarakāt (as implied by the platform's broader sequencing), it can accelerate automaticity without undermining decoding accuracy.[1,8] Conversely, if introduced too early—before mapping is stable—children may over-rely on fragile visual strategies, which can be counterproductive in orthographically complex systems and may increase error rates and corrective demands.[7,5]

Moreover, AlefBata's leveled stories appear to facilitate the transition from decoding to reading-for-meaning, consistent with the developmental trajectory toward reading fluency. The platform provides stories (قصص) organized by level, functioning as a bridge to comprehension.[9] In fluency theory, fluency is largely a consequence of automatized word recognition, which frees attentional resources for meaning construction.[10] Accordingly, leveled stories should be viewed not merely as "reading content" but as a diagnostic and developmental space to test whether automaticity and sentence-level skills built at the micro level (letters/words/sentences) transfer to text comprehension.

At the same time, Arabic-specific dimensions—diglossia, vowelization practices, and the demands of phonological–orthographic awareness—should remain central lenses for evaluating AlefBata's progression. Research suggests that Arabic reading development is shaped by diglossia (the distance between spoken varieties and MSA), which can affect phonological representations and early decoding processes.[11] In addition, differences between vowelized (with ḥarakāt) and unvowelized reading alter orthographic transparency and processing demands; numerous studies emphasize the contributions of phonological awareness, vocabulary, and orthographic knowledge to reading under vowelized versus unvowelized conditions.[12] In AlefBata's case, the prominence of ḥarakāt-focused lessons and a systematic listening module can be interpreted as attempts to strengthen phonological foundations and sound–print mapping.[1,13] However, an ideal progression would also examine whether the platform supports a gradual fading from fully vowelized texts toward more authentic, less-marked texts, because advanced Arabic literacy requires adaptation to shifting orthographic representations.[12]

Finally, the structural challenge identified in this review is not content availability but the "implementation curriculum," particularly for parent users. AlefBata's FAQ states that the platform offers extensive materials—games, exercises, and stories—but does not provide a single fixed curriculum/manhaj; learning success depends heavily on

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parents' content selection and ongoing monitoring.[14] From a cognitive load standpoint, the absence of an explicit learning path can generate extraneous load for adults (teachers/parents), who must decide sequencing, select tasks, and interpret progress with limited guidance.[2,14] As a result, two children using the same account may follow substantially different learning routes, potentially affecting the reliability and comparability of expected literacy outcomes.

**B. Research Question 2**

In terms of multimedia learning alignment, segmentation emerges as AlefBata's most explicit and consistent design strength. CTML posits that learners benefit when multimedia messages are presented in segments that can be processed step-by-step (the segmenting principle).[15] AlefBata describes its games/lessons as short, progressive units ("دروس قصيرة" with numbering), and it similarly structures sight-word learning into five-word sets followed by review.[1,6] From a CLT perspective, this segmentation functions as a practical strategy to reduce the likelihood of working-memory overload by supporting chunking and pacing.[2]

Intrinsic load management through leveling is also evident across modules such as lessons, listening, stories, and worksheets. CLT distinguishes intrinsic load (inherent complexity), extraneous load (load created by poor presentation), and load that supports schema construction.[2] AlefBata emphasizes ordered difficulty progression—for example, 100 graded listening exercises, leveled stories, and worksheets that begin with letters and extend toward grammar.[13,9,16] This aligns with recommended instructional approaches for novices, who should not be forced to integrate too many interacting elements simultaneously, but instead be guided from simpler components to more complex structures.

However, coherence and extraneous-load control remain areas requiring careful empirical testing, especially because game-based formats can introduce distraction if entertainment elements are not tightly aligned with learning goals. CTML underscores that irrelevant material (decorations, effects, or nonessential information) can interfere with learning (the coherence principle).[17] In game-based environments, entertainment features can function as germane support for attention—or as extraneous distraction—depending on the quality of mapping between gameplay elements and literacy targets (letters, ḥarakāt, words).[2,17] Because public access does not reveal the full interface details of each activity, stronger evaluation requires sampling real tasks to determine whether audio/animation/game objects consistently serve the instructional target or partially operate as decorative load.

Split-attention and contiguity represent classic risks in screen-based learning that should also be anticipated. CLT identifies the split-attention effect when learners must divide attention across separated information sources (e.g., text far from an image), thereby increasing extraneous load.[18] CTML's spatial and temporal contiguity principles likewise emphasize proximity and synchronization between corresponding verbal and visual information.[15] If AlefBata places textual instructions, diacritic symbols, and gameplay objects far apart or out of sync, split-attention risk increases, particularly for novice learners who have not yet automatized decoding.[18,2] Practically, this implies that the "Findings" section of a full review should include micro-level indicators—such as

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whether instructions are anchored near letter stimuli, whether visual highlighting is synchronized with audio, and whether eye movements are minimized—to support claims of CTML/CLT alignment.

Finally, redundancy and modality considerations suggest both opportunities and risks. CTML/CLT predict that combining visuals with narration can be effective (modality), but that presenting narration alongside identical on-screen text can produce a redundancy effect that interferes with learning—especially when learners must read while listening concurrently.[19,20] AlefBata includes a dedicated listening module and indications of listening-based activities in certain lessons.[13,1] For early literacy, audio can strengthen sound–print mapping, but effectiveness depends on whether on-screen text is limited to keywords and cues (rather than full transcripts), whether replay is supported, and whether reading demands are not added at moments when the primary goal is auditory comprehension.[19,20]

Taken together, AlefBata appears strong in content staging and module-level scaffolding, yet it would be more fully aligned with CTML/CLT at the ecosystem level if it provided more explicit scaffolding for adult decision-making. Conceptually, scaffolding involves not only leveled materials but also guidance on what to learn first, when to review, when to advance, and when to remediate.[4,14] Because the FAQ indicates there is no single parent-facing manhaj, features such as a default learning path, mastery checkpoints, or performance-based recommendations would likely reduce extraneous load for adults and promote more consistent progression for children—although such features cannot be confirmed from the current set of public data.[14,2]

## Conclusion

The review concludes that AlefBata's content structure constitutes a relatively complete and explicit early Arabic literacy pathway, moving from letter recognition and positional letter forms to tashkīl/ḥarakāt and pronunciation, then to reading–writing simple words, constructing short sentences, and ultimately developing text comprehension through leveled reading materials.[12] Difficulty progression is implemented through a two-layer design: at the macro level, a modular curriculum is evident in Lessons (200 short, staged lessons), Worksheets (more than 1,000 graded exercises), Stories (88 stories across five levels), and Listening (100 progressively graded listening activities);[2567] at the micro level, Letters organizes learning per letter via a consistent "story → vocabulary → sentence" sequence with thematic review, while Sight Words supports reading automaticity through five-word sets followed by systematic review.[34] The platform's main pedagogical strengths lie in segmentation and leveling, which are theoretically consistent with CTML's segmenting principle and with CLT's emphasis on managing intrinsic load through task decomposition and gradual increases in complexity.[2610] In addition, review structures and meaningful repetition—such as five-word review cycles in Sight Words and thematic reviews in Letters—indicate an orientation toward schema stabilization, which can be interpreted in CLT terms as supporting productive (germane) processing for schema construction.[3410]

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At the same time, the primary limitation identified is not content availability but the "implementation curriculum." AlefBata explicitly states that it does not provide a fixed manhaj for children; instead, it functions as a supplementary platform whose success depends heavily on adults' content selection and ongoing guidance.[8] This dependence can create divergent learning routes and impose a "decision burden" on parents or teachers—especially novices—making the realized progression less consistent across users.[8,10] Furthermore, CTML/CLT alignment at the micro-interface level remains to be validated through direct observation of interactive activities. While public pages provide strong indications of segmentation and leveling, principles such as coherence, redundancy, and split-attention can only be confirmed by examining how text, audio, and visuals are coordinated in actual tasks (e.g., synchronization, animation density, instruction placement, and feedback patterns).[10,11]

For educators and parents, AlefBata is best positioned as a supplementary resource rather than a replacement for a home or classroom curriculum. A consistent minimal learning path is recommended: begin with Lessons targeting letters and ḥarakāt, proceed to word-level practice, and then introduce Sight Words and lower-level Stories to consolidate fluency and meaning-making.[2,4,5] Practical application of segmentation is also advised through short, user-paced sessions with small goals per meeting (e.g., one to two lessons or one word set), consistently ending with review to stabilize learning.[2,4,10] To reduce the risk of "module skipping" that can produce large remedial demands, adults should establish mastery checkpoints—such as discrimination of visually similar letters, accuracy with ḥarakāt, decoding of simple words, and basic sentence comprehension.[27] Listening activities should be used to strengthen sound–print mapping and oral comprehension, while ensuring that children are not required to process lengthy on-screen text when the primary task is listening.[6,10] In institutional settings, teachers are encouraged to leverage assignment and performance-monitoring features (e.g., error counts and completion time) to make progression more structured and measurable in group or classroom use.[9]

For future research, micro-level CTML/CLT coding should be conducted on authentic logged-in activities by sampling tasks across modules (e.g., 10–20 activities) and evaluating segmentation, coherence, contiguity, redundancy, split-attention, scaffolding, and feedback quality.[10,11] Researchers should also incorporate measurements of cognitive load and learning outcomes, combining subjective indicators (e.g., mental effort ratings) with behavioral logs (e.g., pauses and errors), and assessing pre–post changes in decoding accuracy, reading speed/fluency, and story/text comprehension.[10,57] In addition, the "implementation curriculum" should be tested as an explicit variable by comparing structured learning-path conditions (teacher/researcher-designed) with free-navigation conditions to determine effects on progression consistency and outcomes.[8] Finally, broader contextual factors—device constraints, internet requirements, and subscription models—should be analyzed for their influence on practice intensity, access equity, and the generalizability of findings.[8]

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