

## التحول الرقمي في إختبارات اللغة: إطار مفاهيمي لابتكار التقييم والمواءمة مع تعليم اللغة الإنجليزية

### Digital Transformation in Language Testing: A Conceptual Framework for Assessment Innovation and ELT Alignment

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قبول البحث: 10/05/2026

مراجعة البحث: 15/04/2026

استلام البحث: 06/03/2026

#### ملخص الدراسة:

أحدث "التحول الرقمي" متسارع الوتيرة في التعليم العالمي - المدفوع بتطور النماذج اللغوية الكبيرة والذكاء الاصطناعي التوليدي أثرًا عميقًا في الأساليب التقليدية لتقييم اللغة. ورغم الإستخدام الواسع للأدوات الرقمية في تدريس اللغة الإنجليزية لأغراض تعليمية، تشير الأدلة إلى أن تصميم الإختبارات إتسم برد الفعل المحدود في هذا السياق، وإقتصر على "رقمنة" المناهج التقليدية للتقييم. تُظهر الأبحاث وجود "فجوة تربوية تقنية" فيما يتعلق بتصميم التقييم؛ إذ تتجاهل العديد من نماذج التقييم الأبعاد المعرفية والأخلاقية التي يفرضها إعتتماد الذكاء الإصطناعي. وعلاوة على ذلك، تبرز حاجة ماسة إلى أطر عمل تعالج الانقسام بين التقدم التقني في الإختبارات والمتطلبات التربوية للمعلمين في البيئات القائمة على الموارد المتطورة. يقدم هذا البحث إطار "المواءمة الرقمية التربوية" وهو بناء نظري جديد يهدف إلى تحقيق التناغم بين التطور التقني والاستدامة التعليمية. يرتكز هذا الإطار على ثلاثة أبعاد: 1. البنية التحتية التقنية: وتتمحور حول إنشاء بنود الإختبارات المدعومة بالنماذج اللغوية الكبيرة والتقييم التكيفي.

2. المواءمة التربوية: التي تعيد صياغة مفاهيم صدق البناء والأثر التعليمي في المجال الرقمي.

3. الفاعلية المهنية: مع التأكيد على أهمية "الثقافة الرقمية في تقييم اللغة للمعلمين.

يتم تنفيذها من خلال دمج النظرية السوسيوثقافية مع التقنيات الحاسوبية المعاصرة، يعمل الإطار المقترح كدليل للانتقال من "اختبار التعلم" إلى "الاختبار من أجل الثقافة الرقمية". وتقدم هذه الدراسة رؤى قيمة لصناع القرار ومدربي المعلمين، مؤكدة أنه رغم الدور المحوري للتقنية في مستقبل تعليم اللغة الإنجليزية، فإن التواء النظرية والابتكار لا بد أن يتسق مع البيداغوجيا الإنسانية.

**الكلمات المفتاحية:** النماذج اللغوية الكبيرة، المواءمة التربوية، الإستدامة التعليمية

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## Abstract

**Introduction:** The fast-paced "digital turn" witnessed in the realm of global education through the development of Large Language Models and Generative Artificial Intelligence has had an immense impact on traditional modes of conducting language assessment. Although digital tools have been used extensively in English Language Teaching for teaching purposes, there is evidence suggesting that test design has been reactionary in this context, limited to the digitization of traditional approaches to assessment.

**The Problem:** Research shows an existing "pedagogical-technological disconnect" with regard to assessment design. In fact, many assessment designs overlook the cognitive and ethical dimensions posed by the adoption of AI for conducting assessment. Moreover, there is a dire need for frameworks that address the divide between technological advancement in testing and pedagogical requirements of teachers in evolving resource-based environments.

**Purpose:** The current paper presents the Digital-Pedagogical Alignment (DPA) framework – a new theoretical construct aimed at harmonizing technological development and educational sustainability. Three dimensions support the DPA framework: (1) Technological Infrastructure – centered around LLM-powered item creation and adaptive assessment; (2) Pedagogical Alignment – which reconceptualizes construct validity and washback in the digital realm; and (3) Professional Agency – with an emphasis placed on the importance of DAL for educators.

**Conclusion:** Through the integration of sociocultural theory with contemporary computational technologies, the presented framework serves as a guide to transition from “testing of learning” to “testing for digital literacy.” This research holds valuable insights for both policymakers and teacher trainers, indicating that while technology plays a pivotal role in the future of ELT, the convergence of theory and innovation must be aligned with humanistic pedagogy.

**Keywords:** Digital Transformation, Language Testing, Conceptual Framework, ELT, Large Language Models (LLMs), Pedagogical Alignment, Educational Sustainability.

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## Introduction

The current state of language education in the world is experiencing an earth-shaking transition, which has often been described in the literature as the “Digital Turn.” The Digital Turn does not simply refer to the digitalization of learning content; rather, it refers to the changing nature of how languages are learned and assessed, among others. Specifically, in ELT, the concept of the Digital Turn includes hyper-connected learning environments, multimodal communications, and finally, the emergence of Generative Artificial Intelligence and LLMs.

Despite all these changes, there remains a major theoretical gap in language testing. Modern testing practices, most of which emerged from paper-based testing to CBT, seem to be far behind in terms of innovation and development. Conventional approaches to validity and reliability of language assessments mainly work under conditions that distinguish between the learner's own knowledge base and outside help.

The generative age of artificial intelligence has brought about the blurring of these lines. The capacity of the LLMs to jointly generate content, translate in real-time, and emulate human interaction puts into question the fundamental assumption of traditional construct validity. If assessments tools continue to function on the "pre-AI" level, then they will be unable to take into account the additional competences needed in the digital environment—such as the use of AI tools and digital empowerment—while at the same time being exposed to integrity issues.

Additionally, many approaches to technology integration have viewed it as an "extra" rather than a revolutionary aspect that transforms the dynamic between teachers, students, and assessments instruments. In light of this Digital Turn, the pressing issue of the moment is the development of a relevant conceptualization that does not simply digitize previous practices but revolutionizes the assessment process to suit the demands of contemporary ELT education.

## Literature Synthesis

The state of the academic art concerning digital developments in language assessment can be characterized by a profound shift. Even though CALL has provided an evidence-based foundation to its practice, the "digital turn" (Thorne et al., 2021) as well as the advent of Generative Artificial Intelligence (GenAI) have created substantial "theoretical friction" in the field due to the conflict between established psychometric principles and current digital practices (Godwin-Jones, 2023).

### 1. The Disjunction between Pedagogic Technology in ELT and Assessment

Present-day literature points at an emerging discrepancy between innovative ELT pedagogy and the stagnation of testing. Although ELT practices are increasingly embracing multimodality and task-based methodology, assessment continues to rely on dated linear approaches (Chun & Heift, 2024). The consequence is that digital assessments "under-represent" constructs by failing to examine collaboration and multimodality required in 21st-century discourse (Jewitt et al., 2024). In addition, many digital shifts do not go beyond "digitization" of traditional exams—a phenomenon known as "old wine in new bottles" (Isbell & Kremmel, 2020).

### 2. Generative AI and the Validity Crisis

The "GenAI shock" has resulted in a paradigm shift regarding individual autonomy and "autonomous" creation in language testing (Kasneci et al., 2023).

Mediation Issue: As LLMs increasingly function as tools that scaffold learning processes, conventional criteria to assess writing skills and language complexity are becoming obsolete,

pointing to the emergence of "AI-mediated proficiency" frameworks (Hockly, 2025). Gap Between Integrity and Integration: Current research on this topic is bifurcated into two camps—one that highlights the ethical ramifications of AI applications and "AI detection" and another that is more forward-looking, emphasizing "AI-integrated assessment." The latter stresses "human-in-the-loop" linguistic competency, which depends on the efficiency of the interaction between humans and AI (Liu & Wang, 2026; Su & Cheng, 2024).

### 3. Practitioner Insights and Systemic Issues

The DAL gap represents a significant issue in recent academic discourse. Even though educators might have skills related to the digital delivery of their lessons, very few possess the necessary knowledge required to develop valid digital assessments or analyze sophisticated data from e-learning (Coombs et al., 2022; Levi & Inbar-Lourie, 2024). Negative Washback: The use of ineffective digital testing may cause a "negative washback effect," whereby the learning process would shift its focus from acquiring communicative skills to mastering how to navigate software tools (Yan & Fan, 2024). The Digital Divide: According to global literature, "uneven innovation" continues to be a challenge to equitable assessment (UNESCO, 2024). There is a pressing need for models that emphasize capacity-building and teacher empowerment in contexts where resources keep evolving (Adlan, 2026; Elwood & MacLean, 2025).

### 4. Towards Sustainable and Ecological Frameworks

In response, scholars have been calling for "future-proof" frameworks to ensure educational sustainability (Cope & Kalantzis, 2025). This paradigm shift entails moving away from an emergency, tool-focused approach to adopting sustainable digital pedagogy (Fuchs, 2026). These paradigms need to view technology and pedagogy not as separate components, but rather as one integrated "ecological ecosystem" (Kessler, 2024). Through the combination of teacher development initiatives (Torsani, 2024) and collaborative learning theory (Harasim, 2023), the future of assessment will embrace innovation and humanism.

## Framework

The major contribution of this research lies in the conception of the Digital-Pedagogical Alignment (DPA) Framework. The DPA Framework is intended to facilitate a structured navigation of the "Digital Turn" and ensure that technological innovation is not carried out in an educational vacuum. The DPA Framework itself takes the form of a three-pillared architecture, wherein each pillar is reliant upon the other two pillars to sustain its own integrity and validity.

### First Pillar : Technological Infrastructure & AI Integration

This pillar acts as the foundation for the rest of the framework. It addresses both "what" and "how" the digital tools are implemented in the assessment process.

LLM-Aided Item Construction: Employing generative AI technologies to create multivariate assessment items with reduced burden on teachers and increased variability.

Adaptive Test Formats: Employing adaptive testing systems, wherein test questions adapt based on individual student performance to avoid "one-size-fits-all" solutions.

Digital Integrity Systems: Development of AI protocols and new forms of digital proctoring aimed at ensuring "security by design" approach.

### Second Pillar: Alignment with Pedagogy and Construct Validity

This pillar guarantees that technology aligns with the educational and linguistic objectives of ELT. This pillar concerns itself with the "why."

Redefinition of the Construct: Re-conceptualizing language proficiency by adding "Digital Literacy" and "Human-AI collaboration," recognizing that language in today's context may entail digital mediation.

Optimized Positive Washback: Designing online assessments that will promote genuine classroom interactions instead of repetitive "screen drills."

Formative Feedback Loops: Utilizing the instantaneous nature of digital media by providing instant diagnostics, shifting assessment from being an end goal to a pedagogic tool.

### Third Pillar: Professional Agency and Digital Assessment Literacy (DAL)

The third pillar acknowledges the significance of human agency for effective transformation. DAL Competency Standards: Developing a framework of competencies for teachers covering the ability to interpret automated analytics to the ethical use of AI-driven assessments. Human-in-the-Loop (HITL): Preserving the position of teachers as the ultimate judges of their students' abilities to ensure that AI only assists in decision-making processes. Continual Professional Development (CPD): Implementing systems of professional development that enable faculty members to adapt to emerging changes in the digital world.

### Discussion:

In contrast, the framework suggested by this study represents a radical paradigm shift away from conventional assessment frameworks, which have often regarded technology as the second medium, not an integral part of the language construct. In this regard, the following discussion presents the case for the superiority of the DPA Framework over other digitized models based mainly on the criterion of educational sustainability.

#### 1. Resilience to "Software Obsolescence"

Most frameworks rely on the notion of being "tool-dependent," meaning that they concentrate on the application of particular software solutions or tools. The consequence of such dependence is an endless cycle of training and investment in new technologies as they develop. On the contrary, the DPA Framework is theoretically sound. It is based on the importance of

incorporating LLMs into educational practice as an instructional tool rather than software. As such, the framework remains resilient to changes in AI and retains its relevance regardless of technological progress.

## 2. Bridging the "Pedagogical-Technological" Gap

Most contemporary frameworks emphasize only one aspect out of two possibilities; the psychometric validity of the software and the communicative aims of the syllabus, but not both simultaneously. What sets the DPA Framework apart from others is that it balances both sides in equal measure. Instead of simply translating existing assessments to the digital world, the concept of Digital Agency enters into the very definition of what makes up an assessment. In such a case, the effect of "Washback" is guaranteed to be positive in nature, and teaching evolves from "teaching to the test" to "teaching for digital linguistic proficiency."

## 3. Empowerment Versus Automation: The "Human-in-the-Loop" Approach

In many cases, modern AI-based models rely on automation at all costs due to efficiency, compromising Teacher Agency in the process. In contrast, the DPA Framework does not endorse the "Black Box" mentality when it comes to the use of AI for scoring. On the contrary, it recognizes DAL as one of the fundamental components of this framework, thus ensuring that educators will not be substituted by algorithms but rather enabled by them.

## 4. Scalability and Global Equity

Lastly, whereas most frameworks operate under the assumption of resource-intensive settings and stable infrastructure, the scalability of the DPA framework is made possible by its emphasis on Educational Sustainability. The modularity involved in the DPA framework enables the implementation of the "Professional Pillar," which includes Teacher Training, prior to the complete implementation of the "Technological Pillar" that involves High-end Infrastructure. This takes care of the issue of "uneven innovation" identified in existing studies.

The DPA model represents more than just a development of the computerized test; it represents a paradigm shift. In taking an ecological approach to the digital turn rather than simply another obstacle, it offers a framework for how institutions can find a balance between innovation and continuity. It represents a move forward by the field of ELT towards an assessment system which will be dynamic and sustainable into the future.

## Implications

The deployment of the DPA Framework calls for an overhaul of the existing language assessment ecosystem. Its implications go beyond the immediate realm of pedagogy, reaching into the realms of institutional policy-making and teacher training programs.

### 1. Implications for Policy: Transforming the Testing Culture

A holistic approach to digital transformation calls for a complete shift of the policy mindset from gatekeeping to growth-oriented approaches within the digital environment.

**Defining New Constructs:** Policy makers need to introduce constructs such as Digital Agency and AI-Mediated Communication in national language proficiency standards. No longer will tests punish the learner for utilizing technological aids; instead, they will assess the critical and accurate use of digital media.

**Investments in “Pedagogical Infrastructure”:** Budget allocations should not be limited solely to hardware procurement but also include investments in developing proprietary LLM ecosystems which would safeguard student data and facilitate contextualized assessment.

**The Transition from Summative to Formative Assessments:** In addition, policy needs to promote the transition from high-stakes summative assessments to Continuous Digital Assessment.

## 2. Implications for Practice: A New Era of Teacher Training

In accordance with the DPA Framework, the teacher acts as the "architect" of the entire digital assessment environment. It means that training approaches have to move from elementary computer and information literacy toward DAL.

**Training in Human-AI Interaction:** Teachers should receive specialized training in interacting with AI systems, including how to properly prompt the LLMs for task generation purposes, how to assess the accuracy of the AI-generated score and how to recognize potential "hallucinations" in automatic feedback.

**Training in Data Analysis:** Professional development should emphasize "Assessment Analytics" and help educators learn how to analyze large amounts of digital data generated by assessment platforms in order to provide personalized support for learners.

**Ethical and Critical Mentorship:** Educators have to become ready to facilitate discussions of ethical issues associated with AI technology, shifting their role from "policing" students for plagiarism to critical mentorship in using linguistic assistants for academic purposes.

## Conclusion

The "Digital Turn" in language testing is not something far off in the future; it is happening now, and it requires a strong theoretical response. The Digital-Pedagogical Alignment (DPA) Framework is that theoretical response in that technological advancement always occurs within the context of pedagogical truth and teacher agency.

Looking ahead to a world of Generative AI, the yardstick for measuring whether a test system is successful or not will not be based on how advanced it is technologically, but rather on whether it is Educational Sustainable. Through an integrated and tri-pillared approach, the realm of ELT can be assured that language testing will continue to remain a valid and transformational force

within global education. It also acts as both a defense and stimulus toward creating a sustainable digital future.

The "Digital Turn" in language testing is not something far off in the future; it is happening now, and it requires a strong theoretical response. The Digital-Pedagogical Alignment (DPA) Framework is that theoretical response in that technological advancement always occurs within the context of pedagogical truth and teacher agency.

With respect to the future, I believe that it will be characterized by a paradigm shift from standardized measures towards empowerment. In this vein, as LLMs and Generative AI systems advance further, the notion of language proficiency "construct" will include the ability to interact within a human-to-human-and-machine framework. Rather than being judged on individual achievements, a student's success will be assessed based on his/her ability to make use of digital technology responsibly to attain communicative goals.

Finally, the role of the ELT practitioner in this process must necessarily change into that of a data-driven mentor. With the adoption of the DPA approach by education institutions, we will not have to deal with the fear of artificial-intelligence disruption any longer; instead, we will be able to ensure Educational Sustainability through the implementation of new digital technologies.

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