

# Digital Humanities 5.0 and AI for Transformative English Language Pedagogy: The AIMED Framework

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## Abstract

The rapid convergence of Digital Humanities (DH) and Artificial Intelligence (AI) is reshaping the contemporary landscape of English Language Pedagogy (ELP). As higher education shifts toward data-rich, technologically mediated ecosystems, the need to move beyond conventional instructional models becomes increasingly urgent. This paper proposes an integrated, future-facing pedagogical paradigm that synthesizes Digital Humanities methodologies with intelligent AI systems, including Natural Language Processing (NLP), machine learning analytics, AR/VR-enhanced immersive environments, and multimodal interaction tools. These components collectively inform the AIMED Framework (Artificial Intelligence and Multimodal Ecosystems for Digital Humanities–Enhanced English Pedagogy), designed to unify adaptive intelligence, multimodal learning pathways, and cultural-historical perspectives from DH. The study explores theoretical foundations, pedagogical affordances, instructional redesign strategies, ethical considerations, and implications for learner autonomy, cultural literacy, and critical digital competence. The paper concludes with a framework for implementing transformative, inclusive, and cognitively engaging English language learning ecosystems in academic institutions.

**Keywords:** AIMED Framework, Digital Humanities, Artificial Intelligence, Multimodal Learning, AR/VR Education, English Language Pedagogy, NLP Tools, Educational Technology, Transformative Pedagogy, Intelligent Learning Systems.

## 1. Introduction

The integration of technology in higher education has accelerated the need for pedagogical models that transcend traditional methods of English language instruction. Digital Humanities (DH), with its emphasis on cultural analysis, multimodal meaning-making, and digital textuality, offers rich intellectual grounding for rethinking how English is taught and learned. Meanwhile, Artificial Intelligence (AI) has revolutionized language learning through adaptive systems, automated feedback, and intelligent analytics.

This paper positions the convergence of DH and AI through a structured pedagogical model known as the AIMED Framework—Artificial Intelligence and Multimodal Ecosystems for Digital Humanities–Enhanced English Pedagogy. The framework bridges computational power and cultural interpretation, promoting a holistic, interdisciplinary approach to transformative language education.

## **2. Literature Review**

### **2.1 Digital Humanities in English Language Pedagogy**

Digital Humanities brings interpretive, analytical, and multimodal practices to language learning. Tools such as corpus analysis platforms, digital storytelling engines, and annotation systems allow learners to engage critically with texts, artifacts, and cultural materials.

### **2.2 Artificial Intelligence in Language Education**

AI-driven technologies—including NLP, adaptive learning systems, and conversational agents—enable personalized learning pathways, real-time feedback, and immersive simulations. Such systems strengthen linguistic accuracy, fluency, and communicative competence.

### **2.3 Convergence: Toward Multimodal, Intelligent Ecosystems**

The blend of DH and AI provides unprecedented opportunities for immersive, user-centered language pedagogy. This convergence forms the conceptual foundation for the AIMED Framework, integrating cultural inquiry, adaptive intelligence, multimodal interfaces, and immersive AR/VR environments.

## **3. Theoretical Foundations Underpinning AIMED**

**3.1 Constructivism:** Learners actively construct knowledge through digital texts, multimodal materials, and interactive environments.

**3.2 Connectivism:** Knowledge flows across networks—archives, digital platforms, AI agents—mirroring the multimodal structure of the AIMED ecosystem.

**3.3 Multiliteracies Theory:** The framework emphasizes visual, spatial, digital, and linguistic dimensions of communication.

**3.4 Critical Digital Pedagogy:** AIMED embeds ethical awareness, cultural inquiry, and reflective engagement in technology-enhanced learning.

## **4. Methodology**

The study employs a design-based research (DBR) orientation, synthesizing:

cross-disciplinary literature, pedagogical design principles, comparative analysis of DH and AI tools, qualitative insights from technology-enhanced learning models

This methodological approach supports the development and validation of the AIMED Framework.

## **5. The AIMED Framework: Structure and Components**

### **5.1 Definition**

The AIMED Framework refers to Artificial Intelligence and Multimodal Ecosystems for Digital Humanities–Enhanced English Pedagogy. It is a holistic model that integrates computational intelligence, multimodal interaction, cultural-historical inquiry, and immersive environments to advance English language education.

### **5.2 Core Components of AIMED**

#### **1. AI-Driven Adaptive Learning**

- NLP-based feedback

- Machine learning analytics
- Personalized learning trajectories

## 2. Multimodal Ecosystems

- Digital storytelling
- Visual mappings
- Audio–visual compositions
- Multisensory learning modes

## 3. Digital Humanities Integration

- Digital archives
- Corpus linguistics
- Cultural data visualizations
- Collaborative annotation

## 4. AR/VR-Enhanced Immersive Environments

- Virtual cultural field trips
- Scenario-based communication
- Simulation-led fluency practice

## 5. Learner Analytics & Cognitive Insights

- Skill profiling
- Behavioural data visualization
- Engagement metrics

## 6. Ethical and inclusive frameworks

- Data privacy
- Algorithmic fairness
- Cultural representation

## **6. Pedagogical Implications of AIMED**

### 6.1 For Learners

- Greater autonomy and self-regulation
- Immersive and culturally rich learning
- Enhanced multimodal and digital literacies
- Improved fluency and communicative competence

### 6.2 For Educators

- Shift to roles as curators, facilitators, and data-informed decision-makers
- Increased capacity in DH tools, AI systems, and AR/VR technologies

### 6.3 For Institutions

- Need for cross-disciplinary collaboration
- Curriculum redesign
- Investment in digital infrastructure

## 7. Ethical, Social, and Cultural Considerations

### 7.1 Algorithmic Bias

Ensuring accuracy and fairness in AI-generated language assessments.

### 7.2 Digital Equity

Providing equitable access to immersive and multimodal tools.

### 7.3 Cultural Sensitivity

Embedding diverse DH perspectives to avoid cultural homogenization.

### 7.4 Data Privacy

Ensuring responsible collection and handling of learner data.

## 8. Findings and Insights

The AIMED Framework demonstrates that:

- DH deepens cultural and interpretive dimensions of language learning.
- AI strengthens personalization and skill mastery.
- AR/VR promotes immersive linguistic engagement.
- Multimodality enriches comprehension, creativity, and communication.

Combined, these components foster a transformative ecosystem for English language pedagogy.

## 9. Conclusion

The AIMED Framework offers a robust, interdisciplinary, and future-ready model for transforming English language pedagogy. By integrating Digital Humanities methods with intelligent AI systems and multimodal immersive technologies, AIMED provides institutions with a scalable, inclusive, and culturally grounded pathway for reimagining language education. It establishes a foundation for enhanced communication, cultural literacy, and critical digital competence—key components of 21st-century learning.