


Chapter 7

Analyzing the Novel Approaches for Intelligent Computer-Aided Learning (ICAL)

Shaheen H.

 <https://orcid.org/0000-0003-3544-5424>
MVJ College of Engineering, India

ABSTRACT

Beyond the spread of the disease and efforts to treat, the coronavirus pandemic has far-reaching implications. It is crystal clear that the pandemic wreaked havoc on critical fields such as healthcare, business, and academic. In terms of academics, one direct outcome of the pandemic's spread was the decision to suspend traditional in-person classroom courses in favor of remote learning and home-based schooling through the use of computer assisted learning technologies, but these technologies confront numerous hurdles. The majority of these issues revolve around the effectiveness of these delivery modalities, as well as engagement and knowledge testing. These difficulties highlight the need for an advanced smart educational system that aids all types of learners, gives teachers a variety of smart new tools, and enables a more flexible learning environment. The internet of things, artificial intelligence and virtual reality is a blooming sector, and IoT-based devices have ushered in a revolution in electronics and information technology.

DOI: 10.4018/978-1-6684-5058-1.ch007

INTRODUCTION

The concept of Computer-Assisted Learning (CAL) was introduced in 1960 itself in the PLATO Project, initiated by Illinois University. It is developed in each decade till now. CAL's present theory emphasizes student-centered skills that enable students to work independently (Wikipedia contributors, 2022). As the name suggests, computer assisted learning (CAL) is the use of electronic devices/computer devices to deliver educational instructions to educate people. Computer-Assisted Learning can be applied in almost any field of education, from kindergarten children's Television based game programs earlier and computer-based programs nowadays also medical people studying quad bypasses treatment methods. Knowledge from all domains of education/learning, Human-Computer Interaction (HCI), and cognitive has been combined to create CAL (Wang and Wu, 2020).

These resources might be structured or unstructured, but they usually include two key elements: participatory training and personalized learning. CAL is essentially a technology that aids teachers in making the language learning process easier for students. It can be used to reinforce what students have also already learnt in class or as a remediation tool for students who need more help. CAL products are made with language education and method in mind, which can be taken from a range of instructional concepts (e.g., cognitive, behaviorist, constructivist) and second-language development theory. The definition of blended learning is the combo of CAL and face to face learning (Gunawardhana, 2020).

Typology

There are many CAL methods identified once it starts to bloom. The Scientists Warschauer and Healy (1998) outlined there are three phases to determine the CAL types from the 1960s as shown in the figure 1. In Type-1 approach Students' inputs will be analyzed and feedback will be provided, and more advanced algorithms would react to errors by diverging to assistance screens as well as corrective tasks. Since such programmes and their underlying methodology still exist today, most language teachers reject behavioristic effects on language acquisition, and the rising power of new technologies has driven CAL to explore other options. The Next type is communicative strategy The emphasis is on communication rather than analysis, and grammar is taught implicitly rather than formally. It also permits students' linguistic outputs

11 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/analyzing-the-novel-approaches-for-intelligent-computer-aided-learning-ical/313144

Related Content

Exploring the Possibility of Combining High-Richness Media and the Simplification in Multimedia Education

Jinya Liu and Mageswaran Sanmugam (2024). *Integrating Cutting-Edge Technology Into the Classroom* (pp. 101-116).

www.irma-international.org/chapter/exploring-the-possibility-of-combining-high-richness-media-and-the-simplification-in-multimedia-education/344303

Using Article Networks on Wikipedia to Explore Public Understandings of Academic Domains and Address Observed Gaps

(2019). *Methods for Analyzing and Leveraging Online Learning Data* (pp. 250-263).

www.irma-international.org/chapter/using-article-networks-on-wikipedia-to-explore-public-understandings-of-academic-domains-and-address-observed-gaps/216310

Engaging Graduate Students During a Pandemic: Critical Thinking, Creativity, Communication, and Collaboration in Emergency Remote Learning

Alyssa S. Cortes Kennedy and Sandra L. Guzman Foster (2021). *Handbook of Research on Barriers for Teaching 21st-Century Competencies and the Impact of Digitalization* (pp. 316-334).

www.irma-international.org/chapter/engaging-graduate-students-during-a-pandemic/280728

Students' Views on the Benefits of E-Learning During the COVID-19 Pandemic and the Factors That Facilitated Their Learning

Maria Pavlis Korres (2023). *Handbook of Research on Education Institutions, Skills, and Jobs in the Digital Era* (pp. 96-116).

www.irma-international.org/chapter/students-views-on-the-benefits-of-e-learning-during-the-covid-19-pandemic-and-the-factors-that-facilitated-their-learning/314259

Investigating the Effects of Gamification and Ludicization on Learning Achievement and Motivation: An Empirical Study Employing Kahoot! and Habitica

Qi Zhang (2023). *International Journal of Technology-Enhanced Education* (pp. 1-19).
www.irma-international.org/article/investigating-the-effects-of-gamification-and-ludicization-on-learning-achievement-and-motivation/326127