

<https://doi.org/10.34142/2709-7986.2024.29.1.10>

TEACHING ENGLISH AS A FOREIGN LANGUAGE AND SMARTER LEARNING ENVIRONMENTS IN THE NEW AGE OF DIGITAL TRANSFORMATION

Received: 05/12/2023

Accepted: 14/02/2024

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ABSTRACT

The fully online and electronic environments of today as the only way of teaching/learning require some reviews and appraisals of the paradigms of digital transformation, including the paradigm of smart education. Therefore, the current study investigated the paradigm change of the smart education to the smarter education, leading to the review of Teaching English as a Foreign Language (TEFL).

Purpose. The current study intends to update both the traditional theories and practice of TEFL in the new age of digital transformation, which will have effective theoretical and empirical implications in the practice of TEFL in smarter learning environments.

Methodology. The present study was designed in two phases and employed a qualitative methodology with a descriptive design. It tried to answer how this paradigm change affects the theories of TEFL.

Results. In the first phase of the study, the Preliminary Framework for Smart Learning Environments by Spector was adapted and expanded into the Model of Smarter Learning Environments based on the challenges and opportunities brought about by the new age of digital transformation. The second phase involved reviewing Krashen's Acquisition/Learning Hypothesis, exploring its relevance and applicability to TEFL in the context of the Model of Smarter Learning Environments. The aim of this phase was to identify the

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potential challenges and opportunities associated with managing TEFL classroom resources within this new framework.

*The investigation **concluded** that the mandatory application of fully online teaching, in the case of TEFL, which resulted from the New-Age Digital Transformation, requires reviewing the traditional theories of Second Language Learning and Teaching. It has created challenges and opportunities in the class resource management. Finally, providing digital facilities and training was proposed as a solution to the challenges.*

KEYWORDS: *Acquisition-Learning Hypothesis, Class Resource Management, Model of Smarter Learning Environments, New-Age Digital Transformation, Preliminary Framework for Smart Learning Environments.*

INTRODUCTION

The exploitation of technology in educational contexts has been growing worldwide and has facilitated the process of teaching and learning and enhanced the outcome of education and the attainment of more desired objectives. The integration of cutting-edge technology, such as audiovisual tools and multimedia devices, into educational settings has had a profound impact on teaching and learning practices since the 1960s (Marty, 1981).

Early computer assisted language learning (CALL) programs primarily displayed text on screens, and learners could only interact with the material by typing in their responses. However, with the continued advancement of technology, more interactive and immersive learning experiences have become possible, offering a wealth of new opportunities for language learners and educators alike. Then it advanced to computational linguistics and human language technologies (HLT).

Then it came up to the use of artificial intelligence (AI), referred to as “intelligent CALL” (ICALL) (Matthews, 1994). The evolution of CALL has led to the widespread adoption of exploratory approaches in contemporary language education. These approaches include the use of web concordances, web-based CALL practices (Tribble & Jones, 1990), and data-driven learning (DLL) (Johns & King, 1991).

In parallel, interactive multimedia materials were also being developed and utilized. With the advent of the World Wide Web in 1993, web-based and hybrid approaches to CALL emerged, incorporating the web and CD-ROM multimedia (Felix, 2001). This was followed by the introduction of web-authoring programs that made it easier for educators to create and customize learning materials, reducing the need for advanced computer science knowledge (Bickerton, 1999; Bickerton, Stenton & Temmermann, 2001).

This do-it-yourself) approach has democratized the creation of language learning resources, enabling educators to tailor materials to the specific needs and interests of their learners. Today, there are many different professional associations in the world grouped under the associations of World CALL (<https://worldcall.org/>) such as the Australian Association for Technology Enhanced Language Learning (ATELL), the International Association for Language Learning Technology (IALLT), and the European professional association for CALL (EUROCALL).

As it can be noticed, although these technological innovations were enhancing and reinforcing the processes and products of teaching and learning, they were perceived as a *should*, not a *must*. They were just tools, not a requirement. In other words, they were a choice, not a force; a feed, not a need.

But now, with the unexpected outbreak of pandemics and similar episodes, electronic and web technologies in the teaching and learning practice have been transformed from an assistance (CALL: computer *assisted* language learning) to an essence without which this practice is not feasible. So, the world has gone through a New-Age Digital Transformation, evolving such that, in many cases, online and digital communication is the only way of development.

This digital transformation has recreated some recent impacts on the definitions and perceptions of the traditional paradigms, theories, thoughts, and concepts. As the contemporary age of digital practice transformed the traditional definitions, theories, and practices, so too have been created new effects on the contemporary theories, statements, paradigms, and methods in different fields of study. Therefore, the present study tries to explore two primary questions:

1. How has the digital transformation impacted Spector's (2014) Preliminary Framework for Smart Learning Environments, and what modifications are necessary to develop a more advanced educational model, known as the Model of Smarter Learning Environments?
2. How has Krashen's (1982) Acquisition-Learning Hypothesis been affected by theoretical revisions, and what are the practical challenges and opportunities associated with its application within the context of the Model of Smarter Learning Environments?

By addressing these questions, the study aims to contribute to a deeper understanding of how technology can be leveraged to enhance learning environments, especially TEFL environments, requiring revising language learning theories to adapt to the rapidly evolving and fully online digital contexts.

Regarding the related literature to establish the niche for the current study, the theories and practices of the TEFL and smart education must be reviewed. The most impressive theory in the field of second language acquisition is Krashen's (1982) Monitor Theory, a renowned framework comprising five key hypotheses that shed light on the language learning process.

These hypotheses include the Acquisition-Learning Hypothesis, the Natural Order Hypothesis, the Monitor Hypothesis, the Input Hypothesis, and the Affective Filter Hypothesis. These proposals have had a lasting impact on language teaching practices, providing valuable insights into how best to promote second-language proficiency. The scholarly literature has extensively documented the profound influence of Krashen's Monitor Theory on various aspects of second language acquisition research and pedagogy since the 1980s. However, it is important to note that the theory has also been met with substantial critical feedback and debate (Abukhattala, 2013).

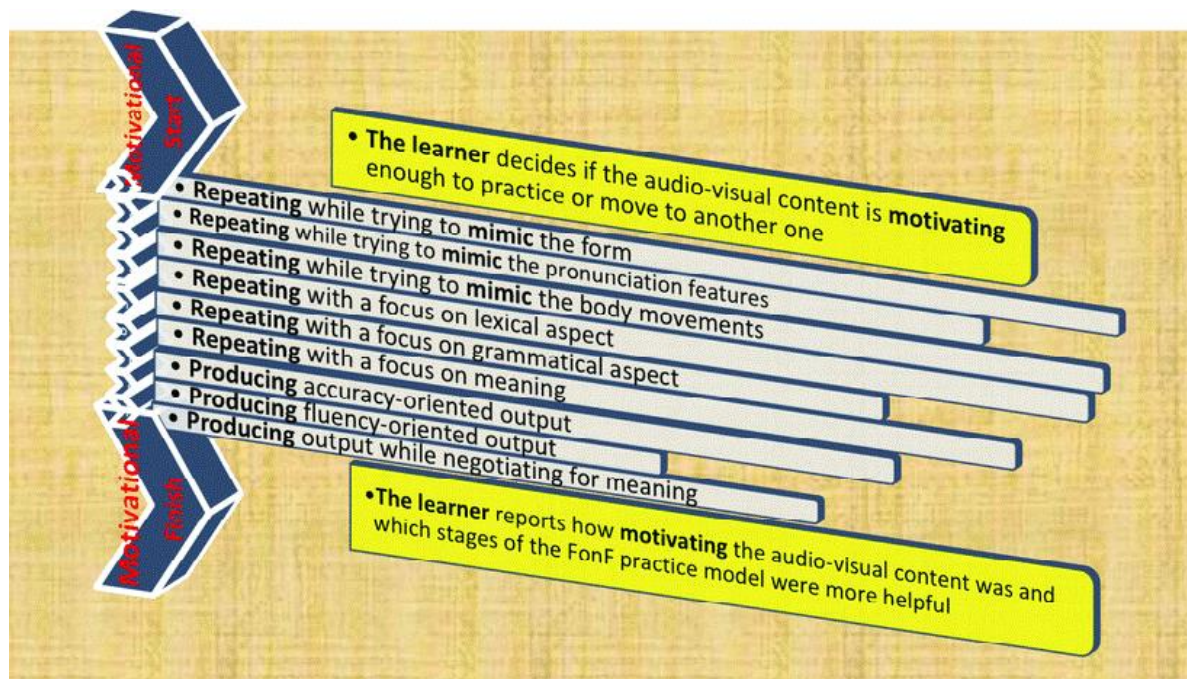
According to Ellis (1985), Littlewood (1984), and Krashen and Terrell (1983), students develop their second language skills in two different ways, namely acquisition and learning. To distinguish acquisition and learning, Krashen (1982) proposed that while

learning is an instructional, planned, and conscious mental process, acquisition is a natural, untutored, and unconscious conceptual process.

The focus of the former is on the form, whereas the focus of the latter is on meaning. Likewise, Michael Long's (1991) Focus on Form (FonF) model of language acquisition and teaching proposed an approach that differed significantly from the more traditional FonF model. While the former focuses on the message with occasional shift of attention from meaning to linguistic forms and structures, the latter focuses on the linear, discrete linguistic forms and items. The FonF practice model also boosts the learners' dynamic motivational levels. Figure 1 also demonstrates the FonF Practice Model by Bahari (2020) which is a digital and adaptive learning model for the learning and practice of form.

Figure 1

FonF Practice Model adopted from Bahari (2020)



Another model relevant to the acquisition/learning distinction is the usage-based model of language proposed by Langacker (1987) and developed by linguists like Tomasello (2000). It assumes language acquisition as the context-based mental processing and that there is a profound relation between linguistic structure and usage and actual language use. Tomasello viewed language acquisition as the building and actualizing of concepts through use. He states: "In usage-based models of language . . . all things flow from the actual usage events in which people communicate linguistically with one another." (Tomasello, 2000, p. 61–62).

Similarly, there is quite a number of other approaches, methods, and models proposed based on the tenets of the distinction between acquisition and learning such as the Communicative Approach and Communicative Language Teaching (CLT), which focuses on the interaction, communication, and language use as the both means and end of language education and acquisition (Savignon, 1997; Savignon, 2000). The incorporation and utilization of the capabilities of technology and CALL in programs such as distance learning and blended learning accelerate, facilitate, and reinforce the interactive process of foreign language learning.

Given that no single learning or teaching theory can be considered the ultimate solution for all educational settings, including online, on-campus, and blended environments, various theories have emerged, drawing upon major learning theories to address the unique challenges and opportunities presented by different contexts. One such theory is the Integrated Multimodal Model for Online Education proposed by Picciano (2017).

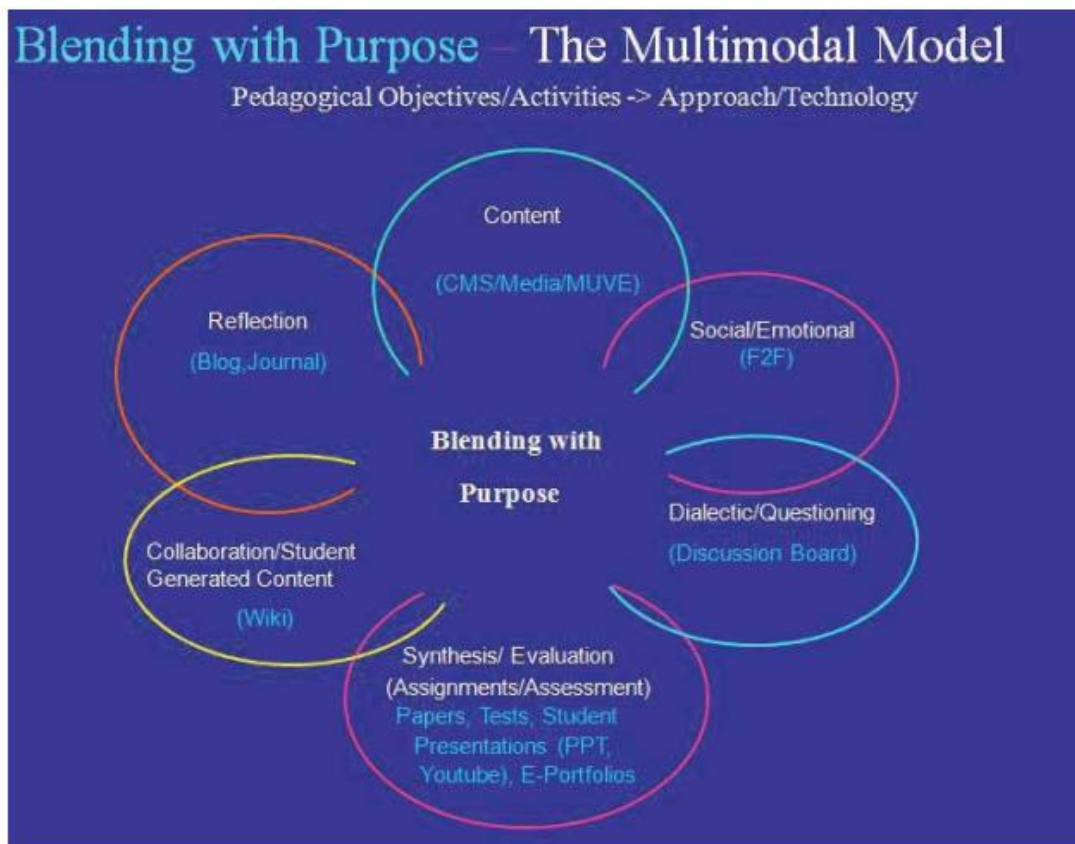
The model includes elements that might be required for a unified and integrated model for online education. Picciano’s model draws inspiration from Anderson’s (2011) Online Learning Model, which posits that none of the instruction is delivered through traditional face-to-face methods. Consequently, blended learning models, which incorporate some degree of face-to-face interaction, fall outside the scope of Anderson’s model (Picciano, 2017, p. 178).

In his own work, Picciano (2017, p.186) articulated this distinction by stating: “The proposed Multimodal Model for Online Education includes many of the major attributes of other learning and online education theories and models. For example, behaviorists will find elements of self-study and independent learning in adaptive software.”

Multimodal Model for Online Education consists of six basic pedagogical modules and expands on the Blending with Pedagogical Purpose Model (Picciano, 2009) which are indicated in figure 2 and adds several new components from Anderson and others, namely, community, interaction, and self-paced, independent instruction (ibid).

Figure 2

Blending with Pedagogical Purpose Model adopted from Picciano (2009)



As it is demonstrated in figure 2, the Blending with Pedagogical Purpose Model incorporates several key modules to facilitate effective learning and development:

1. Content: This module utilizes a variety of tools, such as visual aids, learning management systems (LMS), content management systems (CMS), media, and games, to deliver course materials and facilitate student engagement.
2. Social/emotional development: Fully online courses and programs offer opportunities for faculty members to provide social and emotional support as needed, while blended courses and programs may incorporate face-to-face interactions to address these aspects of learning.
3. Dialectic and questioning activities: Electronic discussion boards, such as Voice Thread, enable students to engage in critical thinking and reflective discussions.
4. Reflection: Pedagogical activities encourage students to reflect on their learning and share their insights via digital platforms, such as blogs and journaling, in both individual and group contexts.
5. Collaborative learning: Wikis and other digital tools facilitate group projects and collaborative writing assignments, promoting teamwork and communication skills.
6. Evaluation: CMSs/LMSs and other online platforms provide a variety of assessment methods to measure student progress and learning outcomes.

By incorporating these modules into the learning experience, the Blending with Pedagogical Purpose Model aims to create a well-rounded and engaging educational environment that supports student growth and development.

The Blending with Pedagogical Purpose Model includes the modules of content (visual aids LMS, CMS, media, games), social/emotional development (the development of the fully online courses and programs allows faculty members to provide some social and emotional support where possible and appropriate, and a face-to-face mode in blended courses and programs), dialectic and questioning activities (the electronic discussion board such as Voice Thread).

As well as reflection (pedagogical activities that ask students to reflect on what they learned and share their reflections with their peers, teachers, and fellow students via digital sites such as blogs and blogging whether as a group exercise or individual journaling), collaborative learning (wikis create a space for students to generate content to be shared with others in group projects and writing assignments, email, mobile technology, and other forms of electronic communication), evaluation (CMSs/LMSs and other online tools and platforms and technology providing different evaluation methods).

Picciano (2017, p. 181) considers the six components of the Blending with Pedagogical Purpose Model, described above, and “adds several new components from Anderson and others, namely, community, interaction, and self-paced/ independent instruction to form an integrated community of learning in which rich interaction, whether online or face-to-face, can be provided and blended across all modules.”

In this way he modifies and enlarges of the Blending with Pedagogical Purpose Model to the Multimodal Model of Online Education to be considered a model for online education in general. The leading feature of this model is that it supports the student learning, not distance learning. In other words, it has been developed as a subset of learning in general rather than a subsection of distance learning. For the learning

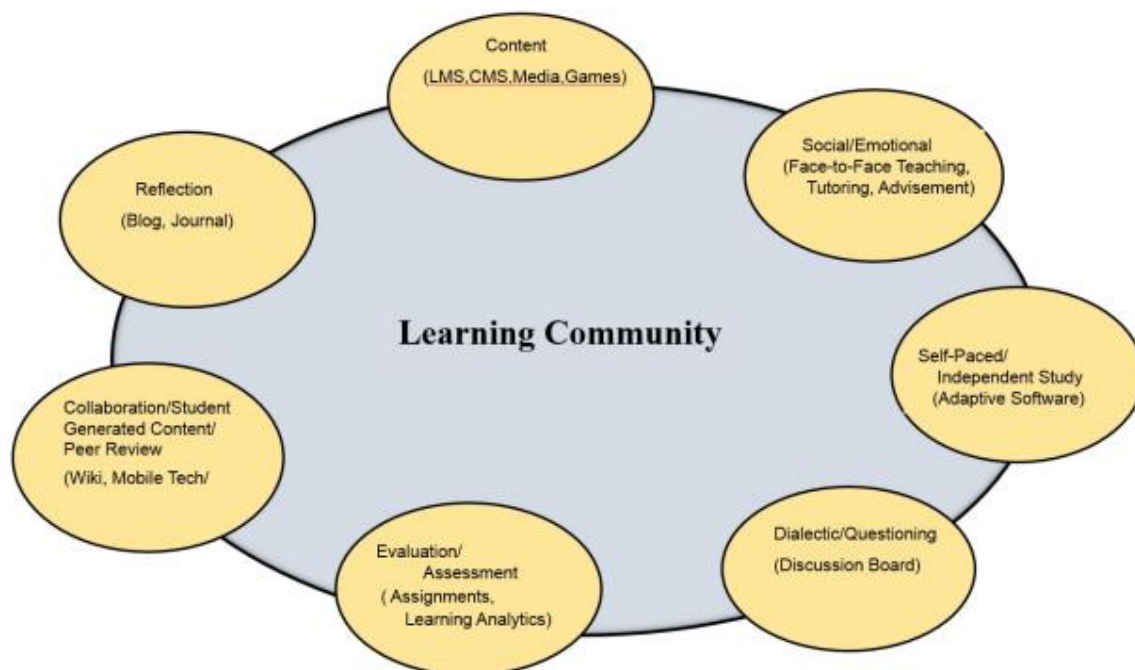
community of the Multimodal Model of Online Education, interaction is a basic required characteristic.

Moreover, the self-study/independent learning module “that Anderson emphasized as incompatible with any of the community-based models” is integrated with other modules. Furthermore, adaptive learning software plays a crucial role in self-study, offering a flexible and personalized approach to education. This type of software can function independently or be seamlessly integrated into other components of the Blending with Pedagogical Purpose Model (Picciano, 2017, p. 182).

By adapting to each student’s unique learning needs and preferences, adaptive learning software enhances the overall learning experience and facilitates individualized progress. Figure 3 demonstrates the Integrated Multimodal Model for Online Education proposed by Picciano (2017).

Figure 3

Integrated Multimodal Model for Online Education proposed by Picciano (2017)



In relation to the effect of technology and digital transformation on foreign language education, a study by Küçükler (2020, p. 643) found that “through technology, learning can be made more interactive and interesting to increase their engagement, social interactions and motivation.”

In addition to the possibility of faster and further interaction among students and teachers-and-students, the idea of personalized learning rose in the age of digital transformation as well; and sequentially and consequentially they have been intensified and extended in the new age of digital transformation. So, the concept of smart education as attracted much attention.

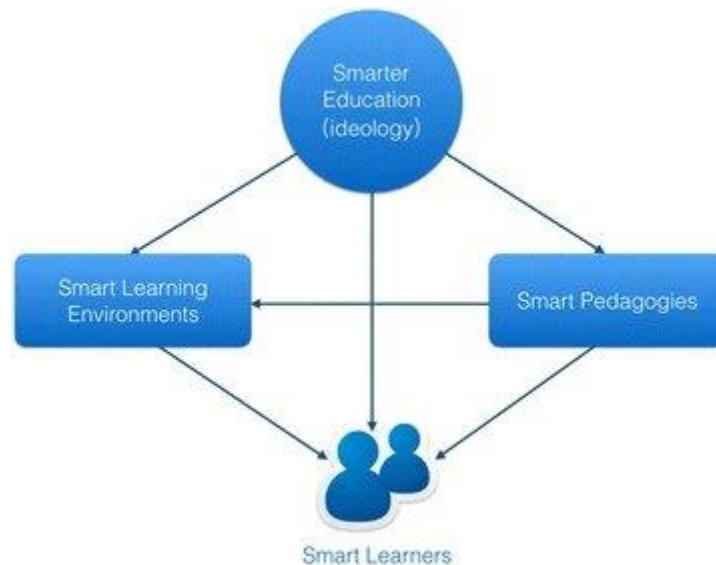
As such Zhu, Yu, and Riezebos (2016, p. 3) proposed a framework for smart education based on which learners can access digital resources and network and to gain both personalized and interactive learning. They stated that “the personal and smart

technologies make learners engaging in their learning and increase their independence in more open, connected and augmented ways by personally richer contexts”.

Zhu and He (2012, p. 6) stated that “the essence of smart education is to create intelligent environments by using smart technologies, so that smart pedagogies can be facilitated as to provide personalized learning services and empower learners”. Then Zhu, Yu, and Riezebos (2016) introduced the three-tier conceptual framework of smart education including smart environments, smart pedagogy, and smart learner. Figure 4 indicates the research framework of smart education.

Figure 4

Research framework of smart education adopted from Zhu, Yu and Riezebos (2016)



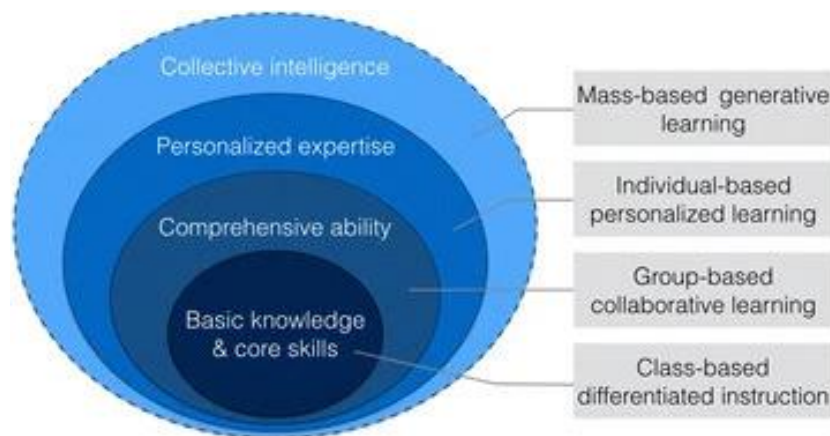
Their framework incorporates a four-level architecture of abilities necessary for students to thrive in the context of smart education and prepare them for the demands of modern society. These levels include:

1. Basic knowledge and core skills: This foundational level emphasizes the acquisition of fundamental knowledge and skills essential for navigating various aspects of life and work.
2. Comprehensive abilities: This intermediate level focuses on the development of broad competencies that transcend specific domains, equipping students with adaptability and versatility in diverse contexts.
3. Personalized expertise: This advanced level encourages students to cultivate specialized skills and knowledge that align with their unique interests and career aspirations, enabling them to excel in their chosen fields.
4. Collective intelligence: This highest level fosters the ability to collaborate effectively with others, leveraging diverse perspectives and skills to achieve common goals and drive innovation.

By encompassing these four levels of abilities, the framework provides a comprehensive roadmap for empowering students to thrive in the evolving landscape of smart education and society. Figure 5 demonstrates the elements of the learning structure of the framework and four-tier architecture of smart pedagogies adopted from Zhu, Yu, and Riezebos (2016).

Figure 5

Four-tier architecture of smart pedagogies adopted from Zhu, Yu and Riezebos (2016)



Therefore, in the digital transformation age, smart education necessitates the implementation of innovative and flexible learning and teaching resources and pedagogical approaches. These can be categorized into four distinct levels, each serving a unique purpose in facilitating student learning and growth:

1. Differentiated learning: This level involves tailoring instruction to meet the diverse needs and learning styles of individual students, ensuring that all learners have equitable access to meaningful educational experiences.
2. Collaborative learning: This level emphasizes the importance of group work and peer interaction, fostering critical thinking, communication, and teamwork skills through collaborative projects and activities.
3. Personalized learning: This level focuses on customizing the learning experience to align with students' unique interests, strengths, and goals, enabling them to take ownership of their education and pursue their passions.
4. Generative learning: This level encourages students to go beyond the acquisition of knowledge and develop the ability to create new ideas, solutions, and innovations, equipping them with the skills necessary to become active contributors to their fields and communities.

By incorporating these four levels of learning, smart education empowers students to develop a diverse range of abilities and skills, preparing them to thrive in an increasingly complex and interconnected world.

But as the matter of fact, the requirements and qualities of smart education in the new age of digital transformation are required to be reviewed and improved to be upgraded and promoted to smarter education models and paradigms. So, the purpose of the present study is to meet this requirement. It tries to update the smart learning environments to smarter learning environments, and also the principal theory and practice of second/foreign language teaching/learning in the smarter learning environments.

The purpose of the current study is to update both the traditional theories and practice of TEFL in the new age of digital transformation that will have effective theoretical and empirical implications in the practice of TEFL in smarter learning environments.

METHODOLOGY

The qualitative descriptive design is used in the present study to describe the *what* of the Model of Smarter Learning Environments, *where* it has come from, and the *why* of the proposition of the model regarding the phenomenon of the New-Age Digital Transformation where the application of fully online education is obligatory. The current study is also designed to review and study the case of one of the primary theories of TEFL that is the Acquisition/Learning Hypothesis proposed by Krashen (1982).

Attempts have been made to describe in what ways the principles of the theory have been influenced by the features of the Model of Smarter Learning Environments in the context of new-age digital transformation. Moreover, it is designed to describe and discuss the *what* of the opportunities and challenges of the practice of a TEFL class resource management in the Smarter Learning Environments.

RESULTS

The results of the current study are collected from a systematic review and overview of primary studies which contains statements and objectives related to the purpose of the available research to describe and discuss the research questions. They come from the logical and controversial explanations and classifications of the findings, figures, tables, and graphs.

Smarter Learning Environment

Though Zhu, Yu and Riezebos (2016, p. 2) stipulate that “intelligent technologies, such as cloud computing, learning analytics, big data, Internet of things (IoT), wearable technology and etc., promote the emergence of smart education,” smarter education comes from the fact that the digital and online media have developed to prevail in all living conditions, and teaching and learning peripheries.

Although there are various definitions for the concept of ‘smart,’ it is defined by Zhu, Yu, and Riezebos (2016, p. 6) as follows: “For software, ‘smart’ refers to adaptive and flexible [software]. It is efficient to carry out personalized learning for learner[s] according to their personal difference, with adaptive learning technologies (e.g., cloud computing, big data, learning analytics, adaptive engine, and etc.)”.

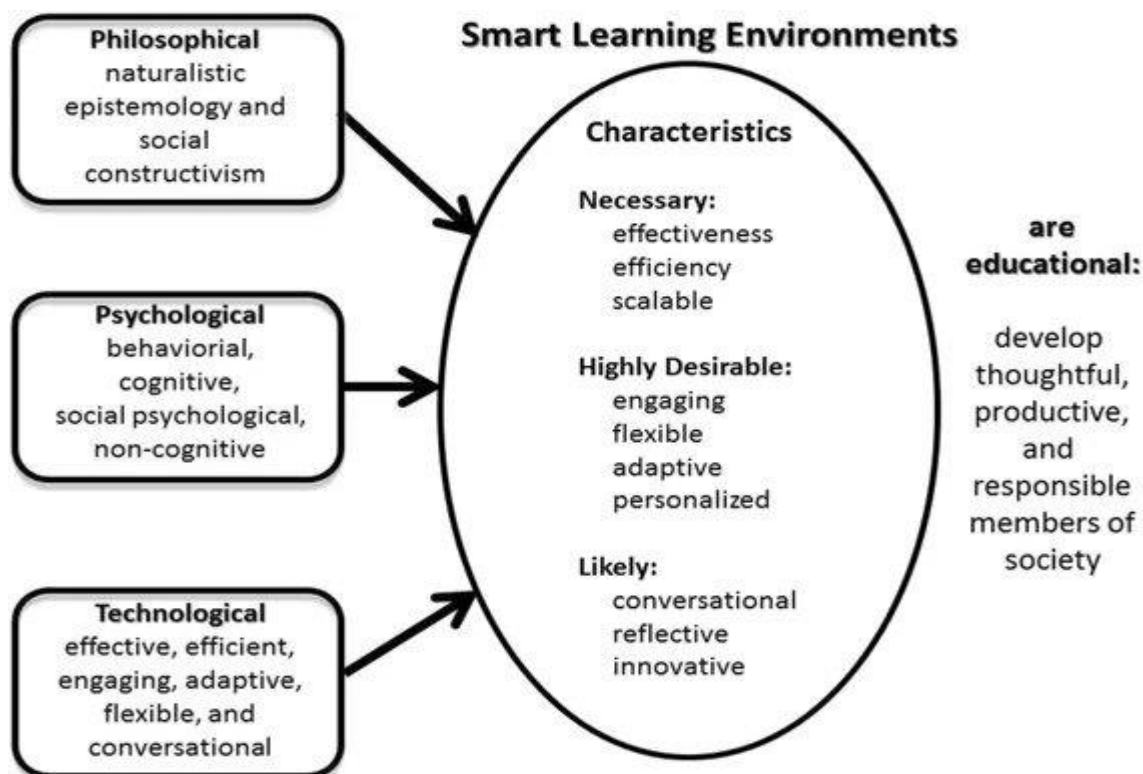
Apart from the global trend of the smart education, the concept of smarter learning environment requires to address not only the educational and technological topics of smart pedagogy and environments, but also the psychological and philosophical features of learning in a smarter environment.

As stated in Spector (2014, p. 2), features of smart learning environments might include “(a) collaboration, (b) struggling learners, (c) motivation.” Moreover, he counts the main attributes of being smart as being adaptive, effective, efficient, engaged, flexible, and thoughtful.

Furthermore, he presents the preliminary characteristics of the Smart Learning Environments in his framework as Effectiveness, Efficiency, Autonomous, Engaging, Flexible, Adaptive, Personalized, Conversational, Reflective, Innovative, and Self-organizing. Figure 6 shows the preliminary framework for smart learning environments adopted from Spector (2014).

Figure 6

A preliminary framework for smart learning environments adopted from Spector (2014)



So, to establish a smarter learning context, it is crucial to enhance the key attributes of the smart learning environment, both in terms of quality and quantity. In the new age of digital transformation, it is important to have strategic educational managements such as students' collaboration and interaction, their needs analysis, feedback analysis and so on. The appropriate adjustments to what a learner knows, has mastered, and wants to learn next are improved and reinforced in the production and application of the on-going innovative software, especially in the time of global events such as disease pandemics where there is no way round to communicate in the activities and processes of teaching and learning.

In a smarter learning environment both teachers and students must be involved. It is beyond a blended context. It is an all-virtual context. Unlike the result of a study by Abbasova and Mammadova (2019, p. 370), it is stated that "all the interviewed teachers emphasized the huge advantages of modern technologies applied during the teaching process for both teachers and students." In the New-Age Digital Transformation, all teachers and students need to be trained the presentation and practice of teaching and learning.

So, there is no way round unless teachers acknowledge the global digital educational platforms and practices effectively as the only essential and educational instrument, utilize the available online and digital media tools, provide students with regular updates, participate in the training sessions and panel meetings with other teachers and technicians, and work together with students in helping them master new learning opportunities.

In addition to teachers, digital tools and soft wares, materials and institutions, for a new-age digital transformation to be more effective, efficient, autonomous, engaging, flexible, adaptive, personalized, conversational, reflective, innovative, and self-organizing, it needs student`s cooperation, and adaptation, too. To support language learning, an interactive environment is crucial. Students should be reactive and proactive, but not overactive, when using technology, according to Panagiotidis et al. (2018).

As Abbasova and Mammadova (2019, p. 368) found “all the teachers seem to indicate at least one drawback. Since the technology became a fundamental temptation of youth, it might be misused during the classes.” A study by Suharti et al. (2020), along with several other investigations like Alwehebi (2021), Luan et al. (2020), Meşe and Sevilen (2021), and Susanti (2020), highlights the positive impact of online language learning platforms on student engagement and participation in the EFL learning process.

These studies demonstrate that utilizing digital tools and resources can enhance the overall learning experience, fostering greater interaction and involvement among learners. By leveraging the capabilities of technology, educators can create more dynamic and effective EFL learning environments that support students` growth and development as language users.

What shifts the paradigm of the digital transformation to the New-Age Digital Transformation is not just the use of technology, tools, and software but the conditions in which the use of digital and online learning tools and settings is the only way. It has, therefore, changed the smart education to the smarter education which proposes and imposes some requirements in the areas of psychology and philosophy, too.

As discussed above, Spector`s (2014) framework for a smart learning environment is built upon three key foundations: technology, psychology, and epistemology. This framework also encompasses three categories of characteristics that contribute to the effectiveness of such an environment:

1. Necessary characteristics: These are the fundamental elements that must be present for a learning environment to be considered smart.
2. Highly desirable characteristics: While not absolutely essential, these characteristics significantly enhance the overall quality and effectiveness of the learning experience.
3. Conversational characteristics: These features encourage interaction and dialogue among learners and facilitators, promoting a more engaging and collaborative learning environment.

By integrating these foundational and characteristic elements, Spector`s framework provides a comprehensive approach to designing and implementing smart learning environments that foster effective and meaningful education.

A smarter learning environment is composed of all the mentioned characteristics with the addition of two other indicators that are prevailing and entailing. In fact, basically, the smarter, digital and online environments of new-age learning paradigm, employing educational technology are a pervasive and mandatory provision. In reality, these two indications as mandatory requirements and requisites have changed the educational and managerial paradigms of the digital transformation to the new age of digital transformations.

Acquisition/Learning Hypothesis in the Model of Smarter Learning Environment

According to the Acquisition/Learning Hypothesis of Krashen’s (1982) Monitor Theory there are two ways of in-taking and developing a-second-language skills; one of them is acquisition which is automatic and subconscious; the other is learning which is subconscious and instructional. Abukhattala (2013) summarizes the hypothesis in a table. Table 1 demonstrates the distinction between Krashen’s acquisition and learning adopted from Abukhattala (2013).

Table 1

The distinctions between Krashen`s acquisition and learning adopted from Abukhattala (2013)

Learning	Acquisition
Conscious process	Subconscious process
Knowing the rules	Picking up the learning
Results in accuracy	Results in accuracy and fluency
Formal, traditional teaching helps	Formal, traditional teaching does not help
Available for correction	Available for Automatic correction

As it is indicated in table 1 the underlying key implications are immersion (reception), attention (process) and production.

The Model of Smarter Learning Environments builds upon Spector’s (2014) framework for smart environments by incorporating not only the necessary, highly desirable, and likely features, but also by providing a comprehensive approach to creating a pervasive online/offline learning environment.

This model is particularly relevant in contexts where an Internet-based and computer-mediated learning approach is essential, such as learning platforms, schools, and situations like disease pandemics, and metaverse environments. By addressing the diverse needs and challenges of contemporary education, the Model of Smarter Learning Environments offers a robust and adaptable framework for fostering effective learning and growth.

In other words, the smarter learning environments are fully effective (acceptable outcome), efficient (cost effective), scalable (beyond a small number of practices), autonomous (a reactive learning service to learners to help organize their goals, processes, outcomes, etc.), engaging (active participation, motivation), flexible (adjustable to changes and resources), and adaptive and personalized, (adjustable to specific learners’ needs and competencies, their cognitive and non-cognitive learning and life styles, etc.), as well as conversational (providing [group] dialogues), innovative (emerging and new technology or innovative use of technology), self-organizing (rearranging resources and mechanisms through interaction with learners), pervasive (all-surrounding digital learning environment and extensive availability and use of smart devices everywhere), and mandatory (indispensable and obligatory use of online and offline e-learning devices and programs as the only way of instruction and learning).

The pervasiveness and extensive need to digital learning environment in the promoted version of smart learning environment of Spector (2014) henceforth named smarter learning environment provides learners with more significant exposure and immersion to learning a foreign language.

According to the Acquisition/Learning Hypothesis, when learners are undergoing poverty of input and are exposed to a foreign language just in the formal and instruction-based classrooms they need to learn not acquire a language. In other words, they need to make a conscious effort, to memorize and know rules and vocabulary.

On the other hand, when the learner is exposed to a second language especially at lower ages, the learner is not trying to memorize and learn the rules but just picks up the learning (Shatz, 2007; Chomsky, 1980). Therefore, smarter learning environments create a rich input environment of $i+1$ for language learners, as suggested by Krashen's (1982) Input Hypothesis.

This approach promotes effective learning by providing learners with diverse and challenging materials that slightly exceed their current language proficiency level. By leveraging technology, educators can foster more meaningful language acquisition and support learners' growth toward greater fluency and mastery. So, in this way, the smarter learning environment changes the paradigm of the learning attempts of a foreign language to the natural-like and subconscious acquisition and picking up of a foreign/second language.

Moreover, regarding both the strong and weak versions of communicative language teaching (CLT), this ubiquity feature of smarter learning environments creates an extensive use of digital learning environments, especially in the online environments for learners, which increases communication, interaction, engagement and immersion.

In short, CLT is an approach to second/foreign language teaching that aims at developing communicative competence through interaction and problem-solving tasks. Howatt (1984) introduced a "strong" and a "weak" version of CLT. The "strong" version stresses that language is acquired through the using of language in communication. The weak version stresses emphasize providing opportunities for learners to use the language for communicative purposes. In other words, strong version claims that "using the language to learn it." while the weak version entails "learning to use the language."

The use-based approaches of language learning such as weak or strong CLT, implies the Output Hypothesis and the production of language too. The Comprehensible Output Hypothesis developed by Merrill Swain (1995) claims that comprehensible output enhances the learners' language input due to the mental and cognitive processes connected with the production of language.

In other words, language acquisition involves production gaps between their knowledge and output, and bridging them through learning and experimentation. The Noticing Function leads to the Hypothesis-Testing Function, where learners modify their output, seek feedback, and refine their language skills, moving closer to their communication output.

Upon receiving and processing feedback on their language output, learners engage in the Metalinguistic Function, a critical component of language acquisition. During this

stage, learners actively reflect on the linguistic knowledge they have gained, integrating it into their understanding of the target language. The all-present opportunity made in the smarter learning environment for the extensive and indispensable reception of input, production of output, and use of a foreign language has changed the paradigm of the learning to acquisition principles and practice.

It also eradicates the problem of the Output Hypothesis proposed by Krashen, stating that learners make rare and less input. In a smarter learning environment, where digital media and online interaction serve as the only modes of communication, students are compelled to actively produce language output in order to engage with the learning materials and interact with their peers.

This situation aligns with Krashen's (2003) Need Hypothesis, which posits that language acquisition is most effective when learners have a genuine need to communicate and express themselves. In the Smarter Learning Environments which are only digital and/or online, students need to communicate only through the digital tools. Moreover, in the context of online learning, the virtual environment can help reduce affective filters, allowing students to express their true selves more comfortably.

As a result, learners are more likely to actively produce language and engage with the learning materials, fostering more meaningful and effective language acquisition. Besides, the online and smarter learning environments make students produce more simultaneous, less monitoring and more fluent production; in this way, the principles of the learning paradigm change into the acquisition paradigm.

Regarding the high attention and speed of the processing of language in a collaborative dialogue, Wells (2000, p. 73) points out that "one of the characteristics of utterances, whether spoken or written, is that it can be looked at as simultaneously process and product: as 'saying' and as 'what is said'."

According to the psychological and philosophical foundations of the smarter learning environments, the interaction of socio-cultural, cognitive and behavioral thoughts, theories and practices are realized and enhanced in the widespread and ceaseless virtual learning media.

For instance, Vygotsky's Sociocultural Theory of Cognitive Development highlights the role of social and cultural factors in shaping cognitive abilities, such as language development, attention, memory, and problem-solving skills. According to this theory, proposed by psychologist Lev Vygotsky (1896–1934), these cognitive abilities are not innate, but rather are constructed and facilitated through social interactions and cultural contexts (Langford, 2005).

Similarly, the theory of social constructivism in education states that learners actively, socially and contextually construct knowledge and create mental representations in different ways rather than just passively and individualistically take in the transmitted information.

One way is engaging learners in the social meaning-making tasks to build up new knowledge upon their pre-existing and personalized information and experiences. Social constructivism comes from Lev Vygotsky (1974), and is closely connected to cognitive constructivism with the added influence of societal, social, and peer elements. In other words, he believes that cognitive functions are the products of social interactions. The

process of development and learning is through social interaction and that social learning actually leads to cognitive development.

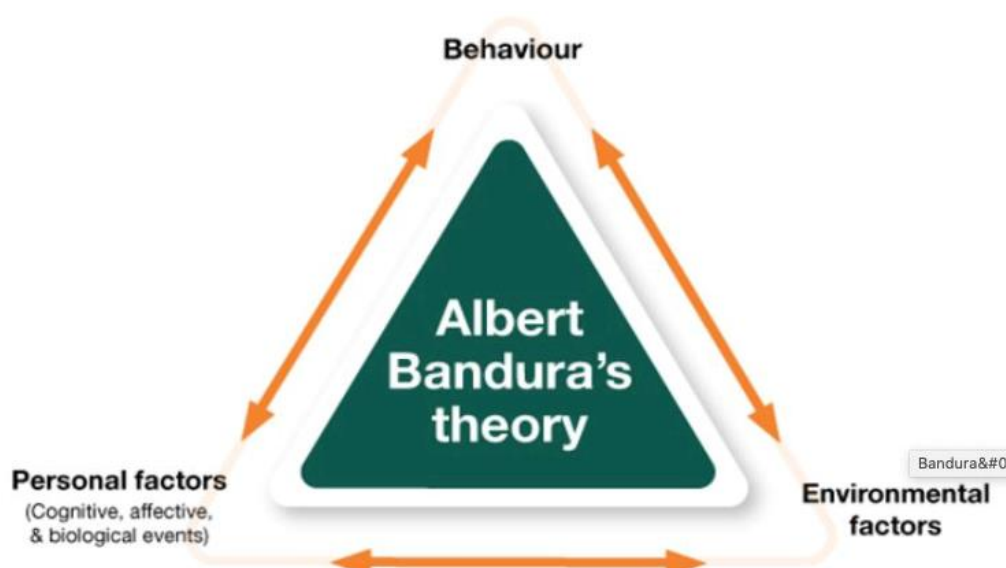
So, in the model of smarter learning environments, where the prevalent existing e-learning media is the only channel of teaching have created the utmost interactional opportunity for teachers and learners, Krashen's learning might be changed into acquisition in his principle of distinction between acquisition and learning. The New-Age Digital Transformation has provided the cognitive development of learning to take place across an utterly interactive environment. Therefore, the paradigm of learning as a rule-teaching, corrective, formal, and traditional instruction has changed into the use-based and practical, productive, less formal, and global teaching.

Moreover, observation, modeling, and imitation have founded a social theory of learning. Bandura's (1977) research on social learning theory highlighted the importance of observational learning, particularly through the imitation of symbolic models presented in various media forms. These symbolic models, such as those found in movies, videos, digital media, and podcasts, can serve as powerful learning tools, demonstrating behaviors and skills that learners can emulate. Students watch and listen to them attentively and envision the way actors and characters react and feel, and act like them. He proposed the Social of Theory of Learning.

Bandura's (1977) Social Learning Theory interconnects three fundamental theories of psychology and philosophy of learning; namely behaviorist, cognitivist and social constructivist theories of learning. Figure 7 indicates Bandura's Theory of Social Learning adopted from Kurt (2020).

Figure 7

Bandura's Theory of Social Learning adopted from Kurt (2020)



Social Learning Theory of Albert Bandura agrees with the behaviorist theory in the way that behavior is learned from the environment through the process of observational learning (McLeod, 2016). However, he argues that observation alone may not be sufficient enough to learning. He asserts that while most human behavior is learned through

observation, imitation, and modeling; a learner can observe, imitate, or model something but might not learn it in the behaviorist sense of learning, that is a permanent change in behavior.

So, in addition to these three basic tenets of his theory which connects it to the social theory of learning, he also cites four necessary elements for learning as attention, retention, reproduction, and motivation. So, learners' motivation and mental state also influence the learning. The last factors of his theory connect Bandura's learning theory to those of cognitive-developmental theories (Kurt, 2020).

However, Spector (2014) regards some emotions and habits as non-cognitive aspects of thought and behavior. Therefore, in the Model of Smarter Learning Environments, where there are boundless, extensive, and pervasive opportunities for the digital and internet mediated interaction with peer learners and teachers worldwide, learners can exercise the three tenets and four elements of Bandura's learning theory effectively, functionally, and competently.

In brief, the Model of Smarter Learning Environments is the updated and upgraded Spector's (2014) Preliminary Framework of Smart Learning Environment, required by the New-Age Digital Transformation, which would be connected to the International Association for Smart Learning Environments (IASLE) per se (<http://iasle.net/>).

In other words, the technological advancement has made a transition of digital transformation to the New-Age Digital Transformation. It has made requirements, in turn, on the revision of the models, paradigms and frameworks of the smart education.

So, building upon Spector's (2014) Preliminary Framework of Smart Learning Environment, this study presents a Model of Smarter Learning Environments. In this model, one of the key theories of language acquisition in the field of TEFL, Krashen's (1982) Acquisition/Learning Hypothesis, was reevaluated within the context of smarter learning environments. In the next section, the class administration, application, and implication of the reviewed Acquisition/Learning Hypothesis in the Model of Smarter Learning Environments will be investigated.

TEFL Resource Management in the Model of Smarter Learning Environments

One of the key components that plays a leading role to the effective learning of students is class management. Class management is an issue that is influenced by many factors, such as resource management which is the focus of the present discussion.

Human and nonhuman class resources include students, material/gadget, syllabus/curriculum, time and space which should be managed by the teachers. They are all involved to create the most conducive and optimal student learning conditions. Resource management, in the current study, involves making a strategic plan for organizing and using the instructional resources. Instructional resources include all the materials, tools and means that an instructor uses to implement instruction/syllabus and achieve instructional objectives.

The central feature of an effective teaching is the selection of instructional materials that fit the learning environment and meet the teaching needs. Five types of instructional materials can be classified as print (e.g., textbooks and handouts), audio (e.g., microphone, podcast, and CDs), visual (e.g., charts and photographs), audiovisual

(e.g., multimedia, videos, and screencasts), electronic interactive instructional materials (e.g., computers and tablets, Internet and social media).

In the Model of Smarter Learning Environments, where the line between acquisition and learning has also faded away, the common instructional materials are audio, visual, audiovisual, and electronic interactive materials. The use of these nonprint instructional materials in the Model of Smarter Learning Environments and fully online teaching might bring challenges and opportunities.

There are many active and potential opportunities and challenges, at the same time, in using online education especially TEFL regarding the collaboration and connectivity among users, and access to a number of different sources. Regarding the opportunities, teachers become more effective since they can use a variety of different online teaching and learning tools, such as videos and podcasts, as part of their instructional plans, and expand their lesson plans beyond the materials in print to the online and digital resources.

Moreover, as the Smarter Learning Environments are more scalable, they can manage to carry out the flexible, personalized, customized, and adaptive syllabus for students with different learning style, speed, and backgrounds. Furthermore, Teachers become more efficient because there are plenty of various digital and online instructional materials which are affordable or provided by the institute or even free for both teachers and students, and accordingly they are more innovative, available, reasonable, and easier to share.

Hence teachers will have a good deal of material options in their lesson plans and class managements. In addition, where there is no geographical lines and limits but more connectivity, teachers, especially TEFL teachers, can enjoy the worldwide connections, increased interactions and collaborations with their students and native colleagues. It also generates a more conversational, reflective, and engaging atmosphere for students to take advantage of native speakers and peer learning.

Besides, the flexibility of time and location leads to higher rate of students' attendance because online classes can be attended from any location. Therefore, by and large, the Smarter Learning Environments provide the, TEFL teachers with opportunity to manage their class resources the way in which the learning process and activity change into that of acquisition.

On the other hand, the Smarter Learning Environments cause teachers to face with challenges in their class resource management. One of the frequent and common challenges is about the accuracy, reliability and validity of students' language proficiency assessment.

Although fully online and digital education can exploit a variety of soft wares for testing, it makes the TEFL teachers less assured with the written (especially multiple-choice tests) and spoken modes of tests partly because of the standardization of online and digital assessment tools, poor internet connection, or any technical glitch, lack of facilities and infrastructure in some remote and less urban areas, and poor digital literacy, and partly because of the ethical issues on the side of the test takers. The validity of a test is to measure the trait it is designed to measure (Guion, 1980).

If the students make use of some aids during the test, it impairs the validity and generalizability of the scores. It will also damage the reliability of test scores. The reliability of test scores is the extent to which they are consistent across different administrations (Franzen, 2011). So, implementing valid and reliable assessment, especially in achievement tests, is one of the challenges of the fully online TEFL education. In addition to the assessment, poor knowledge of digital media use on the side of both teachers and students can create considerable challenges in the practice of teaching.

Another challenge of the Smarter Learning Environments is about students' attention. While the online education increases students' attendance, it decreases their attention. Lack of in person interaction leads to the lack of physical connection and less emotional communication which can detach students from classes and class settings. Moreover, students might be struggling with the digital tools during the class and miss the track of instruction. Furthermore, if students attend the online classes from a crowded place or a workplace, the environment will distract them and disrupt their learning.

DISCUSSION

As it has been discussed earlier, the principles of Krashen`s Acquisition/Learning Hypothesis to distinguish learning from acquisition can be correct and applicable in the age of non-or-less technology. Today, in the age when digital technology is not only a device but only an environment of learning and teaching, the theory and practice of Krashen's hypothesis needs to be updated for the new-age smarter learning environments.

So firstly, a smart learning environment, the model of Spector (2014) has been selected and discussed to be promoted and updated. Then a theory of language learning and teaching, the Acquisition/Learning Hypothesis of Krashen (1982) has been discussed and reviewed for the practice in the new-age digital classes, and class resource managements. The opportunity for teaching in the fully online learning environment creates challenges for both teachers and students. Therefore, it requires training, tools, and resources to be implemented and applied.

CONCLUSIONS

Many practical designers are operating under the constraints of theoretical backgrounds. The way learning and learning process is theoretically defined has important implications in the way it can be practiced. Different learning theories provide instructional designers and practitioners with related instructional strategies and techniques for the facilitating and enhancing of learning. Moreover, with the advancement of technology and development of human life style, and biolinguistic and biological evolution across generations, both primary and contemporary theories need appraising.

So, one of the primary objectives of the present study was to examine Krashen's (1982) Acquisition/Learning Hypothesis in the context of fully online education in TEFL. It resulted in the proposition that in the New-Age Digital Transformation in which fully online education is a pervasive must, the distinction between acquisition and learning has been dissolving.

In addition to the theory, the practice of different fields of education needs to be appraised and upgraded in the New-Age Digital Transformation especially in particular episodes such as disease pandemics. Thus, the preliminary framework for Smart Learning Environments introduced by Spector (2014) was reviewed and promoted to the Model of Smarter Learning Environments.

Finally, tying a theory to its practice, the opportunities and challenges of the class resource managements of the new-age digital practice of TEFL in the Smarter Learning Environments were described and discussed. It is concluded that apart from numerous advantages of the new-age practice of TEFL in the Smart Learning Environments, providing required facilities and training for both teachers and students is still a challenge which should be dealt with by the policy makers and administrators.

CONFLICT OF INTERESTS

The author declares that she has no conflict of interest regarding the publication of this paper.

FUNDING

The author declares that this study received no specific financial support.

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ABSTRACT [in Persian]:**چکیده****محیط های یادگیری هوشمندتر در عصر جدید تحول دیجیتال: تدریس زبان انگلیسی به عنوان یک زبان خارجی**

محیط های کاملاً آنلاین و الکترونیکی امروزی به عنوان تنها راه آموزش/یادگیری نیازمند بررسی و ارزیابی پارادایم های تحول دیجیتال از جمله پارادایم آموزش هوشمند است. بنابراین، مطالعه حاضر به بررسی تغییر پارادایم آموزش هوشمند به آموزش هوشمندتر در مورد آموزش زبان انگلیسی به عنوان زبان خارجی (TEFL) پرداخته است. بدین منظور پژوهش حاضر در دو مرحله و با استفاده از روش کیفی با طرح توصیفی طراحی شد. سعی شد پاسخ دهد که این تغییر پارادایم چگونه بر نظریه های TEFL تأثیر می گذارد. مرحله اول، ارتقای چارچوب اولیه برای محیط های یادگیری هوشمند (Spector, 2014) به مدل محیط های یادگیری هوشمندتر بر اساس پیامدهای عصر جدید در تحول دیجیتال بود. مرحله دوم بررسی فرضیه اکتساب/یادگیری (Krashen, 1982) در عصر جدید تحول دیجیتال، و بحث در مورد فرصت ها و چالش های کاربرد مدیریت منابع کلاس در مدل محیط های یادگیری هوشمندتر بود. این تحقیق به این نتیجه رسید که استفاده اجباری از آموزش کاملاً آنلاین، در مورد TEFL، که حاصل تحول دیجیتال عصر جدید است، نیاز به بررسی نظریه های سنتی یادگیری و آموزش زبان دوم دارد. این تحول چالش ها و فرصت هایی را در مدیریت منابع کلاس ایجاد کرده است. در نهایت ارائه امکانات و آموزش دیجیتال به عنوان راه حلی برای چالش ها پیشنهاد شد. هدف مطالعه حاضر که به روزرسانی نظریه ها و عملکرد سنتی TEFL در عصر جدید تحول دیجیتال است، پیامدهای نظری و تجربی مؤثری در اجرای TEFL در محیط های یادگیری هوشمندتر خواهد داشت.

عبارات کلیدی

فرضیه اکتساب-یادگیری، مدیریت منابع کلاسی، مدل محیط های یادگیری هوشمندتر، تحول دیجیتال عصر جدید، چارچوب اولیه برای محیط های یادگیری هوشمند

АНОТАЦІЯ / ABSTRACT [in Ukrainian]:**ВИКЛАДАННЯ АНГЛІЙСЬКОЇ МОВИ ЯК ІНОЗЕМНОЇ ТА РОЗУМНІШЕ НАВЧАЛЬНЕ СЕРЕДОВИЩЕ В НОВУ ЕПОХУ ЦИФРОВОЇ ТРАНСФОРМАЦІЇ**

Сучасні повністю онлайніві та електронні середовища як єдиний спосіб викладання/навчання вимагають деяких оглядів та оцінок парадигм цифрової трансформації, включаючи парадигму розумної освіти. Таким чином, дослідження вивчало зміну парадигми розумної освіти на більш розумну освіту у випадку викладання англійської мови як іноземної (TEFL).

Метою дослідження є оновлення як традиційних теорій, так і практики викладання англійської мови як іноземної (TEFL) у нову епоху цифрової трансформації, що матиме ефективні теоретичні та емпіричні наслідки для практики викладання англійської мови як іноземної (TEFL) у розумніших навчальних середовищах.

Методологія. Це дослідження було розроблено у два етапи та використовувало якісну методологію з описовим дизайном. Воно намагалося відповісти, як зміна парадигми впливає на теорії викладання англійської мови як іноземної (TEFL).

Результати. Перший етап цього дослідження полягав у просуванні попередньої основи для розумних навчальних середовищ, пропонувану Спектор, до моделі розумніших навчальних середовищ на основі результатів нової епохи цифрової трансформації. Другий етап полягав у перегляді гіпотези розуміння/навчання, пропонувану Крашен, у нову епоху цифрової трансформації та обговоренні можливостей і викликів застосування управління ресурсами класу викладання англійської мови як іноземної (TEFL) у моделі розумніших навчальних середовищ.

Дослідження дійшло **висновку**, що обов'язкове застосування повного онлайн-викладання у випадку викладання англійської мови як іноземної (TEFL), яке стало результатом цифрової трансформації Нового часу, вимагає перегляду традиційних теорій вивчення та викладання іноземної мови. Це створило виклики та можливості в управлінні ресурсами класу. Нарешті, як вирішення проблем було запропоновано надання цифрових засобів і тренінгів.

КЛЮЧОВІ СЛОВА: гіпотеза розуміння-навчання, управління ресурсами класу, модель розумніших навчальних середовищ, цифрова трансформація нового часу, попередня основа для розумних навчальних середовищ.

CITE THIS ARTICLE AS (APA style):

Roofazai, Z. S. (2024). Teaching English as a Foreign Language and Smarter Learning Environments in the New Age of Digital Transformation. *Educational Challenges*, 29(1), 135-158. <https://doi.org/10.34142/2709-7986.2024.29.1.10>

