

Expanding Emerging Markets through Vocational Skill Acquisition: The Role of E-Learning Initiatives

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Keywords:	
Blended Learning; Digital Literacy; E-Learning; Emerging Economies; Vocational Skills	<p>This paper examined vocational skill acquisition and development from the perspective of e-learning. It explores how e-learning facilitates the dissemination of vocational education by enabling easy access to educational content, promoting interactive and collaborative learning experiences, and allowing for the reuse and adaptation of instructional materials. The advent of the internet has made it increasingly possible for individuals to simultaneously learn, grow, and adapt in pursuit of personal and economic advancement. Furthermore, the paper discusses key concepts, processes, operational frameworks, and the benefits of e-learning in the context of human capital development, particularly in emerging economies where access to traditional education and training may be limited. It is suggested that computer literacy programmed be further entrenched in educational system right from the early stages so that the learners will have an early introduction into the computer world which will facilitate online programmes orientation.</p>

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1. INTRODUCTION

The acquisition and development of vocational skills are essential for providing people with practical, job-ready competences that foster self-reliance, decrease unemployment, and promote economic growth, particularly in developing nations. In recent years, the incorporation of e-learning platforms into vocational training has transformed skill development by providing flexible, accessible, and economical learning options. Vocational training or education is a kind of education that enables students to

gain skills, develop talents, solve issues, and cultivate business-oriented attitudes essential for success in economic growth and development. Therefore, investment prospects become evident when one has understanding about vocational education or acquired relevant vocational skills.

2. LITERATURE REVIEW

Okwuanaso and Nwazor (2000) defined vocational skills acquisition/education as a process of educating individuals about the dynamics of business transactions in offices, banks,

marketplaces, and any context involving monetary exchange [1].

Vocational skills acquisition is the process of training, allowing students to gain practical experience in their chosen career path before they even graduate and after graduating, it helps students who finish those rigorous programs to have the credentials and training they need to get started immediately in their chosen career path or to secured job for a living [2]. The philosophy of vocational education emphasized skill acquisition and basic scientific knowledge required by individual for employment in industry or self-employment [3]. Therefore, to carry out a thorough skill acquisition/development programme, these current preferences for training and development must be in focus: it must be trainee- or learner-centered, it must be experiential learning whereby the person has the freedom of choice and action and capacity to initiate rather than simply respond to circumstances, and it must be a participative form of training whereby learners jointly decide with teachers on how their needs are to be met instead of highly structured programmes which had hitherto been the case. Komolafe (2002) quoting Gagne in a classic work on learning indicated that there are eight different learning conditions as noted below [4]:

- a. Signal Learning: this refers to classical conditioning (unconditional stimulus) whereby food and a sound of bell (conditional stimulus) were paired and presented to a dog several times and the dog salivated even when the unconditional stimulus (food) was removed.
- b. Stimulus Response: This is also referred to as instrumental conditioning where animals are used to conduct experiments and applied to human learning. It is a more flexible and is not restricted to natural or innate responses, but to a variety of responses.
- c. Chain Learning: This implies the connection of a set of individual stimulus-response in sequence. We have motor and verbal; it entails

connecting together in a sequence two or more previously learned stimulus responses.

- d. Verbal Association Learning: This refers to the ability of humans to:
 - 1) Observe a stimulus response that connects appearance of an object and distinguishes it from other objects and
 - 2) The stimulus responses that stimulate the child itself to the name of the object.
- d. Multiple Discrimination Learning: It refers to the reinforcing selectively, of some responses to one aspect of the environment. It involves higher mental process. It is the basis upon which we learn to think and solve problems.
- e. Concept Learning: Classification of objects by growing persons or children on the basis of common characteristics. E.g. color, size, height etc., for example, children would gradually differentiate animals from trees, dog from sheep and be able to make generalizations within classes of objects.
- f. Learning of Principles: This involves having regular interaction among two or more concepts in order to function effectively in an environment. E.g. Spoken language, moral code etc.
- g. Problem-Solving Learning: This is the highest state of Gagne's hierarchy of the learning process as it touches the major categories of learning as advanced by Bloom as these are cognitive, affective and the psychomotor domains of learning.

The trend shown above in knowledge/skill acquisition is still in some way behind the theorists of complex people, as most institutions or organizations still adopt style that are determined by the collective needs of the institution or organization rather than allow for conflict between individual and collective priorities, hence, the challenge of modern learning theory is to find some ways of resolving this basic conflict.

The long-established educational institutions, expressed that the sphere of the classroom was predominantly confined to the four walls of the classroom where varieties of instructional strategies that are selected and implemented by the instructor who is almost always physically present in classroom during the teaching and learning sessions.

Komolafe (2002), as earlier noted indicated that there are eight different types of learning condition from the primitive learning to problem solving otherwise known as complex learning where new rules and solutions are articulated basis of previously acquired rules combined with the application of insight to situation [4]. These types of learning as stated by Gagne help to educate on the process of acquiring knowledge, understanding, skills and value, that learning cannot be pursued effectively is we adopt a narrow view of learning theories whereas, these modern approaches to learning drawn upon major learning theories in other to strengthen and establish an optimum condition of learning.

2.1 Concept of Learning

Wikipedia expressed that e-learning refers to using electronic applications and processes to learn. Also, it expresses that it is all forms of electronic supported learning and teaching, which are procedural in character and aim to affect the construction of knowledge with reference to individual experience, practice and knowledge to the learner. The early e-learning systems based on Computer-Based Learning/Training often attempted to replicate autocratic styles whereby the role of e-learning system was assumed to be for transferring knowledge, but in recent times, Computer Supported Collaborative Learning (CSCL) which encouraged the shared development of knowledge had evolved.

E-learning 2.0, by contrast to e-learning systems not based on CSCL assumes that knowledge (as meaning and understanding) is socially constructed as learning takes place through conversation about content and guided interaction about problems and actions, whereas

Mobile Assisted Language Learning (MALL) is a term used to describe using hand held computers to assist in language learning. However, Schramm (2001), reiterated that while self-managed learning is encouraged and provided for the impact of e-learning is strongly influenced by how well support is provided for the learning [5]. The sophistication of the technology, hence, the author postulated three major applications.

- Web Based Learning delivers content to the individual without significant interaction with other learners or the tutor.
- Supported on Line Learning is learner centered activity focused and involves considerable interaction with other learners and the tutor.
- Informal e-learning is concerned with organizational learning, it is practice focused and involves multi-way interactions between learners, facilitators and experts in the normal course of work.

2.2 The Emergence of ICT in Learning Context

One of the features of the human race in the ability to rise to challenges and eventually surmount any problem that presents itself, hence the progress of the human race is measured by how successfully these problems are tackled and one major way of tackling the problem of knowledge is in the emergence of information Communication Technology. As Jibril (2000) asserted in Ojo (2005), "the world was drawing in information the very element that should help the world going", there was need to keep pace with knowledge explosion by developing ways and means of communicating information as quickly as possible over large distances [6].

In order to surmount the problem, the information-conscious society will have to find a way to free itself from fetters of space and distance, I e., the world had to be reduced to a global

"hamlet and this sets in motion the information and communication technology revolution."

According to Ojo (2005), the effect of this i.e ICT can play the role of a patient teacher, whereby the teacher works consistently at the learners' pace, in order to achieve or acquire sets of information, skills, values etc [6]. This means that the concern of ICT is the individual advancement. He further reiterated that teacher can take advantage of ICT to demonstrate some difficult concepts, theories and principle which will give meaning to his classroom instructions to:

- i. Stimulate the development of intellectual skills in the learner.
- ii. Spur "spontaneous interest" more than the traditional approaches.
- iii. Provide collaborative learning.
- iv. Imbibe research within the learner.

2.3 *The Advent of E-Learning*

Today, the impact of technology worldwide has led to the globalization of Information Communication and one of the offshoots of this is e-learning. The breakthrough in technology led to the e-learning revolution which is rapidly gaining grounds as one of the most recent developments in approaches to the delivery and support of learning. According to Rahman in Ojo (2005), information and communication and technology is defined as the technology of creation, processing, storage, retrieval and transmission of data and information including satellite technologies, electrical and electronics (hardware/software) [6]. E-learning as an offshoot according to Armstrong (2005) is learning or training that is delivered by electronic technology. It makes use of the internet and World Wide Web and even intranets whiting organizations. It is an extension and a supplement to face to face learning [7].

Unlike the traditional approaches to learning, Debel (2008) indicated that web based online mode of teaching and learning to develop human capital is typified by the delivery of course contents digitally and electronically through

computers by means of communication whereby tools such as discussion forums, chat rooms and emails are enhanced from faculty to students, students to students and students to faculty [8]. In this new development or educational scenario, there is no need of the physical presence of learners and instruction at a particular time in a particular place, which is known as asynchronous communication as against the erstwhile synchronous communication where all parties have to be physically present at the same time to convey messages.

2.4 *Operations of E-Learning*

From the foregoing, the benefits derivable from e-learning in human capital development would be unattainable if not based on these basic operations:

- i. **Connectivity:** This is the process by which computers are networked, share information and connect people to people. It is a dimension that is over and above assisted or computer-based learning.
- ii. **Focus on learner:** Sloman (2001) distinguishes between learning that lies in the domain of the individual and training that lies within the domain of the organization [9]. Reynolds (2002) supporting this view expresses that it is a move beyond the replacement of conventional courses into a richer and more fertile learning domains which then emphasizes more on the learner with the introduction of services that will motivate the individual to take charge of their learning [10].
- iii. **Blended learning:** This operation emphasizes on the range of ways of combination of different modes of delivery taking cognizance of the learner's environment, motivation and learning styles with different theoretical approaches known as multilayered approaches to learning methods. It is regarded as blended learning because it avoids the

pitfalls of over reliance on one approach. It combines the use of conventional instruction and self-managed learning which in a sense, is balanced learning.

2.5 Developing the E-Learning Processes

Armstrong (2005) postulated that the following steps are required to develop effective e-learning processes [7].

- Define or redefine the human resource (capital) development within the context of the organization or institution.
- Identify the learning needs – what should be invested in people in order to develop the human capital to extend its stock of knowledge, skills and values.
- Identify the overall scope for developing e-learning systems by enhancing a blended approach that uses complementary and mutually supportive methods of delivering learning to improve on the value added.
- Identify and establish what specific opportunities technology offers to enhance knowledge.

When the above is achieved, it will assess the strengths and weaknesses of the previous arrangements and updating where necessary.

Solarin (2001) complemented this and expressed that listed below are factors that are crucial to the development of the e-learning processes [11].

- Strategic Intent: It is a strategy of e-learning to transforming the approach to learning delivery.
- Introducing the System: The system has to be introduced with care, following an analysis of requirements and detailed information.
- Blended Learning: Consideration has to be given to achieving the right mix of e-learning and idea to face learning. E.g. e-presence, e-conference etc.
- Content Validity: Organizations/institutions prefers

customized web-based modules either developed in-house or outsourced to software firms to produce material to specific design,

- Supportive Learning: There has to be motivation to learn with the appropriate support given. Motivation often rests on the extent to which the content is relevant and reflective of varying learning types.
- Measurement and Monitoring: Current measurement practice concentrates on what learners have accessed and how much time has been spent to determine its efficiency.

3. METHOD

This study reviews the literature to explain how e-learning supports vocational skill acquisition and development, with particular attention to developing and emerging economies. The review connects established perspectives on vocational education and learning processes with the growing use of ICT-enabled training. It focuses on how e-learning contributes to work readiness and employability by shaping access, learning flexibility, practice-oriented learning, and the conditions that support effective skill formation in vocational contexts.

Relevant sources were identified through targeted searching using keywords related to vocational education and training, skills acquisition, ICT in learning, e-learning, online and web-based learning, supported online learning, blended learning, digital literacy, micro-credentials, and learning simulations. The search was strengthened by examining reference lists of key publications and tracing newer studies that cite them, so that influential foundational works and recent contributions were both represented. Sources were screened for direct relevance to vocational skill development and e-learning implementation. Materials that only described technology tools without linking them to learning outcomes or skill development were not retained.

Evidence from the selected literature was synthesized thematically. Each source was examined to capture its main contribution, including the vocational setting it addressed, the form of e-learning discussed, the learning mechanism highlighted, and any enabling conditions or constraints noted. The extracted insights were then grouped into themes aligned with the paper's argument: the conceptual foundations of vocational skill acquisition, the evolution of ICT and e-learning in learning environments, the operational features that support effective e-learning, and recent innovations that extend training beyond classroom boundaries. These themes were integrated into a coherent narrative to clarify how e-learning can strengthen vocational skill development and what factors influence its effectiveness in practice.

4. RESULT AND DISCUSSION

4.1 *New Innovations on Skill Acquisition for Reliance Beyond Classroom Experience and To Survive and Succeed in Emerging Economies*

The skill development terrain of the emerging economies is in a radical change with the increasing realization by organizations and policymakers that the conventional classroom-based education is not adequate to meet the dynamic needs in the fast-changing labor markets.

The emergence of new skill acquisition technologies outside the classroom will be a paradigm shift that is out of the traditional boundaries of pedagogical practices that include real-life learning experience, technology-supported solutions, and collaboration with industries. Such innovations are fundamentally transforming the way people in the emerging economies are obtaining, sustaining and changing the competencies to survive and even thrive in the increasingly competitive and technology-driven economies [12].

Experience-based learning has become a principal pillar of this radical methodology, and the gap between

theory and practice has been closed. Empirical studies also show that when a well-planned integration of experiential learning with technology-enhanced learning programmes is used, the outcomes of employability are also measurably improved, especially in addressing key skill gaps in communication, technical competency, and problem-solving [13].

This integration is further facilitated by the strength of industry-academia partnership and contextualized in the particular economic and sociocultural realities of the emerging markets (Sharma, & Jain, 2025), which makes it even more effective. In addition to formal interventions, new models of apprenticeship that merge traditional community-based mentorship with formalized credentialing frameworks are also becoming transformative, especially in areas where informal economic sectors are the main source of employment.

Aliu, Familoni, and Sarumi, (2025) asserted that the degree that indigenous apprenticeship systems, including the Yoruba and Igbo apprenticeship training systems in Nigeria, are integrated with formalized models, it can be seen that culturally responsive vocational education models can produce equitable, scalable and economically empowering vocational education models [14].

Another essential trend towards innovation is digital literacy and online certification systems, as they will allow people in under-resourced environments to gain access to internationally validated skill credentials at significantly lower expenses and faster timeframes than conventional institutional channels (Hossain, Anika, Mridula, Hossain, & Tanisha, 2024) [15]. These services democratize the availability of highly demanded technical capabilities like cloud computing, data science, and information technology and respond directly to the high degree of skills

mismatch that defines emerging economies [16].

In this dispensation, digital technologies and pedagogical innovation are continually transforming the skill acquisition process. This transformation is facilitated by adaptive learning systems, artificial intelligence mentorship, and immersive experiential learning environments that simulate real workplace settings. Training software Virtual reality training, especially in highly specialized industries like manufacturing and construction, allows apprentices to build complex psychomotor and cognitive skills in risk-free, repeatable settings similar to the actual job requirements [17]. By placing project-based learning models in contexts that are relevant to industries and through the provision of formal feedback mechanisms, students develop key competencies related to the 21st century, such as creativity, adaptability, collaborative problem-solving, and entrepreneurial thinking competencies, which would become critical in negotiating precarious and rapidly evolving labor markets in emerging economies [18].

In addition, in view of Vasilev (2024), micro-credentials and competency-based training modules rapidly can be strategically deployed to provide flexible, modular paths to competency acquisition that are directly connected to demonstrated labor market needs and which support rapid up- and re-skilling in response to technological disruption and economic change [19]. Notably, such innovations should be supported by deliberate attempts to create encompassing digital ecosystems that tackle endemic barriers to access, digital literacy, and technological infrastructure, especially among disadvantaged populations, such as women, rural dwellers, and people living in underprivileged socioeconomic situations [20].

The synergistic combination of all these different mechanisms in innovation, such as experiential learning, digital platforms, reforms in apprenticeship, industry partnerships, and inclusive technology implementation, will produce complete skill development ecosystems that will be able to prepare individuals not just to survive but to be active participants and consumers of the wealth creation of emerging and knowledge-based economies [21].

4.2 Benefits of E-learning on Vocational Skill Acquisition and Development

E-learning has become a vital instrument in vocational skill development, particularly in developing nations where access to conventional training is sometimes restricted. A primary advantage is enhanced accessibility students from rural or disadvantaged regions may now get high-quality vocational training via digital platforms [22]. Moreover, e-learning facilitates self-directed and adaptable education, enabling students to reconcile their studies with professional or familial obligations, which is essential for adult learners [23]. Multimedia technologies, virtual simulations, and interactive modules used in e-learning augment practical comprehension and retention of vocational skills, including carpentry, tailoring, ICT, and plumbing [24]. Furthermore, e-learning systems often include ongoing evaluation and immediate feedback mechanisms, allowing learners to track their advancement and enhance their performance more effectively. As technology advances, blended learning strategies that integrate physical practice with online training have shown efficacy in enhancing both theoretical and practical abilities [25]. E-learning facilitates scalable, inclusive, and economical vocational education, establishing it as a crucial catalyst for youth empowerment, employment, and economic advancement.

E-learning can provide immeasurable benefits to organizations/institutions and individuals involved: These are:

- Improved Performance: Acquiring skills and development through e-learning enhances improved productivity and profitability. Learners online generally perform better than those in face-to-face course, a 12-year analysis of research carried out by U. S Education Department is in support of this assertion.
- Increased Access: In the course of acquiring skills and developing the skills through e-learning, there is too much knowledge as it easily shares across borders as there is the opportunity of making information available internationally.
- Convenience and Flexibility to Learners: Through e-learning, skill acquisition and development is made and flexible as learners are not bound to a specific day time to physically attend classes and can pause learning sessions at their convenience. It is possible for learners to begin their courses while at work and finish at home.
- It encourages or enhances the development of in-service capability of services, thereby minimizing trips which will task the organization on the use of foreign currency, in other words, it is a web-based learning which delivers content (acquisition and development) to the learner without significant interaction with the tutor.
- It supports self-directed learning as an important strategy for skill acquisition and development. It promotes a form of hybrid skill or competence to the learner.
- It assists technical employees in, not only updating their skills but also for developing further range of skills by learning how to acquire

knowledge effectively and applying it appropriately.

- It further enhances learners to display traits that are oriented towards advancement, coping and self-reliance, in other words, it is practice focused even in the normal course of work.
- Through connectivity, vocational skills and development can be acquired as computers are networked, there is opportunity to share information unlike the traditional classroom setting.
- The participation of a learner in the 2-learning in summer is a means to sustain one's employability when in or out of employment
- With e-learning, learners can receive training anytime and anywhere that is, at work, homes etc, thereby improving productivity and profitability.

There are also additional advantages of computer-based training over traditional classroom training which include the ability to pay less per credit hour, reduce overall training time, spread training out over extended periods of time (even months), bookmark progress (computer remembering where the student left off so they can resume the courses from there, remain in one location (e.g, home, office, airport, coffee shop etc), with no need to travel, also reduces the cost of transportation to physical classroom and benefits environment, participate in class activities when convenient (not tied to class meeting times), access public content such as webcasts or other course content and to access courses from a variety of locations.

5. CONCLUSION

Vocational education remains a strategic pathway for strengthening employability, self-reliance, and economic growth, particularly in developing contexts where access to stable work opportunities is

often limited. The literature synthesized in this paper indicates that the integration of e-learning into vocational training expands learning access, improves flexibility, and supports skill development through technology-enabled learning environments. When designed to be learner-centered and aligned with experiential practice, e-learning can complement vocational training by enabling continuous learning, timely feedback, and more adaptive learning pathways that respond to diverse learner needs and changing labor market demands.

At the same time, the effectiveness of e-learning in vocational skill acquisition is strongly shaped by operational readiness and supportive conditions. Connectivity, content relevance, learner support, and systematic monitoring determine whether e-learning becomes a meaningful skill development tool or merely a content delivery channel. Recent innovations such as blended learning arrangements, industry-linked learning models, digital certification and micro-credentials, and simulation-based training further reinforce the potential of e-learning to extend vocational learning beyond classroom

limitations and to strengthen job-ready competencies. In practice, the key implication is that e-learning should be positioned as part of a wider skill development ecosystem that combines technology, pedagogical support, and workplace relevance.

To strengthen implementation, this paper also emphasizes the following practical directions, aligned with the recommendations already outlined in the manuscript. First, computer literacy should be embedded early within the education system so learners develop the confidence and basic competencies needed to participate effectively in online training. Second, learners who struggle to follow the pace of conventional classroom instruction should be encouraged to use flexible learning options that allow them to learn at their own speed, which can support motivation and stimulate independent inquiry. Third, institutions and organizations need to continuously update their technological capacity and networking readiness so they can keep pace with global changes in digital learning and remain relevant in the evolving knowledge and skills economy.

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