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Structural Hybridization of Teaching-Learning Platforms and Its Systemic Influence in (Re)Orienting Working-Students' Mental Modes for Knowledge Acquisition

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ABSTRACT

This paper examines how structural hybridization of teaching-learning platforms affects working students' mental modes in acquiring quality knowledge in Ghana. Most universities offer graduate programs for working individuals using a hybrid system that alternates between face-to-face and virtual platforms. Despite its benefits, the hybrid platform's impact on reorienting working students' mental modes remains unstudied. Using quantitative and systemic analytical approaches, this study evaluated the cognitive and emotional-motivational complexities involved in knowledge acquisition through the hybrid system. Findings revealed that the hybrid system hindered student-workers' interaction with lecturers, reducing lecturer visibility and perceived expertise. Additionally, the hybrid system's inflexibility caused difficulties and discomfort, negatively impacting students' ability to balance work and studies. It was concluded that the hybrid system limited personal contacts, preventing active learning and collaborative engagement, while also deteriorating students' physical and mental health due to increased pressures from juggling professional and academic responsibilities.

Keywords: Employee teaching-learning, Face-to-face platform, Virtual platform, Structural hybridization, Knowledge acquisition, Mental modes, Working-students

INTRODUCTION

Since the year 2020, the world has faced a historic challenge caused by the COVID-19 pandemic whose spread across the globe temporarily brought a halt to economic, social and learning activities that form part of peoples everyday lives. In this stead, the COVID-19 pandemic had a devastated effect on many aspects of human life, including those on the education front (Boon, 2021; Sanda, 2024). In attempts to manage the spread, schools had to be shut for extensive periods, stalling learning according to syllabus and making it difficult for examinations to be written onsite,. This dynamics resulted in the adoption of virtual teaching and learning in globally, Thus, in the academic sector, the "teaching-learning" activity, which used to be conducted face-to-face, was shifted to online

using virtual platforms. Despite this structural shift, face-to-face teaching-learning is still considered necessary, thus prompting its integration with the virtual platforms to create hybrid teaching-learning platforms. This shift also brought to the fore variety of constraints not only on the teaching and learning environment, but also, on the quality of contents, management and students' learning experiences (Boon, 2021; Sanda, 2024). In Ghana most universities have Graduate programmes designed for working-persons that are delivered weekdays' evenings and/or weekends, using the hybrid system, which enables a "teaching-learning" roll-over between face-to-face and virtual platforms. Despite the usefulness of such hybrid platform, its influence in (re)orienting the mental modes of working-students towards quality knowledge acquisition remains unexplored. An earlier study by Sanda (2024) established that most instructors lack the requisite technological adaptability of virtual-classroom environments and are thus constrained in their capabilities to management virtual teaching-learning systems. This constraint decreased the efficacy of the students' virtual-learning experiences (Sanda, 2024). Thus, this paper sough to understand how structural hybridization of teaching-learning platforms (re)orient the mental modes of working-students in the acquisition of quality knowledge. Based on the concept that an individual's self-regulation system develops and changes over extended periods, with its issues and potential only understood in the context of its history, the argument is made that an individual's mode of mental operation may influence their ability or inability to accurately acquire knowledge. This is highlighted by the following question: Does the structural hybridization of onsite and online teaching-learning models entail new mental demands and systemic expectations from working-students in their pedagogical process of quality Knowledge Acquisition?

LITERATURE REVIEW

Modern virtual teaching-learning differs from conventional face-to-face lectures, incorporating web-based collaborative role-playing and interactive multiplayer strategy games (Sanda, 2024). Unlike traditional environments where lecturers can adjust the pacing of teaching based on student feedback, virtual settings require different adaptation strategies for effective learning (Sanda, 2020). In this stead, three key components of understanding virtual learning dynamics are outlined by Means et al. (2010): whether the activity replaces or enhances face-to-face instruction; whether communication is synchronous or asynchronous; and the character of virtual learning experience. The primary objective of virtual activities, according to Sanda (2024), can be either to replace face-to-face instruction or enhance it with virtual platforms. Both applications have different goals, and their successful integration should enhance learning without compromising student achievement (Sanda, 2024). Learning experiences are classified based on who controls the learning process. Expository learning occurs through content delivered via lectures or written materials, while active learning involves student engagement in collaborative or interactive activities (Means et al., 2010; Sanda, 2024). In active learning, emergent content fosters

positive interactions among learners and educators. The adoption of virtual teaching-learning systems has become increasingly prevalent, particularly among universities. Many of these institutions are now aligning or re-aligning their educational delivery systems towards complete or hybrid digitization. This trend has positioned the digitization of educational instruction systems as a key attribute of organizational design (Sanda, 2020). Technologies can support the following types of learning experiences (Means et al., 2010): Active learning, with learners using inquiry-based manipulation of digital artifacts to build knowledge; Interactive learning, with learners engaging in inquiry-based collaborative interaction with other learners to construct knowledge and expository instruction, with knowledge transmitted through digital devices. These learning experiences are explained by the learner-control concept [5] (Zhang, 2005), wherein content is delivered by technology in the form of expository instruction, or in scenarios where technology enables students to control digital artifacts to explore information or address problems. Additionally, technology can act as a mediator in student-system interactions, facilitating the emergence of interactive learning among students (Sanda, 2020; Zhang, 2005). The decision by an employee to further his/her education is significant as it prepares him/her for new opportunities and responsibilities in the workplace, which has motivational implications. For instance, it offers greater flexibility in the job market, improved conditions of service, and better retirement packages (Tetteh and Attiogbe, 2018). This indicates that students engage in professional work for various reasons. Students from low-income families often work for financial reasons, whereas those from financially stable families have varied motivations, such as gaining easy access to the professional world or utilizing their spare time productively (Beerkens et al., 2011).

The increase in working students can be attributed to greater access to university education and the unique needs of individuals pursuing higher education (Holmegaard, Madsen, and Ulriksen, 2017). Additional factors include rising living costs, increased competition in the labour market, and evolving dynamics within the labour market itself (Lairio, Puukari, and Kouvo, 2013). Concerns about securing employment post-graduation also drive students to seek jobs while still in school (Hall, 2010). Furthermore, engaging in professional work during studies is viewed as an effective strategy for transitioning into the workforce (Robotham, 2013). Yet, the risk of students with longer working hours leaving school prematurely is higher, despite the benefits of working while studying (Lessky and Unger, 2023). Hodgson and Spours (2001) have noted that individuals vary in their ability to manage professional work and life activities, with some excelling and others struggling to balance both. It is established in the extant literature that employment occupies working students time and this adversely affects their academic performance, including final year marks, degree results, credits, as well as the capacity to balance their professional work with schooling (Broadbridge and Swanson, 2005). Additional studies indicate that socioeconomically disadvantaged students are negatively affected by the dual demands of working and studying (Darolia, 2014). Consequently, the increased pressures associated with juggling professional work and

academics have raised concerns regarding students' mental health and burnout (Sanda, 2020). Academic performance pressure is a primary stressor among young adults. The most impactful stressors on students include unrealistic expectations from themselves and external parties, stressful environments, academic tasks, and university recognition Jiménez-Mijangos et al., 2023). Research indicates that heightened stress levels correlate with poor academic performance (Sohail, 2013). Furthermore, heavy course loads, inadequate physical exercise, and extended exam periods exacerbate working students' stress and anxiety levels during examination periods (Sanda, 2020). Consequently, an unfavorable university environment can intimidate working students, causing them anxiety due to high cognitive job demands (Haar et al., 2018), and time pressures, which may diminish the quality of their work-life balance and knowledge acquisition.

METHODOLOGY

The study is guided by the quantitative method of perceptual evaluation in which units of measurement and measurement procedures that permit the comparison of different elements of activity are required (Bedny and Karwowski, 2007; Sanda, 2022). This implies that while work situations can be evaluated both experimentally and theoretically (Bedny and Karwowski, 2007), expert judgments, such as the use of a five-point scale can also be used for the subjective evaluation of employees' perception of their work situations (Sanda, 2022). Therefore, the quantified philosophical approach was used to obtain entrepreneurs' subjective evaluations of their personal characteristics and perceived status in the conduct of their entrepreneurial activities in the Ghanaian creative industry. Data was collected from two hundred and twenty-six participants who are simultaneously working and schooling, using a uniformly designed self-administering questionnaire. The questionnaire included a synopsis that explained the study purpose. The systemic analytical approach was applied to evaluate the cognitive aspect of complexity entailed in the working-students' knowledge acquisition activity that depend on the specificity of information processing, and those emotional-motivational aspects of complexity that reflect the energetic aspects of their knowledge acquisition activity using the hybrid teaching-learning platform. In this wise, principal component analysis was conducted to identify how the working students perceived the fit of the hybrid teaching-leaning system with their professional work, mental modes, and the quality of their knowledge acquisition. The benchmark used for determining such predictiveness is Schumacker and Lomax's (2004) recommendation that the estimated factor loading must be 0.70 or higher.

RESULTS

Demographic Analysis of the Study Participants

The analysis of the respondents gender showed that of the 216 respondents, 175 (77.40%) were females and 51 (22.60%) were males. Two hundred and eleven (93.40%) respondents combine professional work and academic

study, 8 (3.50%) resigned from professional work to pursue academic study, and 6 (2.70%) have worked before, but free to pursue academic study. Only 1 (0.40%) respondent was granted leave from professional work to pursue academic study.

Factor Analysis of the Study Variables

To answer the study question "Does the structural hybridization of onsite and online teaching-learning models entail new mental demands and systemic expectations from working-students in their pedagogical process of quality Knowledge Acquisition?" factors that are predictive of the working-students' mental demands and systemic expectations were determined. In this stead, principal component analysis was conducted for each variable. Firstly, the Kaiser-Meyer-Olkin (KMO) and Bartlett's test statistics was conducted to establish whether it is appropriate to factor analyze the variables. The estimated KMO value for both variables is 0.84, while the estimated chi-square (χ^2) value from the Bartlett's test is: $\chi^2 = 3369$ ($p = 0.00$), which is highly significant ($p < 0.01$). Analytic output from both the KMO and the Bartlett's tests showed that it is appropriate to factor analyze the two tested variables. Thus, factors analysis was performed to identify the factors perceive by the study participants as predictive of their mental demands and systemic expectations in the pedagogical process of quality knowledge acquisition from hybridized onsite-online teaching-learning systems.

Factor Analysis of Mental Demands on Working-Students by Hybrid Teaching-Leaning System

The factor loadings/regression values (r) for the tested factors predictive of the mental demands on working-students in the pedagogical process of quality knowledge acquisition from hybridized onsite-online teaching-learning system is shown in Table I below.

Table 1: New mental demands on working-students in the pedagogical process of quality knowledge acquisition from hybridized onsite-online teaching-learning models.

The Hybrid System …	Factor Loading (r)
Is flexible, making it easy pursue my education	0.660
Made it comfortable for me to pursue my education	0.657
Is a positive experience for me	0.444
Made it easy for me to manage my worklife	0.647
Made it difficult for me to interact with my lecturers	0.728
Made the expertise of my lecturers less visible to me	0.719
Made it difficult for me to attract my lecturers' attention	0.737
Made it difficult for me to receive learning enhancing support	0.846
Made it difficult for me to receive counsel to enhance my learning	0.818
Resulted in me having a low personal contact with my lecturers	0.767

Continued

Table 1: Continued

The Hybrid System …	Factor Loading (r)
Made it difficult for me to share my opinions with my lecturers	0.714
Is very demanding and deteriorated my physical health condition	0.542
Is very demanding and deteriorated my mental health condition	0.510

Using Schumacker and Lomax (2004) benchmark of $r \geq 0.70$ for factor predictiveness, it is observable from table 1 above that, from the thirteen factors tested, the following seven factors are manifestations of the new mental demands contended by the working-students' in their pedagogical process of quality knowledge acquisition from hybridized onsite-online teaching-learning system: The hybrid system has made it difficult for me to interact with my lecturers ($r = 0.728$); The hybrid system has made the expertise of my lecturers less visible to me ($r = 0.719$); The hybrid system has made it difficult for me to attract the attention of my lecturers ($r = 0.737$); The hybrid system has made it difficult for me to receive support to enhance my learning ($r = 0.846$); The hybrid system has made it difficult for me to receive counsel to enhance my learning ($r = 0.818$); The hybrid system has resulted in me having a low personal contact with my lecturers ($r = 0.767$); and The hybrid system has made it difficult for me to share my opinions with my lecturers ($r = 0.714$). On the contrary, though the factor loadings of the six remaining factors were below the benchmark of $r \geq 0.70$ for factor predictiveness, the converse of their interpretative senses rather situates them as manifestations of the new mental demands: The hybrid system is flexible, making it easy for me to pursue my education ($r = 0.660$); The hybrid system made it comfortable for me to pursue my education ($r = 0.657$); The use of the hybrid system is a positive experience for me ($r = 0.444$); The hybrid system has made it easy for me to manage my worklife ($r = 0.647$); The hybrid system is very demanding and has deteriorated my physical health condition ($r = 0.542$); and The hybrid system is very demanding and has deteriorated my mental health condition ($r = 0.510$).

Factor Analysis of Working-Students' Systemic Expectations of Hybrid Teaching-Leaning System

The factor loadings/regression values (r) for the tested factors predictive of the Systemic expectations from working-students in the pedagogical process of quality knowledge acquisition from hybridized onsite-online teaching-learning system is shown in Table 2 below.

Table 2: Systemic expectations from working-students in the pedagogical process of quality knowledge acquisition from hybridized onsite-online teaching-learning models.

Systemic Expectation	Factor Loading (r)
My experience with hybrid lectures was better than I expected	0.632
The quality of hybrid lectures was excellent	0.693
I am satisfied with how lecturers handle the hybrid teaching-learning system	0.553
The hybrid system is very clumsy, and has deteriorated my physical health condition	0.833
The hybrid system is very clumsy, and has deteriorated my mental health	0.812

Using Schumacker and Lomax (2004) benchmark of $r \geq 0.70$ for factor predictiveness, it is observable from table 1 above that, from the five factors tested, the following two factors are manifestations of the systemic expectations of the working-students' in their pedagogical process of quality knowledge acquisition from hybridized onsite-online teaching-learning system: The hybrid system is very clumsy, and this has deteriorated my physical health condition ($r = 0.833$) and The hybrid system is very clumsy, and this has deteriorated my mental health ($r = 0.812$). On the contrary, though the factor loadings of the three remaining factors were below the benchmark of $r \geq 0.70$ for factor predictiveness, the converse of their interpretative senses rather situates them as manifestations of the systemic expectations of the working-students: My experience with the hybrid lectures was better than I expected ($r = 0.632$); The quality of the hybrid lectures was excellent ($r = 0.693$); and I am satisfied with how lecturers handle the hybrid teaching-learning system ($r = 0.553$).

DISCUSSION

As it was established in the analyses, the hybrid system has made it difficult for the student-workers to interact with their lecturers, thus making the expertise of their lecturers less visible to them. The student-workers, therefore, viewed this to have made it difficult for them to attract the attention of their lecturers that could have enabled them receive support and counsel to enhance their learning. This finding is at variance with the notion that the hybrid teaching-learning system require different adaptation strategies for effective learning (Sanda, 2020). Thus, the application of the hybrid system in teaching-learning activity resulted in a constrained personal contacts between the student-workers, which prevented them from sharing and/or discussing their opinions with their lecturers. This, therefore, showed that the working-students viewed the hybrid teaching-learning system as enabling expository learning rather than the expected active learning which should have involved their engagement in collaborative and interactive teaching-learning activities (Means et al., 2010; Sanda, 2024).

It was also manifest from the findings that the student-workers find the hybrid system inflexible, which made them encounter semblances of difficulties and discomfort in their educational pursuit, which experience they deem to be negative, making it difficult for them to manage their work lives. This showed that the student-workers deem the hybrid teaching-learning system as devoid of the expected active learning which could have fostered positive interactions among learners and their educators (Means et al., 2010; Sanda, 2024). This situation might have resulted in the student-workers viewing the hybrid teaching-learning system to be very demanding and clumsy, thus deteriorating both their physical and mental health conditions, and increasing the pressures associated with juggling professional work and academics students' and its consequences on mental health and burnout (Sanda, 2020), and the development of heightened stress levels that lead to poor academic performance (Sohail, 2013). The findings also established that the systemic expectations of the working-students' in their pedagogical process of quality knowledge acquisition from hybridized onsite-online teaching-learning system was not met as a result of it not being excellent or better than they had expected, which situation might have informed their manifestation of dissatisfaction with how lecturers handle the hybrid teaching-learning system. This implies that the student-workers not experiencing active learning denied them involvement in interactive learning, and engagement in inquiry-based collaborative interaction with other learners to construct knowledge and expository instruction, with knowledge transmitted through digital devices. These learning experiences which are explained by the learner-control concept (Zhang, 2005), appeared not to have benefited the student-workers, thus constraining the emergence of interactive learning among them (Sanda, 2020; Zhang, 2005), which is a prerequisite in the hybrid teaching-learning system.

CONCLUSION

The findings of this study has established that the structural hybridization of onsite and online teaching-learning models entail new mental demands and systemic expectations from working-students in their pedagogical process of quality Knowledge Acquisition. Based on the findings, it is concluded that the application of the hybrid system in teaching-learning activity resulted in a constrained personal contacts between the student-workers, which prevented them from sharing and/or discussing their opinions with their lecturers, and by implication denying them the expected active learning which should have enabled their engagement in collaborative and interactive teaching-learning activities. It is also concluded that the presumed inflexibility of the hybrid teaching-learning activity resulted in the student-workers encountering difficulties and discomfort in their educational pursuit, making it difficult for them to manage their work lives, thus deteriorating both their physical and mental health conditions, and increasing the pressures associated with their juggling of professional work and academics.

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