A Systematic Review Of Factors Influencing Student Productivity In Higher Education

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Abstract:

Higher education is a critical context in the development of human educative and productive capabilities and in determining the social and economic profile of societies. Despite the growing trend of higher education around the world, the student productivity remains a concern and has not been enhanced as expected. In this review paper, the paper has reviewed more than 50 recent studies that particularly focused on factor such as academic, individual and environmental to student productivity in higher education. The reviewed literature strongly emphasized that there are significant association between factor such as academic, individual and environmental to student productivity in higher education. Amid to the literature, it can recommend that universities should cultivate a favorable organizational culture that prioritizes academic principles and encouraging leadership, implement adaptable and dynamic learning approaches that integrate technology and collaborative tasks, and reinforce academic support services by providing individualized tutoring and counselling. moreover, it is also essential to establish educational settings that are favorable to learning, equipped with contemporary amenities, and to actively encourage a well-rounded campus experience, covering the areas of academic, individual and environmental. The review paper contributed to extension of state-of-art literature knowledge on the subject area, identifying existing research gaps thus promote improved efforts and strategies in the education sector to increase graduation rates, employment opportunities hence increasing the prospects of positive future employment status among graduates.

Keywords: Student productivity, academic performance, learning environment, educational strategies, motivation, self-efficacy, digital learning, institutional support, academic engagement

INTRODUCTION

Higher education is a critical context in the development of human educative and productive capabilities and in determining the social and economic profile of societies [1]. As the world is rapidly changing, the overall higher education system is currently in a middle of potential transformations, and this is connected with the demands on its further expansion and changes in the expectations of the society [2]. According to UNESCO, the overall rate of students undertaking higher education has increase over two folds in the past twenty years from 100 million in the year 2000 to over 220 million in the year 2022 [3]. This enrolment has been felt most especially in the developing countries where the government has regard for higher education as an engine of growth and change. A similar trend exists in the developing countries, where the access to higher education is perceiving more and more as the mechanism for development and social promotion. For instance, Malaysia's higher education ecosystem has experienced significant growth, with an estimated 43 universities, 31 private university colleges, 9 foreign university branch

campuses, and 414 private colleges operating across the country [4]. This expansion has led to a substantial increase in student enrolment, producing an average of around 280,000 graduates annually between 2010 and 2019. In 2024, Malaysia has over 590 higher education institutions and more than 1,270,000 students enrolled.

Despite the growing trend of higher education around the world, the student productivity remains a concern and has not been enhanced as expected due to several reasons. For instance, with increase in the number of students enrolled for higher education across the world, the completion rate however didn't kept pace, resulting a real concern among higher education institutions [5]. Recent data showing that about 40 percent of students taking up a higher education program do not complete it within the standard duration of time according to the World Bank [6]. Particularly, studies found that the disparity can be traced to a number of factors such as academic, personal and environmental factors. For instance, reports been highlighted that many universities have failed to cope with the increased number of students and due to this most universities have a high student to facility ratio [7]. This has resulted into high student to facility ratio in most universities where the lack of sufficient class size, reduced access to academic resource centers besides limited learning facilities also hampers the quality of education offered hence the achievement of students' academic dreams. This in turn may lead to reduced student's productivity, disengagement and consequently higher drop-out rates.

There are also other factors anchored on the individual factors of students that contribute to their productivity. For instance, challenges such as financial strains compel the students to work part-time or even full-time in their periods of study making them fatigued, reducing their study time and stressed [8]. Moreover, it is crucial noted that individual factors such as to mental health disorders like anxiety and depression might also affect the learning of higher education students. Also, primary commitments in individual's life like commitment to family or carrying out chores at home may also force students to struggle in terms of how they allocate their time between academic work and personal responsibilities and commitments [9]. In addition, studies also found that students' productivity at the university depends on the internal and external environment [10]. For instance, lack of or weak student community may make students feel alienated and disinterested in their academic endeavors, especially so to those studying far from home. Moreover, poor physical infrastructure which includes bad housing facilities, scarce and safe means of transport, weak and inadequately provided campus security may also affect the student productivity in education. Likewise, other interferences such as noise, overcrowding in the living spaces, and many other factors that characterize environmental stress hinder students from concentrating on their books [11].

As student productivity is equated to higher learning outcomes, higher graduation rates, higher employment rates, hence a strong measure of the student's future, it is within universities' mandate to ensure that a student is trained in a manner that will enable the students to fit in tomorrow's dynamic and highly competitive world economy [12]. The preparedness of higher education learners for such a future is not only the ability of an individual to get a job or be self-employed but also a measure of the educational function of a given institution. Despite having recognized the significance of student productivity, there is a lack of focus on the research findings that would address this issue and indicate what factors impact the productivity most of all. Though past studies have taken a closer look at some aspects of students' performance and educational results, there is lack of research that systematically review these factors and assessed the effects on student productivity across all possible contexts. For instance, student productivity has been discussed in literatures as multi-faceted and depends on different factors such as academic, personal or environmental but these have not been well explained. This indicates that there is a lack of intensive and comprehensive research in this direction which hampers the growth of both theory and practice and therefore, it becomes difficult for the universities to design specific intervention measures that can boost up the student productivity.

As a result, this review paper aims to fill this research gap by providing a systematic review and integration of literary works researching on factors that play a role in the productivity of students in higher learning institutions. The review paper objectives include: RO1. To extend state-of-art literature knowledge on the subject area and factors influencing student productivity, and thus promote improved efforts and

strategies in the education sector to increase graduation rates, employment opportunities hence increasing the prospects of positive future employment status among graduates.; and RO2. To identify existing research gaps and provide recommendations for enhancing student productivity in higher education institutions by addressing the identified factors. This review paper identifies and collates evidence from different past studies on the different factors that affect productivity; including academic, personal, and environmental, and in-depth assess and discuss on how these factors interact to produce student results. In particular, the paper will discuss how academic relevant factors, personal factors, and environmental factors affect the productivity of students. Moreover, the review paper also aims at providing clarity of the concept of student productivity, and more crucially, to present findings that could be useful to the management of universities and policymakers in the formulation of better strategies towards the promotion of student efficiency. This review paper synthesizes the existing literature and derives key areas that may require interventions for creation of high productivity environment within educational settings for enhancing learner accomplishment, graduation rates and employment opportunities.

IMPACT OF STUDENT PRODUCTIVITY ON ACADEMIC PERFORMANCE

Generally, productivity refers to the completion of tasks in terms of the time and other input resources utilized in learning, including the amount of time spent in studying as well as evaluation of the extent to which students interact with the learning content [13]. According to literature, it was evident that there is a direct relationship between student productivity and the academic performance with studies identifying a number of factors attributing to increase in the two aspects. Time management is very important as highlighted by [14] and [15] that revealed students who found ways on how to manage their time yield higher GPAs in school. Likewise, another study established that comprehensive study skills, containing use of active learning techniques, such as self-quizzing and spaced repetitions foster better academic performance [16]. Another factor is the learning context, encouraging campus conditions and technology supporting the organization of the learning process ([17]; [18]). Research findings also substantiate these observations, confirming that while productive students usually achieve better results and better retention statistics [19]. [20] found that productivity affects student perceptions of their academic experience and enhanced learning. However, productivity continues to be difficult to quantify because of use of self-estimates and cross-sectional data and the fact that the concept under study is inherently multifaceted [21].

METHODS

This review paper conducted a systematic literature review analysis of studies which examined factors affecting student productivity in higher education from 2009 to 2024. The study used selected studies which demonstrated relevance to academic, individual and environmental factors that influence student outcomes. A systematic review process was used to analyze the studies for recognition of main literature trends and research findings alongside remaining gaps. The review method combined multiple results to reveal relationships between different influencing factors affecting student productivity. This research approach creates a complete overview of existing academic investigations while revealing approaches to enhance educational productivity among university students.

RESULT

INDIVIDUAL FACTOR

According to literature, students basically consider a lot of aspects in relation to their academic performance, which entails personality, motivation, self-confidence, and approaches to learning. In other words, when it comes to learning processes and outcomes among students, the so-called personal factors that include students' intellectual and emotional assets are particularly critical in determining the learning attitudes of students and the students' performances [22]. Pleasure and interest together with the mechanisms of external and internal pressure and control stimulate the efforts and outcomes of the students ([23]; [24]; [25]). Self- efficacy is a potent source of academic achievement since high self- efficacy

beliefs help students to undertake challenging courses, to persevere with coursework, and to handle failure in constructive manner ([26]; [27]; [28]). Moreover, learning styles within learners including but not limited to Dunn and Dunn, and Kolb's learning style inventory predispose learners to the way they learn and succeed in their learning processes, as well as learning styles do affect study patterns and academic achievement, but there are organizational and situational factors that moderate them ([29]; [30]; [31]).

In terms of research gap, there is a major gap in the literature about personal factors and their relationship to motivation, academic self-efficacy and learning styles for academic achievement. First, there is a call for more fine-grained research on how the interaction of/among intrinsic and extrinsic motivators different aspects of academic performance and across different educational settings. Although current literature documents these motivational factors, the effects of the interaction of these motivational factors are chiefly unknown on other forms of academic achievement. Second, while self-efficacy has been acknowledged as a significant predictor of academic achievement, there is lack of research on the formation process of self-efficacy beliefs across time. Special emphasis has been highlighted on the role of self-efficacy beliefs in enhancing persistence of learners in their academic pursuits amidst various difficulties. Third, students' learning styles are rich in coverage in the literature but not much research has been done on how these styles moderate educational practices and characteristics of institutions with regard to learning. In addition, there are few systematic reviews combining the cognitive and perceptual learning approaches and the motivational and self-efficacy theories to make a systematic account of academic achievement.

Table 1 Summary of the previous study that focused student productivity and individual factor

Authors / years	Focus area	Study method	Key findings	Research gaps
Wong & Liem (2022)	Student effort and resources invested in academic outcomes	Review of student engagement literature.	Motivation impacts student attitudes, behavior, institutional outcomes like reputation and financial status.	Need for empirical studies linking specific motivational strategies to academic outcomes.
Mauliya et al. (2020)	Intrinsic and extrinsic motivational factors	qualitative	Intrinsic motivation arises from personal interests, while extrinsic motivation is influenced by external factors like macro-economic conditions.	Further research needed on the impact of specific intrinsic and extrinsic factors in different educational settings.

Žalėnienė & Pereira (2021)	Extrinsic motivation	Literature review.	Extrinsic motivation is shaped by environmental factors and institutional policies.	Need for more studies on how institutional policies and macro-economic factors specifically affect student motivation.
Camfield et al. (2021)	Impact of self-efficacy on productivity	Qualitative	High self-efficacy leads to setting challenging goals and persistence despite failure.	More empirical studies required to understand the impact of self-efficacy on various academic outcomes.
Schunk (2023)	Self-efficacy beliefs and academic performance	Literature review	Self-efficacy affects students' goal-setting and effort levels, influencing academic success.	Need for research on how different levels of self-efficacy affect diverse student populations and academic fields.
Trautner & Schwinger (2020)	Outcome expectancy and self-efficacy	PLS-SEM	Self-efficacy influences the expectancy of outcomes, affecting performance.	Research needed on interaction between outcome expectancy and self-efficacy.
Maya et al. (2021)	Cognitive and perceptual styles	interdisciplinary approach	These styles influence psychological processes and learning strategies.	Need for empirical studies linking learning styles to specific academic outcomes.
Kathiah et al. (2024)	Learning styles and organizational characteristics	Quantitative	Learning style distribution varies by organization, not just industry.	Need for studies on organizational-specific predictors of learning styles.

ENVIRONMENTAL FACTOR

From the reviewed literature, the impact of the physical-technological environments in relation to student productivity in higher learning institutions stands out blazing. [32] and [33] studies have supported the argument that design of classrooms and other physical spaces in a university influence students' learning

process, satisfaction, and retention. UCLA's [34] have rightly zeroed in on the positive influence of well-designed classroom environment, however, very limited literature is available as to how all the above mantled campus setting taken together influence learner outcomes. Likewise, whereas technology has enriched the ways in which people learn. [35] pointed out that, many institutions still apply archaic technologies that reduce such gains. Also, [36] and [37] show that, in fact, disturbance by the acoustic characteristics is not so significant compared with other physical cues. In sum, the literature points at a need for more intersectional research that investigates how campus design that encompasses both indoor and outdoor spaces, as well as how the integration of technology into learning spaces can be optimized to foster student activity and productivity and gaps that the current research leaves open with regard to more sustainable learning environments and promoting the provision of good learning environments for students.

Based on the reviewed literature, several research gap can be identified. First, concerns with the physical learning space that encompasses the size of classroom, the shape and the configuration, arrangements of learning spaces indoors and outdoors, are all adequately captured but little is known about the surrounding environment that the students learn in including play areas, library and even the compound layout as a whole. Another limitation that can be identified is the absence of a comprehensive examination of the ways in which the different campus environments may influence the students' productivity; hence, the paper opens for a wider examination of the overall university environment for students ([38]; [39]). Second, while having agreed with that, technology has been known to foster learning, many learning institutions remain with outdated or without enhanced technology that's the effect that have on stromal engagement and performance has not been researched on [40]. Third, although technological uses such as 'online course management' and 'virtual learning environment' are widely studied, the combined interaction of these and physical learning environments for students remains under-researched [41]. Sanitizing also, architectural features among them the acoustic environment have been considered by some studies but they in particular had shown that it had a minimal influence as regards to other aspects; this means that the aspect of acoustic environment has to be still considered together with other characteristics of spaces ([36]; [37]).

Table 2 Summary of the previous study that focused student productivity and environmental factor

Authors / years	Focus area	Study method	Key findings	Research gaps
Rajesh (2014); Saleem et al. (2012)	Environmental impact on student productivity	Literature review and case studies	Physical and technological characteristics significantly affect learning, satisfaction, and retention.	Need for comprehensive studies on the broader campus environment beyond individual classrooms.
Horne & Martin (2009)	Classroom design features	Empirical research, surveys	Effective classroom design enhances class climate, attendance, participation, and performance.	Limited focus on overall campus environment rather than just individual classroom design.

Kuo et al. (2021); Oliveira et al. (2021)	Overall campus environment	Quantitative analysis, campus surveys	The campus environment influences student experiences and results, but less research on this aspect.	More research needed on how different campus spaces affect productivity.
Li & Kim (2022); Brink et al. (2021)	Influence of acoustic settings	Experimental studies	Acoustic environment has limited impact on student productivity.	Further investigation into the significance of acoustic design in various learning settings.
Haleem et al. (2022); Alam (2023); Veluvali & Surisetti (2022)	Role of technology in education	Literature review,	Technology enhances classroom learning and learner engagement, shifting from print-based to interactive environments.	Need to explore how technology impacts learner engagement and productivity in various settings.
Reich (2020); David & Aguilar-Cruz (2023)	Virtual Learning Environments (VLEs)	Case studies, user experience surveys	VLEs often replace non-digital components but may not revolutionize learning; passive engagement observed.	Investigate how VLEs can be improved to enhance active learning and collaboration.
Martins et al. (2022); Butt et al. (2022); Beasley (2021)	Factors influencing student engagement	Mixed-methods research, longitudinal studies	Engagement involves attention, emotion, and cognition; influenced by environment, motivation, and social interactions.	Study the impact of advanced educational technologies on student engagement and performance.
Saleem et al. (2012);	Classroom and learning space design	Review studies, meta-analysis	Proper design improves	Explore how to optimize classroom and

			educational climate and performance; global recognition of its importance.	campus design to maximize student success.
Sadick et al. (2020)				

ACADEMIC FACTOR

The literature indicates that organizational culture, teaching methods, and academic support services play a crucial role in shaping student productivity and academic achievement. Studies emphasize that organizational culture has a fundamental impact on behaviours and outcomes, with positive cultures leading to increased productivity. Further investigation is required to establish a direct correlation between particular cultural practices and academic achievement among students. Studies have demonstrated that teaching methods, especially those that are innovative and include active learning, can enhance student engagement and increase outcomes.

Eventually, the literature consistently supports the idea that student productivity is a complex process, which is influenced by factors such as the organizational culture, implementation of instructional methods, and availability of academic support services. While several studies have a significant fascination with these relationships, several aspects have not been definitively confirmed as of yet. Hence, additional research is required to investigate how particular organizational culture practices influence or hinder students' productivity, the long-term effects of different teaching methods, and the most effective components of academic support services.

Table 3 Summary of the previous study that focused student productivity and academic factor

Authors / years	Focus area	Study method	Key findings	Research gaps
Akpa et al. (2021)	Organizational Culture	Qualitative	Organizational culture shapes member behaviour within and outside the organization.	Need for more empirical studies linking organizational culture directly to academic performance
Forson et al. (2021)	Organizational Culture	Survey	Organizational culture significantly impacts employee motivation, an indicator of productivity.	limited exploration of specific cultural elements on student productivity.
Adams-Manning (2018)	Organizational Culture	Case study	Appropriate organizational culture boosts student commitment	Further research needed on how specific cultural practices influence student outcomes

			and performance.	in different contexts.
Brink et al. (2021)	Teaching method	Literature review	The choice of teaching method significantly impacts student productivity	Lack of longitudinal studies to assess long-term effects of different teaching methods on productivity.
Awacorach et al. (2021)	Teaching method	Comparative analysis	Active learning and technology integration enhance student engagement and productivity	Need for more research on the effectiveness of hybrid teaching models.
Dolores de Juan Vigaray et al. (2010)	Teaching method	Survey	Group and peer learning positively influence student academic performance and productivity.	Limited studies on the impact of group learning in diverse cultural contexts.
Hall et al. (2021)	Academic Support Services	Survey	Tutoring and counseling services improve student GPA and reduce class failure rates.	More research needed on the specific elements of support services that most effectively boost productivity.
Wu (2021)	Academic Support Services	Quantitative analysis	Positive relationship between academic support services and student productivity	Lack of analysis on how these services impact different student demographics.
Santos et al. (2020)	Academic Support Services	Mixed-method	Students utilizing support services are generally more productive academically.	Further studies needed to understand why some students benefit more than others from these services.

DISCUSSION

INDIVIDUAL FACTOR

Personal factors are defined as internal psychological characteristics or the factors that are inherent to the individual or the student in particular [22]. Student characteristics are the variation that exists in terms of their predispositions towards or away from particular ideas or ways of learning, perceiving, and interpreting data. The aim is to determine the nature and extent of academic, intellectual, developmental, personality, motivational, social and emotional differences affecting learning, school performance and academic productivity and how these may be managed and addressed through feasible and effective intervention and educational practices.

MOTIVATION

Student motivation includes student effort, or, in other words, the use that a student makes of his or her resources, including time, energy and attention in the direction of specific academic outcomes [23]. The consequences of motivation are far-reaching affecting individual's attitude and behavior as well as institutional returns such as better reputation, better financial position, and higher human capital by more degree attainment ([42]; [43]). As motivation has an influence on the degree of consideration and effort students invest in the learning activities, therefore motivational factors are found significantly importance [44]. Such factors are generally distinguished with intrinsic and extrinsic rewards.

This kind of motivation stems from the student's internal factors such as a love for a certain subject, or a desire to excel [25]. This is more of an intrinsic motivation and as such, it comes from within and it comprises elements such as curiosity. On the other hand, extrinsic motivation originates from outside a student and includes macro-economic environment, institutional programs and information environment that determine the student's participation in his or her academics [25]. In the classification of internal motivations, other subcategories point out how goals are taken, including social factors such as parental encouragement and peer pressure and education factors [45]. Moreover, goal orientation literature reveals that mastery-oriented students tend to be motivated by personal standards of performance while performance-oriented students are motivated by things like grades [46].

SELF-EFFICACY

According to [26] self-efficacy is one of the most significant predictors of students' productivity and can be viewed as a gate to the academic success. Specifically, those who have high self-efficacy beliefs have the perceiving themselves capable of being able to complete certain tasks and these encourage them to set challenging goals and endure challenge which is crucial ([27]; [28]). Eventually, individual with self-efficacy do not get easily dissuaded from their activities in the event they experience some form of failure, rather they exhibit more effort and persistence in the course of their activities. Studies show that self-efficiency is a protective factor for several personal achievements especially in areas that require diligence, hard work and participation in acquisition of new knowledge and technologies [47].

On top of that, self-efficacy beliefs also work with numerous mechanisms to determine performance and this is revealed by [48]. Studies argue that high self-efficacy means that students will be more likely to set challenging goals and use a great deal of effort to attain them. It is positively associated with greater tenacity and endeavor [49]. Moreover, self-efficacy beliefs influence the expectancy of outcomes, for example the consequences of success or failure such as social repercussions like satisfaction, reputation, and interpersonal relationship [50]. This also explain that the academic outcome expectancies, through the variable of academic goal setting and self-efficacy affect student performance. In addition, self-efficacy beliefs enable the achievement of favorable student outcomes by promoting adapted coping strategies to failure. The resourcefulness in managing difficulties is a related concept with personal efficacy stressing on the self-efficacy as a key to sustained optimism in coping and academic perseverance ([51]; [52]).

LEARNING STYLE

The cognitive and perceptual student patterns significantly vary having implications on their psychological processes [29]. This diversity of learning styles is educationally relevant, since students use a range of approaches organizationally to the learning process including, choice of material and amount of work input. These styles can be related to the academic results and determine approaches to studying and the results of the process [53]. For example, Xu et al study emphasized although the theory of cognitive-style construct postulated from the Dunn and Dunn model differentially and validly explained the students' post-training awareness of cognitive style, it did not significantly explain students' productivity or other study variables, including age, gender, and academic performance [30]. Furthermore, the Kolb's learning style inventory that is used in different settings such as pharmacy, industrial manufacturing, engineering and other organizations and industries also affirmed that the learning style distribution is highly variable across organizations and industries. However, there is moderate support from in the findings of [31] that showed organizational-specific work group composition could better predict learning styles than industry characteristics.

ENVIRONMENTAL FACTOR

Physical and technological characteristics of learning environments are imperative to determining student productivity since they act as one of the key determinants of the learning environment ([32]; [33]). The aspects of such environments can influence students 'learning, satisfaction and retention, leading to their performance and productivity in their colleges or universities.

PHYSICAL ENVIRONMENT

One significant finding published in several research is the impact of design features in the architectural learning environment on productivity of students. Concretely and more narrowly, effective classroom learning environments have been conceptualized to enhance positive classroom climate that enable positive construction with the students' classroom tasks through enhanced class attendance, participation and performance [34]. On the other hand, appropriately designed classroom has been realized to hamper academic processes and reduced academic standards measures ad frequency and attendance. While there is a vast amount of literature on the appearance of the classroom there is much less if any concern for the building and the environment that universities inhabit even outside of the classroom. This is surprisingly missing since the totality of the campus context that includes a wide range of spatial contexts and architectural features appears to potently influence the student experiences and their results.

Similarly, most of the work done in this field of study has focused on specific sections such as recreational areas, library, and social areas while a vast area of research interest has been left untouched with regards to the impact that the overall campus environment has on student productivity ([38]; [39]). Though, the area as a whole is still a work in progress, the effects that classroom have on the students have been the subject of extensive studies. Such features as size, form, and disposition of learning environment and arrangement of class affect socially constructive interaction and motivational exertion to result into better grades and increased attendance records. Whereas, other studies have also focused on the acoustic environment; in regard to the students' productivity, it was found not to have much impact ([36], [37]). Moreover, Classness spatial arrangement attributes within design has mainly supported learning and management strategies in higher learning institutions; thereby specifying global acclaim to such decisions. Appropriate application of these attributes can improve the educational climate which in its turn will contribute to improved learning performance and hence, the students' success around the world ([33]; [54]). In this concern it is recommended that further research be done to capture every aspect of the physical environment of universities and the effects that such environment has on productivity of students; There is also need to go further in exploring how the existing or new class arrangements can best support productivity of students in university.

TECHNOLOGICAL ENVIRONMENT

Technological environment in higher learning entails used or usable technologies which supplement and facilitate learning among the learners [35]. It comprises the technologies like the online course management systems, technological tools for research, virtual learning environment, and educational software. Technology when adopted into the systems of learning has brought a dramatic shift on the traditional learning models with the prospects of increasing effectiveness of the classroom learning and increased engagement of the learners ([55]; [56]). In the past, teaching learning processes in the context of higher learning institutions have been closely associated with printed textual manuscripts and traditional pedagogy. However, the emergence of technological effectively has moved the emphasis onto the interactive and richness of the learning environment [57]. However, still in many learning organizations, facilities, and institutions there are utilizing environment that has been developed formerly and is Suffice based on textual print media [40]. VLEs have, more often than not, led to a substitution of some aspects of non-technology enhanced education systems without revolutionizing learning. Due to these issues, learner engagement participation in these environments has often been described as passive with the learners working in a silo rather than in pairs or groups.

Another important characteristic of the technological environment consists of the level of students' engagement ([58]; [41]). Education is a process of paying attention on education related activities, of giving and applying feelings, thoughts, and efforts for educational activities. Research identifies four primary factors that influence engagement: level of compatibility with learners' expectations, motivations, and needs; nature of the educational environment and it's perceived by learners; learners' experiences that may potentially affect their ability to process educational stimuli; and the interaction between learners and the educational staff [59]. It becomes pertinent to study the impact of such resources and technologies on these aspects for better students' engagement and the general performance. Similarly, it is significant to pursue the optimization of advanced educational technologies in the educational process of students to enhance and promote their learning processes ([60]; [61]; [62]).

ACADEMIC FACTOR

According to [63], the academic factor can refer to everything in academic life that can influence the performance of a student. This can concern anything from class work, to out of class work, to the nature of that class work. It also concerns the way in which a that work is presented to the student, and any support available to help a student engage with that work.

ORGANIZATIONAL CULTURE

Organization culture in this context comprises of the values, beliefs, attires, and practices that define the manner in which members in an organization, or establishment behave and transact their businesses, both within and outside the organization [64]. Several studies highlighted that there is major impact on the standards of employee motivation, which serves as one of the leading early indicators of workplace productivity and performance ([65]; [66]). Moreover, organizational culture consists of leadership, decision making, management, communication, workers relationship, institutions and culture values and norms, and social pressure influence [67]. According to literature, appropriate organizational culture is crucial for boosting purpose, commitment, and performance of the students pursuing higher learning education [68]. The studies conducted demonstrate that high expectation of students and emphasis on academic goal creates a positive path towards the achievement of such goals [69]. For example, past studies identified that the institutions focused on research force students into enhancing their output ([70]; [58]). On the other hand, instances where institutions emphasize sports and recreation, they end up compromising student's concentration on their books ([71]; [72])). Thus, it was suggested that in higher learning institutions, institution culture should promote learning, honor, and uphold academic values for all the students and embrace all students.

TEACHING METHOD

Teaching method is a factor influencing student productivity pertinent to how students are taught in a higher education academic environment [37]. According to literature, several past studies have in-depth explored the current teaching methods in higher education, whether traditional lecture-based teaching is still the mainstay of academics or if universities are adopting more active learning approaches, and how new technology is impacting student pedagogy, and whether online instruction is leading to more productive students [73]. For instance, the productivity levels and teaching methods used in universities in different countries are examined to assess whether the teaching method alters between discipline areas, if different teaching methods are always the best approach, and what innovative pedagogical methods are being utilized to ensure that students are engaged and motivated to learn [74]. The effectiveness of group and peer learning in the teaching setting is also analyzed as well as reviewing how the teaching method influences student academic performance and overall productivity in higher education institutions ([75]; [76]).

ACADEMIC SUPPORT SERVICE

According to past studies, it was argued that tutoring and such other academic related services like counselling and study skills development classes have been found to affect productivity of students in a positive way ([77]; [78]) This productivity, which would generally be quantified as GPA, class failures, and overall performance, rises considerably when students employ one or several of these services, as shown by [79]. But, when academic services have been incorporated and analyzed as the control variable in models estimating student productivity from attitudinal and prior background characteristics and pre-entry performance, the same positive relationship is not invariant. For instance, productivity measures such as Total GPA, number of hours worked per week, and SAP status to depict respondents' performance show a positive and statistically significant relationship with support service utilization showing that students utilizing support services are at least as productive as their counterparts who do not use any support service [57]. This finding, while seemingly counterintuitive, can be interpreted in several ways, for instance either academic services actually increase productivity, with users gaining higher grades, or these services assist learners with poor academic performance without positively predisposing overall productivity increments ([59]; [80]).

RECOMMENDATIONS FOR HIGHER EDUCATION PROVIDERS AND FUTURE WORK

Amid to the literature review, several recommendations can be made for the higher education providers. For instance, in order to greatly enhance student productivity, institutions should concentrate on establishing a favorable corporate culture that places a high importance on academic ideals, encourages dedication, and advocates for supporting leadership. This entails incorporating these principles into the institution's vision and rules, fostering transparent communication, and acknowledging academic accomplishments to inspire and incentivize both students and staff. Furthermore, universities ought to embrace adaptable and inventive instructional techniques that surpass conventional lecture-centered approaches. Universities can improve student engagement and learning results by implementing active learning methods, such as group projects, interactive debates, and technology-enhanced education. Moreover, Hybrid learning methods which integrate both in-person and online training can also better accommodate the different needs of students, offering increased access to resources and flexibility in the learning process. In addition, it is crucial to enhance academic support services by increasing the availability of tutoring, counselling, and tailored academic support programs in universities. These programs should be designed to cater to the specific requirements of individual students, assisting them in overcoming obstacles and attaining academic excellence. Consistent surveillance and assessment of these services can guarantee their continued efficacy and adaptability to the demands of students. On top of that, higher education providers should establish favorable learning environments by allocating resources to modern, well-equipped physical and digital facilities that facilitate both collaborative and independent study. For instance, encouraging a well-rounded campus experience, in which academic

pursuits are enhanced by participation in extracurricular activities such as athletics, arts, and social events, can positively impact the general well-being and productivity of students. Ultimately, cultivating an all-encompassing and varied campus atmosphere is crucially important, as it guarantees that every student is esteemed, motivated, and assisted, hence enhancing morale, involvement, and scholastic achievement, gradually increasing the student productivity.

Future work also includes to create a comprehensive framework to provide educational settings with guidance on how to establish their instructional environment in a suitable manner. In addition to quantitative approaches, the use of mixed-method designs can be adopted in future work to contribute to a more comprehensive understanding of context-specific elements that can be established as distinctive selling points. In order to enhance the effectiveness of research on learning productivity, it would be advantageous to create standardized instruments that can be used to compare findings across different studies.

CONCLUSION

There has been a growing interest in recent years in studying the factors that affect student productivity in higher education. This review paper reveals that there are still significant unanswered questions, as well as crucial contextual aspects that impact educational environments. In this context, future research can include review more quantitative studies finding and examine the effects of national culture using data from the World Values Survey and GLOBE project. To address conflicts, it can recommend to carry out qualitative case studies as a first cost-effective measure. Similarly, a longitudinal study can also conduct to provide insight into how their moderating influence changes over time as classes graduate.

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CONFLICT OF INTEREST

Declare that there are no conflicts of interest

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