Lecturers' Factors, Teaching Methods and Students' Academic Outcome in Computer Keyboarding Skills in Colleges of Education, Southwest, Nigeria

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In Partial Fulfilment of the Requirements for the Award of Doctor of Philosophy (PhD) Degree in Business Education

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2025

Certification

This is to certify that **Olaiwola Seun SODAMOLA** with matriculation number **LCU/PG/002770** carried out this research work titled **'Lecturers' Factors, Teaching Methods and Students' Academic Outcome in Computer Keyboarding Skills in Colleges of Education, SouthWest, Nigeria'** in the Department of Arts and Social Sciences Education, Faculty of Education, Lead City University, Ibadan, Oyo State, for the award of Doctor of Philosophy Degree (PhD) in Business Education and that this has not been previously submitted.

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Dedication

This thesis is dedicated to Almighty God.

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Finally, **e**ven though the above-mentioned institutions and persons have assisted in the process of this research work, I alone stand responsible for the errors, if any, found in the work.

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Abstract

The study investigated Lecturers' Factors, Teaching Methods and Students' Academic Outcome in Computer Keyboarding Skills in Colleges of Education, Southwest, Nigeria. Studies on research works have covered comprehensive nature on many traditional teaching methods but this research work incorporates and blends the traditional teaching methods applicable to practical with modern pedagogical approaches and contemporary lecturers factors. It highlights the critical function that lecturers fulfill in shaping students' academic performance through their educational strategies, dispositions, and anticipations. The research emphasizes that lecturers' salary, teaching experience, qualifications, teaching facilities and working condition of lecturers may have an impact on student outcomes, despite the fact that these variables have yielded inconsistent findings. The aim of the study is to investigate the influence of lecturers' factors and methods of teaching on student's academic outcome in computer keyboarding skills. Two-Factor Theory, Constructivism Learning Theory, Theory of Behaviorism and Connectivism were applicable and used Descriptive survey research design was adopted. Five objectives of the study, three research questions and two null hypotheses guided the study. The sample covered total number of (1105) one thousand one hundred and five 200 level Business Education students. The validity of the instrument was determined by two experts in research methodology to make inputs while the internal consistency reliability coefficient of 0.68 was obtained for the study Descriptive and inferential statistics: simple percentage, mean, standard deviation and anova were used to analyze data. Findings revealed that the level of academic outcome in computer keyboarding skills is high (x=3.48) and standard deviation of (0.66). The level of status of lecturers' factors in computer keyboarding skills is high with average weighted mean of (X3.36) with standard deviation of (0.66). The Degree to which teaching methods enhance computer keyboarding Skills is also high (x=3.38) and standard deviation of (0.66). The results show a Multiple Regression coefficient of R = .508, an adjusted R^2 = 0.257, indicating a positive correlation on combined influence of lecturer's factors and methods of teaching on academic outcome of students. (Adj. R^2 = 0.257) and (F = 157.791; p<0.001). Research hypothesis two presents the standardized beta (β) coefficients which revealed relative influence of lecturer's factors and methods of teaching on academic outcome of students. The results show that all predictor variables significantly influence students' academic outcomes in computer keyboard skills, with [β = .299, t(139) = 9.111, p < 0.05] and [β = .298, t(139) = 9.323, p < 0.05]. It was concluded that, high level of academic outcome in computer keyboarding exists among students as a result of lecturers' factor and application of appropriate teaching methods. The results concluded that, effective pedagogical techniques and lecturer-student interactions are essential for enhancing students' learning outcomes in the domain of computer keyboarding skills. It was recommended that, government should continue to support and maintain competitive salaries, improve working environments, and provide opportunities for professional development. among others and lecturers should continue to intensify of application of appropriate teaching methods.

Keywords: Academic Outcome, Computer Keyboarding, Lecturers' Factors, Teaching Methods, Skills

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Chapter One

Introduction

1.1 Background to the Study

Academic outcome of students is evident through test and examination scores/result assigned by the course lecturers. It could also be said to be any expression used to represent students' scholastic standing. At school level it is not only a pointer of the effectiveness of schools but also a major determinant of the well-being of youths in particular and the nation in general. Hence, how students perform in their academic endeavor is of pertinent priority to the, parents, government, lecturers of any nation for lecturers' accountability. Schools are often assessed using students' academic outcome and there is a growing demand for good academic performance of students in the society at large[1].

Students' academic outcome in any institution is affected by copious numbers of factor including lecturers' salary, working conditions, teaching experience, teaching facilities and learning environment. Good number of students carryout adequate studies about the factors enhancing student outcome at different study levels and it was observed that students' outcome were actually based on several factors. Also, a study argued that, a student academic attainment hinged on methods of teaching employed by the lecturers. It was opined also that, students' result in examinations or test are consequential to particular method of teaching lecturer applied. According to a study, "the higher institution students' academic outcome is based on the academic performance of graduate students and observed that students future outcome, is determined by how serious such students must have been participating in school work and given assignment or project[2]. Lecturers cannot be separated from the institutions they work and academic outcomes of

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students in schools. It would therefore be logical to use standardized students' assessments results as the basis for measuring the students' outcome performance.

Lecturers' salary is very fundamental as lecturers assume an essential role in educational success as they are fundamentally accountable for translating policies into actionable strategies and practices during their interactions with students. Hence, it has been substantiated that lecturers' pay motivates their performance and relatively exert a significant influence on students' academic performance and they should be well paid. It is thus concluded that the salary is predominant lecturer's factor affecting student learning outcomes. Lecturers occupy a critical position in the dissemination of knowledge, values, and skills throughout the educational experience. Should the lecturer be ineffective, students under their guidance are likely to experience insufficient academic advancement, irrespective of the degree of similarity or divergence in students' individual academic potential[3]. Salary and other allowances reinforce workers in institutions either public or private work place. Lecturers who receive high pay salaries tend to excel in their teaching courses are rewarded with other packages during school appraisal time. Lecturers are often rewarded when their institutions and different courses are highly ranked. While given cognizance to the reward of lecturers who make better results, lecturers should also be blame when students perform woefully[4].

The academic outcome of students is a complex dynamic phenomenon that is influenced by a multitude of factors that affect a student's efficacy. However, one of the most important influencing factors is the lecturers' salary. It is claimed that the greatest determining factor on performance and on the overall experience of the course was the lecturer' salary. The authors highlight that negative attitudes can occur due to low salary; sometimes lecturers act as if they were working and not in real sense when there is nothing to impress them due to low/ non-payment of adequate salaries[5].

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These multifaceted factors collectively contribute to the evolution of students' academic outcome over time, prompting researchers to assert that the lecturer's salary among other factors significantly influences students' academic outcomes, extending well beyond their academic tenure. In their investigations, the authors have emphatically advocated for lecturers to provide support to their students throughout the learning process and have advised the cultivation of an environment characterized by positive expectations. This, it is contended, would inspire students to engage actively in their learning endeavors and enhance retention. The interplay adequate of competitive salary among workers, motivates responses and fosters a good job performance among lecturers. A reinforcing act of teaching and learning is accomplished, which leads to the desired level of learning for the students and satisfaction for their respective lecturers. This is because the developing relationship further encourages the lecturer to build upon the low performance of the students rather than retarding them because of a typical low performance[6].

Working conditions within educational environments pertain to the contextual and situational factors that influence the processes of teaching and learning. These conditions encompass elements such as classroom ergonomics, illumination, auditory levels, seating configurations, and workload, among others. In the domain of computer keyboarding, where dexterity, velocity, and precision are paramount, the caliber of the lecturers' working conditions substantially impacts the educational outcomes of students[7]. The ramifications of lecturers' working conditions on the academic performance of students in computer keyboarding at institutions of higher education represent a matter of considerable significance. Educators who benefit from favorable working conditions, including appropriate work load, conducive classroom environments, access to pedagogical resources, manageable class sizes, and supportive administrative

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frameworks, are predisposed to deliver high-quality instruction. These advantageous circumstances bolster their motivation, engagement, and capacity to utilize innovative pedagogical strategies, thereby enhancing students' educational experiences and proficiency in keyboarding skills[8].

In contrast, poor working conditions may impede lecturers' performance, leading to diminished teaching effectiveness and reduced academic success among learners. Variables such as antiquated equipment, inadequate teaching materials, excessive workloads, and a lack of opportunities for professional development can foster lecturer dissatisfaction and contribute to burnout. This, in turn, adversely affects their ability to sustain students' engagement and mastery of keyboarding competencies. Consequently, the enhancement of working conditions for lecturers is imperative for promoting superior academic outcomes and skill acquisition in computer keyboarding within higher education institutions. Empirical research has indicated that unfavorable working conditions can result in physical discomfort, distraction, inadequate seating, diminished motivation, and overcrowded laboratories, all of which can obstruct skill acquisition in precision-dependent areas, such as keyboarding, thus yielding lower performance outcomes[9].

Teaching experience of lecturers is another factor that is very fundamental and study revealed either male or female play a pivotal role in students' academic outcome. Scholars have scrutinized the effects of various lecturer factors, including gender and teaching experience, on student academic outcomes, yielding diverse conclusions. In recent years, there has been a substantial reconfiguration of the gender teaching experience present in higher education, a process backed and documented by a series of fundamental studies in the field This notable change not only emphasizes the sustained inclusion of women in fields previously governed by men, but also their

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outstanding performance and active participation in the academic context, challenging and reformulating traditional paradigms Given this rising phenomenon, there is a clear need to carry out a detailed analysis that sheds light on the various facets of this transformation. According to contemporary research, women exhibit high commitment in their university trajectory, assigning considerable value to the academic and extracurricular dimensions of their educational experience[10].

Lecturers' teaching experience has positive effect on students' academic outcome in computer keyboarding. It was also discovered that there was influence of educational background on students' outcomes. Describing lecturers' experience, another study found that how lecturers handle student assignments affects their performance, particularly when those assignments are clear, inspiring, corrected, and evaluated in class and serve as a platform for providing feedback on students' performance. When it comes to educating students, lecturers are essential. The school is the most crucial setting for students to learn and grow in their social and academic skills, second only to their homes. Every school makes an effort to hire competent lecturers who can provide its students with a high-quality education. Effective results can only be achieved by highly qualified and dedicated lecturers or teaching personnel who develop high-caliber students who will later contribute to their nation[11]. Because only experienced lecturers can provide the greatest education to students, it is imperative that schools retain their brilliant or vital teaching staff. Therefore, the caliber of lecturers has a significant impact on the caliber of education. However, students and the school's performance will suffer if the qualified lecturers are planning to leave the teaching profession or the institution. Therefore, it is crucial to retain highly trained lecturers in order to provide high-quality instruction.

They advocate examines the critical role of lecturers teaching experience in shaping effective teaching practices and improving student learning outcomes. The authors argue

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that a deep understanding of subject matter enables teachers to deliver content more clearly and effectively, thereby enhancing students' comprehension and academic performance[12]. Research focusing on students' perceptions of lecturers' knowledge, comprehension, and clarity concerning their respective courses yielded noteworthy insights. The pedagogical skills, the knowledge of the subject matter, and the lecturer's attitude were all documented as perceived by the students involved in the study. The findings and analyses of this investigation demonstrated that each of these elements had a substantial correlation with the academic outcomes of the students. Furthermore, the study conducted among university students in Malaysia aimed to investigate the apparent neglect of students' learning styles in both research and pedagogical practices[13].

The researchers contend that lecturers frequently lack awareness of their own learning styles and engage in teaching without adequately considering the needs dictated by the individual learning styles of their students. Their findings indicated that students exhibited a preference for kinesthetic learning, characterized by learning through active participation in activities, while demonstrating minimal inclination towards auditory and visual learning modalities. Simultaneously, they expressed a lack of appreciation for personalized teaching or learning strategies employed by their lecturers. The majority of lecturers utilized traditional auditory and visual methodologies within the lecture environment[14]. The level of job satisfaction among lecturers constitutes a component of their overall productivity; hence, it is anticipated that satisfied personnel will exhibit prolonged tenure within the organization, contingent upon enhanced motivation and improved well-being.

The availability and quality of teaching facilities, including operational computer laboratories, sufficient numbers of functional workstations, dependable power sources and internet connectivity, contemporary word-processing software, and suitable

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instructional aids and practice programs, constitute a fundamental determinant of whether learners acquire practical ICT competencies, such as computer keyboarding. Empirical research across various contexts correlates access to ICT resources and instructional instruments with enhanced laboratory teaching quality and increased student engagement, which subsequently contributes to improved academic performance in skills-oriented subjects[15].

Investigations that assess learning in computer keyboarding and word-processing skills reveal that the presence and utilization of tools and equipment significantly influence students' acquisition of practical office and keyboarding competencies. Learners who are engaged in well-equipped, experiential learning environments report greater skill advancements than those instructed under conditions of limited resources. This finding implies that the provision of facilities is not merely a logistical concern but is fundamentally pedagogical in nature, particularly in fostering motor-skill automaticity in typing[16].

The impact of educational facilities on students' academic performance in computer keyboarding skills is substantial. Research indicates that the availability and utilization of contemporary educational resources, such as interactive computer software packages, positively influence student achievement in keyboarding by enhancing speed, accuracy, and proficiency in typing skills. For instance, studies have demonstrated that students utilizing interactive computer software packages exhibit superior academic performance relative to those lacking access to such technological resources. This enhancement is ascribed to improved touch typing capabilities facilitated by these instructional tools, which synergistically integrate cognitive, affective, and psychomotor skill development. Moreover, computer-aided instruction (CAI) has been shown to significantly elevate keyboarding proficiency in comparison to traditional typewriting and textbook

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methodologies. Research conducted within educational environments indicates that students educated with computer software in a laboratory context achieve superior accuracy and speed on keyboarding assessments. These results highlight the critical importance of ensuring adequate technological facilities and instructional materials to enhance keyboarding performance[17]. The instructional facilities provided by lecturers, particularly access to computer-aided instructional tools and well-equipped computer laboratories; exert a strong positive influence on students' academic performance in computer keyboarding skills. The enhancement of these facilities is vital for augmenting the effectiveness of keyboarding instruction and fostering the academic success of students in this domain[18].

The concept of the learning environment encompasses educational resources and technology, pedagogical methods, learning modalities, and connections to societal and global contexts. The phrase also refers to aspects of human behavior and culture, such as the critical role that emotion plays in learning. In the same way that an ecology is a combination of living creatures and the physical environment, the learning environment is a composite of human actions and material systems. Modern students should have access to classrooms that accommodate both their individual and group needs. Educational leaders must create engaging and empowering physical and cultural environments in order to tackle this challenge[19].

Different classrooms and contexts have different learning environments, each with its own special components. Learning environments might be student-centered, knowledge-centered, assessment-centered, or community-centered, student-centred environments are designed for the active construction of knowledge by and for students according to a study. Student-centered environments are meticulously crafted to facilitate the active

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construction of knowledge by and for the students. Knowledge-centered learning environments are characterized by their provision of support for students' profound explorations of significant concepts through generative learning activities. Assessment-centered learning environments offer frequent, ongoing, and diverse opportunities for evaluation, encompassing possibilities for revision as well as self and peer assessment. Community-centered environments emphasize the importance of collaboration, negotiation of meaning, appreciation for diverse perspectives that underpin the construction of knowledge, and connections to the local community and cultural context[20].

The learning environment comprises several components that exert influence over the student's educational trajectory. These components include individuals; instructional materials, technological tools, and educational resources; curriculum, training, and pedagogical strategies, as well as physical evaluation. The individuals involved are those who directly or indirectly affect the student through interpersonal connections or relationships, which can significantly contribute to the growth and success of students in their professional pursuits. The instructional materials, technological tools, and educational resources consist of pedagogical materials, advanced tools, or other instructional resources that are aligned with the curriculum, serving as part of the support system for student learning. The curriculum, training, and instructional practices form the foundational pillars of the learning process; they interact reciprocally and play essential roles in facilitating the dissemination of knowledge and the delivery of instructional content[21].

The physical learning environment refers to the tangible setting of the student's space, which should elicit positive responses and sustain the engagement of its inhabitants.

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Certain critical factors have been identified that may influence the learning process, including intellectual factors, which pertain to the individual's cognitive capacity. Learning factors emerge from ineffective methods of study or work and the limited breadth of experiential background, impacting the learning process. Physical factors encompass aspects such as health, physical development, nutrition, visual and physical impairments, and glandular irregularities. Mental factors include dispositions such as interest, positivity, and open-mindedness, which are pivotal in personality development. Personal factors, including instincts and emotions, along with social factors, such as cooperation and competition, are intrinsically linked to a complex psychological framework of motivation. The teacher, as a distinctive individual, constitutes a significant factor within the learning environment. They serve as key elements that foster a conducive teaching-learning atmosphere, thereby rendering the instructional process more accessible, enthusiastically adaptable, and beneficial[22].

Teaching methods are made up of the ideas and strategies lecturers employ to help students learn. These tactics are based in part on the subject matter being taught and in part on the student's characteristics. A teaching approach must be relevant to the student's characteristics and the kind of learning it is intended to facilitate in order to be effective and suitable. There are recommendations for designing and choosing instructional strategies that consider both the nature of the subject matter and the learning styles of the students. The current trend in schools is to promote a great deal of creativity. It is well recognized that human progress is a result of reasoning[23]. Creativity is boosted by this logic and unique idea. The two main categories of teaching methods are student-centered and lecturer-centered. The primary authority figure in a lecturer-centered learning model is the lecturer.

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Usually, a lecturer's chosen teaching methods, the classroom setting, and their accommodating demeanor toward students all have an impact on students' learning. Ideally, the classroom setting should both assure students that real instruction is taking place and guarantee lecturers that real learning is taking place. Furthermore, when a student thinks more like a lecturer and the lecturer thinks more like a student, the learning curve is accelerated. Deepening a student's sophisticated thought pattern through their surroundings, it was said, opens the door to better classroom performance and inspires them to contribute original and unique thoughts that come with their special knowledge and skill set[24].

The lecture method represents a conventional pedagogical approach that is predominantly instructor-centric, wherein the educator serves as the primary conduit of knowledge, delivering a systematically organized presentation of content to learners. Learners are anticipated to engage in attentive listening and note-taking, with minimal interaction permitted during the presentation, often restricted to preordained intervals for questions and answers. The principal objective of the lecture method is to effectively impart a substantial volume of information within a relatively brief duration, relying significantly on the instructor's expertise and communicative proficiency. This approach is predominantly unidirectional, wherein the educator disseminates information while students passively receive it without engaging in active discourse or participation. Notwithstanding its prevalent utilization in educational institutions, the efficacy of the lecture method is contingent upon the educator's capability to systematically organize and elucidate material in a manner that captivates students' attention and promotes understanding. Hence the lecture method is esteemed for its efficacy in transmitting knowledge; but it may occasionally constrain active student engagement and interaction[25].

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The discussion method constitutes a teaching strategy that encompasses interactive group dynamics in which the educator and students collaboratively identify issues and pursue resolutions. This approach prioritizes active involvement, critical analysis, auditory comprehension, and verbal articulation skills. It generally adheres to three principal phases: orientation (wherein the educator delineates the topic and clarifies the procedural framework for the discussion), engagement (where learners actively contribute and the educator facilitates the discourse to maintain focus), and debriefing (where reflective contemplation and summarization of learned concepts transpire). This method cultivates democratic reasoning, self-articulation, and profound understanding by motivating learners to exchange ideas, pose inquiries, and partake in dialogue rather than passively absorbing information. Challenges inherent to this method include its demand for greater temporal and cognitive investment in comparison to alternative methodologies. The discussion method is underpinned by constructivist and social learning theories, which underscore the construction of knowledge through active engagement and collaboration among learners[26].

The demonstration method constitutes a teaching technique wherein the instructor displays learning materials through the exhibition or demonstration of a specific process, situation, or object, whether authentic or simulated, frequently accompanied by verbal explanations. This methodology facilitates students in developing a more vivid and enduring comprehension by enabling them to observe the practical application or operational dynamics of the subject matter, thereby bridging the divide between theoretical concepts and real-world contexts. It renders learning more transparent and tangible, circumventing mere verbal exposition, thereby stimulating students to adopt a more proactive stance in observation and practical application. The method encompasses several fundamental principles, such as capturing students' attention, fostering positive

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teacher-student rapport, and enhancing the overall engagement of the learning process. Through the utilization of demonstration as a pedagogical strategy, students' exhibit enhanced capabilities in both comprehension and retention of subject matter, while simultaneously fostering their creativity and practical competencies through close observation and self-directed experimentation[27].

Computer Aided Instruction (CAI) represents an instructional method that employs computers as pivotal instruments in the dissemination of instructional content, evaluation of student progress, and facilitation of learning activities. This method promotes interactive learning environments in which students interact with computer-mediated materials, such as texts, visuals, auditory elements, videos, and simulations, thereby clarifying concepts and enhancing understanding beyond the limitations of traditional pedagogical techniques. CAI is inherently learner-centered and fosters active learning by facilitating personalized interactions between the student and the computer, which has the potential to elevate academic achievement, motivation, and knowledge retention when compared to conventional instructional practices. Furthermore, it moves the educator's role from a direct instructor to a facilitator who guides students in their exploration and mastery of academic subjects. Research indicates that CAI contributes to improved student performance and engagement, serving as a flexible and effective adjunct or alternative to traditional classroom instruction. This instructional approach has demonstrated particular efficacy in domains necessitating conceptual understanding, such as scientific and business education, by rendering the learning experience more meaningful and accessible[28].

Computer keyboarding constitutes a crucial and fundamental aspect of Vocational Education, particularly within Colleges of Education and Polytechnics tasked with

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training office technologists. Keyboarding is defined as the act of inputting data through designated keys on a computer. This skill represents a highly sought-after business course for numerous students whose primary objectives include mastering touch typing and proper keyboard techniques. Additionally, it entails the development of foundational speed and accuracy, while also offering practice in applying these skills to the formatting of letters, reports, tables, memos, and various forms of personal and business communication. A defining characteristic of Vocational Education is its focus on the labor market, with the curriculum prioritizing the acquisition of skills that enhance employability. Given that proficiency assessments are a prerequisite for employment, the emphasis on acquiring employable skills within the classroom is essential for fostering sustainable livelihoods and encouraging responsible citizenship. Vocational Education seeks to promote skill acquisition through competency-based training initiatives. These programmes encompass a wide range of domains, including office competencies and technical training[29].

Proficient keyboarding skills are among the essential competencies possessed by an Office Technologist, which are undeniably critical to the profession. In the realm of computer literacy, keyboarding skills significantly influence the effective utilization of computer systems, underscoring the importance of proficient keyboard usage. This represents the primary modality through which individuals engage with their computing devices, frequently utilizing the keyboard without constant visual reference; furthermore, a multitude of operations can be executed solely through keyboard input. Initially, the acquisition of proficient typing skills is paramount, as this competency can substantially augment one's overall productivity. For the practice of computer keyboarding to be deemed effective and efficient, the touch typing methodology, which necessitates the

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utilization of all eight fingers to input text without visual guidance, must be integrated into the learning process to facilitate access to various keys[30].

The significance of proficient computer keyboarding skills has been recognized and incorporated within the minimum standards established by the NCCE. The development of keyboarding competencies necessitates a considerable investment of time and dedication. In the processes of drafting correspondence or performing numerical calculations, the keyboard serves as the primary interface for data entry into the computer system. Additionally, computer users may leverage their keyboard as a means of navigating and controlling the computer, thereby reducing reliance on the mouse. The acquisition of a limited repertoire of keyboard commands (which serve as directives to the computer) can enhance operational efficiency[31].

The contemporary landscape presents numerous challenges for modern lecturers, as they are routinely confronted with scenarios that require prompt decision-making amidst the complexities inherent in today's societies. Within the educational setting, the lecturer is tasked not only with making decisions related to pedagogical objectives, content selection, and resource allocation but also with the imperative to employ suitable and efficacious methodologies based on informed decision-making from a plethora of available strategies. The increasing array of pedagogical approaches and methods, which may be interpreted as a testament to lecturers' dedication to discovering more effective and economically viable teaching practices, affords lecturers a broader spectrum of methodological alternatives than has previously been available. The hands-on teaching strategy, characterized as a student-centered approach, is not entirely novel within the academic discourse but extends the conceptual framework beyond earlier definitions that were limited to laboratory settings, now encompassing diverse environments such as

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classrooms. Much like numerous terminologies within educational practice, this concept lacks a universally accepted definition that conveys a singular meaning for all practitioners[32].

The hands-on teaching strategy encompasses activities that may or may not involve actual experimental procedures, including observation or measurement tasks that need not be confined to laboratory environments. Generally, hands-on activities are delineated as those that enable students to engage with, manipulate, or observe scientific processes. In these hands-on endeavors, students actively interact with materials to witness various phenomena. Employing a hands-on teaching approach is recognized as an exceptionally effective method for enhancing student performance and deepening knowledge acquisition, while also fostering 21st-century competencies that emphasize learning and innovative skills encapsulated in the 4Cs: communication, creativity, collaboration, and critical thinking. The rationale for advocating hands-on learning in the context of keyboarding skill development is predicated on the premise that it enables students to cultivate functional understanding and fosters their capacity to independently explore and inquire about phenomena[33].

Through the utilization of experiential pedagogical approaches, students in the educational setting assume the role of investigators, collaborating to dissect issues and ascertain viable resolutions. Hence, a study suggested that experiential pedagogical approaches are employed to facilitate problem-based learning. An activity-centered curriculum has demonstrated enhancements in creativity, affirmative attitudes towards skill acquisition, and cognitive development. The keyboarding lecturer plays a critical role in directing this practice. In the acquisition of any psychomotor skill, a pivotal element of the educational paradigm is the presence of an engaged lecturer who observes,

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assesses the learning trajectory, and delivers feedback through corrective measures (comments and demonstrations) to aid the student's advancement[34].

The skill of computer keyboarding is cumulative what can be effectively grasped at one tier is significantly reliant upon prior learning experiences. When "hunt ‘n peck" techniques become entrenched, it becomes increasingly challenging to cultivate proficient keyboarding abilities. Establishing a foundational knowledge early in the process is imperative in keyboarding Software. The intricacy involved in instructing keyboarding necessitates a comprehensive and exceptionally well-structured software application. No software solution has been proven to surpass the effectiveness of proficient, live keyboarding instruction. Who should instruct keyboarding and when should it be introduced? Is it solely relying on keyboarding software? Lecturers would not simply seat students and employ a software package for exclusive instruction. The lecturer provides motivation, reinforcement, and corrective feedback. Accomplished computer keyboarding lecturers exhibit proper keyboarding proficiency, as well as demonstrate the sub-skills integral to the comprehensive skill set. Demonstration is arguably the most significant singular method of delivering instruction in keyboarding. “An ounce of showing is worth a pound of discussing” and “A gram of demonstration is worth a kilogram of discovery.” Trial-and-error methodologies are both economically unfeasible and ineffective in complex skill acquisition. Typewriting is about learning and taking to instruction in styles and layouts of different tasks. Proficient Keyboarding Lecturers assess students’ abilities and competencies through[35]:

a. Observation
b. Leveraging student strengths to assist in addressing any weaknesses
c. Providing consistent, affirmative reinforcement
d. Offering feedback and constructive suggestions.

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e. Evaluating the learning process rather than the end product.

f. Mitigating the adverse effects of competition.

g. Adjusting the objectives of learning activities to elicit appropriate levels of tension.

h. Monitoring for signs of excessive anxiety.

i. Alleviating excessive anxiety by: Promoting self-competition

j. avoiding direct comparisons among students

k. Ensuring that group contests are enjoyable rather than distressing.

l. Encouraging students to establish personal goals.

m. Mitigating excessive anxiety by maintaining a portfolio for each student instead of a grade book that reflects only relative performance.

n. Facilitating a range of contexts whereby all students achieve success.

Keyboarding and reading are classified as 'automatic skills' (see then do), predicated on instantaneous letter recognition and immediate word recognition. Not only can students acquire typing skills, but those who engage in typing also enhance their language arts capabilities. One must utilize the correct technique to achieve the appropriate spin on a curve ball; otherwise, the ball will not curve. Consequently, the student must refine the technique until the response becomes automated.

1.2 Statement of the Problem

The acquisition of computer keyboarding skills is essential for students in the digital age, as it enhances their productivity, efficiency and overall academic performance. However, many students struggle to master keyboarding skills, leading to suboptimal academic outcomes. This raises concerns regarding the variables influencing students' learning

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results and the quality of education. The quality of instruction and the quality of students' academic outcome seem to be influenced by a number of lecturers' factors which are:

Inadequate or irregular salary payments, frequently lowered lecturers' morale by which leads to a decreased level of dedication and excitement for teaching computer keyboarding. Students' understanding of the subject often suffer in situation where lecturers were underpaid or unmotivated, since lecturers did not make necessary effort to provide interesting and hands-on computer keyboarding classes. There is worry that, instructors' low pay demotivates and disengages them, which therefore have a detrimental effect on the quality of teaching and consequently affect students' academic outcome in computer keyboarding[36].

One possible cause of students lacking keyboarding skills is inadequate working conditions, characterized by insufficient office space or an excessive workload, which impedes the productivity of lecturers. In many academic institutions, the lack of favorable conditions serves to demotivate lecturers, consequently diminishing the quality of their pedagogical delivery and subsequently impacting students' academic performance in the domain of keyboarding. This inadequate physical and psychological working conditions which amount to deficiency of institutional support, and an overwhelming workload influence lecturers' teaching efficacy.

Also, inadequate lecturers' instructional experience significantly influences their proficiency in imparting computer keyboarding skills. The focal point of this issue lies in the point that, lecturers with greater experience yield superior student outcomes in contrast to their less experienced counterparts, thereby underscoring the significance of expertise and instructional methodologies in students' academic outcome in computer keyboarding. The extent of teaching experience among lecturers is posited to affect their

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pedagogical competencies and their aptitude for effectively managing classroom environments.

Inadequacy of operational teaching facilities, including contemporary computing devices, audiovisual projectors, typing applications, and reliable electricity supply, constitutes a substantial challenge. In the absence of these essential resources, educators are hindered in their capacity to effectively illustrate concepts or facilitate experiential keyboarding practice for students, which is crucial for the acquisition of necessary skills. In most higher institutions, students are often more than computer systems. It is usual to find lecturers and students interacting academically under non-properly equipped laboratory which in turn translated into students' poor performance in computer keyboarding skills.

It is cleared that the discipline of computer keyboarding necessitates both theoretical instruction and practical application, novice lecturers would struggle to effectively integrate inappropriate method of thereby hindering students' good academic outcome. The reason for this failure is tied to the less demonstrative nature in which this course is being taught. Many apply inappropriate methods of teaching which breed students' lower academic outcome instead of incorporating discussion method, demonstrating method and Computer Aided Instruction (CAI) which are significantly applicable to computer keyboarding skills. This study seeks to investigate the relationship between lecturers' factors, teaching methods and students' academic outcomes in computer keyboarding skills.

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1.3 Aim and Objectives of the Study

The aim of the study was to investigate the influence of lecturers' factors and methods of teaching on student's academic outcome in computer keyboarding skills in Colleges of Education in South West, Nigeria. The objectives of the study were to:

1. identify level of academic outcome in computer keyboarding skills in Colleges of Education in South West, Nigeria.
2. examine status of lecturers' factors (lecturers' salary, working conditions, teaching experience, teaching facilities) in Colleges of Education in South West, Nigeria.
3. determine the degree to which teaching methods (lecture method, discussion method demonstration method, Computer Assisted Instruction) enhance keyboarding skills in Colleges of Education in South West, Nigeria.
4. determine combined influence of lecturers' factors (lecturers' salary, working conditions, teaching experience, teaching facilities) and methods of teaching (discussion method demonstration method, Computer Aided Instruction) on academic outcome of students in computer keyboarding skills in Colleges of Education in South West, Nigeria.
5. ascertain relative influence of lecturer's factors (lecturers' Salary, working conditions, teaching experience, teaching facilities) and methods of teaching (discussion method demonstration method, Computer Assisted Instruction) on academic outcome of students in computer keyboarding in Colleges of Education in South West, Nigeria.

1.4 Research Questions

The following research questions guided the study:

1. What is the level of academic outcome in computer keyboarding skills in Colleges of Education in Southwest, Nigeria?
2. What is the status of lecturers' factors (lecturers' salary, working conditions, teaching experience, teaching facilities) in computer keyboarding skills in Colleges of Education in South West, Nigeria?

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3. What is the degree to which teaching methods (discussion method demonstration method, (CAI) computer assisted instruction) enhance keyboarding skills in Colleges of Education in South West, Nigeria?

1.5 Hypotheses

The following hypotheses were tested in the study:

H_o1: There was no significant ccombined influence of lecturer's factors (lecturers' Salary, working conditions, teaching experience, teaching facilities) and methods of teaching (discussion method, demonstration method, (CAI) computer assisted instruction) on academic outcome of students in computer keyboarding in Colleges of Education in Southwest, Nigeria.

H_o2: There was no significant relative influence of lecturer's factors (lecturers' Salary, working conditions, teaching experience, teaching facilities) and methods of teaching (discussion method demonstration method**,** (CAI) computer assisted instruction) on academic outcome of students in computer keyboarding in Colleges of Education in Southwest, Nigeria.

1.6 Significance of the Study

The findings of the study would be of relevance to the following stakeholders: the curriculum developers, lecturers, students, other undergraduates from other disciplines, educational planner, administrators and the general public. Curriculum planners would be made to design curriculum that will encourage appropriate methods of teaching and emphasize technology driven education improvement on inclusion of ICT on NCCE minimum standard with emphasis on course contents which will improve students' skills and competencies for employability and self-sustainability for 21st century in Tertiary education. They would be able to offer suggestions as to what the number of units to be

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allotted for such practical course and necessary pre-requites needed to as regards to personnel and facilities.

It would benefit lecturers to appreciate and value the need to give student enough time for practical sessions and demonstration. Therefore, lecturers would be guided in planning the implementation of curriculum with consideration to modern technology being incorporated into Business Education. The findings of the study would encourage students to develop skills and competencies in using touch typing, allocation of typing tutor software and technologies for learning in Tertiary education programme. This would go a long way to get familiar with computer keyboard build speed in typesetting through skills.

Through programme instruction method, the study would provide improved performance in other undergraduates from other disciplines, as computer keyboard is indispensable for every system user with learning abilities since computer system is unavoidable input devise. It would promote conveniences and flexibility of all students generally self-paced learning and convenient time, as well as increased access to lecturers of best quality share of knowledge across borders, through online and internet connectivity. It would also help administrators to understand the role of lecturers'' factors on students' academic outcome and proper handling of computer keyboarding for effective and efficient job performance (ICT) in office work and to be aware of the factors hindering the effective delivery of practical course as computer keyboarding, work towards averting the problems to attain excellent student academic outcome.

The findings of this study would help the policy makers and other lecturers to pay serious attention to those lecturers factors that seriously influence students' academic outcome in their vocation and know the role of information and communication technology and

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provide an efficient, reliable means which will help in planning, decision making and implementation.

It is hope that the findings and result of this research work would help in providing information on the factors affecting lecturers motivation, so as to enable the school management, parents and government see the importance of motivating, encouraging and inspiring lecturers. It would also influence productivity/performance of lecturers so that they can discharge their duties with utmost efficiency in the teaching and learning process so as to improve learning on the part of students and produce sound and soundly equipped students.

More so, it is hoped that this study would enlighten school management on the indispensable role of motivation of the job performance of their lecturers in the school as it promotes the reputation of the schools through the performances of the students in examination regarding efforts to attain a more accurate measurement of students' outcome on standardized assessments that require keyboarding skills. This study would produce important information about the effects of keyboarding proficiency on some special students. Individuals with dyspraxia, dysgraphia and other specific learning difficulties often struggle when it comes to writing by hand. It would also benefit people with visual impairments and other special needs too, including individuals with autism spectrum disorder and down syndrome. Finally, this study would also contribute to the body of knowledge in general by providing direction to future researchers who may wish to further their investigation on similar topic.

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1.7 Scope of the Study

This study is delimited contextually, geographically and by location. Contextually, it covers independent variable (Lecturers' factors and methods of teaching) and dependent

Variables((students' academic outcome). Geographically it covers all the seven (7) Federal and State Colleges of Education, Southwest, Nigeria. Hence, it covers one thousand one hundred and five (1105) 200 level Business Education students in all the Colleges of Education in six (6) States of Southwest, Nigeria. This is within the scope of investigating, lecturer's factors and method of teaching on student's academic outcome in computer keyboard skills. The 200 level NCE Business Education students in the Southwest, Nigeria are to be carried research on.

1.8 Limitation of the Study

The limitation that was experienced was high cost of transportation and materials needed for production of instruments as prices of things not stable in the country economy. More also, the research study was constrained by different schools being on break and not operating semesters concurrently in a year. Hence, it was difficult locating and getting easy access to some schools same period.

1.9 Operational Definitions of Terms

Teaching Methods: These are means/techniques of relaying factual information and impacting the needed and appropriate knowledge by a lecturer to students in a school which includes principles, concepts, ideas and all theoretical knowledge about a given topic

Lecturers' Factors: These are lecturers' salary, teaching experience, qualifications, teaching facilities and working condition that influence lecturers in the performance of his/her competency.

Teaching Environment: A learning environment is considered as an area that offers privileges for students to learn through many different strategies,

Working Conditions: Working conditions are the physical and psychological conditions, context within which a worker is expected to perform his job.

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Salary: Money that employees receive for doing their job, especially professional employees like lecturers and other people working in an office, usually paid every month.

Teaching Experience: Teaching experience is the culmination of skills, exposure or training acquired over time that enables you to perform an existing job better or prepare you for a teaching position.

Teaching Facilities: These are the buildings such as classrooms, laboratories; equipment and other ICT devices provided for lecturers to optimize their productivity in the teaching and learning process.

Computer Keyboarding: This is the ability to input information in computer system smoothly during typesetting with all the available fingers) by (Touch Typing) not looking at computer keyboard

Lecture Method: This is a teaching techniques in which a lecturer dominate his/her teaching process solely with students contributing minimum in response or not at all.

The Discussion Method: It is process in which lecturer and students collaborate together to exchange notion during teaching and learning process for the aim of students thinking, learning to solve a problem and get clearer understanding.

Demonstration Method: is an a pedagogical approach, an effective and interactive technique that focuses on actively engaging students in learning how to do something, and then having them practice.

Computer Aided Instruction: It is a programme that uses computers and other digital technologies to deliver instructional content and provide feedback to students

Academic Outcome: Means the extent to which a student's academic performance can be measured and ascertain by test of examination.

Skills: These are vocational and set of practical skills to help one becomes proficient in a performing tasks in office, trade or occupation.

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Chapter Two

Literature Review

This chapter focuses on reviewing related literature to the study. It is categorized into:

2.1 Conceptual Review

2.1.1 Concept of Computer Keyboarding

2.1.2 Methods of Teaching

2.1.2.1 Lecture Method

2.1.2.2 Discussion Method

2.1.2.3 Demonstration Method

2.1.2.4 Buzz Groups

2.1.2.5 Brainstorming

2.1.2.6 Role Plays

2.1.3 Concept of Learning Environment and CAI

2.1.4 Lecturer's Factors

2.1.4.1 Lecturers' Job Satisfaction

2.1.4.2 Motivation

2.1.3.3 Lecturers' Salary

2.1.3.4 Working Conditions

2.1.3.5 Teaching Experience

2.1.5 Concept of Students' Academic Outcome in Computer Keyboarding Skills

2.2 Theoretical Framework

2.2.1 Two-Factor Theory

2.2.2 Constructivism Learning Theory

2.2.3 Theory of Behaviorism

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2.3 Review of Empirical Studies

2.3.2 Lecturers' Environment and Academic Outcome in Computer Keyboarding Skills

2.3.1 Lecturer's Related Factors and Students' Academic Outcome in Computer Keyboard Skills

2.3.2 Lecturers' Environment and Academic Outcome in Computer Keyboarding Skills

2.3.3 Lecturers' Lecturer's Motivation and Students' Academic Outcome in Computer Keyboarding Skills

2.3.4 Lecturers' (Attitude) Behavioral Patterns and Students' Academic Outcome in Computer Keyboarding Skills

2.3.5 Learning Environment on Students' Academic Outcome in Computer Keyboarding Skills

2.3.6 Methods of Teaching and Students' Academic Outcome

2.5 Summary of Reviewed Literature

2.1 Conceptual Review

2.1.1 Computer Keyboarding

The importance of computer keyboarding for academics and office use cannot be over-emphasized. In fact, today training of keyboarding is being included in the early NCE curriculum of Business Education as a course in 100 level known as Computer Keyboarding (BED 116) for first semester and Computer Keyboarding (BED 126) for second semester. This course metamorphosed to what is called Word Processing in subsequent level[1]. Students building up on keyboarding skills and familiarity requires lots of commitment and painstaking Despite this, keyboarding skills should still be the goal. Actually, a practical course like computer keyboarding is an early NCE 1 curriculum needs more attention from lecturers teaching the computer keyboarding. Considering the duration in which the training be carried out, this has to be regular at

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least twice a week. Not long ago, Business Education lecturers taught what was then called typewriting in the old minimum standard but now keyboarding through computer system is being incorporated for learning those keys. Will training be the responsibility of the classroom lecturer? It has been posited that the methodology of acquiring keyboarding proficiency through interactive computer software packages represents a pedagogical approach that encompasses drilling and practice programmes, intelligent tutoring systems, simulations, and educational games. The four elements of computer software-based instruction are ubiquitous in contemporary 21st-century educational environments. Engaging in keyboarding instruction via drill and practice software programmes contributes significantly to enhancing students' fluency, speed, and accuracy in keyboarding[2]. Evidently, computer is now commonly used in homes, schools and other business offices. Will students hunt and peck for keys as they input on the keyboard or will they develop a skill that allows them to use both hands and very little cognitive effort as they key. One requires very little training and the other an investment of time that may be hard to find. If an investment of time will be made into training, will students retain this skill as they move on in their education?

There are greater and better advantages why computer keyboarding skill is preferred over the "Hunt-and-peck" method of using a computer. Touch typing enhances accuracy as you harness muscle memory in the fingers to assist with spellings. So what do we mean by muscle memory? Keyboarding constitutes a lifelong competency, and the attainment of this skill necessitates the acquisition of movement and physical positioning (technique), ergonomic keyboard interaction, and familiarity with key locations. Mastering key location mandates a systematic introduction along with extensive repetition and reinforcement to cultivate the kinesthetic memory that facilitates automaticity in keyboarding[3]. The conscious brain will be slower at answering the

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question than the finger. Through sufficient repetition, the fingers reach automatically for individual keys when they are needed. One doesn't have to consciously think about where the fingers go. Touch typing makes one faster. This, in turn, means system operator will be more productive, as it takes one less time to do tasks so student can take on more work or assignments, or alternatively spend less time sitting at a computer. Automatizing the process improves the quality of your writing too. It frees up cognitive energy so you focus on the ideas instead of just the language required to articulate them.

Moreover, the acquisition of keyboarding skills enhances precision and aids in the development of decoding and sight-reading capabilities for students experiencing particular learning challenges. Although tablets have emerged as significant educational tools in contemporary settings, proficiency in typing on computers remains an essential competency for students to acquire. Keyboarding entails the engagement of the hand muscles during typing; thus, the learner navigates the activity through tactile feedback rather than relying solely on visual cues[4].

Tertiary education students stand to gain substantially from the study of keyboarding, as it facilitates their reading and the execution of additional academic tasks. This is particularly evident in multi-sensory instructional programmes, such as Touch-type Read and Spell, where the educational process contributes to phonetic understanding. Students attune their auditory perception to the spoken word, observe the corresponding text on the screen, and subsequently transcribe it, thereby reinforcing their comprehension of phonetic letter sounds essential for accurate understanding and spelling. Furthermore, this practice enhances sight-reading proficiency through the repetitive engagement with frequently encountered vocabulary[5].

At times, academic assignments within educational institutions can be time-consuming, necessitating that written work be composed in typed format. Students' competencies can

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indeed be augmented through typing on computers, as the process fosters greater fluency, allowing ideas to flow seamlessly from their fingertips to the digital medium. Errors are more readily rectified, and the process of drafting becomes significantly more manageable. Students enrolled in higher education and researchers stand to benefit from utilizing online notes during lectures. Even adult learners returning to academia can employ touch typing to enhance their spelling, literacy, and computer proficiency. Furthermore, necessary resources have been made available for take-home assignments, collaborative tasks, and standardized assessments. Additionally, computer-based testing serves as a rationale for advocating the importance of keyboarding proficiency for all students within educational settings. The swifter a student can type, the greater the opportunity they have to focus on enhancing the quality of their responses and addressing the remainder of the examination questions. Nonetheless, it is noteworthy that not all educational institutions offer keyboarding as a formal course[6].

Allocation of Fingers on Keys

Find the Home position with both hands. Identifying the Home position with both hands constitutes the foundational step in developing computer keyboarding skills, as the fingers navigate various keys but consistently return to their base (home keys) after executing the necessary typing tasks. Most keyboards are equipped with tactile indicators on the F and J keys, designed to signify the placement of the index fingers for guidance.

1. Gentle place the fingers on the keys next to key F and J.
2. The left pinky will be on key A, the left ring finger on key S, and the left middle finger to be placed on key D
3. The right pinky to be on L, and the right middle finger on K.
4. While the right thumbs rest on the spacebar

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Practice typing the home keys. As typing exercise begins, the beginners has to use appropriate assigned fingers to press the necessary keys and memorize the key that each finger will press through repetition. And for hone keys to be constantly stick to one's memory one has to engage in constant practicing[7].

asdf ;lkj asdf ;lkj asdf ;lkj asdf ;lkj asdf ;lkj asdf ;lkj asdf ;lkj

asdf ;lkj asdf ;lkj asdf ;lkj asdf ;lkj asdf ;lkj asdf ;lkj asdf ;lkj

asdf ;lkj asdf ;lkj asdf ;lkj asdf ;lkj asdf ;lkj asdf ;lkj asdf ;lkj

To navigate to the keys surrounding the home guide, **o**nce one masters the home keys one can easily learnt other keys without necessary looking at those keys. Engaging in repetitive exercise to navigate other keys. Use the nearest finger to get to other keys around. As the computer user gets wrists up, one will be able to easily strike the keys that are slightly outside of one's reach. One finger only, should be taken off from the keys at a time. Return the finger after the key has been struck[8].

ded kik ded kik ded kik ded kik edd ikk edd ikk edd ikk

ded kik ded kik ded kik ded kik edd ikk edd ikk edd ikk

fed hid led all sea his leg aid; hid led leg fed all his aid;

die keg jig fee lid see fig leg; die keg; jig fee lid see fig;

egg lie dig; did eel; gig hid; del; gig lee; lie gee lee keg;

How computer keyboard keys are arranged

keyboard keys are divided with several parts according to their function:

1. **Typing (alphanumeric) keys**. These are the keys that contain punctuation, symbol keys same letter, number, on a computer system.

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2. **Control keys**. Conrol keys are not used alone but combine with other keys to perform certain tasks. Examples of these are Ctrl, Alt, the Windows logo key, and Esc.
3. **Function keys**. These are keys used to carry out specific tasks and known as F1, F2, F3, and so on, up to F12. The work of these keys distinct from application to another.
4. **Navigation keys**. These are the keys to move and maneuver around documents and websites pages and to edit text. They are arrow keys, Home, End, Page Up, Page Down, Delete, and Insert.
5. **Numeric keypad**. These keys are often used to input figures on the computer and they are formed together in a block style and typical calculator[9].

Other Special Keys and their Functions

In addition to letters, numerals, punctuation marks, and symbols, the typing keys also include Shift, Caps Lock, Tab, Enter, the Spacebar, and Backspace[10].

1. **Shift:** This is often pressed and combined with another letter in which, one needs initial capital for a word or to press Shift along with signs or symbol needed at top row.
2. **Caps Lock:** When to type in capital letter (upper case), one has to press caps lock to activate capital letter and to stop typing in capital letter, one has press the caps lock again.. in some keyboard light is shown anytime the caps lock is being activated.
3. **Enter:** Enter key serves as okay or Yes/No s button for highlighted button in a dialogue box if one doesn't want to use mouse to select yes or No. It is also used to break a typing line to another typing line.

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4. **Spacebar:** Press the Spacebar to move the cursor one space forward to puts space between words.
5. **Backspace:** Backspace to delete the character before the cursor, or the selected text.

Using keyboard shortcuts

These are way to get quick access to computer system and task being carried out. Shortcuts are means to carry out actions by using computer keyboard. to work faster. In fact, most of the action or command any computer operator can perform using mouse can be performed better and faster by using one or more keys on your keyboard[11].

Useful Shortcuts

The below are some of the most useful keyboard shortcuts computer operators use from time to time.

Press this	**To do this**
Windows logo key	It is used to start menu
Alt + Tab	When one needs to open programmes or windows
Alt + F4	Close the active programme, or exit the active programme
Ctrl + S	It used to save a file -a working document
Ctrl + C	To copy highlighted work on screen, files or folders etc
Ctrl + X	Cut the selected item
Ctrl + V	Paste the selected item
Ctrl + Z	Undo an task or action that has been carried out.
Ctrl + A	Select all items in a document, file, folder or window
Ctrl+I	Italicize selected text

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Press this	To do this
Ctrl+P	To Print a document from file or website
Ctrl+W	To close an active window
Ctrl+O	Open a new document
Ctrl+E	To center align a document
Ctrl+N	To open a new document

Keyboard skill is the ability to be able to work on a document keyboard smoothly during typesetting while Touch Typing is a method of typing (with all the available fingers) without looking at the keyboard. Touch typing can increase typing accuracy and speed and understanding keyboard layout and its functions[12].

Benefits of Touch Typing

1. It improves speed efficiently to type faster than other means
2. There is accuracy in work done with fewer errors
3. Productivity: much work is typed without getting tired easily
4. Health: It convenient with less health problem in hands, wrists, neck,

Typing Tips

1. Maintain a healthy posture.
2. Get use to keyboard layout.
3. Touch typing is best method to start practicing keyboarding skills with.
4. Master the home keys and type each key with the proper finger.
5. Repeat each exercise while practicing makes ones familiar with keys.
6. After mastery of keys, a good speed and accuracy drill is necessary to monitor progress.

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Keyboarding Technique

Proper posture

1. Body: centre body in front of keyboard and sit up straight.
2. Arm position: arms relaxed and bent to about 90 degrees; elbows naturally close to body.
3. The mouse and keyboard should be set to the height of elbow height.
4. Hand position: hands should be flat, but palms of hands not resting on the keyboard. Keep wrists off the keyboard.
5. Feet position: feet should be flat on the ground, slightly apart (don't cross).
6. Eyes: keep eyes on the screen rather than the keyboard or hands[13].

2.1.2 Methods of Teaching

2.1.2.1 Lecture Method

A lecture serves as an auditory medium for the dissemination of instructional content by the lecturer. This method facilitates the communication of factual information encompassing principles, concepts, ideas, and comprehensive theoretical knowledge pertaining to a specific subject matter. During a lecture, the lecturer articulates, elucidates, describes, or correlates the ideas and notions that the students are expected to assimilate through attentive listening and comprehension. Consequently, this instructional approach is predominantly teacher-centered, with the lecturer exerting dominance over the entire process by engaging in the majority of the verbal discourse. Students, in contrast, predominantly occupy a passive role, primarily listening and remaining inactive throughout much of the instructional delivery. Despite the widespread acceptance of lectures, the minimal engagement of students significantly constrains its efficacy as a pedagogical method[14].

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For advanced students or those with little to no prior understanding of the subject, the lecture method of instruction is frequently used to provide an overview of the material before providing in-depth notes. It is also crucial for providing the student with a structured body of knowledge. The lecture must include some material and a period of questions and answers to properly engage students if this approach is to be successful in fostering learning[15].

As previously mentioned, the students just focus on the teacher during the lecture. Therefore, when organizing a lecture, it is crucial to take the students' listening time into account. The listening session is when the students can focus entirely on the course material that the lecturer is presenting. Since it is difficult to keep students' attention for extended periods of time, lectures must be carefully prepared. The lecturer should have a well-thought-out, methodical, and sufficient presentation plan. He or she must highlight the topic's modality and relevant stages, arrange them in accordance with urgent needs and system linkages, and create connections between the several instructional stages[16]. Students can better organize their stores or retain lessons when instructional content is carefully planned. The lecturer should employ a number of strategies when creating a theme.

Relaying knowledge from simple to complex, known to unknown, and from parts to a whole is a useful idea in any teaching approach[17]. It is crucial to the teaching process to get to know the students and pay attention to their needs and interests. For example, the teacher should look for teaching tools that students will recognize when describing anything technical or logical. Care should be taken when introducing those educational materials. It is necessary to provide a definition, explanation, and suitable example for new terms. This approach is known as an informative method since students are accustomed to a teacher-dominated teaching style. It entails imparting ideas, concepts,

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facts, and knowledge orally. In terms of the approach, its goal is to give students sufficient information. While students are passive or only marginally participating, taking notes and asking few or no questions, lecturers perform the majority of the work[18]. The lecture technique is the accepted way of teaching in universities and other higher education establishments. Students at other lower educational levels are not prepared to adhere to this high standard of thinking training. Thus, the lecture technique in its purest form should not be employed.

In order to get attention of students, the lecturer has to make adequate preparation, flow in his/her presentation and should use other instructional materials as charts, posters, realia which is real objects during the lecture method. Raising quiz and answering periods should be incorporated in teaching[19].

A qualities of lecture has the below [20]:

1. Lecture method should not be too long to avoid boredem
2. It must focus on a single theme.
3. Technical and logical terms must be adequately explained.
4. Clear illustration and analogies are given.
5. A good lecture enhances clarity of content.
6. A good lecture incorporates right illustration.
7. It is based on existing body of knowledge.
8. It encompasses adequate approaches and methods.

Advantages of the Lecture Method

1. It is very simple to use as no special materials is needed
2. It makes reduction o teacher's time for planning
3. It is makes use of adequate body of knowledge in a limited amount of time.
4. It can cover large number of students to be handled.

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5. It helps to encourage the thinking of all students in a given direction.

Disadvantages of the Lecture Method

1. Students are passive listeners and do not participate in the development of the lesson.
2. The desired learning outcomes may not be accomplished.
3. The method is inadequate for teaching certain types of concepts e.g. attitudes and feelings which are not learned through pure telling.
4. Students' progress cannot be evaluated during the lesson since they are passive.
5. It is difficult to meet the individual difference of the students.
6. It does not gives the students opportunity to practice communication skills.
7. It's largely denied of exploratory aspects of learning. Students may show a tendency to accept the teacher as the "final authority". Consequently they accept his biases and prejudices at face value.
8. It encourages rote learning or cramming.

2.1.2.2 Discussion Method

Discussion pertains to the reciprocal exchange of communication among participants. Within the context of the classroom, both the lecturer and the students engage collaboratively in discussion. Throughout the discussion, the lecturer allocates a substantial amount of time to active listening, while the students occasionally engage in verbal expression[21]. Consequently, the discussion represents a more dynamic learning experience for the students in comparison to the traditional lecture format. A discussion serves as a conduit through which individuals convey their experiences, ideas, and perspectives. By facilitating student engagement with the subject matter, it may foster the desired changes in attitudes. Discussion can be employed in the classroom setting for the

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purposes of lesson enhancement, enabling students to apply their acquired knowledge, or to assess students' learning progress through feedback mechanisms[22].

In contexts where participants possess a degree of prior knowledge or practical experience, discourse may be employed to elucidate the primary concepts to be addressed in a pedagogical session[23]. For instance, within the realm of safety training, numerous protocols and behaviors that ought to be adhered to can be established through dialogue with the participants. Students are able to leverage their prior experiences from working in workshops and contract sites to enrich the discourse. During the examination of certain topics, divergent perspectives may emerge. Such discussions can facilitate the clarification of various viewpoints and may aid each participant in articulating their individual stance. When utilized in this manner, discourse may prove to be a more efficacious means of motivating students than formal lectures. Participants are likely to perceive that their contributions hold a significant value[24].

Discussion may be employed subsequent to a lecture or demonstration to facilitate the application of acquired knowledge by students. The lecturer may pose inquiries that assist students in connecting concepts and principles with contexts that are either familiar to them or where such knowledge is ultimately applicable. For instance, following a lecture on "types of wood joints," the lecturer may guide a discussion that directs students' focus towards the various locations or types of furniture where each joint is utilized, as well as the rationale for preferring one type over another. Employed in this manner, discussion serves to enhance the transfer of learning. The discussion method is predicated on the philosophical view that knowledge is generated within the students rather than derived from external sources. The students engage with the course material from diverse perspectives, while the lecturer assumes the role of a facilitator.

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Furthermore, the discussion method offers a valuable opportunity to assess the learning progression of students. The responses provided by students, along with the inquiries they pose, illuminate the depth and quality of learning that is occurring.

Lecturers may utilize this data to reiterate or amend an explanation to enhance the educational experience. Additionally, they have the capability to furnish feedback to students, thus facilitating the reinforcement of previously acquired knowledge. Discussions employed in this manner should occur subsequent to alternative pedagogical strategies such as lectures, demonstrations, or practical exercises.

Discussion sessions may be orchestrated by the lecturer or may occur within collaborative groups. In both scenarios, the objective is to fulfill the educational goals by enabling the students to[25]:

a) Connect pertinent personal experiences or occurrences that have transpired within the professional environment.

b) Offer insights or personal viewpoints.

c) Implement the knowledge acquired in familiar contexts or in addressing challenges.

d) Articulate the knowledge that has been assimilated.

Whether the discourse is facilitated by the lecturer or conducted in collaborative groups, it is imperative that the lecturer provides guidance throughout the process. The discourse must remain aligned with the pedagogical objectives of the lesson, as it is incumbent upon the lecturer to ensure that these objectives are achieved. In the absence of appropriate guidance, a discussion may deteriorate into an examination of irrelevant or trivial subjects, thereby introducing confusion rather than enhancing clarity in the instructional material[26].

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Advantages of the Discussion Method

1. Students exhibit a heightened level of cognitive engagement, which fosters clear and critical thinking.
2. Sustained interest is cultivated, accompanied by an increase in self-assurance as students become adept at articulating their thoughts without restraint. The discussion method facilitates learning through active participation and engagement with the lesson content.
3. Furthermore, this method serves as an effective avenue for honing problem-solving skills.
4. The provision of information regarding the students enables the lecturer to attain a more profound comprehension of the students.
5. Instructional methods that incorporate discussion facilitate constructive shifts in attitude, as students may encounter challenges to their own values and beliefs through the perspectives presented by their peers.

Disadvantages of the Discussion Method

1. It would take a long time for the kids to come up with adequate responses.
2. Because the discussion technique makes it difficult to cover the curriculum, it cannot be employed frequently. Due to their lack of knowledge or ignorance of the lesson's subject, the majority of students typically do not participate in class. They could even be timid or afraid.
3. Students who lack prior knowledge of the subject matter may grow disengaged or bored throughout the class.
4. Younger children are unable to keep a high degree of attention because of their extremely short attention span[27].

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Some Guidelines to the Discussion Method

1. The teacher's questions and the subject to be covered should be appropriate for the students' level.
2. Discussion topics ought to be relevant to the students' backgrounds.
3. The lecturer must prevent certain students from controlling the conversation.
4. The lecturer ought to take every opinion seriously and dismiss any that are unrelated to the topic at hand, but they should do it quietly.
5. The lecturer should steer clear of ambiguous inquiries.
6. To help your students grasp the key ideas and tenets of the subjects being discussed, the lecturer should provide periodic summaries.
7. At the conclusion of the class, make sure the person facilitating the conversation can divide the entire subject into manageable chunks[28].

2.1.2.3 Demonstration Method

Any planned execution of a scientific theory, experiment, or occupational skill is referred to as a demonstration. Demonstrating an occupational skill is the best approach to teach it. Both the ability to explain and the ability to demonstrate are two of the most important teaching abilities. In the demonstration approach, the students watch as the lecturer performs a performance or exhibition in manipulation of equipment. Usually, it entails demonstrating to students how to properly use experience and resources, demonstrating a method, and carrying out a "experiment" that is either risky, costly, challenging, or dangerous for specific students. Shorthand outline drilling can be done using the demonstration approach, and during office practice lessons, the lecturer can show how to use different office supplies to individually or in groups. Also in vocational aspect like typing, sewing, weaving, barbing, pot making and the like demonstration method is best adopted using the teaching learning processes.

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Both are vital to the success of either an operation lesson or an information lesson.

Demonstration method can be done through:

1. Before the class begins, practice your presentation.
2. Be prepared for any challenging steps, any disruptions, etc.
3. Get all the supplies, tools, equipment, and instructional and visual aids ahead of time and make sure they are in good working order.
4. Ensure that all resources are easily accessible and organized.
5. Clear away any unnecessary items; examine the illumination, visibility, student clustering, and the distance to gas, electric, and water outlets.
6. Make a plan to take use of a skill or procedure; take it one step at a time29 and progress from simple to sophisticated[29].

Presentation

1. Ensure that the instruction is visible and audible to every learner.

2. Exhibit professionalism, enthusiasm, and effectiveness without being overly theatrical.

3. Unwind; take advantage of any accidents or humor.

4. Comply with all safety regulations.

5. Maintain eye contact with the students; pose and welcome inquiries.

6. Use show-and-tell tactics to explain how and why.

7. To make your explanation stronger, use a medial summary.

Advantages of the Demonstration Method

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5. Maintain eye contact with the students; pose and welcome inquiries.
6. Use show-and-tell tactics to explain how and why.
7. To make your explanation stronger, use a medial summary. .

Disadvantages of the Demonstration Method

1. The presumption that every student has equal vision and hearing does not always hold true. In situations involving very small things or in big classes, it is not certain that the details of what is being displayed will be visible.
2. Students will not be given the chance to develop manipulative skills in manipulating the objects if the demonstration is limited to the teacher[30].

Precautions

1. Keep the demonstration fluid and uninterrupted by avoiding interruptions.
2. Don't ever demonstrate using a student's work.
3. Focus on a single goal.
4. Give students time to participate if they can[31].

Carrying Out a Demonstration

1. Put on an excellent performance. Keep in mind that your excellent example is how the learners learn.
2. As you go along, describe each stage or procedure. Adhere to your lesson plan.
3. Ensure that the students observe the demonstration from the perspective from which they will execute it.
4. Ensure that we can see and hear everyone, keep eye contact
5. Stress important topics and, if at all possible, get ready in advance. As you proceed, pose important questions and welcome inquiries from students.
6. Pay attention to and follow all safety guidelines, protocols, and safeguards.
7. Support your demonstration with the appropriate guidelines and tools, such as a

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whiteboard, charts, handouts, etc.

8. Whenever feasible, allow students to participate both during and after the demonstration.
9. Only act in the proper manner. Make the right first impressions since they are crucial.
10. Always restate the processes and highlight important details[32].

After Demonstration

1. All materials utilized for the demonstration should be put back in their storage locations.
2. Arrange for a hands-on class session so the learners can practice the skill as soon as practicable.
3. Examine and evaluate the performance of the trainee or students and fix errors.
4. Where required, provide reinforcement.
5. Mentor students who are slow or weak.
6. Verify the trainee's finished work for accuracy in performance and documentation.
7. Give yourself enough time before demonstrating another operation.

2.1.2.4 Buzz Groups

Another pedagogical approach is the buzz group. During an extended session, the plenary assembly can subdivide into smaller groups to deliberate on one or two specific questions or issues. The environment rapidly becomes animated as each sub-group engages in lively discussion. If suitable, following the discourse, a representative from each group can convey its conclusions back to the plenary. Buzz groups may consist of pairs, trios, or larger configurations, contingent upon the activity. Participants may engage with their immediate neighbours for a brief discussion or assemble into larger groups of three or more. This structure facilitates nearly all individuals in articulating their viewpoints. While engaged in this buzzing activity, participants are afforded the opportunity to

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exchange ideas and draw upon their extensive collective experiences. It may serve as a valuable occasion for students to contemplate the content of a lecture[33].

An effective buzz session is likely to elicit numerous ideas, comments, and opinions, the most significant of which will be relayed back to the plenary. Another pedagogical approach is the Buzz group technique, which constitutes a collaborative learning strategy aimed at the establishment of small discussion clusters with the purpose of accomplishing a designated task (such as idea generation or problem-solving). Following the preliminary exposition of the task to be undertaken, larger collectives are segmented into more intimate groups comprising three to six individuals. Each subgroup designates a representative to disseminate the findings of their discussion to the remaining groups. This method was initially implemented by Dr. Donald Phillips, a scholar affiliated with Michigan State University. It is essential to allocate class time effectively to facilitate the organization of the session. Clearly delineate the responsibilities of the group leader and the recorder in the presence of the entire assembly, ensuring that all participants are cognizant of their respective duties. Establish a definitive temporal constraint for the discussion. For instance, if five group members are allocated 15 minutes to address their inquiries, each participant may contribute for a maximum of three minutes. Another pedagogical approach involves the utilization of buzz groups. Documenting the elapsed time will be the responsibility of the designated recorder. The lecturer should circulate among the various groups to facilitate enhanced engagement, assist them in overcoming any obstacles, and generally disseminate enthusiasm throughout the learning environment. Compile the observations from the designated reporters and synthesize the information[34]. The facilitator may also contribute additional insights at the conclusion, ensuring that such a report document serves as a valuable reference tool long after the instructional session has concluded.

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Buzz groups consist of small clusters of 3-4 students convened to engage in discourse on a specific topic within a brief timeframe. These groups may be tasked with discussing identical or varied subjects. Buzz groups are instrumental in aiding students to cultivate collaborative and collective problem-solving competencies, while simultaneously affording them opportunities to integrate concepts, as well as develop applications and generalizations or overarching principles. Participants can receive feedback on their ideas from peers and can derive significant learning experiences from interactions with fellow students. Speaking "in private" increases the likelihood that students will subsequently talk "in public" in front of the entire group.

Here are some ideas for using Buzz Groups:

1. Clearly explain your use of buzz groups and how it advances the course's goals.
2. Putting seats in circles improves the effectiveness of discussions.
3. Let students get to know one another by teaching them each other's names.
4. Clearly state the inquiry or conversation topic. Request that they enumerate or name several problems.
5. Assign responsibilities or ask students to take on duties during the conversation, such as scribe, timekeeper, or spokesperson.
6. The teacher can circulate among the groups, offering clarifications or instructions or letting students work independently.
7. After groups present their findings, the teacher can revise and elucidate the conversations, as well as provide closure[35].

Buzz groups help trainers as they allow to:

1. Take a deep breath.
2. Assess the atmosphere by hearing some of the conversations.
3. Modify the session's tempo

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4. Inspire participants to consider the lessons they have learned and how they could use them in their professional lives.

Another approach to instruction involves the utilization of buzz sessions; however, the primary challenge associated with their implementation stems from a lack of familiarity, the time investment required, the necessity for designated leaders or facilitators within each subgroup, and the imperative to arrange tables and chairs to facilitate prompt and efficient discourse[36].

2.1.2.5 Brainstorming

The objective of a brainstorming session is to rapidly uncover novel ideas and responses. This method is particularly effective for eliciting innovative thoughts. It is distinct from buzz group discussions in that its emphasis is placed on the generation of a multitude of ideas without the imposition of evaluative judgment. Within this framework, all contributions are accorded equal significance. Participants are encouraged to allow ideas to emerge organically, enhancing and refining previous suggestions. No idea, regardless of its perceived absurdity, should be dismissed. These contributions are recorded verbatim on a board or flipchart, or inscribed on slips of paper. The aggregation of rapidly produced ideas typically culminates in a highly dynamic and invigorating session. Even those participants who are more reticent should feel sufficiently empowered to share their input. The rationale for cataloging responses lies in the intention to gather preexisting experiences and reflections. This process is particularly advantageous for accumulating answers to inquiries when one anticipates a considerable degree of redundancy in the responses[37].

Following a session dedicated to brainstorming, the generated ideas may undergo further deliberation and assessment, such as systematically enumerating the most advantageous alternatives. Ideas can be categorized and scrutinized to ensure they are attributed to the

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collective rather than to individual contributors. In contrast to a buzz session, a brainstorming session is particularly effective when conducted with a larger cohort and typically requires less time to execute. It is advisable to impose a time constraint on plenary brainstorming activities, as the attention of certain participants may be compromised.

Brainstorming is an extensively acknowledged methodology for unleashing creative potential and promoting innovation within both personal and professional domains. It is frequently regarded as the preferred technique for generating a diverse array of ideas, encompassing the resolution of intricate business challenges to the formulation of novel product concepts, marketing initiatives, or even the organization of personal endeavors. The elegance of brainstorming resides in its adaptability whether conducted individually or within a group, it establishes a framework (or an absence thereof) that fosters the generation of spontaneous, unfiltered ideas devoid of immediate evaluative pressures or critiques. By cultivating an environment conducive to creative flourishing, brainstorming has the capacity to yield revolutionary solutions that may have otherwise remained unexamined[38].

Nevertheless, brainstorming has its limitations even though it can be very productive. Not every brainstorming session yields the intended results, and occasionally the very transparency that makes brainstorming effective can also impede advancement. Others' creativity can be stifled by groupthink, a lack of discipline, or a few people controlling the debate. Furthermore, brainstorming can degenerate into chaos and produce ideas that are irrelevant or unworkable if it is not properly facilitated and focused. You can better grasp the benefits and drawbacks of brainstorming by reading this essay, which offers a thorough analysis of the subject. We will examine the main advantages of brainstorming,

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including its capacity to foster teamwork, foster creativity, and produce a large number of ideas. On the flip side, we will explore 9 potential drawbacks, including its tendency to foster groupthink, its time-consuming nature, and the risk of excluding quieter voices[39].

Advantages of Brainstorming

1. Encourages Creative Thinking

The fact that brainstorming encourages creative thinking is among its most important advantages. Through the removal of constraints and the facilitation of unrestricted idea exchange, brainstorming allows participants to think creatively and unconventionally. Innovative ideas that would not surface in more formal or structured problem-solving settings are frequently produced by this creative technique.

2. Promotes Group Collaboration

Brainstorming encourages team members to work together. It enables people to share ideas collaboratively, promoting collaboration and teamwork. Collaboratively, participants can expand on one another's concepts, resulting in more thorough and sophisticated answers. Additionally, this collaborative setting facilitates the dismantling of organizational walls among teams, resulting in a more transparent and open working environment.

3. Generates A High Volume of Ideas

The main objective of brainstorming is to produce as many ideas as you can without immediately assessing them. A wide variety of ideas, some of which may be extremely inventive, are made possible by this early quantity-over-quality strategy. The sheer number of ideas often results in at least a handful that are worthwhile, even if many of them end up being unworkable.

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4. Provides a Non-Judgmental Environment

The goal of brainstorming sessions is to avoid passing judgment. Participants are urged to express their opinions without worrying about backlash. This laid-back environment is especially crucial for encouraging creativity since it makes it possible to express even the most absurd or unrealistic ideas. When further explored, these "wild" ideas can occasionally serve as the seeds for ground-breaking solutions.

5. Builds on Existing Ideas

The potential of brainstorming to let participants expand on other people's ideas makes it special. A creative chain reaction could occur if one participant's idea prompts another to come up with an even better answer. This process of building on preexisting concepts can produce more comprehensive and resilient answers to challenging issues[40].

6. Enhances Problem-solving Skills

Brainstorming challenges participants to think critically about problems and explore a wide array of potential solutions. This process strengthens problem-solving skills by encouraging individuals to approach issues from different angles and think about multiple possibilities. Over time, these enhanced problem-solving abilities can become valuable assets in both professional and personal settings.

7. Allows for Equal Participation

In a well-facilitated brainstorming session, everyone has the opportunity to contribute ideas. This democratic approach ensures that all voices are heard, including those who may not typically speak up in more structured or hierarchical settings. By allowing everyone to contribute, brainstorming taps into the collective intelligence of the group, which often leads to more diverse and creative solutions.

8. Increases Engagement and Ownership

When participants are actively involved in generating ideas, they are more likely to feel a sense of ownership over the outcomes. This engagement leads to increased motivation and commitment, as individuals are more invested in seeing their ideas come to life. By fostering a sense of responsibility, brainstorming can boost team morale and drive higher levels of participation in subsequent phases of a project.

9. Facilitates Rapid Idea Generation

Brainstorming sessions are often fast-paced, which allows for the quick generation of ideas in a short period. This is particularly useful when time constraints require immediate problem-solving. The rapid-fire nature of brainstorming keeps participants focused and energized, which can lead to a surge of creativity and productivity.

10. Helps Identify Unseen Opportunities

Brainstorming can bring hidden opportunities to the surface that may not have been considered through more conventional problem-solving methods. By encouraging diverse perspectives and allowing for unrestricted idea generation, brainstorming can reveal innovative solutions or opportunities that were previously overlooked.

11. Adaptable To Various Settings

Brainstorming is highly adaptable and can be used in different contexts, whether in corporate strategy sessions, educational settings, or informal group discussions. Its flexibility makes it a valuable tool for any situation where new ideas are needed, whether it's solving complex business problems, planning events, or developing creative content[41].

Disadvantages of Brainstorming

1. Susceptible To Groupthink

One of the most significant disadvantages of brainstorming is its susceptibility to groupthink. Groupthink occurs when the desire for harmony or conformity leads participants to adopt the dominant ideas in the room, rather than offering their unique or potentially dissenting views. This can stifle creativity and prevent more diverse or innovative ideas from emerging.

2. Can Be Time-Consuming

While brainstorming is excellent for generating ideas quickly, the evaluation and refinement process can be time-consuming. Without clear goals and proper facilitation, brainstorming sessions can drag on without producing actionable results. The time spent sifting through unworkable ideas can also detract from the efficiency of the overall process.

3. May Result In Low-Quality Ideas

Because brainstorming encourages the free flow of ideas without immediate evaluation, it often produces a mix of high-quality and low-quality suggestions. This can lead to wasted time sorting through impractical or irrelevant ideas to find the ones worth pursuing. Without proper moderation, brainstorming can lead to an overload of mediocre suggestions that slow down progress.

4. Can Overwhelm Introverted Participants

Although brainstorming is intended to be inclusive, it may inadvertently favor extroverted participants who are more comfortable speaking up in group settings. Introverted individuals may struggle to contribute in the fast-paced, open format of brainstorming sessions, which can lead to their ideas being overlooked or unheard.

5. Lacks Structure

The unstructured nature of brainstorming can sometimes lead to chaos, with discussions veering off-topic or participants talking over one another. Without a clear framework or a skilled facilitator, brainstorming sessions can become disorganized and unfocused, reducing their effectiveness and productivity.

6. Idea Dominance by Vocal Participants

In some brainstorming sessions, more dominant personalities may overshadow quieter participants, leading to an imbalance in idea generation. When certain individuals dominate the conversation, it can prevent the group from exploring a wider range of ideas and perspectives, limiting the overall creativity of the session.

7. Requires Skilled Facilitation

For brainstorming to be successful, it often requires a skilled facilitator who can manage the flow of ideas, keep the discussion on track, and ensure that all participants are engaged. Without proper facilitation, brainstorming sessions can become unproductive, with some voices going unheard and others dominating the conversation.

8. Not Always Effective for Complex Problems

While brainstorming is effective for generating ideas, it may not be the best method for solving highly complex or technical problems. In situations where deep analysis and structured thinking are required, brainstorming can fall short. Other problem-solving methods may be more suitable for addressing intricate or multifaceted issues[42].

9. Risk of Ideas Being Rejected Too Early

In some cases, ideas may be dismissed prematurely, either due to a lack of understanding or insufficient time to develop them fully. This early rejection can prevent potentially valuable ideas from being explored further. If participants feel that their contributions are not being taken seriously, it can discourage them from sharing ideas in future sessions.

Brainstorming is a valuable tool for generating a wide range of ideas and encouraging creative thinking. When used effectively, it can foster collaboration, enhance problem-solving skills, and bring out the best in group dynamics. However, it is important to recognize its limitations, such as the risk of groupthink, the time-consuming nature of evaluating ideas, and the potential for dominant personalities to overshadow others.

By understanding the pros and cons of brainstorming, you can better navigate its strengths and weaknesses to ensure successful outcomes. Whether you're using it in a corporate setting, an academic environment, or for personal projects, brainstorming can be a powerful method for unlocking innovation and solving problems. With the right facilitation, clear goals, and a structured approach, brainstorming can help you tap into creative potential while minimizing its drawbacks.

2.1.2.6 Role Plays

In simulated scenarios, participants leverage their personal experiences to enact authentic life situations. When executed proficiently, role plays enhance participants' self-assurance, provide opportunities to comprehend or even develop empathy for alternative perspectives or roles, and typically culminate in actionable insights, solutions, or guidelines. Role plays serve as an effective means for investigating and refining interviewing methodologies, as well as scrutinizing the intricacies and potential conflicts inherent in group discussions. They facilitate the integration of diverse lessons within a single context and function as effective energizers[43].

Nevertheless, role plays may be labor-intensive, and their efficacy is contingent upon the participants' willingness to engage actively. Certain students might perceive a role play as overly revealing, intimidating, or humiliating. This hesitance can be mitigated at the outset through a meticulous elucidation of the objectives and anticipated outcomes. Some

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role plays have the potential to evoke intense emotions among the participants. Consequently, it is imperative that a role play is succeeded by a comprehensive debriefing. This process affords the trainer and participants the opportunity to identify and evaluate emerging issues.

2.1.2.7 Discovery Method Discovery

Method of Discovery The discovery method is a teaching approach that lets students figure out the answers on their own. It is referred to as a heuristic method since it is a student-centered approach. Notably, there are two varieties of it: guided discovery and unguided discovery. By giving them general guidelines, the lecturer (you) helps the students find solutions to difficulties on their own. However, you do not provide the solution to the scientific problem. In the unguided discovery type, students figure out the broad principles and the solution to a scientific problem on their own. It is referred to as the "pure discovery" at times[44].

Advantages of the Discovery Method

1. Regardless of whether it is directed or undirected, the discovery approach transforms the learner from a passive recipient into an active participant.
2. Because the approach makes it difficult for the student to learn the material on his own, he will be more likely to remember what he has learned.
3. The ability to autonomously learn new information can be utilized to problem-solving and new learning.
4. Students are intrinsically motivated by the satisfaction of learning something new.
5. Students' understanding of the nature of scientific evidence is reinforced by the discovery method, which teaches them that questions can frequently be answered by independent research.

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6. One of the main goals of teaching science is to help students develop manipulative skills and attitudes, which is something that the discovery method aids in.

7. Discovery promotes both analytical and synthetic thinking as well as intuitive thinking because it functions at the highest levels of the cognitive domain.

Disadvantages of the Discovery Method

1. The discovery process takes a long time, and results are not particularly quick. It is necessary to set up the apparatus and wait for the investigation's outcome.
2. There is a chance that nothing will be found using this approach. Students could find things that aren't what they were supposed to find. They may become very discouraged by this, especially if they have put in a lot of work.
3. Given the necessary tools and supplies, the process is costly.
4. It is only solely adequate for a small group of people, where proper supervision is realistic[45].

The Individual Instructional Method

The Individual Instructional Method is a type of planned instruction where learning programmes are presented in carefully structured steps that vary depending on the individual student and the type of material to be learned. For instance, the pace of learning depends on the individual student,

Advantages of the Individualized Instructional Method

1. It lets the student go at his own pace

2. It encourages participation

3. It provides the teacher with quick information about each student, such as whether the lesson is understood or not, since tests are typically given at the end of each lesson

4. It can be used to compensate for a student's lack of background knowledge

5. It lessens a student's anxiety because he is dependent on himself.

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Disadvantages of the Individualized Instructional Method

1. It takes a lot of time.

2. It requires a lot of supplies and equipment.

3. It necessitates minimal to no student contact[46].

The Laboratory Method

The Laboratory Method is an activity that can be completed by a single student or by a group of students in order to gather firsthand observations from experiments from which they can draw their own conclusions.

Advantages of the Laboratory Method

1. This approach to learning strengthens and expands theoretical knowledge through practical application.
2. The laboratory approach gives students the chance to cultivate scientific dispositions including objectivity, critical thinking, caution, and open-mindedness, among others.
3. Students are more likely to be engaged since the approach encourages learning by doing.
4. Through conducting experiments, documenting observations and findings, compiling data, and drawing conclusions, students learn how scientific knowledge is obtained.
5. The learner develops manipulative skills by learning how to handle equipment and other devices through the laboratory technique.
6. The laboratory approach encourages independence and problem-solving.
7. Students can also learn a lot about the connections between science and technology by participating in laboratory activities.

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Disadvantages of the Laboratory method

1. If separate tools and supplies have to be supplied, it could be costly.

2. Because meticulous planning and preparation are necessary, it takes a lot of time.

3. For some students, the skills they acquire by being exposed to the laboratory technique are of uncertain value as goals because they will not be used much in the future.

4. It is an ineffective teaching strategy when a straightforward example or the telling approach would work just as well [47].

There are four major categories into which various teaching approaches can be divided. These are[48]:

(1) Lecturer/teacher Centred Methods

In this context, the lecturer positions themselves as the authority on the subject matter. The lecturer is perceived by the students as a specialist or a figure of expertise. Conversely, students are typically viewed as passive and abundant recipients of knowledge imparted by the lecturer. Illustrative examples of such pedagogical methods include expository or lecture-based techniques. In the realm of education, there exists no universal method applicable to all situations. Certain lecturers advocate for a more student-centered methodology, while others endorse a more lecturer-centered paradigm. There exists no definitive right or wrong methodology for teaching; however, there are strategies to enhance the efficacy of the lecturer-centered approach. The lecturer-centered methodology is frequently referred to as the didactic approach. This pedagogical framework has predominated as the principal instructional method for numerous centuries. It is predicated on the assumption that the lecturer is the authority and the primary reservoir of knowledge. The lecturer conveys this knowledge to the students via lectures, textbooks, and other didactic techniques. The students function as passive

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recipients of this information and are anticipated to memorize and reproduce it during assessments.

The lecturer-centered methodology has been subjected to criticism for its deficiency in fostering engagement and its inability to facilitate profound comprehension. Students who adopt a passive stance often fail to retain the information imparted to them and encounter challenges when attempting to apply it to novel contexts. Furthermore, this methodology does not incentivize critical thinking or creativity. Notwithstanding its limitations, the lecturer-centered approach remains prevalent in numerous educational environments. This persistence can be attributed to its efficiency and the familiarity of this methodology among the majority of lecturers. To augment the effectiveness of the lecturer-centered approach, lecturers may implement strategies that stimulate active learning and engagement.

One of the advantages of the lecturer-centered approach is its potential for increased efficiency. In a classroom comprising 30 students, providing individualized attention to each student can prove challenging. Centralizing the lecturer's role facilitates a more streamlined educational process. Additionally, this approach can foster a more disciplined environment. In a student-centered classroom, there is often a prevalence of disorder and off-task behavior. Positioning the lecturer as the focal point assists in maintaining student concentration and attentiveness[49].

Nonetheless, the lecturer-centered approach also presents certain disadvantages. A significant critique is that it may be excessively restrictive and inhibit creativity. When the lecturer serves as the sole source of information, it may hinder students' opportunities to explore and inquire. Another disadvantage is that this approach can contribute to students perceiving themselves as incapable of independent learning. This phenomenon

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can be particularly pronounced among struggling students who may feel overwhelmed by the pace of the classroom.

In summation, the lecturer-centered approach to education encompasses both advantages and disadvantages. While it may enhance efficiency and support discipline, it may concurrently restrict creativity and lead students to doubt their ability to engage in autonomous learning. Ultimately, it is up to the teacher to decide what approach will work best for their students[50].

(2) Student-Centred Methods

In student-centered pedagogical approaches, the lecturer concurrently assumes the roles of both lecturer and student. The lecturer engages in a dual capacity as a student, thereby broadening rather than limiting the intellectual scope within the educational environment. Furthermore, the lecturer acquires new knowledge daily through the act of teaching, enhancing their own understanding. The lecturer transitions from a position of authoritative knowledge to that of a resource for the students. Illustrations of student-centered methodologies encompass discussion, discovery, and inquiry-based approaches. Student-centered pedagogy, commonly referred to as the student-centered approach, constitutes an instructional framework that leverages a student's interests and strengths to tailor a unique learning experience. This methodology is predicated on the principles of fostering classroom community and leveraging student strengths via cooperative learning. Among the various instructional methods, traditional lecturing remains the most prevalent, the simplest, and yet the least efficacious. In the absence of a particularly engaging lecturer, a significant proportion of students tend to disengage during lectures. Research indicates that undergraduate students enrolled in courses employing conventional "stand-and-deliver" instructional paradigms are 1.5 times more likely to

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experience failure compared to their counterparts in student-focused settings, irrespective of whether they are in a general or highly specialized laboratory context[51].

Actively engaging students in the educational process, as opposed to merely delivering lectures, enhances their attentiveness, motivation, and sustained interest in the course material. Rather than eliciting vacant expressions and perplexed gazes in response to queries, an lecturer can maintain student engagement throughout the instructional session. Educational psychologists assert that mere verbal instruction is insufficient for facilitating learning; it is far more effective to demonstrate skills and allow students to practice them independently.

A student-centered paradigm perceives students and students as proactive participants in their learning journeys. It transforms the role of the lecturer from that of a mere information provider to a facilitator of knowledge acquisition. This approach posits that each student contributes unique knowledge, experiences, and perspectives, which significantly influence their assimilation of new information. Conversely, traditional educational methodologies exert complete control over the classroom dynamics. An incessant flow of information often leads students to lose focus and overlook critical content. Student-centered learning methodologies encompass active learning, wherein students engage in problem-solving, question formulation, discussion, debate, and brainstorming activities. Cooperative learning, characterized by collaborative team efforts on problem-solving tasks, fosters interdependence and personal accountability[52].

(3) Content-Focused Methods

Within this category of instructional methods, both the lecturer and the students must adapt to the prescribed content. In essence, the information and skills imparted are regarded as fundamental or of paramount importance. Significant emphasis is placed on

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the clarity and meticulous analysis of the content. Both the lecturer and the students are expected to refrain from altering or critiquing any aspects of the content. An illustrative example of a method that prioritizes the content over the interests of the lecturer and students is the programmemed learning approach[53].

The principal objective of content-based instruction is to augment student interest, engagement, and motivation. Content-Based Instruction (CBI) diverges from conventional language acquisition methods, such as translation and rote memorization, and instead focuses on diverse topics or "content" to facilitate the practice of language skills.

Though usually task-oriented and centered around concepts, pictures, or objects, content-based instruction can take many forms. There are many different ways to approach learning, as different people learn best in different ways. Some people are visual students while others prefer hands-on learning, and some people learn best alone while others learn best in a group. Despite having been around since the 1980s, content-based learning has become more and more popular in recent years. It is impossible to overestimate the significance of content-focused design in the fast-paced digital world of today.

Perhaps this is the reason why business websites are starting to move away from dazzling animations and graphics in favor of a design strategy that emphasizes the delivery of high-quality, valuable content a mix of text, images, videos, animations, and other elements-with the goal of perfect communication[54].

It is now crucial to create a seamless user experience. Web designers and UX/UI specialists are using a content-focused design methodology that puts user expectations first in order to accomplish this goal. By prioritizing pertinent and understandable information, this approach guarantees that users can find what they're seeking for fast and with ease. The rise of content designer positions in companies trying to improve the user

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experience on their websites is evidence of the value of a content-centric design approach.

1. A seamless user experience is produced by content-focused design, which puts the needs of the user first.
2. This method guarantees content that is understandable, pertinent, and helpful.
3. Content-driven design improves SEO and usability.
4. People from the product, marketing, and sales departments work together to create content-centric design. To create amazing website experiences, the content designer works with others.
5. Organizations can obtain a competitive edge by implementing content-focused design ideas.
6. Designers may produce interfaces that meet the unique requirements and objectives of people by comprehending and empathizing with them[55].

User research, including surveys, interviews, and usability testing, helps uncover insights about user preferences and behaviors. This data-driven approach enables designers to make informed decisions when designing websites or digital products.

Clear and concise content is essential for enhancing the user experience. Users visit websites looking for information or solutions to their problems. Do not add to them by giving them a confusing website to navigate[56].

Simplify complex concepts into bite-sized pieces through headings, bullet points, and visuals like diagrams or infographics. Additionally, limit the use of jargon or technical language unless necessary for your target audience. Organizing information effectively contributes significantly to a seamless user experience. Structure your content hierarchy logically by grouping related topics together while providing clear pathways for navigation between sections or pages on your website[57]. Consider incorporating

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navigation menus that are intuitive and straightforward so users can effortlessly find what they're looking for without getting lost in an excessive number of pages or unnecessary clicks. By following these principles throughout the design process, web designers can ensure that their designs prioritize user needs while delivering clear and organized content, ultimately leading to an enhanced overall user experience on their websites.

(4) Interactive/Participative Methods

This fourth category integrates elements from the preceding three methodologies without disproportionately prioritizing the student, content, or lecturer. These methodologies are informed by a situational analysis that assesses the most suitable educational actions for the current circumstances of both students and the lecturer. They necessitate a participatory comprehension of diverse domains and influencing factors[58]. Interactive and participatory pedagogical approaches encompass instructional strategies characterized by the active engagement of students, including activities such as brainstorming, experiential learning, demonstrations, practical exercises, collaborative problem-solving, educational games, discussions, field excursions, guided walkthroughs, problem formulation, group assignments, review of homework, interactive question and answer sessions, theatrical presentations, or role-playing scenarios[59]. Traditional lectures are not classified as interactive or participatory teaching methodologies.

Numerous educational theorists have acknowledged that conventional pedagogical approaches are inadequate in their capacity to promote student development. Conventional teaching strategies frequently depend on rote memorization and repetition. Such techniques are inherently passive, emphasizing the transmission of instructions rather than cultivating critical thinking capabilities. To genuinely comprehend the subject matter being studied, it is essential to develop critical thinking skills. One effective method for cultivating these skills is through interactive teaching practices.

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Interactive teaching pertains to instructional strategies that engage students actively within the classroom environment. In contrast to rote memorization, interactive teaching promotes collaboration between students and lecturers to enhance the learning experience[60]. Furthermore, interactive teaching stimulates the brain's inherent analytical functions, facilitating students' engagement with their long-term memory. Interactive teaching employs a variety of interaction methods to energize the classroom dynamic. These methods encompass:

1. Interaction between lecturers and students
2. Interaction among peers
3. The incorporation of auditory, visual, and video materials
4. Practical demonstrations and exercises[61].

While alternative techniques may exist, these represent the primary strategies that contemporary educational environments tend to adopt. Illustrative examples of these methodologies in practice include paired discussions, either among students or between the lecturer and students. In such discussions, students are encouraged to collaboratively analyze a problem and devise a solution. This process enables students to articulate their thoughts and ideas, thereby enhancing their understanding of the subject matter being studied. Problem-solving utilizing this approach can also contribute to improved retention of information[62].

Classroom surveys represent another interactive teaching technique that enables students to influence the trajectory of classroom dynamics. Lecturers can employ anonymous surveys to assess students' comprehension of the subject matter or to gather insights regarding their perspectives and attitudes towards the lesson content. Students may find anonymous surveys to be a more accessible medium for expressing their opinions to both

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lecturers and peers. Lecturers can subsequently utilize the insights garnered from these surveys to tailor lesson plans that align with the specific needs of their students[63].

2.1.3 Learning Environment and CAI

The learning environment encompasses a multitude of factors, including educational resources and technologies, pedagogical methodologies, learning modalities, and connections to societal and global contexts. This term also encompasses the behavioral and cultural dimensions of human interaction, highlighting the pivotal role of emotions in the learning process. The learning environment is an amalgamation of human practices and material systems, much like the ecological balance between living organisms and their physical surroundings[64].

To effectively address this challenge, educational administrators must cultivate both physical and cultural environments that foster empowerment and engagement. Educational settings differ from one classroom to another and from one context to another, each possessing distinct attributes. These learning environments may be characterized as student-centered, knowledge-centered, assessment-centered, or community-centered. Environments centered on students are specifically designed to facilitate the active construction of knowledge by and for the students. Knowledge-centered environments are structured to support students' thorough exploration of significant concepts through generative learning activities. Assessment-centered environments offer frequent, continuous, and varied opportunities for evaluation, which encompass avenues for revision as well as self and peer assessment. Community-centered environments emphasize the importance of collaboration, negotiation of meaning, respect for diverse perspectives that contribute to knowledge construction, and the establishment of connections to local communities and cultures[65].

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The learning environment comprises several components that significantly influence the trajectory of student learning. These components encompass individuals, teaching materials, technological tools, learning resources, curriculum, training, instructional methods, and the physical environment or learning space. The individuals involved are those who directly or indirectly impact the student through interpersonal connections or relationships, which can positively contribute to the student's growth and success in their professional endeavors. The teaching materials, technological tools, and learning resources represent the educational materials, sophisticated instruments, or other instructional resources that align with the curriculum and support student learning. The curriculum, training, and instructional methods constitute the foundational elements of the educational process; they are interdependent and play essential roles in facilitating the transmission of knowledge and the delivery of instructional content. The physical environment or learning space pertains to the tangible setting of the student's environment, which should elicit positive responses and sustain the interests of its inhabitants. Each classroom accommodates diverse personality types among students, who enter the space with varying levels of preparedness and unique characteristics that shape their aspirations within the same educational context[66]. Consequently, the classroom serves as a shared environment that simultaneously hosts all these varied personalities.

The task of organizing these differences into a coherent, identifiable, and functional whole rests upon the lecturer, who serves as the second living component of the classroom environment and acts as the primary facilitator of learning. What characteristics does the classroom possess that can harmonize the individual differences among students to enhance their engagement in academic activities? The answers to this inquiry can be discerned within the classroom environment. The classroom environment

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encompasses a wide array of educational concepts, including the physical setting, the psychological atmosphere created by social contexts, and various instructional components related to student characteristics and behaviors. There are two primary dimensions of the classroom: the physical and the social environment. The physical classroom environment pertains to the arrangement of chairs, tables, fixtures, artwork, lighting, and ventilation, while the social environment reflects the leadership demonstrated by the lecturer and the modes of participation and interaction among students[67].

The physical environment encompasses the tangible space wherein both the lecturer and the students interact, incorporating spatial components such as the flooring, walls, and additional instructional apparatus. The physical setting significantly influences students' comfort levels and their capacity to engage in the learning process. Students who experience comfort are predisposed to assimilating more information than those who are subjected to discomfort. An adverse classroom environment can deter students, resulting in diminished willingness to engage, which variably impacts their overall interest in the academic journey and surrounding space.

The classroom environment plays a crucial role in delivering effective instruction and facilitating a seamless teaching-learning experience, thereby positively influencing academic outcomes. The significance of the classroom environment is manifested through the establishment of situational interest, which serves as a pivotal element in enhancing student engagement. Situational interest is characterized as an emotional response elicited by specific stimuli present in the environment. This interest can be augmented through the deliberate alteration or adaptation of particular dimensions of the learning context and contextual variables, including pedagogical strategies, task

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presentation, and the structuring of educational experiences. Both internal and external classroom factors are critically influential in determining students' academic performance. Among the internal factors are class schedules, class size, educational resources, the lecturer's role, and the overall classroom atmosphere[68].

The design of the classroom environment can facilitate and enhance the learning process, taking to the overt curriculum. Regrettably, the situation in Nigeria mirrors that of Pakistan, with classrooms suffering from overcrowding, insufficient facilities, a scarcity of qualified lecturers, and a lack of appropriate seating arrangements, leading some students to occupy window sills while lecturers struggle for adequate mobility. In certain educational institutions, roofs have been compromised by severe weather conditions, with governmental apathy evident in the response to these challenges. Under such circumstances, the classroom fails to present an appealing environment for students, who may choose to squander their time rather than endure the deterioration of their learning spaces[69]. In some instances, classroom collapses have tragically resulted in the fatalities of students. Empirical investigations have indicated that a conducive classroom environment has a substantial positive impact on students' academic performance; however, findings also reveal a lack of significant correlation between the school environment, which encompasses the classroom, and academic outcomes.

As previously highlighted, an unfavorable classroom environment can dissuade students, leading to a decreased willingness to engage in the educational process, which subsequently affects their interest in classroom activities. Interest, as a psychological construct, plays a pivotal role in various life pursuits, including academic endeavors. The inclination to participate or abstain from an activity, the motivation to persist or re-engage following a period of disengagement, and the extent of effort and time devoted to

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an activity are predominantly influenced by the individual's level of interest. Interest dictates the focus of individuals' attention, their cognitive processing, discussions, and the depth of their learning engagements. Within the context of academic pursuits, interest serves as a fundamental impetus for student participation, often described as intrinsic motivation. When individuals are intrinsically motivated, they partake in activities for their own sake, driven by a genuine interest in the task at hand[70].

Computer Assisted Instruction (CAI)

This is a course that uses a computer or computer systems to convey educational content. A plethora of software allows students to master keyboarding skills on their own by acting as typing tutors. When a computer is equipped with a tutorial programme, the computer poses a question to the student, who then enters their response and receives an instant response. In the event that the response is accurate, the student is directed to increasingly difficult tasks; if it is not, the programme will bypass increasingly difficult questions until the student demonstrates proficiency in that area and numerous computer alerts will highlight the error in the process[71].

For many years, CAI has been employed in the field of education and has been proven to be a successful method of instructing students of all ages and skill levels. Students who have trouble with traditional classroom instruction will find it especially helpful because it gives them immediate feedback and lets them work at their own speed. A type of education known as computer-assisted instruction (CAI) employs computers and other digital tools to provide students feedback and deliver educational materials. It can be applied to a variety of courses and grade levels and is intended to either replace or enhance traditional classroom learning[72].

CAI is very fundamental because, it enables customized training and can be adjusted to meet each student's unique learning needs. It can also give students immediate feedback,

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which enables them to spot and fix errors fast. Additionally, CAI can be helpful in giving access to educational resources and multimedia learning experiences that might not be available in conventional classroom settings. All things considered, CAI can be a useful instrument for raising student learning results. Teaching students of all ages and skill levels can be accomplished with CAI. It offers instant feedback, enables tailored training, and lets students learn at their own speed[73].

It is not without its difficulties, though, such as the requirement for teacher training. The expense of the programmes, and the requirement for access to technology. Notwithstanding these difficulties, the advantages of CAI make it a useful instrument for lecturers to employ in the classroom. The characteristics of CAI programmes are as follows[74]:

1. Interactive and capable of using eye-catching animation, sound, and demonstration to explain a topic.
2. Let students work alone or in groups to solve problems, and let them advance at their own speed.
3. Give students prompt feedback, indicating whether or not their response is accurate. In the event that the response is incorrect, the software instructs students on how to respond appropriately.
4. Capture students' interest because the programmes are participatory and encourage a spirit of competition among them to improve their grades.
5. Go at the students' own speed and, in most cases, wait until they have mastered the skill before moving on.

The ability to learn at one's own pace is one of CAI's primary advantages. As needed, students can go back and study the content, and when they're ready, they can move on to new topics. This enables students to focus on the content they need to learn and removes

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the strain that many experience when they are compelled to stay up with their peers. The fact that CAI gives students quick feedback is an additional advantage. This makes it easier for them to see and fix errors quickly and improves their comprehension of the subject matter. Furthermore, a lot of CAI programmes use interactive exercises and simulations to enhance the interactive and engaging nature of learning[75].

Additionally, CAI makes customized education possible. A student's comprehension of the subject matter can be evaluated by the computer, which can then modify the lesson. Additionally, it can monitor the student's development, giving the lecturer important insights into how well the student is performing. Despite its many advantages, CAI is not without its difficulties. The requirement that students have access to computers and the internet is one of the biggest obstacles. Students from low-income households or those living in remote locations with little access to technology may find this problematic. The cost of purchasing and maintaining CAI programmes is another difficulty. For lecturers and schools with little funds, this might be a challenge. Last but not least, lecturers may also find CAI difficult to utilize and may require training on how to incorporate the technology into their lessons[76].

2.1.4 Lecturer's Factors

2.1.4.1 Lecturers' Job Satisfaction

Job dissatisfaction causes stress and burnout for lecturers. Therefore, the importance of lecturer job satisfaction for a successful educational reform cannot be over emphasized. Thus, reduction in lecturer turnover and reform in education can be facilitated by identifying variables that impact lecturers' job satisfaction. Different studies investigated the relationship of characteristics of lecturers' backgrounds, lecturers' school, lecturers' compensation, working conditions with lecturers' job satisfaction. And found a significant relationship between favorable working conditions (administrative support

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and leadership, school atmosphere, student behavior, and lecturer autonomy) and lecturer job satisfaction[77]. When lecturers show their interest in moving and achieving towards organizational goals then their job commitment and satisfaction increases. Lecturer job satisfaction is the predictor of lecturer retention and a determinant of lecturer commitment which contributes to the school effectiveness. A direct association between lecturers' job satisfaction and lecturer turnover and further found that, lecturers have different perceptions regarding job satisfaction which impact on their intention to stay in teaching or school.

2.1.4.2 Motivation

Motivation can be conceptualized as an intrinsic impetus that compels an individual to engage in activities aimed at attaining specific objectives. It encompasses the myriad of internal conditions characterized by aspirations, desires, and impulses that invigorate an individual's engagement in various endeavors. Consequently, motivation represents an internal condition that incites and catalyzes behavioral manifestations. This may pertain to behaviors exhibited in professional contexts, thereby encapsulating the notion of workplace motivation[78]. Work motivation is delineated as a constellation of dynamic forces that emerge from both internal and external sources to instigate work-related behaviors, as well as to shape their form, trajectory, intensity, and duration. Scholars posit that comprehending the motivational drivers of an organization's workforce is pivotal to the domain of industrial and organizational psychology, with a prevailing consensus indicating that motivation encompasses three fundamental psychological processes: Arousal, Direction, and Intensity.

1. Arousal: This is what initiates action and it is fueled by a person's need or desire for something that is missing from their lives at a given moment, either totally or partially.

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2. Direction: This refers to the path employees take in accomplishing the goals they set for themselves.
3. Intensity: The vigour and amount of energy employees put into this goal-directed work performance.

Motivation is conceptualized as a dynamic process initiated by a physiological deficiency or need that catalyzes behavior or a drive directed towards the attainment of a specific goal or incentive. Consequently, motivation encompasses needs (deficiencies) that give rise to drives (motives) which facilitate the acquisition of incentives (goals). Drives or motives are inherently action-oriented, whereas incentives or goals represent those elements that fulfill a need. Motivation is a critical factor that individuals require to enhance their performance, contingent upon the alignment of the right individual possessing the requisite skills with the assigned task[79].

The productivity of any organization can be quantitatively assessed by the efficacy with which lecturers execute their respective responsibilities. This productivity is significantly influenced by various factors, including job analysis, job recruitment, selection, and the placement of employees. Nonetheless, the superior performance of an organization is not solely reliant on these pivotal variables[80]. Individual performance is a function of both the capability and the willingness of the employee to undertake the assigned duties. Motivation constitutes a crucial dimension that has garnered substantial scholarly attention in the exploration of the individual lecturer and their professional milieu. It is noteworthy that heightened employee satisfaction invariably correlates with increased organizational productivity. Motivation is posited to emerge when the cumulative assessment of diverse job facets engenders feelings of satisfaction; conversely, when the aggregate assessment induces feelings of dissatisfaction, job dissatisfaction ensues. Enhancing any singular facet propels the trajectory towards job satisfaction, whereas the

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removal of any such facet precipitates job dissatisfaction. Thus, it is evident that the enhancement of job satisfaction among employees within any organization serves as a cornerstone for productivity[81]. Motivation encapsulates all the determinants that inspire an individual to act, encompassing both negative motivators such as fear, as well as more positive incentives including monetary rewards, promotions, or recognition. The origins of motivation can be classified as both intrinsic and extrinsic. Intrinsic motivation manifests when individuals engage in activities devoid of external incentives, deriving motivation from their capacity to regulate the effort they invest in an activity, with the understanding that the outcomes are not contingent upon chance. Extrinsic motivation pertains to external incentives that are administered by management to promote employee performance in task execution.

In developing nations, the motivation of lecturers has been the subject of significant research and discourse. Lecturers frequently express considerable dissatisfaction regarding their remuneration and other aspects of their working conditions, such as inadequate incentives and substandard service conditions, resulting in diminished morale and subsequent poor performance. In Nigeria, absenteeism and attrition rates have been heavily influenced by motivational factors affecting lecturers, including insufficient salaries and inadequate working conditions. Consensus among educational stakeholders indicates that lecturer motivation is contingent upon a variety of factors, including remuneration levels, geographical location of the institution, accessibility to suitable housing, opportunities for further training, service conditions, workload, promotional prospects, student behavior, community relations, and quality factors pertaining to the availability of educational resources[82].

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Management practitioners and researchers have long held the conviction that the achievement of organizational objectives is fundamentally reliant upon the sustained commitment of organizational members. Motivation is recognized as a psychological trait that influences an individual's level of dedication. It encompasses the various elements that incite, direct, and sustain human behavior in a specific, committed trajectory. This perspective underscores the necessity for managers to comprehend the foundational assumptions underpinning motivational practices. First, it is widely accepted that motivation is generally regarded as a positive attribute[83]. An individual is unlikely to experience a sense of self-worth if they are devoid of motivation.

The issue of lecturer motivation within the Nigerian context has been the subject of extensive discourse in various venues, including seminars, labor unions, and public commissions. The Federal Republic of Nigeria has articulated the necessity for the establishment of a well-informed, enthusiastic, proficient, esteemed, and satisfied teaching workforce. The efficacy of lecturers' contributions is intrinsically linked to their morale, which is influenced by factors such as remuneration and advancement opportunities; thus, it can be succinctly asserted that motivation serves as a critical element in augmenting the performance of lecturers in their professional duties and, by extension, the academic success of their students.

It has been a longstanding belief among managers and management scholars that the realization of organizational objectives is inherently dependent on the sustained commitment of organizational members. Motivation is a psychological trait that plays a pivotal role in determining an individual's level of commitment. It encompasses the various factors that instigate, direct, and maintain human behavior towards a specific committed goal. This further implies that there are fundamental assumptions regarding

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motivational practices employed by managers that necessitate comprehension. Firstly, it is commonly posited that motivation is inherently beneficial. One's self-perception is often adversely affected in the absence of motivation.

Secondly, motivation constitutes one of several determinants that influence an individual's performance. Other critical factors, such as capability, resources, and the contextual conditions of performance, also play a significant role. Thirdly, it is a common assumption among managers and researchers alike that motivation requires periodic renewal. Fourthly, motivation serves as an instrument that managers can leverage within organizations. By understanding the motivational drivers of their workforce, managers can tailor job responsibilities and incentives to align with what motivates their employees. Moreover, motivation can be perceived as the means by which workers are encouraged to perform, by addressing or appealing to their intrinsic needs. It is inherently goal-oriented and, as such, is always aligned with the objectives of any organization, whether it be public, private, or non-profit[84].

Motivation aids in directing and regulating a child's behavior, ensuring that the student's actions are consistently guided. Such behavior is characterized by purposefulness and persistence. For instance, when a motivated child is assigned a task in an educational setting, they exert considerable effort to accomplish the assignment accurately. Even in instances of failure, the child does not succumb to discouragement; rather, they intensify their efforts in pursuit of their goals. Motivation can be defined as a critical factor influencing various aspects of human behavior. Moreover, the ramifications of motivation on students are particularly observable within educational environments. Motivation serves to invigorate students' behaviors and incites them to engage in constructive activities.

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In addition to energizing behavior, motivation also plays a pivotal role in sustaining students' interests and actions over extended periods. A motivated individual demonstrates enhanced efficiency and effectiveness in their behavioral patterns. For instance, a student imbued with motivation approaches academic tasks with enthusiasm and engagement. Such a student consistently attends school and diligently completes requisite assignments. Furthermore, the influence of motivation on academic performance is evident in the selective nature of a motivated student's behaviors[85]. Such behavior is purposefully directed toward specific objectives that the individual establishes for themselves. In this context, the student's actions are not executed randomly; rather, they are strategically channeled toward the attainment of a designated goal. For example, when a student is resolute in their pursuit of high examination scores, they engage in deliberate behaviors, such as rigorous studying, to achieve these established objectives. The motivational impetus culminates with the realization of these goals.

The most prevalent outcomes derived from externally administered incentives (extrinsic motivation) encompass financial compensation, social prestige, material wealth, and favorable evaluations from others. In the context of academia, extrinsic motivators for lecturers include financial remuneration, housing provisions, healthcare benefits, complimentary meals, leave entitlements, and advance payments for financial exigencies, as well as additional instructional allowances[86]. For the purposes of this investigation, extrinsic motivation for lecturers encompasses allowances, salaries, leave benefits, material possessions, and advance payments.

Extrinsic motivation may manifest as either positive reinforcement, such as rewards, or negative reinforcement, such as penalties, contingent upon the specific circumstances.

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Conversely, intrinsic motivation pertains to motivation that originates internally. Factors such as passion, altruism, and intrinsic enjoyment can compel an individual to engage in activities irrespective of the presence of external incentives. Occasionally, an individual may experience a combination of both extrinsic and intrinsic motivations. A considerable body of research indicates that both forms of motivation can effectively stimulate individuals to undertake tasks or accomplish short-term objectives. However, the implications of these distinct motivational types on long-term aspirations are less well-defined. Certain studies propose that excessive reliance on extrinsic motivation may hinder learning and long-term goal achievement, potentially diminishing intrinsic motivation over time.

The effectiveness of extrinsic motivation may vary significantly among individuals. Specific contexts may also be more conducive to this type of motivation. For some individuals, the allure of external rewards suffices to drive sustained high-quality performance. Conversely, others may find that intrinsic, value-based incentives are more compelling. The optimal use of extrinsic motivation occurs in scenarios where rewards are administered judiciously to preserve their effectiveness. The perceived value of a reward may diminish if it is overly dispensed. This phenomenon is often referred to as the over justification effect[87]. The over justification effect arises when an activity that an individual previously found enjoyable becomes so frequently rewarded that it ultimately leads to a loss of interest.

In a particular investigation, scholars examined the responses of 20-month-old infants to tangible rewards in contrast to their reactions to social commendation or the absence of any reward. The findings indicated that the cohort receiving material incentives exhibited a reduced likelihood of participating in similar altruistic behaviors in subsequent

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instances. This observation implies that the phenomenon known as the over-justification effect may manifest at a notably early developmental stage. There exists some empirical evidence suggesting that an overabundance of extrinsic rewards can precipitate a decline in intrinsic motivation. Nevertheless, a consensus has not been reached amongst all researchers in this field. This concept was initially examined in an investigation published in 1973. In the course of this study, a subset of children was incentivized for engaging with felt-tip pens, an activity that they inherently found enjoyable. Conversely, other children were not offered any form of reward for this behavior. Following a sustained period of reward, the group that received incentives displayed a diminished interest in playing with the pens[88]. Conversely, the study participants who were not incentivized continued to derive enjoyment from the activity.

Intrinsic motivation is characterized as a phenomenon that originates within the individual or the activity itself, exerting a beneficial influence on behavior, performance, and overall well-being, which is defined as a state of being that encompasses health, happiness, and prosperity[89]. In contrast to prevailing notions, intrinsic motivation is posited to exist when actions are undertaken for their inherent value rather than for external or material incentives. The intrinsic motivation of lecturers encompasses professional satisfaction, enjoyment in their discipline, acknowledgment, influence over others, the challenging and competitive aspects of teaching, opportunities for career advancement, and the pursuit of teaching as a paramount objective in life. For the purposes of this research, intrinsic motivation encompasses satisfaction and enjoyment in teaching, acknowledgment, and the pursuit of teaching as a principal life goal.

Intrinsic motivation is defined as behavior propelled by an internal or intrinsic impetus. In other terms, it refers to the drive to engage in certain behaviors that emanates from

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within the individual rather than from external stimuli. This denotes that the impetus is derived solely from the self, devoid of external influences such as monetary compensation or accolades. The significance of intrinsic motivation is a crucial theme within the educational sphere. Lecturers and instructional designers aspire to cultivate learning environments that foster intrinsic rewards[90]. Regrettably, numerous conventional educational paradigms suggest that a majority of students perceive learning as tedious, thereby necessitating extrinsic encouragement to engage in educational pursuits.

The theoretical framework surrounding intrinsic motivation was initially grounded in fundamental human needs such as hunger, thirst, and essential psychological requirements. This framework is intricately linked to social psychology and self-determination theory, which provides a comprehensive approach to understanding motivation and posits that individuals attain self-determination when their needs for competence, social connection, and autonomy are satisfied. Research in self-determination is concentrated on the motivators that individuals universally endeavor to fulfill, which extend across diverse contexts, including professional environments. Intrinsic needs, such as job satisfaction and interpersonal connections, are derived from self-determination theory and frequently drive individuals to perform at their optimal level. Furthermore, intrinsic motivation has the potential to enhance team engagement by encouraging the pursuit of activities that evoke internal satisfaction and contribute to a sense of purpose. This engagement is characterized by participation in behaviors that are motivated by the inherent enjoyment of the activity itself rather than by the aspiration for external rewards or specific outcomes.

Individuals derive pleasure from engaging in activities or perceive them as avenues for exploration, education, and the realization of their inherent capabilities. The fundamental

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components of intrinsic motivation encompass autonomy, purpose, and skill acquisition. Individuals experience intrinsic motivation when they possess the freedom to act independently, perceive the significance of their contributions, and derive fulfillment from enhancing their competencies. Reflect upon the last occasion you engaged in an endeavor purely for the pleasure it afforded. Numerous activities fall within this domain. For example, one might cultivate a garden, create a painting, participate in a game, compose a narrative, embark on a stroll, or read literature. These activities may or may not yield tangible products or rewards; rather, we partake in them due to our intrinsic enjoyment[91].

Intrinsic rewards significantly contribute to exemplary performance. These inherent rewards not only establish role models but also delineate performance standards. It has been observed that a critical segment of the private education sector has witnessed enhancements in the acknowledgment of a diverse faculty. Furthermore, it is posited that lecturers within the private sector are often perceived more favorably by parents and the general populace, owing to the demanding nature of their work, which is frequently less lucrative, yet yields superior educational outcomes. Consequently, this sector has developed amidst considerable public esteem. Evidence suggests that inadequate human resource management adversely affects employee satisfaction. Therefore, proficient management practices and the training of senior lecturers are imperative to effectuate substantial improvements in lecturer conduct and performance.

An escalation in workload, large class sizes, diverse topics and programmes, as well as evolving curricula, serve as significant demotivating factors across various nations. Moreover, it is contended that the magnitude of class sizes and substantial workloads engender resistance among lecturers towards the adoption of novel teaching

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methodologies and innovations within the educational landscape. The phenomenon of intrinsic motivation constitutes a pivotal subject within the realm of education. Lecturers and instructional designers endeavor to cultivate learning environments that offer intrinsic rewards. Regrettably, numerous conventional paradigms imply that a majority of students perceive education as tedious, necessitating extrinsic incentives to engage them in academic pursuits. A plethora of theories has been proposed to elucidate the concept of intrinsic motivation and its operational mechanisms. Certain scholars assert that all human behavior is fundamentally motivated by external rewards, such as financial gain, social status, or sustenance. In contrast, intrinsically motivated behaviors find their reward within the activity itself. The most widely acknowledged theory of intrinsic motivation is predicated upon the fundamental needs and drives of individuals. Biological imperatives such as hunger, thirst, and sexual reproduction are essential needs that motivate individuals to pursue them for the sake of survival and health [92].

Similar to these biological imperatives, individuals possess psychological needs that necessitate fulfillment to foster personal development and thriving. These psychological needs encompass the desire for competence, autonomy, and social connectedness. In addition to addressing these foundational psychological needs, intrinsic motivation entails the pursuit of and engagement in activities that present challenges, captivate our interest, and provide internal rewards, devoid of any anticipation of external compensation. Certain lecturers commute significant distances to their institutions, expending substantial time in transit, which consequently impacts their performance. Financial rewards exert a more pronounced influence on employee performance.

The significance of extrinsic motivation, particularly in relation to monetary incentives, presents the potential to fulfill a myriad of objectives; thus, financial compensation

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serves as a substantial source of job satisfaction for junior non-teaching and academic personnel in comparison to their senior counterparts. When lecturers experience motivation, their work performance is likely to escalate to elevated levels. While both intrinsic and extrinsic motivational elements exert influence over lecturers' satisfaction and performance, existing literature has also underscored additional critical determinants that adversely affect lecturers' performance, potentially inducing a desire to exit the academic profession or educational environment. Consequently, factors that positively influence the retention or commitment intentions of lecturers are equally essential to evaluate in the context of lecturers' satisfaction[93].

Extrinsic motivation may demonstrate greater efficacy for certain individuals compared to others. Particular contexts may also be more conducive to the application of this motivational framework. For some individuals, the advantages associated with external rewards are sufficient to stimulate sustained, high-quality work. Conversely, others may find value-based incentives to be more compelling. The optimal utilization of extrinsic motivation occurs in scenarios where rewards are administered judiciously, thereby preserving their effectiveness. The significance of a reward may diminish if it is dispensed excessively, a phenomenon commonly referred to as the over-justification effect. This effect arises when an activity that an individual initially enjoys becomes less appealing due to excessive external rewards. In a particular investigation, researchers examined the responses of 20-month-old children to material rewards as opposed to their reactions to social praise or the absence of any reward. The findings revealed that the cohort receiving material incentives exhibited a reduced likelihood of engaging in similar altruistic behaviors in subsequent instances, indicating that the over-justification effect may manifest at an early developmental stage [94].

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2.1.3.3 Lecturers' Salary

The remuneration of lecturers plays a pivotal role in their efficacy in fulfilling their professional responsibilities. Empirical research has identified inadequate salary as a primary predictor of lecturer attrition, adversely affecting their commitment to student academic achievement. Enhanced compensation is likely to optimize lecturers' performance, as numerous studies have indicated that insufficient salaries correlate strongly with diminished lecturer productivity. Additional investigations have advocated for elevated lecturer salaries as an effective strategy to mitigate subpar performance and apathetic attitudes among lecturers during the execution of their professional obligations. Moreover, research has established a positive correlation between salary levels and job satisfaction among lecturers. It has been observed that inadequate lecturer compensation constitutes a significant contributor to their dissatisfaction with their employment. Regrettably, scant research has concentrated on the interrelationship between lecturers' satisfaction with their remuneration and the support provided by administrative structures[95].

Lecturers operating within the Nigerian economic landscape are burdened by the repercussions of delayed salary disbursements and various welfare challenges, as noted by participants during the quarterly meeting of the National Universities Commission Parastatals Servicom Committee (NUCPSC). They have observed that lecturers' monthly salaries are frequently insufficient and are often subjected to delays, resulting in prolonged periods without payment; consequently, they are compelled to grapple with welfare concerns that impede their performance in multiple ways. Researchers have indicated that the provision of quality services may be compromised when the welfare of employees is placed in jeopardy.

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Some lecturers have resorted to the liquidation of assets such as real estate, vehicles, and other personal belongings as a means of financial survival. What strategies may students employ to maximize their academic benefit from these lecturers? The welfare of employees is of paramount importance in the provision of high-quality services. We are confronted with a scenario characterized by a rapid escalation in student enrollment, juxtaposed with a decline in financial resources[96].

2.1.3.4 Working Conditions

Research has indicated that a greater number of lecturers resign from their positions due to adverse working conditions including insufficient administrative support, issues related to student discipline, lack of student motivation, and the absence of decentralized decision-making processes than for other factors such as remuneration. It has also been noted that inadequate working conditions have surfaced as a predominant source of dissatisfaction and diminished performance among lecturers, which consequently exerts a deleterious effect on students' academic achievements[97]. Working conditions pertain to the environment in which work is conducted. The primary function of working conditions is to facilitate the effective execution of job responsibilities by employees. These conditions are shaped by the interplay between employees and their organizational environment. Numerous studies have affirmed that the work environment significantly influences employee performance, productivity, job satisfaction, and employee turnover. Nevertheless, perspectives on the elements constituting working conditions can vary; for example, one researcher delineates working conditions in terms of environmental factors and hazards. Beyond the mere physical environment, it is posited that working conditions encompass both physical and behavioral dimensions. The physical dimension encompasses the degree of comfort, including aspects such as office space and infrastructure (including water and electricity), as well as the availability of necessary

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tools and supplies. The physical working conditions also encompass the office layout, specifically the provision for privacy[98].

The behavioral dimension of the work environment encompasses levels of interaction and distraction. Working conditions also encompass psychological aspects of the work environment in conjunction with the physical arrangement of the job responsibilities. Working conditions can be analyzed in terms of working hours and workloads; other aspects incorporated within working conditions include occupational safety and health concerns, maternity protection, work-family dynamics, remote work, working hours, compensation, work organization, issues of sexual harassment, workplace violence, workload, employee welfare amenities, housing, nutrition, and environmental factors. The belief in a correlation between working conditions whether physical, psychological, or both and job performance suggests that intrinsic motivation is inherently linked to the nature of the employee's work.

2.1.3.5 Teaching Experience

The phenomenon of lecturer turnover is most pronounced during the initial years of teaching. Newly appointed lecturers exhibit a higher propensity to exit the teaching profession compared to their more seasoned counterparts, with many novice lecturers departing within their first five years of service. Additionally, it has been indicated that lecturers possessing one to three years of experience are statistically more inclined to vacate the profession than those with greater experience. Approximately two-thirds of former first-year lecturers attributed their departure from the teaching profession primarily to feelings of dissatisfaction with their teaching roles. The presence of social support and effective school management emerged as significant determinants influencing both satisfaction levels and turnover rates among newly appointed lecturers. More years of teaching experience had a greater impact on outstanding lecturers' job

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satisfaction than administrative support, and more seasoned lecturers had lower levels of job satisfaction than less seasoned ones[99].

A professional who assists students in learning about particular courses is known as a teacher. You can demonstrate your capacity to impart knowledge to students by gaining experience in a teaching position. Gaining knowledge about teaching experience and how to obtain it will help you land the job you want. This article defines teaching experience, discusses its significance, outlines how to obtain it, and offers advice on how to make the most of your experience. Combining exposure, training, and developed abilities, teaching experience helps you perform your current job more efficiently and gets you ready for a teaching role. Usually, it entails collaborating with groups or students to support their learning. You can learn useful strategies for interacting with students and creating a supportive learning environment in the classroom at this time. Classroom experience at the beginning of your teaching career can help you define your career path and offer insights into the educational environment[100]. Naturally, there are differences in the effectiveness of lecturers at every level of their careers; therefore, not all inexperienced lecturers are less effective, and not all experienced lecturers are more successful. The most successful 20-year lecturers are, on average, far more effective than the most successful first-year lecturers; however, since policymakers typically create policies for the norm, it is crucial to acknowledge that these benefits extend beyond the experienced teacher's own classroom to the school as a whole.

2.1.5 Students' Academic Outcome in Computer Keyboard Skills

One of the most vital human endeavors that helps every society shapes and models how people should behave in their surroundings is education. The goal of education is to empower the populace to eradicate inequity and transform their society. Education in

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particular plays a significant role in both individual and national development. It is essential to building a nation's human resource base.

The government's choice to offer free tuition in public secondary schools in an effort to boost demand may be somewhat explained by the crucial role that education plays. Therefore, it is crucial to provide high-quality education in order to create the advantages and opportunities of social and economic development[101]. The cognitive performance of students is one measure of the caliber of education being given. Test and examination results or grades given by the course lecturers indicate the academic outcome. It could also refer to any phrase that is used to convey a student's academic position. In addition to serving as a gauge of educational efficacy, student academic performance is a key factor in determining the general and young well-being of the country. It has been observed that the academic performance of students in various educational endeavors has consistently garnered significant attention from governmental bodies, educational practitioners, guardians, and society as a whole. Consequently, there exists an escalating demand from both the government and the populace for accountability among lecturers. Institutions of learning are frequently assessed based on the academic outcomes of their students.

Lecturers are intrinsically linked to the institutions in which they operate and the overall academic performance of these institutions. It is therefore rational to employ standardized assessments of student performance as a metric for evaluating lecturer effectiveness. Lecturers receive accolades and recognition when their institutions and pedagogical programmes achieve high rankings. Collective rewards are bestowed upon lecturers working within high-performing institutions[102]. Furthermore, those lecturers who demonstrate excellence in their teaching methodologies are acknowledged during promotional appraisal periods. While acknowledging the merits of rewarding lecturers

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who facilitate superior academic outcomes, it is imperative that they also bear a share of the responsibility when students exhibit subpar performance. Empirical evidence has demonstrated that lecturers significantly impact students' academic achievements. They are pivotal in the educational attainment process, as it is the lecturer who ultimately translates policy into actionable strategies and pedagogical principles during their interactions with students.

The primary determinant of student learning is the lecturer, who occupies a critical position in the dissemination of knowledge, values, and skills within the educational framework. Should the lecturer prove to be ineffective, students under their guidance will experience insufficient academic advancement, irrespective of the variations in individual student potential regarding academic outcomes. There has yet to be a consensus on the specific lecturer-related factors that influence students' academic performance[103].

Scholars have investigated the effects of various lecturer characteristics, including gender, motivation, educational qualifications, and teaching experience, on students' academic outcomes, yielding diverse results. A significant correlation was identified between lecturer gender and student academic performance. This finding stands in contrast to other research that posits lecturer experience and educational qualifications as the primary determinants of student academic success. The variables of lecturer teaching experience and educational qualifications were found to have no significant correlation with student outcomes. A study conducted in Ghana identified several lecturer-related factors contributing to diminished academic performance, including tardiness, absenteeism, and failure to complete the curriculum. The administration of practical classes alongside the allocation of assignments to students by lecturers exerts considerable influence on student outcomes, particularly when such assignments are meticulously articulated, inherently motivating, subject to correction, and subjected to

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review during instructional time, thereby functioning as conduits for constructive feedback to the students[104].

2.2 Theoretical Framework

In a comprehensive sense, a teaching theory represents a structured framework of concepts that clarifies the operational dynamics of teaching and its subsequent impact on student learning. This framework encompasses a diverse spectrum of perspectives, ranging from narrowly defined theories addressing specific teaching phenomena to those that embrace broader categories of teaching phenomena across a variety of educational contexts. Nonetheless, for each teaching theory, it is anticipated that the system of ideas encapsulates some explanatory principle that enhances the field's overall comprehension of teaching, and it is further expected that this theory can inform the actions and decisions of lecturers within classroom settings on varying levels (extending from general principles to specific directives). At the general level, a theory of teaching may advocate for notions regarding the most effective teaching methodologies or approaches. An illustration of this general level could be the proposition that the greater the understanding lecturers possess regarding students' cognitive processes, the more effectively they can instruct those students. Although this principle may have broad applicability, at this degree of generality, the idea may not necessarily be directly correlated with the specific lectures conducted by lecturers; the generality implies that the explicit implications for pedagogical practice are not sharply delineated. A more narrowly defined theory of teaching might concentrate its focus on a particular context or a specific phenomenon occurring within a classroom. At this level, the theory would directly inform lecturers' curricular planning and their actual pedagogical choices within their classrooms[105].

2.2.1 Two-Factor Theory

Fredrick Herzberg's motivation theory is predicated upon Maslow's Hierarchy of Needs theory with respect to the categorization of employees' work-related needs. However, within the framework of Two-Factor theory, Herzberg delineated human needs into two principal categories. Herzberg devised a two-dimensional paradigm of factors influencing employees' attitudes towards work, in contrast to Maslow's five-dimensional paradigm. Herzberg categorizes these factors as motivators and hygiene factors. These factors are presented in:

Hygiene Factors	Motivators
Organisational policies	The quality of work itself
Supervision	Recognition for achievement
Work security	Opportunity for advancement
Interpersonal relations	Responsibility
Salary	Personal development
Working environment	Training

Fig 1: Herzberg's Hygiene Factors and Motivators

Source [106]

The table above illustrates that factors such as organizational policies, supervisory practices, working conditions, and remuneration are classified as hygiene factors. These are elements whose presence guarantees that employees function at a minimal standard, yet do not foster motivation that empowers employees to achieve peak performance. The absence of hygiene factors can engender job dissatisfaction, whereas their presence does not inherently inspire motivation among employees. Conversely, Herzberg also identified factors such as the nature of the work itself, resultant outcomes, and recognition as

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significant determinants of employee motivation. Herzberg designated these elements as motivators, as their presence invigorates employees to exert considerable effort in their work.

Thomas Sergiovanni empirically evaluated Herzberg's theory with lecturers and concluded that outcomes, recognition, and responsibility significantly contributed to lecturer motivation. The two-factor theory has substantially enriched the conceptual framework of school leaders regarding the motivational factors influencing lecturers by differentiating between intrinsic and extrinsic elements[106]. For instance, inadequate school rules and administrative procedures, unproductive leadership styles, and bad interpersonal relationships with students and other lecturers all contributed to the demotivation of lecturers. Critics of Herzberg's Two-Factor theory claim that, like Maslow's Hierarchy of Needs theory, Herzberg's approach concentrates on employee pleasure rather than employee motivation and performance. Herzberg's approach to determining his hygiene elements and motivators was criticized for being overly subjective and devoid of factual support. While motivators have to do with the subject matter of the job that employees are doing, hygiene elements are environmental in nature because they deal with the context in which the work is done.

This study established how the setting and content of teaching affected lecturers' motivation and the performance of their students by focusing on both the situation in which they work and the content of their work. Since this is one of the important factors in lecturers' factors, Fredrick Herzberg's theory of motivation and Maslow's theory of the hierarchy of needs pertain to how lecturers managing (practical) courses should be motivated [107].

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2.2.2 Constructivism Learning Theory

Students are viewed as capable, strong, engaged, and competent in constructivist education. Learning by "doing," as it is called, fosters student engagement, critical thinking, and memory retention. The following are the main benefits of using constructivism as a learning theory in the classroom[108].

1. Students are encouraged to use autonomous, critical, and creative thinking since they are seen as capable students. The learning process may become more enjoyable as a result.
2. Lecturers recognize that students need lessons that are tailored to their cognitive abilities and differentiated accordingly.
3. Based on a student's age, new and fill-in lecturers can rapidly estimate his ability level using Piaget's stages.
4. Gaining comprehension is frequently viewed as a learning process guided by the child.
5. Since constructivist learning methods emphasize doing rather than memorization or sitting, most students find them more engaging and exciting. The educational process is frequently more captivating.

The primary criticism leveled at the constructivist learning theory is its lack of organization. Constructivist learning is primarily associated with a more relaxed approach to encourage students to participate in their education, however an individual student may require extremely regimented and ordered learning environments to thrive. Instead of grading, which could cause students to fall behind, constructivist classrooms concentrate more emphasis on student achievement. Additionally, without uniform marking, it can be challenging for lecturers to identify which students are having difficulty. Constructivism is based on the idea that people don't just passively absorb

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knowledge; they actively create their understanding via experiences. People expand on what they have learned and add fresh information to their existing knowledge as they go through the world and think back on their experiences[109].

According to lecturers who are familiar with constructivist learning theory, every student brings a distinct experience to the classroom. Furthermore, they recognize that a student's prior knowledge influences his capacity to learn. Lecturers shouldn't presume that their students understand the material or how to complete it. Rather, they have to lead them through this exploration process. With the use of specifically created building blocks, we give the student control over the learning process and allow them to form conceptual connections. Students take the lead in choosing the best course of action using this problem-based learning approach.

The pedagogy falls within the social and cognitive domains and can be defined as an active learning technique. A cooperative learning environment is produced by the conversations that take place amongst the students. Understanding how students learn requires an understanding of constructivist learning theory. Constructivism is based on the notion that students actively create their own knowledge. On top of their existing understanding base, students construct their new experiences. Learning is not only passively absorbing information; it is an active mental process. Understanding how students learn requires an understanding of constructivist learning theory. Constructivism is based on the notion that students actively create their own knowledge. Students expand upon their existing understanding by adding their fresh experiences. Learning involves more than just passively absorbing information[110].

It's critical for lecturers to comprehend constructivist learning theory. Every student that walks into your classroom has a different outlook on life, shaped by their individual

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experiences. This will affect what they learn. The beginning of the learning process is crucial if the constructivist theory's premise is that students build new information on top of what they already know. For lecturers, learning theories are just as valuable as credentials; it's critical to comprehend how your students' learning journeys will be impacted.

Constructivism is a multifaceted theory. These tenets describe the idea in its entirety and how it influences students' learning. Below are a list of the key points[111]:

1. Information is created. Each student has some prior information when they start the learning process, and they subsequently build on that knowledge as they progress. They will choose whatever aspects of the experience to include, ensuring that each person's knowledge is distinct.
2. Education is a communal endeavor. Building knowledge requires interacting with others. To build understanding, group projects, talks, dialogues, and encounters are all crucial. When we think back on our prior experiences, we can see how the knowledge we have gained is closely related to how we relate to other people.
3. The process of learning is dynamic. To build knowledge, students need to participate actively in conversations and activities. Students cannot assume a passive role while yet remembering the material.
4. A sensory reaction is necessary for the development of meaningful concepts.
5. Context is key to learning. Information is not best retained when isolated. Making links between our preexisting knowledge and our beliefs helps us learn. Alongside the rest of our understanding, or in the context of our existence, learning also takes place. We consider our life and categorize the new knowledge according to how it aligns with our existing viewpoint.

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6. As people learn, they also learn to learn. Every student improves their ability to choose and arrange knowledge as they progress through the learning process. They are able to develop more significant thought systems and more effectively categorize concepts.
7. Additionally, students start to realize that they are learning more than one concept at once. For instance, when writing an essay about historical events, they are also learning the fundamentals of written language. They are also learning how to arrange significant material chronologically if they are studying significant dates.
8. The mind is where learning takes place. Physical experience and hands-on activities are insufficient for knowledge retention. Reflection and active participation are essential to the learning process. For students to have a complete comprehension, they also need to experience activities in their minds.
9. Individuals possess knowledge. Since each person's viewpoint is different, so too will the knowledge acquired. Each person brings their own experiences to the learning exercise and will also learn new things. Every person's unique viewpoint and experiences form the foundation of the idea of constructivist learning.
10. Learning requires motivation. Motivation is essential for establishing connections and fostering understanding, much like active engagement. If students are unable to use their cognitive processes and reflect on their prior knowledge, they will not be able to learn. Lecturers must endeavor to inspire their students to participate in the educational process.

Constructivism's numerous tenets and distinctive components influence how this theory benefits and connects with students. The various tenets of constructivism theory are listed below. Constructivism's central tenet is that students generate their own knowledge and comprehension of the world via outside experiences, interactions, and explorations. This

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indicates that Cognitive Development constitutes a pivotal element of Constructivism, as learning occurs actively within the environment rather than in a state of isolation. Furthermore, this involves structured guidance aimed at assisting students in drawing their own inferences regarding the functioning of the world[112].

An additional fundamental tenet of Constructivist theory posits that knowledge is "constructed" through experiential engagement. This implies that students are required to transcend mere absorption of facts and information, instead engaging with materials to formulate personal interpretations and establish connections. Through this process, they cultivate their own comprehension of their surroundings and enhance their involvement in the educational experience. Constructivism further emphasizes the necessity of fostering a nurturing learning environment. This entails creating an engaging and interactive experience for students or students, which may encompass opportunities for hands-on experimentation, promoting collaborative endeavors and discourse among students, or granting them autonomy over their own educational journey.

1. Knowledge is formulated upon previously acquired knowledge.
2. Every new learning experience contributes to an enhanced understanding of subsequent concepts.
3. Learning is inherently an active endeavor rather than a passive occurrence, necessitating engagement in activities, readings, and discussions. The student assumes an active role.
4. Lecturers employ social interactions as a means to facilitate student learning and retention of knowledge.
5. Knowledge is inherently contextual, with individuals drawing from their existing beliefs and understandings shaped by their environments.

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6. Knowledge is a subjective phenomenon, as each individual possesses distinct experiences and prior knowledge to contribute.
7. Cognitive experiences are fundamentally essential for the retention of knowledge.
8. Motivation is indispensable for learning, as it enables students to leverage their pre-existing knowledge to forge connections with new information.
9. Cognitive strategies, such as those articulated in the universal thinking framework, must be comprehensively understood.

Discovery-based pedagogical methods have frequently been linked with this area of research. Historically, discovery-based learning strategies have faced criticism, with direct instruction methodologies positioned at the opposite end of this discourse. Within Structural Learning, the classroom is conceptualized as a community of knowledge. This perspective asserts that both the lecturer and the student engage actively in constructivist classroom undertakings. For instance, the mental model approach that we have been investigating through the use of building blocks necessitates that the lecturer guide the learning process in various directions. This tactile activity is predominantly student-led, yet the lecturer plays a crucial role in steering the student's cognitive development[113].

These varieties of constructivist teaching methodologies foster learning agency. We do not characterize it as unstructured play, as there are typically well-defined assessment criteria that must be fulfilled. Adult guidance is employed to channel the learning towards productive outcomes. Lecturers can utilize this authentic formative assessment activity to gauge the child's current learning status. Such constructivist teaching strategies empower the lecturer to be responsive to the needs of the child.

There are multiple forms of constructivism that lecturers can implement to facilitate success within the classroom.

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Cognitive Constructivism

Cognitive constructivism is grounded in the research and contributions of cognitive development in children by Jean Piaget. This theoretical framework comprises two significant components:

1. A developmental theory that elucidates the mechanisms by which students cultivate cognitive capacities.
2. A component of age/stage that serves as a predictor of a child's cognitive comprehension at a particular developmental stage.

Cognitive constructivism is predicated on the premise that the learning process must transpire in accordance with the student's cognitive developmental stage. Piaget is renowned for delineating four fundamental stages of cognitive development: sensorimotor, preoperational, concrete operational, and formal operational. The sequence of these stages remains invariant across diverse cultural contexts. Piaget posits that each child traverses these developmental stages in a consistent order, although the rate of progression may vary among individuals. These stages facilitate students in assimilating new knowledge by correlating it with pre-existing cognitive frameworks, thus enabling adaptations to their prior knowledge in response to novel information.[114].

Social Constructivism

The theoretical framework of Social Constructivism was articulated by the post-revolutionary Russian psychologist Lev Vygotsky. Vygotsky did not reject cognitivism; rather, he advanced the proposition that the social context of learning could be entirely extricated from the educational process. Social constructivism emphasizes the collaborative dimensions of learning experiences. Knowledge is cultivated through the interactions individuals engage in within a societal framework. Students rely on social interactions to augment their understanding. They require external support to facilitate

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the construction of their knowledge. Social constructivism shares a close affiliation with cognitive constructivism, enriched by the additional dimensions of peer interactions and societal influences.

Radical Constructivism

Radical constructivism was proposed by von Glasersfeld**,** who provides a pragmatic approach to problems related to truth, reality and human understanding. In this theory, von Glasersfeld contended that we developmentally build our understanding and our concepts about the world. Radical constructivism is relatively different from social and cognitive constructivism. It focuses on the notion that students and the knowledge they construct do not tell things that are real, only help people to live and work in their environment. The basic idea is that knowledge is developed, not discovered. The stuff we discuss on the table is just interpretation**s** of knowledge, which makes it difficult for us to know the truth.

Constructivism in a Classroom

It is imperative to comprehend how lecturers can implement constructivist principles within a classroom to foster a distinctive learning environment for their students. In constructivist educational settings, lecturers cultivate a collaborative atmosphere wherein students engage actively in their learning processes. Lecturers are required to assume the role of facilitators of learning. They must ascertain the pre-existing knowledge of their students and subsequently integrate new information within those established cognitive frameworks. Moreover, lecturers may need to adapt their pedagogical approaches in accordance with the varying levels of comprehension exhibited by their students. Our collaborative learning strategy, which employs the learning tool Writers Block, converts academic assignments into experiential activities. These collaborative pedagogical methodologies engender environments conducive to active learning. Students are tasked

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with organizing information and forging the conceptual linkages that are central to the constructivist learning paradigm. In contrast to traditional worksheet activities, the construction process embodies a learning journey. Students possess the autonomy to connect and reconnect the blocks, thereby engendering a multitude of conceptual associations. The direction of this process can be modulated by the lecturer to the extent that they deem necessary[115].

On the one hand, a session that is entirely free would encourage discovery learning. A more focused approach might be appropriate if the subject matter is difficult. This method of instruction serves as a vehicle for intellectual growth in addition to helping each student comprehend the curriculum content. The discussions and logic encourage human growth.

This method of encouraging communication and critical thinking can be applied to different year groups and courses. The child lacks the background information that other students in the group can provide as a resource for learning. In other words, the collective knowledge gained by the community is more than the sum of its individual parts.

'Inter-thinking' is the term Neil Mercer uses to describe this idea. The improvement of communication skills is another outcome of these social activities.

Role of a Lecturer in a Constructivist Classroom

The Lecturer's Function in a Constructivist Classroom. A lecturer's main responsibility is to create a cooperative problem-solving atmosphere where students actively engage in their education. According to this perspective, a teacher facilitates learning rather than lecturing. The teacher makes certain that he or she is aware of the students' prior knowledge and designs the lesson to build upon it. A key component of good teaching is scaffolding, in which the adult regularly adjusts the degree of assistance based on the performance level of the students.

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Pedagogical Objectives of Constructivist Learning Environment

The pedagogical goals of constructivist classrooms are as follows:

1. To provide experience in addition to the process of knowledge production, in which students choose their own learning methods.
2. To provide multifaceted experience by experimenting with different approaches.
3. To promote education in authentic settings (factual assignments).
4. To promote student autonomy and choice in the learning process (student-centered learning).
5. To incorporate social interaction (collaboration) into the learning process.
6. To use a variety of representational techniques (text, audio, video, etc)
7. To give insight into the process of creating knowledge (reflection, metacognition).
8. The constructivist learning theory's lack of direction contradicts the direct instruction idea, which is well-supported by research. There is little scientific backing for instructional strategies like discovery-based learning.
9. Effective student collaboration is necessary for these instructional methods to be successful. The approach may not be successful if a student is unwilling to assume a leading position and cooperate with others.
10. To encourage the active development of information, you might also want to consider utilizing a mental representation like Writer's Block.
11. Generally speaking, constructivist classrooms differ greatly from other kinds of classes Students' interests and participatory learning are taken into consideration in constructivist classrooms.

They are student-centered and supplement students' previous knowledge. In productive classes, students mostly work in groups, lecturers engage with students to help them

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expand their knowledge, and they promote discussion about what students need to succeed[116].

Main Strengths of Constructivism Learning Theory

1. Students are viewed as engaged, capable, competent, and powerful in a constructivist educational approach. It encourages students to learn by "doing," which promotes engagement, critical thinking, and memory retention. The primary advantages of implementing Constructivism Learning Theory in a classroom are listed below.
2. Students are encouraged to use autonomous, critical, and creative thinking since they are seen as capable students. The learning process may become more enjoyable as a result.
3. Lecturers understand that students need lessons that are tailored to their cognitive abilities.
4. Through Piaget's stages, fresh and fill-in lecturers can quickly guess a student's ability level based on his age.
5. Developing understanding is often treated as a child-led learning journey.
6. Students mostly find constructivist learning approaches to be more exciting and enjoyable as they learn by doing rather than memorizing or sitting. The learning experience is often more engaging.
7. Based on a student's age, new and fill-in lecturers can rapidly estimate his ability level using Piaget's stages.
8. Gaining comprehension is frequently viewed as a learning process guided by the child.

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9. Because constructivist learning methods emphasize doing rather than memorization or sitting, most students find them to be more engaging and pleasurable. The educational process is frequently more captivating.

2.2.3 Connectivism

Connectivism, a contemporary learning theory, acknowledges the impact of technology, societal influences, interpersonal networks, and employment-related activities. It posits that the advent of online browsers, search engines, social media, among others, has fundamentally transformed the learning landscape. Connectivism advocates for a novel approach to learning, wherein students are encouraged to integrate thoughts, theories, and general information in a highly effective manner. It recognizes the pivotal role of technology in the learning process and asserts that maintaining constant connectivity facilitates informed decision-making regarding one's learning. Moreover, it fosters group engagement and dialogue, accommodating diverse perspectives and viewpoints in the processes of decision-making, problem-solving, and information comprehension. Connectivism endorses learning that transpires within social contexts beyond the individual, such as social media platforms, online communities, blogs, or knowledge repositories[117].

It's one thing to comprehend connectivism; it's another to apply it to classroom instruction. Remember that the student takes greater ownership of their education when adopting a connectivist viewpoint. It is the responsibility of lecturers to help students become strong agents of their own learning and development, in contrast to traditional teaching methods and other ideologies like constructivism or cognitivism. To put it another way, students are in charge of creating their own learning networks, making decisions, and designing their own learning experiences. Expanding digital learning choices, including webinars, blogs, social networks, and online courses, is the first step in

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creating a connectivist classroom. Technology is the mainstay of connectivism. Connectivism in the classroom has advantages for both the teacher and the student.

Take into account the following advantages if you're thinking about implementing this idea in your present or future classroom. It encourages collaboration. Connectivism holds that learning occurs when peers collaborate and connect to exchange ideas, views, and points of view. A group of people can legitimize its acts through connectivism, which facilitates the faster dissemination of knowledge among different communities. It gives lecturers and students more power. Connectivism transfers responsibility for learning from the lecturer to the student. The student is responsible for designing their own educational journey. "Create learning ecologies, shape communities, and release students into the environment" is the new responsibility of the lecturer. It welcomes variety. Theoretically, connectivism allows for no hierarchy in the value of knowledge and encourages individual viewpoints and variety of thought[118]. It is a theory of the technological age that facilitates education. It incorporates online resources into the educational process. Connectivism is "the model of learning for the digital age where learning is no longer an internal, individualistic activity, which manifests itself in all aspects of human life," according to Siemens. It is a philosophy of learning that is required in response to networked and digital technology. Thus, connectivism can be defined as a paradigm of learning that uses the newest digital technology to provide students worldwide with new learning opportunities. Therefore, the lecturer should support the student in making their own connections between seemingly unrelated pieces of information through a variety of platforms, such as blogs, wikis, Twitter, and free educational resources.

A relatively new paradigm of learning called connectivism contends that students should effectively integrate ideas, theories, and general knowledge. It acknowledges that

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technology plays a significant role in education and that continuing to be connected allows us to make decisions about our education. Additionally, it encourages group debate and participation, allowing for a variety of opinions and perspectives when it comes to making decisions, solving problems, and interpreting data. Connectivism encourages learning that takes place in places other than the person, such blogs, online networks, social media, or information databases[119].

History of Connectivism Learning Theory

George Siemens and Stephen Downes, two theorists, initially proposed connectivism in 2005. In 2004, Siemens published Connectivism: Learning as a Network Creation online, and the following year, Downes published An Introduction to Connective Knowledge. The articles discuss how technology is useful in education and how students can now obtain material more quickly thanks to the digital age. Siemens and Downes have both written and spoken about the course ever since. But each has a somewhat different perspective. Siemens tends to emphasize connectivism's social components, whereas Downes concentrates on machine learning and non-human appliances.[120]

What are Nodes and Links in Connectivism?

Connectivism holds that learning is more than just the knowledge we create for ourselves. Instead, learning also refers to what we may access through our external networks. According to this theory, the terms "nodes" and "links" are frequently used to refer to the ways in which humans acquire and connect information inside a network. Students are viewed as "nodes" in a network according to connectivism. Any object, such as a book, webpage, person, etc., that may be connected to another object is called a node. The foundation of connectivism is the idea that knowledge is formed by connections, or "links," that humans create and maintain between different "nodes" of information.

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What are the Principles of Connectivism?

Connectivism suggests that technology is altering what, how, and where we learn by building on preexisting notions. Siemens and Downes found eight connectivist tenets in their study.

The following are connectivism's core principles:

• Diverse viewpoints are the foundation of knowledge and learning.

• Learning is a connecting process.

• Non-human devices may be capable of learning.

• Knowledge is not as important as learning.

• For learning to continue, relationships must be fostered and maintained.

• One essential skill is the capacity to recognize links between thoughts, ideas, and domains.

• The goal of all connectivist learning is to provide accurate, current information.

• Making decisions is a process of learning. Our current understanding may evolve in the future. Due to the ever-evolving nature of information, a correct answer today could be incorrect tomorrow[121].

Prior to the introduction of these ideas, a number of theories viewed students only as information consumers. Connectivism, on the other hand, backs up the idea that knowledge is dispersed throughout networks and that learning is influenced by relationships. Understanding connectivism is one thing, but putting it into practice in the classroom through educational activities is quite another. Keep in mind that from a connectivist perspective, the student assumes the new learning obligations instead of the teacher. The role of the lecturer is to help students become successful agents for their own learning and personal growth, in contrast to conventional teaching methods and other philosophies like constructivism or cognitivism. To put it another way, the student

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is responsible for developing their own learning networks, making decisions, and creating their own learning experiences. Connectivism is fundamentally reliant on technological advancements; thus, the initial phase in establishing a connectivist educational environment is to augment opportunities for digital learning modalities, such as online courses, webinars, social networks, and blogging platforms.

Connectivism in the lecture room can be used in many means[122]:

Social media: A significant approach for lecturers to actualize connectivism involves the utilization of social media platforms within the classroom context. For instance, a dedicated Twitter account for the class may facilitate the dissemination of information, foster discussions, or announce assignments. This practice has the potential to enhance student engagement and facilitate discourse between students and lecturers.

Gamification: The process of gamification transforms assignments and educational activities into competitive games, thereby enriching the learning experience with interactivity. Numerous applications and instructional technologies are available for lecturers to incorporate gamification elements into their classrooms. A notable example is DuoLingo, an online learning platform that assists students in acquiring language skills through engaging, game-oriented lessons. Lecturers can monitor students' advancement while students accrue “points” for progressing through various lessons. Other notable applications include Brainscape, Virtual Reality House, and Gimkit, among others.

Simulations: Simulations promote profound learning engagement that fosters comprehension as opposed to superficial learning reliant on rote memorization. They also inject an element of enjoyment and engagement into the educational setting. The integration of some or all of these illustrative examples serves as an effective mechanism to grant students greater autonomy over the pace and content of their learning.

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Furthermore, this approach creates opportunities for personalized learning tailored to each student's distinct needs and strengths.

Prospects of Connectivism?

Both students and lecturers stand to gain from the implementation of connectivism within the classroom environment. Should you contemplate the incorporation of this theoretical framework in your current or forthcoming educational settings, it is advisable to consider the following advantages[123]:

It Creates Collaboration

Within the framework of connectivism, learning transpires when peers are interconnected and exchange opinions, perspectives, and ideas via a collaborative mechanism. Connectivism facilitates a community of individuals to validate their endeavors, thereby enabling the rapid dissemination of knowledge across multiple networks.

It Empowers Students and Lecturers

Connectivism reassigns the responsibilities of learning from the lecturer to the student. It becomes the onus of the student to cultivate their own educational experience. Consequently, the lecturer's role evolves to encompass the creation of learning ecosystems, the formation of communities, and the facilitation of students' engagement with their environments.

It Embraces Diversity

Connectivism advocates for the acknowledgment of individual perspectives and the richness of diverse opinions, theoretically establishing a framework devoid of hierarchical valuations of knowledge. For current or aspiring lecturers, it is crucial to comprehend how various learning theories can enhance classroom dynamics and assist students in achieving success.

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2.3 Review of Empirical Studies

Numerous studies have been conducted pertaining to student outcomes, identifying and scrutinizing myriad factors influencing academic performance at various educational levels, including primary, secondary, and tertiary institutions. The findings from these investigations underscore the significance of student effort, prior educational experiences, parental educational backgrounds, family income, student self-motivation, age, learning preferences, and entry qualifications as pivotal determinants that impact academic performance within diverse educational environments[124].

The significance of these investigations resides in the necessity to implement corrective strategies that enhance the academic achievements of postgraduate students. It is widely postulated that individuals exhibiting superior or elevated performance during the initial phases of their academic pursuits tend to continue performing favorably in subsequent years at the degree level. This assertion may elicit surprise among scholars if substantiated through empirical evidence. Over the past two decades, there has been a notable increase in the scholarly literature and review articles pertaining to indicators of academic outcomes, with considerable emphasis placed on this discourse: whether conventional measures of academic performance serve as the most reliable predictors of future academic advancement at the university level, or whether alternative, innovative metrics are more effective. Nonetheless, it has been observed that a significant number of researchers contest this perspective or assertion. A particular study challenges the notion that future academic achievements are contingent upon prior performance. In their investigation concerning the correlation between previous academic success and subsequent outcomes at the university level, they discovered that the academic performance of students enrolled at the graduate level and their secured grades did not serve as reliable predictors of any academic outcomes at the university level.

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Furthermore, they highlighted that there exists a modest correlation of merely 0.28 between graduate-level grades and university degree outcomes[125].

Conversely, in their research examining social and educational backgrounds, it was noted that students hailing from underprivileged socio-economic and educational settings tended to perform comparatively better than their counterparts originating from more affluent socio-economic and educational environments. They referred to this phenomenon as educational elasticity. It is evident and accurate that the criteria for categorizing socio-economic status in various nations differ based on their respective cultural norms and values. The benchmarks for identifying low socio-economic status in a developed nation will diverge from those applied in developing countries, and a similar disparity exists between developing and underdeveloped nations. "The aggregate income of households, whether calculated monthly or annually, alongside their expenditures, significantly influences the educational opportunities available to youth and their prospects for academic success. Moreover, it was emphasized that due to residential stratification and segregation, students from low-income backgrounds typically attend schools with inadequate funding, which subsequently diminishes their motivation for academic achievement and heightens the risk of educational failure in their future pursuits.

A research study revealed that students originating from families with low income exhibited more pronounced subsequent challenges in terms of academic outcomes; including lower literacy rates, diminished retention rates, behavioral issues within educational settings, and increased difficulties in their studies, often demonstrating a negative attitude towards education and schooling[126]. This viewpoint is further reinforced by the findings of the study, which indicate that students emerging from low socio-

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economic backgrounds consistently exhibit lower academic performance and achieve inferior scores in comparison to their peers or counterparts.

2.3.1 Lecturer's Related Factors and Students' Academic Outcome in computer Keyboarding Skills

Research conducted on the determinants influencing the academic performance of students substantiates the existence of a substantial correlation between lecturer-related factors and students' educational outcomes. Lecturers occupy a pivotal role in shaping the academic achievements of their students. In numerous developing nations, lecturers are essential components of the educational framework, serving as the primary conduits for the dissemination of knowledge. The elements impacting lecturers' efficacy in their professional responsibilities directly influence student performance. Empirical studies have demonstrated that multiple factors can predict students' academic outcomes in any instructional setting. These predictive factors encompass student-related, school-related, text-related, and lecturer-related variables. The lecturer's role is crucial in the instructional paradigm; hence, the significance of a lecturer's qualifications, encompassing teaching experience and subject matter expertise, cannot be overstated[127]. The caliber of student performance continues to be a paramount concern for lecturers. This concern is aimed at engendering a positive impact at local, regional, national, and global levels. Lecturers, trainers, and researchers have long been engaged in investigating the variables that contribute effectively to the quality of student performance. These variables influencing students' academic achievements encompass both intra-school and extra-school factors. Such factors may be classified as student factors, lecturer factors, familial factors, school factors, and peer factors; however, existing research predominantly focuses on lecturer factors and their pedagogical methodologies. Lecturers

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function as facilitators within the educational process. Their roles are distinctive in that they serve as architects, managers, and engineers of pedagogical practices.

It is posited that student performance is largely indicative of a lecturer's expectations, wherein a student perceived as high-achieving tends to outperform one deemed as less capable. However, it is not uncommon for those students who are perceived as average or below average to surpass expectations. This observation is particularly relevant when analyzed through the perspective of a lecturer's assessment of these misjudged or underperforming students. This suggests that it is not a given that a high-rated student will necessarily be a top performer, nor that a low-rated student will invariably be a poor performer[128]. Furthermore, it is pertinent to consider the possibility of a teacher's discriminatory practices or favoritism towards self-identified high achievers, who are often more prevalent than their underestimated counterparts. Regardless of a teacher's biases concerning student performance outcomes, a noteworthy observation is that groups of students who either exceed or fall short of expectations exhibit diverse personal characteristics.

2.3.2 Lecturers' Environment and Academic Outcome in Computer Keyboarding Skills

The learning environment, as a variable that can either positively or negatively influence students' academic outcomes, has garnered minimal scholarly attention in the quest to address the persistent subpar performance of students within the educational system in the nation. Given that the learning environment has recently emerged as a critical area warranting consideration and effective management to augment students' academic performance, it requires further exploration. It has been noted that, in contemporary society, educational systems must continually adapt to effectively meet the rapidly

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evolving demands of the communities they serve. To achieve a comprehensive understanding of how both the physical and social dimensions of learning environments impact the quality of learning processes, a thorough investigation of the interplay between location and pedagogical methodologies is essential. The pedagogical process cannot occur in isolation within formal educational contexts. It transpires as a consequence of the dynamic interactions among various components of the educational milieu. In the learning environment, the constituents of the teaching-learning process encompass: lecturers, students, curriculum content, pedagogical procedures, and the educational context[129].

Students and lecturers function effectively within an academic culture that fosters expectations of scholarly achievement and motivation to learn, which are acknowledged and rewarded. Such an environment, in which students cultivate a genuine passion for learning for its intrinsic value, leads to enhanced academic outcomes. The educational institution serves as a unique social construct where the educational, training, and character development of children who represent the future assets of the community are established and facilitated through effective pedagogical methodologies, suitable physical infrastructure, and a supportive psychological climate. In the course of socialization, students necessitate a conducive environment and exemplary models to optimize their performance.

Consequently, clean, tranquil, and comfortable surroundings are critical components of the learning environment. Moreover, the establishment of an optimal learning environment should be prioritized by all relevant educational stakeholders, as comfort should encompass a multitude of factors, including thermal regulation, illumination, and sound management, among others. The extent to which students' learning experiences

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can be enhanced is contingent upon their spatial positioning within the educational institution, the architectural design of their classrooms, and the availability of instructional resources and materials. It is posited that an educational institution characterized by an adequate learning environment significantly contributes to the realization of anticipated learning outcomes, thereby promoting commendable academic performance by facilitating effective teaching and learning. It is similarly posited that students' academic outcomes and educational achievements are profoundly influenced by the standards and types of educational institutions they attend. The educational environment of the school attended delineates the parameters of students' academic outcomes, evidencing that the school environment and lecturers' expectations of their students exert substantial influence on student performance. A considerable number of lecturers operating within under-resourced schools often harbor diminished performance expectations for their students, and when students perceive that their lecturers maintain low performance expectations, it consequently leads to suboptimal student achievement[130]. It has been affirmed that student performance is also contingent upon the school in which they receive their education; however, it was further noted that the quantity of resources available at a school typically dictates the institution's quality, which subsequently affects the performance and achievements of its students.

A study contends that schools exert influence over the educational process through the organization of content, the roles of lecturers, and the overall pedagogical evaluation. Consensus among educational theorists and researchers supports the notion that schools significantly impact the academic performance and educational attainment of students. Students hailing from elite educational institutions are anticipated to excel academically due to their enrollment in such prestigious establishments, primarily because these institutions are often replete with abundant resources and facilities. Some researchers

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assert that the ownership of schools and the financial resources available within these institutions indeed influence student performance[131].

It has been observed that ownership of educational institutions, the provision of infrastructural facilities, and the accessibility of resources within schools constitute a significant structural element of the educational framework. Private educational institutions, owing to their superior financial backing, smaller student-to-faculty ratios, committed ownership, dedicated faculty, and access to technological resources such as computers, demonstrate enhanced performance in comparison to public educational establishments. The additional financial support and resources available in private institutions significantly contribute to the academic performance and educational attainment of their students[132]. Furthermore, it is commendable that students enrolled in Government colleges and universities are being provided laptops by the Government, facilitating their ability to engage with global advancements and innovations. It can be inferred that the type of educational institutions that students attend profoundly affects their educational performance and academic outcomes, as corroborated by numerous researchers and educational theorists in their investigations concerning the influence of high school attendance on university success. This study enables academic researchers to postulate that the background of students positively correlates with the academic achievements of graduate students[133].

2.3.3 Lecturers' Motivation and Students' Academic Outcome in Computer Keyboarding Skills

The discourse surrounding lecturers' motivation and their productivity, often referred to as quality assurance, has emerged as a contentious issue within educational frameworks and standards. In numerous developing nations, including Nigeria, there exists an

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increasing recognition of the significance of lecturer motivation as a critical factor for ensuring quality assurance, delivering quality outcomes, and maintaining high standards within the educational system. It is imperative to acknowledge that any nation aspiring to uphold elevated quality standards or to attain quality assurance within its educational infrastructure must regard the motivational needs of lecturers with the utmost seriousness.

Lecturers occupy a pivotal position within the dynamics of the educational system. Their influence on the teaching-learning outcomes can be either beneficial or detrimental, as they are instrumental in determining the caliber of instructional delivery and consequently impact the quality of education in the execution of the curriculum and educational policies[134]. They must be factored into considerations regarding matters such as quality assurance, effective teaching delivery, contextual quality, and the resultant learning outcomes. Moreover, they serve as the custodians of the educational and institutional frameworks. Given that teaching is a systematic, rational, and organized endeavor aimed at imparting knowledge, skills, attitudes, values, and essential educational principles in accordance with recognized professional standards, there is a requisite for the engagement of proficient lecturers whose expertise is intertwined with innovative practices to fulfill educational objectives[135]. In the absence of lecturers within the educational system, the process of learning would be fundamentally compromised. The act of teaching is what facilitates learning, and the lecturer is pivotal in determining the quality of instruction imparted to students. This underscores the necessity for appropriate motivational strategies to be implemented in order to ensure effectiveness and efficiency within the educational framework. Motivation can be conceptually defined as a process that stimulates, energizes, directs, and sustains behaviors and performance. It represents the intrinsic feelings that propel individuals toward action[136].

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The motivation of lecturers is intrinsically linked to their vested interest in students. Additionally, it encompasses their concern regarding student discipline and management, particularly within the confines of the classroom environment. Consequently, this motivation may serve as a fundamental determinant of their engagement or disengagement in both academic and extracurricular activities that are conducted within educational institutions.

The motivation of lecturers is pivotal to ensuring the provision of high-quality education, as it significantly impacts quality assurance within the educational framework. In the absence of proficient and effective lecturers within the education sector, the attainment of qualitative learning outcomes becomes an elusive goal. This underscores the imperative need for appropriate motivational strategies to be implemented in order to enhance the overall quality of the educational landscape. Thus, any thorough examination aimed at achieving educational quality within the Nigerian context must meticulously analyze the contributions of lecturers towards the enhancement of quality assurance in education.

Motivation within the educational sphere can exert multiple effects on student learning and their attitudes towards course material. The motivation of both lecturers and students within the teaching and learning processes can steer behaviors towards specific objectives, foster increased effort and energy, augment cognitive engagement, boost the initiation and persistence of activities, dictate which outcomes are perceived as reinforcing, and ultimately lead to enhanced performance. Lecturers who are motivated consistently seek innovative methodologies to optimize their instructional practices; they exhibit a stronger orientation towards quality and demonstrate heightened productivity. Hence, it follows that motivated lecturers are resolute in their commitment to delivering optimal results in the pursuit of qualitative education. This motivation may manifest in

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the form of timely salary payments, supplementary benefits such as allowances, bonuses, professional development opportunities, promotions, the provision of conducive working environments, the maintenance of positive interpersonal relationships, and the overall enhancement of lecturers' well-being[137]. Therefore, any lecturer who experiences the aforementioned benefits is likely to exert maximum effort in fulfilling their professional responsibilities, deriving satisfaction from their role as lecturers.

Within the educational sector, motivation assumes a critical significance. When lecturers are adequately motivated, this results in improved performance and heightened productivity, which are essential for sustaining national growth and development, as well as ensuring the welfare of the citizenry. Education is a time-honored enterprise, conceived as a mechanism for social transformation and the holistic development of individuals, cultures, and societies. It represents a systematic approach designed to facilitate the growth of all human beings into fully realized individuals.

In 2010, the government implemented a ten percent (10%) increase in lecturers' salary structures with the objective of enhancing their morale within the state; however, despite the appreciation expressed by lecturers for this adjustment, there exists an expectation for further governmental support. In this regard, the Nigerian policy on education, as articulated in section nine, paragraph asserts that "the education of lecturers will continue to be prioritized in all educational planning endeavors, for no educational system can surpass the quality of its lecturers." Consequently, it is imperative to integrate various objectives associated with lecturers' education into our educational institutions. This will necessitate the cultivation of highly motivated, conscientious, and proficient classroom lecturers across all levels of the educational system, as well as the promotion of lecturers' commitment to the teaching profession. Additionally, although poor performance leads to

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the issue of underdevelopment, motivation has a variety of effects on society that are important for the country's economic prosperity and development. Since students hold the key to the nation's future, it is imperative that they receive a quality education in order to equip them with the information and skills necessary to steer its affairs[138]. As a result, when students are motivated and given the right support, their lecturers will be more productive, which will support the advancement of the country.

Additionally, the Oregon State University graduate admissions study confirms that typical indicators of academic success and educational potential, such as high school GPA (Grade Point Average) scores, only revealed a 30% variance in the first year of college. It is significant to note that even these studies disagree with earlier research that examined how past results impact students' performance in subsequent studies; they did, however, confirm that admission scores have a very weak correlation with university-level academic performance. Additionally, it was proposed that graduate-level study scores continue to outperform any other single indicator of cognitive ability in predicting performance at the university level[139].

Students' academic success is also correlated with the socioeconomic status of their parents, which includes their income, professional and academic credentials, and occupational connections. Numerous research' findings supported the idea that a student's academic performance depends on the socioeconomic status of their parents. Students from greater socioeconomic backgrounds will therefore perform better than those from lower socioeconomic backgrounds. The combination of parents' education, occupation, and income level typically determines a student's social and economic standing[140]. It should come as no surprise that socioeconomic class is one of the primary factors examined when predicting academic success in the numerous research studies on academic outcomes.

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A study on the socioeconomic status of students' parents came to the conclusion that parents' socioeconomic status has a significant influence on students' academic performance, is the primary cause of educational disparities among students, and has a significant influence on students' academic success. In their research on the impact of social and economic deprivation on schoolchildren's academic performance, another researcher found that higher levels of future achievement are unquestionably strengthened when parents or guardians have social, educational, and financial advantages. However, it is also seen that these parents provide their kids with adequate psychological and emotional support by creating a positive learning environment that fosters confidence and the development of success-oriented abilities[141].

Researchers employ the basic motivator-hygiene theory, first put out by Frederick Herzberg in 1959, to examine academics' job happiness. Researchers in higher education have used Herzberg's theory as a framework to identify the elements that affect academic professionals' job satisfaction. Researchers in higher education agree with Herzberg that both internal and extrinsic factors influence job satisfaction, and they have found several factors that are similar to those Herzberg outlined in his theory. Herzberg distinguished between two categories of job-related elements that affect job satisfaction: motivational factors, which are the intrinsic factors that lead to satisfaction, and hygiene-related factors, which are the external aspects that prevent unhappiness.

The physiological demands that workers desire and anticipate being met are represented by hygiene variables, which are connected to an employee's workplace. The presence of hygienic aspects at a workplace does not lead to employee dissatisfaction; on the other hand, the absence does. Employee pacification and avoiding dissatisfaction are influenced by hygiene variables. Pay, administrative and corporate rules, fringe benefits,

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physical working environment, status, interpersonal relationships, and job security are all considered hygiene considerations by Herzberg[142].

The psychological requirements that are represented by employment characteristics that employees view as an extra benefit and that encourage them to perform better are known as motivational factors. These elements are related to the real nature of the work that employees do. When there are motivational aspects in the workplace, employees are happy; when these variables are not present, employees are unhappy. Positive satisfaction and employee inspiration are influenced by motivational variables. Recognition, a feeling of accomplishment, chances for advancement and growth, accountability, and the significance of one's work are all considered motivating factors by Herzberg[143]. The Motivator-Hygiene theory's motivational and hygiene variables are used to explain the study's findings and identify the elements affecting lecturers' job satisfaction.

2.3.4 Lecturers' Attitude s and Students' Academic Outcome in Keyboard Skills

In higher institutions, lecturers are the primary force behind high-quality outcomes. A lecturer's professional demeanor has a significant impact on the learning process. The caliber of a country's lecturers determines the caliber of its production. It is crucial to note that lecturers have a big influence on the standard of education that kids receive. One important factor in guaranteeing strong academic achievement on public exams is the professors. It is understandable why lecturers are frequently regarded as a crucial resource in any educational institution. The lecturer is one of the most important instructional resources in the entire system [144].

One important metric for determining the efficacy and success of any educational institution is student performance. Many academics and researchers believe that the lecturer, school, home, and institutional factors among others are to blame for the subpar academic performance in secondary schools. Education experts and scholars agree that

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secondary school students in Nigeria do poorly on public exams administered by the National Examination Council (NECO) and the West African Examination Council (WAEC).

According to the aforementioned assertion, opinion leaders, analysts, experts, and lecturers consistently concur that secondary students' academic performance in Nigerian public exams is indeed declining. According to the aforementioned assertion, some hold students accountable for the seeming drop in academic achievement. Most people hold lecturers accountable for the issues in our institutions. In turn, lecturers place the blame on the kids and their parents. They also hold the government accountable for the poor physical facilities and unappealing service conditions in various areas of the educational system. However, it should be mentioned that a variety of factors, including the lecturers' professional attitudes, affect the students' academic achievement[145]. A lecturer's professional demeanor has a significant impact on students' successful performance. The question of whether lecturers follow the code of conduct that governs the teaching profession is at the heart of the professionalism debate. Effective learning for students is impacted by the role of the lecturer's pedagogy, which is influenced by their professionalism. Since the quality and efficacy of every educational arrangement depend on lecturers with the proper professional attitudes, they are the center of any educational system. Lecturers are regarded as vital educational pillars. No matter how impressive a school system and its curriculum are, they will not be implemented successfully unless they are taught by qualified and capable professors[146].

A professional lecturer must exhibit positive attitudes like intelligence, neatness, and other desirable qualities. Lecturer professional development affects many factors, including student motivation, teaching strategies, communication skills, lesson planning and content organization, student participation, lecturer confidence, and knowledge of the

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subject matter. Attitude is the way people think or act, and it can often make or break an individual's performance while carrying out their tasks and responsibilities. It is commonly stated that attitudes can be either positive or negative, with lecturers' negative attitudes in the classroom leading to poor performance and positive attitudes in the classroom[147].

The impact of each of these elements differs depending on the student and the situation. As a result, it is difficult to generalize findings on how different factors affect students' outcomes. The lecturer's attitude toward the student in question is one of the three particular factors that has drawn notice. According to the writers, a teacher's attitude toward their students affects their motivation, attitude toward school, readiness to complete assignments, and confidence in their learning behavior. The authors contended that a teacher's attitude has a lasting effect on students that extends well beyond their academic career because these instrumental variables come together over time to create students' personalities[148].

The authors of the study have strongly advised lecturers to foster an environment of positive expectations in order to promote their students' learning. This is said to encourage the student to work hard at active learning and retention. A productive relationship between the lecturer and their students is the result of expectations and a positive, motivated reaction to those expectations[149].

A reinforcing act of teaching and learning is accomplished, which leads to the desired level of learning for the students and satisfaction for their respective lecturers. This kind of relationship further encourages the teacher to build upon the positive behavior of the students rather than retarding them because of a typical negative behavior. A meta-analysis was carried out to investigate the accuracy of the judgments made by academicians and lecturers regarding the academic outcomes of their students. Several

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authors emphasized the significance of a teacher's preconceived expectations or judgments for the students' actual academic well-being. This meta-analysis supported previous research findings about lecturers' assessments of academic achievement and the actual performance that resulted[150]. Research, for example, has shown that these assessments inform lecturers' instructional strategies; they enable the identification of students who are having difficulty meeting study requirements or complexity, and they also shift the expectations of a lecturer away from the skills of their students. The foundation of teaching behavior is its content, which is the guidance that lecturers give their students in class. They outlined several characteristics necessary for instrumentally effective classroom instruction in their study. The learning aim must be well-defined, and students' learning outcomes must be regularly evaluated during the teaching day. The results of these assessments must be used to modify and adjust the lessons to the needs of the students and their level of learning. They went on to explain that lecturers must be able to accurately assess or estimate the degree of their students' learning in order to modify and simplify their teaching strategies and improve learning outcomes. Even, if the lecturers are able to make accurate judgments, the judgments alone does not necessitate that they will also go on to adjust their instructional designs as a result[151]. Therefore, though the capability of making accurate judgments, and making these judgments, is a necessary but not sufficient condition for enhanced student learning, because, there is no certainty that the lecturers would also go on to alter instructions on basis of their judgments.

Typically, the teaching process impacts students learning through the lecturers adopted pedagogy approach; the classroom environment created; and a lecturers accommodating attitude 4 towards students. Ideally, the class environment should on the one hand ensure students of actual teaching being carried out, while on the other, it should ascertain

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lecturers of actual learning occurring. Moreover, the learning curve is amplified when a student thinks more like a lecturer, and the lecturer, a student. In an argument presented by deepening a students' advanced thought pattern paves the way for improved classroom performance, thereby encouraging them to bring forth innovative and differing ideas that come with their unique knowledge and skills set. Some accommodating behavioral patterns adopted by lecturers positively impact students motivational level, and consequently, their overall performance. For example, a lecturer demonstrating an open door policy, responding to students queries, being empathetic towards students, being involved and commending students hard work are all reflective of positive lecturers' behavior. Students look up to their lectures as lecturers are their source of information, knowledge and experience, especially those displaying positive attitudes. In a scholarly endeavor, the negative effects on student performance of a lecturer who mocks at or targets a students' failure was highlighted[152].

2.3.5 Learning Environment on Students' Academic Outcome in Computer Keyboarding Skills

A study carried out by United Nations Educational, Scientific and Cultural Organization observed that in today's world, education systems must constantly evolve in order to effectively respond to the rapidly changing demands of the societies they serve. To reach a common understanding of how both the physical and social dimensions of learning environments affect the quality of learning processes, an exploration of the relationship between place and process is needed. The teaching/learning process cannot take place in a vacuum in formal education settings. It occurs as a result of interaction among components of the learning environment[153]. In learning environment, elements of teaching-learning process include: teacher, students, content, learning process and learning situation. Students and lecturers work well in a school culture where academic

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success and the motivation to learn, is expected, respected and rewarded. Such an atmosphere where students learn to love learning for learning's sake, results in better academic outcome.

The educational institution functions as a distinctive social domain wherein the foundational elements of education, training, and the holistic development of individuals, deemed as future assets of society, are systematically established and executed through effective pedagogical strategies, suitable physical infrastructure, and a conducive psychological milieu. The process of socialization for students necessitates a supportive environment and exemplary role models to enhance their academic performance. Consequently, the presence of clean, tranquil, and comfortable surroundings constitutes essential components of the educational atmosphere. Moreover, the establishment of an optimal learning environment should be prioritized by every educational stakeholder, as comfort is contingent upon a confluence of various factors, including thermal conditions, illumination, and sound regulation. The degree to which the learning experience of students can be augmented is contingent upon their spatial positioning within the educational premises, the architectural design of their classrooms, and the accessibility of educational resources and tools. It is posited that a school equipped with a conducive learning environment plays a pivotal role in engendering the anticipated educational outcomes that foster commendable academic performance through the facilitation of effective teaching and learning practices[154].

The interaction between an lecturer's personality and the personalities of the students significantly influences the behavioral dynamics that arise within the educational context. Environmental variables such as classroom settings, textbooks, instructional equipment, educational supplies, and other pedagogical materials constitute the essential physical

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conditions requisite for the learning process. Empirical research has indicated that before students can achieve academic success, it is imperative for them to experience a sense of safety, both physically and psychologically, and for a secure learning atmosphere to be established, students must perceive themselves as welcomed, supported, and respected.

Customizing the learning experience enables students to cultivate critical skills such as analytical thinking, applying knowledge to solve intricate problems, collaborating effectively, communicating proficiently, mastering self-directed learning, and fostering academic mindsets that significantly enhance student engagement. Furthermore, it is essential for students to establish connections with lecturers, staff, and peers. Educational institutions can foster these relationships by emphasizing students' social and emotional learning (SEL). Additionally, students should feel supported by all individuals involved in their educational journey, including faculty, fellow students, administrators, family, and community members, in order to achieve superior academic outcomes. Productive learning environments are indispensable for students' academic, emotional, and social success within the educational system[154]. A conducive learning atmosphere is not a matter of mere coincidence; rather, it necessitates deliberate strategies such as engaging positively with students and demonstrating constructive behaviors that promote educational activities within the learning setting.

There is unequivocal evidence that a student's exemplary academic performance and outcomes are intrinsically linked to the characteristics of the learning environment and the availability of essential resources. Numerous empirical investigations have established that the learning environment is a fundamental prerequisite for academic achievement among students in Nigeria. The educational development process transpires within physical, social, cultural, and psychological contexts, indicating that a proper and

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sufficient environment is crucial for effective learning. Students who achieve high academic success are likely to have engaged with curricular content within an optimal learning environment. Thus, the assertion that "educational attainment/outcome is likely to be determined by the appropriateness of the learning environment" is of paramount importance and cannot be overstated.

A research investigation was undertaken to ascertain the impact of the learning environment on the academic performance of students at the senior secondary school level in Nigeria, revealing a statistically significant disparity between the mean performance of students instructed within an optimal learning environment and that of their counterparts educated in a suboptimal learning environment. This examination was conducted in the southeastern region of Nigeria, scrutinizing the effects of the learning environment on the performance of students enrolled in public colleges within Taraba State, Nigeria, with findings indicating a notable difference in the academic achievements of the two groups (Experimental and Control), thereby suggesting that factors such as the presence of a conducive classroom structure, adequate furnishings, smaller class sizes, and the utilization of instructional materials positively influence students' academic performance in higher education institutions. In a related inquiry, a study was executed to explore the extent to which the school environment affects students' academic outcomes in selected Colleges of Education[155]. The outcomes of this investigation demonstrated that students attending institutions equipped with sufficient facilities, qualified lecturers, and a supportive environment tend to outperform those in schools characterized by inadequate resources, unqualified teaching staff, and a less favorable environment.

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In another scholarly investigation, the ramifications of the learning environment on students' performance during examinations in higher education were explored, taking into account variables such as school facilities, class size, geographical location of the institution, aesthetic considerations, maintenance culture, sanitation, and convenience. The study concluded that "the condition of the learning environment and the quality of infrastructure, alongside the degree of maintenance, significantly influence academic performance among students." Additionally, another study examined the classroom environment and students' academic interests as correlates of outcomes among practical word processing students in selected public colleges in Ibadan, Oyo State, Nigeria. The findings indicated significant correlations between the classroom environment and academic outcomes, while the combined effect of classroom environment and academic interest was also found to be statistically significant. In a further investigation aimed at assessing the impact of environmental factors (including the availability of open spaces, noise levels, lighting, and artistic elements within educational institutions) on students' learning and academic outcomes, it was discovered that environmental factors (such as appropriate color schemes, adequate lighting in educational settings, and the availability of open spaces) significantly influence the learning and academic performance of college students[156].

A research project entitled "The Effect of Environmental Factors in Teaching and Learning in Schools in Edo State, Nigeria" examined various environmental factors to determine their effects on teaching and learning outcomes across different contexts, concluding that the enrichment of learning environments correlates positively with enhanced academic performance and broader benefits for students. Furthermore, an investigation was conducted with the primary objective of examining the influence of the

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school environment on the academic outcomes of students in secondary educational institutions.

According to the study's findings, secondary school students' academic performance in Benue State, Nigeria, is significantly impacted by the physical facilities, school climate, and discipline. This suggests that schools may not give their students their best effort, particularly when it comes to academic performance, if they do not provide the required learning resources and foster an environment that is favorable to teaching and learning. The studies reviewed all revealed a noteworthy correlation between the learning environment and student's academic outcome in the education system in Nigeria. It is believed that a learning environment with accessible and utilizable facilities will guarantee effective teaching and learning process as well as academic outcomes of students. In order to create welcoming, student-, knowledge-, assessment, and community-centered environments where all the essential elements of a model learning environment would be mobilized, the government and pertinent stakeholders in the education sector must fervently step up their efforts.

2.3.6 Lecturers' Job Satisfaction on Students' Academic Outcome in Computer Keyboarding Skills

In a study, job satisfaction of lecturers' in Enugu State, claimed that monetary value for lecturers' should be improved to serve as a source of job satisfaction. while working on the extent of lecturers' job happiness at school in Abia, and Enugu states, it was claimed that the extent of the lecturers' job satisfaction is low since the lecturers' are content with only social interaction with students, and colleagues. The level of the lecturers' job satisfaction is low with other aspects such as working conditions. The institution's lecturers frequently demand better working conditions, which leads to a string of strikes. The success or failure of the institution system is often attributed to the institution

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lecturers, who are thought of as the backbone of the colleges in Nigeria. As a result, the problem of the study, expressed in the form of a question, is: what are the sources of institution lecturers' job satisfaction in South-East, Nigeria[157]?

Previous research has examined job satisfaction among institution faculty and demonstrated that job satisfaction can be used to mediate workload, performance, organizational commitment, and so on. Other unwholesome behaviors by some lecturers include the sale of prohibited handouts in secret and various forms of corruption that have plagued the institution system. However, there hasn't been much research done on how satisfied professors are with their jobs thus far. Professors struggle to keep their identities in the ever-evolving academic environment. It is important to evaluate professors' job satisfaction in light of the challenges they have encountered. Additionally, studies have looked into the elements that affect academics' job happiness. Less study has been done on lecturers whose responsibilities include teaching, research, and service jobs, although the majority of research samples have included a variety of academic types with a wide range of duty sets. It is still necessary to investigate the elements that affect the job satisfaction of professors who carry out a variety of tasks.

The current study examined the job satisfaction of academics who do a variety of tasks and looked into the elements that affect their job satisfaction based on the previously described environment. Four responsibilities-instruction, research, service, and advising as well as the variables affecting work satisfaction were included in the study's second-order hierarchy of faculty job satisfaction model. Only lecturers whose primary responsibilities were teaching, research, service, and advising were admitted. Our participants were from Taiwan, where processes for promotion and assessment are used to evaluate lecturers. Researching the experiences of academics in Taiwan, which has a distinct faculty system, could yield important lessons for other nations.

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Additionally, a mixed methods design was used to gather detailed data and analyze findings using motivator-hygiene theory, allowing us to investigate the elements affecting lecturers' job satisfaction[158].

This article's following sections are arranged as follows. The definition of lecturers' job happiness is covered in the second section, along with relevant research and the motivator-hygiene hypothesis. The current study's methodology and data set are introduced in the third section. The study's findings, including the overall work satisfaction of lecturers, the factors influencing their job happiness, and the model of how factors affect lecturers' overall job satisfaction, are presented in the fourth section. The findings are discussed and prospects for additional research are highlighted in the fifth and final part.

A person is said to be satisfied if they feel good about their work. Another way to look at job satisfaction is as employees' attitudes. Although it was suggested that job satisfaction is an attitude, the researcher should make a clear distinction between the three objects of cognitive evaluation behaviors, beliefs, and emotions. According to this description, people's attitudes toward their employment are shaped by their behaviors and feelings. The operational definition of job satisfaction in the context of this study is a mental state that includes all of the emotions influenced by how well a person believes that his or her needs are being satisfied at work. opportunities for class size, employment security, and promotions.

In school systems, infrastructure plays a critical role. These include office space, libraries, research facilities, teaching materials or furnishings, and equipment for laboratories or workshops. Colleagues, students, direct supervisors, subordinates, non-teaching personnel, and communities are only a few of the social contacts that take place at colleges[159].

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Many claimed that job happiness is a direct result of appropriate policies inside the institution structure. Employment, promotion, retirement, suspension, withdrawal from service, housing, and auto loan policies are all examples of institutional policies. Effective tertiary policies encourage professors to be committed to their work and feel satisfied in their roles. Monetary incentives encompass the disbursement of various compensatory elements, such as annual salary increments, loans, advances, and grants. When an employee experiences satisfaction in their occupational role and is capable of providing for their family, this individual is likely to exhibit heightened levels of effort. Conversely, a discontented employee may seek alternative employment opportunities. It has been noted that commitment to one's duties is intrinsically linked to job satisfaction. This is attributed to the fact that job satisfaction pertains to the degree to which personal desires, including but not limited to salary, acknowledgment for contributions, job security, and the availability of sufficient resources and equipment, are fulfilled by the individual while engaging in their professional responsibilities. It is thus established that employees exhibit greater diligence and enhanced performance when they derive satisfaction from their employment.

The aspect of job satisfaction holds the potential to mitigate employee discontent. Consequently, it is imperative that every organization diligently addresses the element of job satisfaction among its personnel. Researchers have posited that for the educational system to flourish, and for substantial investments in education to yield their full potential, faculty members must experience contentment in their professional roles. Accordingly, it has been further articulated that elements such as favorable working conditions, adequate infrastructural resources, opportunities for social interaction, institutional policies, and monetary incentives, which contribute to faculty members' job satisfaction, constitute the foundations of their professional contentment. These elements

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serve as the underpinning of faculty members' job satisfaction namely, working conditions, infrastructural resources, social interaction, institutional policies, and monetary incentives. In an investigative study concerning the determinants of faculty job satisfaction in South East Nigeria, it was highlighted that social interaction and effective institutional policies are pivotal sources of job satisfaction for faculty members, whereas the analysis of infrastructural resources indicated that their adequate provision within colleges is conducive to job satisfaction. Policies concerning dismissal, housing, transportation, and retirement have been observed not to significantly contribute to faculty members' job satisfaction[160].

Historically, institutions of higher education have delineated the responsibilities of faculty members across three principal domains: instruction, research, and service. The professional lives of faculty members are predominantly shaped by their contributions to knowledge creation and dissemination through research and teaching activities, respectively. Faculty members are tasked with the preparation of instructional materials, the assessment of student assignments, and the monitoring of student progress. Additionally, they are expected to stay abreast of contemporary knowledge, engage in research endeavors, and publish scholarly articles. Occasionally, they may provide professional services and consultations that benefit society, contingent upon their areas of expertise, and may also assume administrative roles and responsibilities within their institutions. Thus, the job satisfaction of faculty members encompasses their evaluation of their professional experiences in relation to instruction, research, and service. Higher education institutions bear the responsibility of nurturing professional talent across diverse fields. Faculty members are arguably the most influential trainers of human resources, possessing a significant impact on student success and the cultivation of a productive workforce. Consequently, faculty members play a crucial role in determining

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the quality of higher education and are integral to the educational advancement of a nation. The job satisfaction of faculty members is therefore a matter of paramount importance in the pursuit of enhancing the quality of higher education.

Researchers have conducted investigations into the job satisfaction of academic faculty and staff, utilizing data derived from "The International Survey of the Academic Profession" to analyze various dimensions of academic satisfaction with their employment across eight distinct nations. The findings indicated that academic professionals within these eight nations exhibited a general sense of satisfaction with their roles at their respective institutions; however, it appears that variations in job satisfaction are reflective of individual differences that are specific to the unique circumstances faced by academics in each nation. Furthermore, data from "The Changing Nature of the Academic Profession (CAP)" collected in 2007 was compared to data from "The International Survey of the Academic Profession" gathered in 1992, revealing that the average job satisfaction of academics was notably high and has been increasing in most countries. Additionally, an investigation was conducted regarding job satisfaction among 1,770 lecturers from various levels, types, and academic disciplines within Chinese colleges, which indicated that overall levels of job satisfaction were approximately moderate (Mean = 3.25 on a scale from 0 to 5). Moreover, a study found that Portuguese academics expressed satisfaction with their academic careers (Mean = 6.30 on a scale from 0 to 10), although general satisfaction was not exceedingly high. Researchers undertook a survey involving 489 lecturers from colleges in Serbia, Slovenia, and Bosnia and Herzegovina, reporting that lecturers within these three countries exhibited a moderate level of job satisfaction[161].

Nevertheless, a limited number of studies have delved into lecturers' satisfaction with the various dimensions of their professional roles, specifically focusing on instruction,

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research, and service. Some lecturers convey enjoyment in their instructional responsibilities, yet express dissatisfaction regarding administrative tasks; conversely, some may find satisfaction in their research activities while feeling discontented with the support they receive related to their instructional responsibilities. Given that job satisfaction pertains to an individual's emotional responses towards specific facets of their employment, the present study not only assessed the overall job satisfaction of lecturers but also their satisfaction concerning particular professional obligations. The lecturers who participated in this investigation were recruited from Taiwanese academic institutions in accordance with Taiwan's Institution Act; their responsibilities were categorized into four principal domains: instruction, research, service, and advising. The advising domain was initially integrated with instruction, but the two areas were delineated to differentiate advising responsibilities from teaching duties. Advising primarily involves tasks related to the mentorship of students, including offering guidance on life and career planning. In conclusion, this study examined lecturers' general job satisfaction as well as their satisfaction with each of the four key domains of professional responsibility as delineated by Taiwanese academic policy: instruction, research, service, and advising[162].

Numerous researchers in the field of higher education have identified the variables that impact lecturers' job satisfaction within the academic sphere. Factors associated with the academic work environment-such as institutional climate, administrative management, interpersonal relationships with colleagues, and performance evaluations-significantly influence the job satisfaction of institutional lecturers. Certain researchers have posited that lecturers may experience discontent regarding their remuneration or fringe benefits, while others have determined that satisfaction with work hours and with department leadership emerged as the most robust predictors of overall job satisfaction.

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Other significant determinants of lecturers' job satisfaction pertain to the dimensions of academic responsibilities, which encompass supervising, mentoring, teaching, and engaging with students, in addition to conducting research and disseminating knowledge through academic publications. It has been established that autonomy and flexibility constitute the paramount factors that shape job satisfaction. The investigation further indicated that academic freedom, participative decision-making, collaborative efforts, supervision, and resource availability serve as prominent predictors of academic job satisfaction. Additionally, it was remarked that the esteemed social reputation of academics, along with social and academic autonomy, represents vital sources of job satisfaction. Furthermore, it was found that a comprehensive examination of workload and autonomy is integral in fostering a positive contribution to job satisfaction. The research also revealed that teaching self-efficacy emerged as the most potent predictor of job satisfaction among various predictors examined. Moreover, several predictors were scrutinized, with findings indicating that workload stands out as the most significant predictor of job satisfaction among female faculty members. Additionally, job autonomy, skill variety, and role conflict considerably influence faculty job satisfaction, organizational commitment, and trust within the academic environment. Furthermore, job security is recognized as a crucial element; tenured lecturers and academics with permanent contracts generally report higher levels of job satisfaction compared to their temporarily employed counterparts. Drawing upon this body of literature, we curated a comprehensive list of factors that may potentially impact lecturers' job satisfaction and scrutinized underlying trends among these variables to ascertain the predominant factor influencing lecturers' job satisfaction[163].

Numerous studies that have examined lecturers' job satisfaction have also delved into its correlation with demographic and professional variables, including gender, race, age,

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rank, professional specialties, and institution type. Among these variables, gender has been the most frequently investigated, yet the findings across studies have exhibited inconsistencies. Some research has indicated that there is no significant difference in job satisfaction levels between male and female lecturers, while other studies have found female lecturers to experience lower satisfaction levels, particularly when accounting for work-family balance. It has been noted that conflicts arising from work-life integration serve as stressors that diminish job satisfaction. In relation to age, it has generally been observed that younger faculty members demonstrate lower levels of job satisfaction compared to their more seasoned counterparts. The rank of lecturers has been identified as another critical factor influencing job satisfaction, with full lecturers tending to report higher satisfaction levels than lecturers in other ranks. Research has uncovered that both early-career scholars and those aged 61 years or older exhibit heightened job satisfaction. However, other studies have indicated that age, gender, work experience, academic rank, and marital status lack significant predictive power regarding job satisfaction. Additionally, a lecturer's academic discipline has been found to influence job satisfaction, although findings in this area have varied. It has been determined that the type of college significantly impacts lecturers' job satisfaction; specifically, lecturers in scientific colleges reported higher job satisfaction compared to their counterparts in other types of colleges. Moreover, the type of institution at which a lecturer is employed also plays a role in shaping their job satisfaction levels.

Some scholars have suggested that academics employed at prestigious institutions or departments generally exhibit heightened levels of job satisfaction when compared to their counterparts from lesser-ranked institutions; however, other studies have reported no statistically significant correlation between job satisfaction and affiliation with a higher-ranked (i.e., research ranking) or older institution[164]. Furthermore, there exists a

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positive correlation between lecturers' research productivity and their job satisfaction. In order to investigate the extent to which demographic characteristics and various work-related factors influence lecturers' job satisfaction, the current study meticulously documented each participating lecturer's gender, academic rank, professional specialization(s), type of institution, working hours, teaching load, and publication output, subsequently comparing these variables against their respective levels of job satisfaction to ascertain which of these factors were associated with the lecturers' job satisfaction.

2.3.7 Teaching Facilities and Academic Outcome in Computer Keyboarding Skills

An expanding corpus of research has established that teaching facilities can significantly influence both lecturer and student outcomes. In relation to lecturers, institutional facilities play a crucial role in the recruitment, retention, commitment, and overall effort of academic staff. Concerning students, the quality of school facilities impacts health, behavior, engagement, learning processes, and overall developmental outcomes. The array of teaching facilities available to lecturers is virtually limitless. The resourcefulness, creativity, and imagination of lecturers are, in fact, boundless. Consequently, teaching facilities encompass all varieties of informational resources that can be employed to foster and facilitate an effective teaching and learning process. These resources include manuals, charts, magazines, maps, journals, periodicals, pamphlets, newspapers, posters, programmemed texts, and non-printed materials such as films, filmstrips, models, mock-ups, slides, pictures, audio recordings, videotapes, records, transparencies, globes, boards, and a multitude of other resources featuring various sound and animation modalities.

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Scholars generally assert that the absence of adequate facilities and resources severely hampers the ability to effectively cater to large cohorts of students with diverse and complex needs. Research conducted in the United States indicates that nearly seventy-five percent of existing American schools as of 1996 were constructed prior to 1970. Among these institutions, approximately one-third required extensive repairs or outright replacement, while nearly two-thirds exhibited at least one deficient infrastructural feature, such as substandard plumbing, roofing, or electrical systems. Additionally, fifty-eight percent of these schools reported at least one unsatisfactory environmental condition, including inadequate ventilation, acoustics, or physical security. Consequently, the quality of facilities serves as a critical predictor of both lecturer retention and student learning outcomes. The physical and emotional well-being of both students and lecturers is intrinsically linked to the quality of the physical environment, underscoring the necessity for establishing safe and healthy educational buildings. Enhancing the quality of school facilities represents a financially burdensome endeavor. Nevertheless, when the positive effects of facility enhancements on lecturers and students are quantified in monetary terms, the benefits derived from such investments substantially outweigh the costs incurred[165].

There are five fundamental dimensions of school facilities: acoustics/noise, air quality, lighting, temperature, and spatial considerations. These dimensions are elaborated upon below. Research has demonstrated that schools equipped with sufficient classrooms that minimize external noise are positively correlated with enhanced student engagement and academic outcomes compared to those with classrooms situated in noisier environments. Therefore, the construction of educational institutions that mitigate external noise encroaching upon classrooms can lead to improved student outcomes because poor air quality is a major factor in asthmatic kids' absenteeism, indoor air quality is also an issue.

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Additionally, studies show that "sick building syndrome" impacts many schools, impacting student performance and absenteeism. Furthermore, schools with inadequate ventilation systems are frequently home to bacteria, viruses, and allergens that cause childhood illnesses. Schools frequently used natural lighting prior to the development of inexpensive electricity. The usage of artificial light in schools rose as the cost of electric power decreased. According to research, natural lighting benefits students in schools whereas artificial lighting has the opposite effect. As a matter of fact, studies have demonstrated that enough natural illumination in classrooms not only improves test scores but also lowers off-task behavior and raises lecturer and student morale. According to one study, students who were taught in settings with the least amount of natural light made 20% more progress in their academics and 26% more in their reading than those who were taught in settings with the most natural light[166].

The temperature at which one works has a consistent impact on engagement levels and overall productivity, including student outcomes, according to research conducted on people of all ages. It can be challenging to work in an uncomfortable environment, as anyone who has ever worked in a classroom or office that is either too hot or too cold understands. The best analyses indicate that 68º to 74º degrees is the optimal temperature range for reading and math development. Lecturers usually need to be able to regulate the temperature for both human and ICT devices as well as other equipment in their own classroom in order to maintain such a temperature in every classroom within a school. At the absolute least, lecturers should be able to regulate the temperature of small classroom blocks with comparable exposure to outside temps and sunlight levels.

Classrooms and laboratories with much space are better for lecturers, offer suitable learning settings for students, and are linked to higher student engagement and learning.

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With the current focus on 21st century learning, which includes making sure kids can collaborate with others, solve problems, and communicate clearly, classroom and lab space is very important. The employment of various teaching strategies that are in line with 21st century skills is made easier in classrooms and laboratories that have enough capacity to rearrange the seating. Smaller learning centers and private study spaces lessen visual and aural distractions, which is beneficial for student growth and performance.

On the other hand, crowded classrooms, laboratories, and schools have continuously been associated with higher student aggressiveness levels. Additionally, crowded classrooms and laboratories are linked to lower student involvement and, thus, lower learning levels. According to studies, the school plant is one of the key components necessary for an efficient teaching and learning process, thus the existence of any educational system, regardless of degree, cannot be separated from it. Regardless of the economic sector, education with sufficient facilities is recognized as the most effective tool for influencing both national and global growth. It has a significant impact on how its norms and values are passed down from one generation to the next[167].

Every civilization has some type of education, whether it be traditional or formal. Nonetheless, the origins of the school plant can be found in the time of the official educational system. Even if other resources like money and people are needed, it also changes with the educational system. The best legacy a country can leave its residents is education, according to educationists and other well-meaning individuals. Therefore, the government should not ignore the shortcomings in the educational system because there is no better investment a country could make in education than to purchase the essential modern teaching facilities. The educational enterprises are supported by good facilities for teaching and learning. According to research, a compact, cozy, and secure space, clean air, excellent light, and educational facilities all affect academic performance.

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Therefore, enhancing school infrastructure presents a practical chance to raise academic achievement.

2.3.8 Methods of Teaching and Students' Academic Outcome

At every educational level, the main goal of instruction is to fundamentally alter the student. Lecturers should use effective teaching strategies that are tailored to certain goals and exit outcomes in order to speed up the process of information transfer. Compared to student-centered approaches, lecturer-centered methods were commonly used by many teaching practitioners in the conventional era to teach students. The effectiveness of teaching strategies on student learning has been a topic of significant interest in the thematic field of educational research up until this point. Furthermore, studies on teaching and learning are always looking to see how much different teaching strategies contribute to students' learning progress. Surprisingly, the majority of students' consistently low academic performance is closely related to lecturers' use of inefficient teaching strategies to impart knowledge to their students. Numerous studies on the efficacy of instructional strategies show that student outcomes frequently mirror the caliber of instruction. In order to accomplish particular goals, teaching entails bringing about desired changes in students. Lecturers must be familiar with a variety of teaching techniques that acknowledge the complexity of the material to be taught in order for the teaching approach to be effective[168].

The performance of students forms an integral part of every teaching and learning goal. It was observed that the success of every given learning process is determined by the academic and established that a student's academic performance is judged by good grades and knowledge of the content of an instructional material being delivered. There has been extensive literature on how instructional methods impact students' academic performance. Lecturers must teach each level's learning

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objectives or instructional standards. While there are numerous factors that can influence good student outcomes, teaching strategies and learning difficulties are the most important ones. The sort of principle and instructional strategies employed are the best ways to characterize a teaching approach. We have lots of teaching methods, depending on instructional content that the lecturer is intending to teach.

According to the study, there exists a statistically significant disparity in the teaching strategies employed by lecturers as perceived by both students and lecturers. In contrast, the investigation revealed a negative and meaningful correlation between compensation strategies and the academic success of students. Nevertheless, the cognitive and compensation strategies encountered by students were facilitated by the lecturers. For effective pedagogy to transpire, it is imperative that lecturers adopt a robust instructional methodology. Lecturers are presented with a plethora of options when selecting a teaching style through which to impart knowledge. A lecturer may create an original lesson plan, adapt plans from fellow lecturers, or conduct an online search or consult literature for lesson plan resources. When determining the appropriate methodology, a lecturer must take into account the students' backgrounds, existing knowledge, environmental context, and educational objectives. Lecturers recognize that students exhibit diverse modalities of information absorption and knowledge demonstration. It is common for lecturers to employ techniques that accommodate multiple learning styles to enhance information retention and comprehension. A diverse array of strategies and methodologies is implemented to guarantee equitable learning opportunities for all students. A lesson plan may be executed through various approaches, including questioning, explanation, modeling, collaboration, and demonstration[169].

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According to the study titled “Shills, lecturers and academic outcome in Bolivia,” enhancing the average quality of education and ensuring equitable distribution has emerged as a primary concern for policymakers in developing nations. Unfortunately, economic research has provided limited insights regarding how educational authorities ought to allocate their fiscal resources and which inputs should be prioritized, particularly within the context of developing countries. Academic outcomes, or academic performance, refer to the extent to which a student, lecturer, or institution has accomplished their short-term or long-term educational aspirations. Cumulative Grade Point Average (GPA) and the attainment of educational qualifications, such as High School diplomas and Bachelor's degrees, serve as indicators of academic outcomes.

Academic outcomes are typically assessed through examinations or continuous evaluations; however, there is a lack of consensus regarding the most effective evaluation methods or the critical aspects to be considered, such as procedural knowledge encompassing skills or declarative knowledge encompassing factual information. Moreover, there are ambiguous findings regarding which individual factors reliably predict academic performance; elements such as test anxiety, environmental context, motivation, and emotional states warrant consideration when formulating models of educational outcomes. Student outcomes have emerged as a salient topic within educational discourse today, particularly in light of the increasing accountability placed upon classroom lecturers. The overarching objective for any lecturer is to enhance students' competencies and adequately prepare them for adulthood[170].

The cost constraints and flexibility for maintaining larger classes due to the proliferation of study programmes, courses, and student enrolment, as well as their effect on student learning outcomes, have become a topical issue. Stakeholders

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have raised red flags about the cost, flexibility, and learning outcomes trade-off. Each level is associated with distinct learning objectives or instructional standards that lecturers are mandated to impart. The efficacy of teaching methods employed to convey instructional standards directly correlates with the enhancement of student outcomes. While a multitude of variables can influence successful student outcomes, the most pivotal are classroom instruction and the methodologies utilized in teaching.

It is crucial to acknowledge that the learning processes of students are not uniform; they exhibit considerable variation in both their modalities and paces of learning. Students can be analogized to the diverse leaves on a tree; no two are identically alike. In a manner taking to the distinctive colors, shapes, and sizes of leaves, each student possesses an individualized learning style. The pedagogical approach employed in the classroom is a predominant factor that significantly influences student outcomes. An effective lecturer will implement diverse strategies, including student discussions, audiovisual materials, or narrative techniques, to capture student interest and facilitate the educational process. It is imperative to perpetually contemplate methods that render learning both enjoyable and contextually appropriate. For instance, in assessing our responsibilities, one might consider pre-paying for cleaning services to avail of a discount or collaborating with a peer to enhance the engagement of the study session. Similarly, the outcomes of students are contingent upon meticulously devised strategies aimed at elevating the quality of the educational experience.

Teaching is recognized as an ongoing process that seeks to instigate favorable transformations in students through the application of suitable methodologies. It has been indicated that in order to effectuate desired changes in students, the instructional techniques employed by lecturers must align effectively with the subject matter being

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taught. Furthermore, it has been posited that the efficacy of teaching methodologies predominantly hinges upon their congruence with the needs of students, as each student interprets and responds to inquiries in a distinctive manner. Consequently, the alignment of teaching strategies with students' requirements and preferred learning modalities can significantly influence students' academic achievements. Instructional methods can be categorized into three primary types, one of which is Lecturer-Centered Methods: In this paradigm, students primarily receive information from the lecturer with minimal engagement concerning the subject matter. This approach tends to be more theoretical and reliant on memorization rather than promoting activity-based learning that encourages students to tackle real-world problems through applied knowledge. Given that the lecturer regulates the dissemination of knowledge, they may strive to maximize the transmission of information while minimizing the investment of time and effort. It is essential for lecturers to facilitate not only the memorization of content but also to actively involve students as principal participants in the learning process[171].

2.4 Conceptual Model

A conceptual framework represents the culmination of synthesizing various interrelated concepts to elucidate and enhance the understanding of the phenomenon under investigation. This framework systematically organizes the principal concepts within the study to delineate the focus and trajectory of the research. The foundational concepts are extracted from theoretical perspectives and empirical findings within the literature. Firstly, it serves as a reminder to the researcher regarding the central focus of the research project while delineating aspects that fall outside its scope. Secondly, it offers guidance for the formulation of research questions, the design of the study, and the pursuit of the literature review[172].

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Considering the conceptual and theoretical framework the relationship guiding the variables is shown in the diagram below.

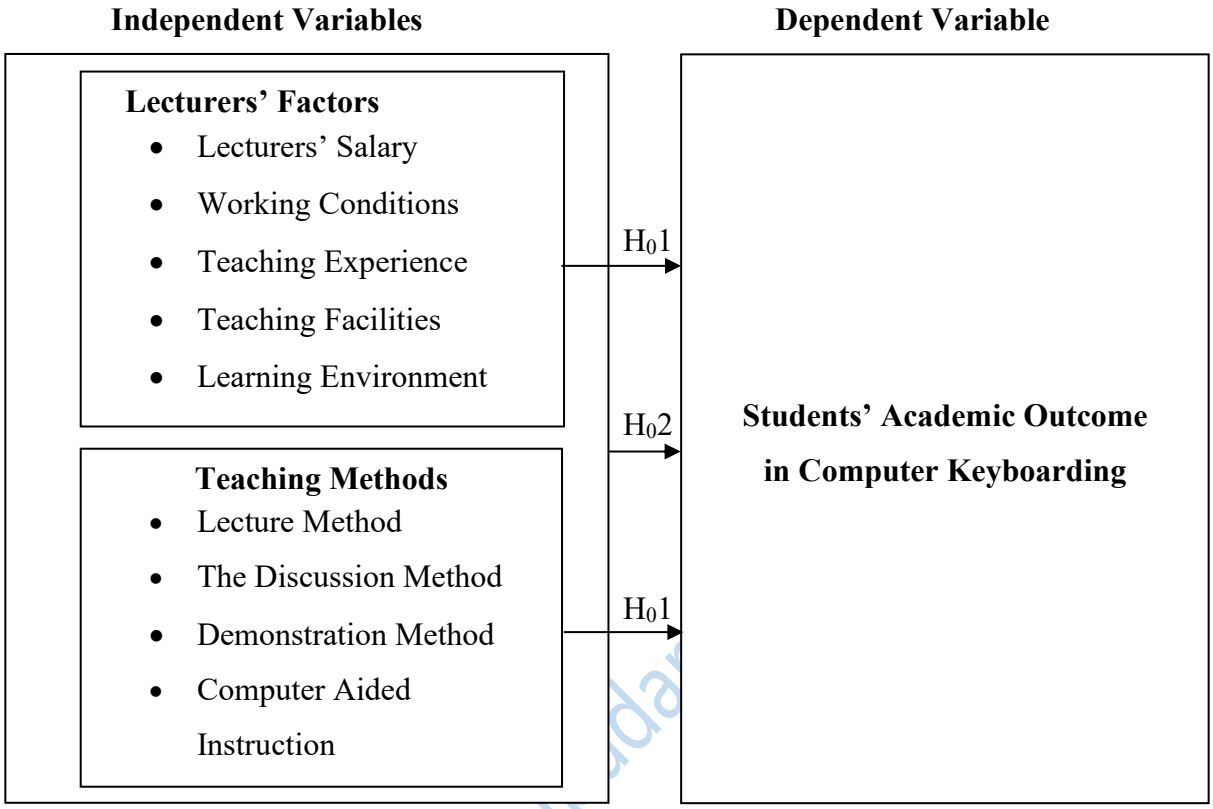


Fig 3: Conceptual Model of Independent Variables and Dependent Variable

Source: The Researcher

The figure presented above elucidates the relationship between lecturer characteristics and pedagogical methodologies in connection with both the contextual and substantive elements of their work, particularly in terms of their impact on students' academic performance. Over an extended period, this will ultimately result in enhanced academic achievement among students. In relation to the contextual factors, lecturers who are motivated are drawn to specific roles, leading them to remain engaged and committed to their professional responsibilities. Concerning the content of their work, motivated lecturers actively participate in the educational process, facilitating learning and evaluating students' academic development. This theoretical framework aligns with

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Vroom's Expectancy Theory, in that the factors upon which effort must be exerted correspond to expectancy, while lecturer motivation corresponds to instrumentality, representing a performance outcome derived from the effective integration of these factors, and student performance equates to valence, serving as the resultant output of instrumentality[173].

The foundational philosophy of this conceptual framework posits that effective lecturer motivation strategies are expected to yield improvements in student performance within rural educational institutions. Ultimately, the optimal teaching practices of lecturers, alongside their facilitation and assessment of the learning experience, are anticipated to result in commendable student performance in standardized national examinations, which serve as a metric for lecturer effectiveness. The performance of lecturers is evaluated based on the extent to which their students achieve the prescribed learning outcomes. The ideal performance of lecturers is typified by elevated academic results, the advancement of students to subsequent grades, and the recognition of students through awards. This process is inherently cyclical, as exemplary student performance encourages school management to sustain motivational efforts directed towards lecturers, thereby enabling students to consistently achieve outstanding results.

Lecturers represent the most critical school-based element influencing the academic performance levels of students in computer keyboarding. Understanding the lecturer characteristics that impact student academic performance will assist administrators in prioritizing recruitment, retention, and class assignments. The lecturer serves as the cornerstone of the educational process. In essence, the lecturer is pivotal within the entire educational framework, possessing the capacity to either enhance or undermine even the most well-conceived educational programmes. Consequently, education is fundamentally

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shaped by the contributions of lecturers. Therefore, the presence of competent, dedicated, and professionally qualified lecturers constitutes an essential foundation for a robust educational system[174]. In other terms, the realization of national objectives aimed at adequately preparing students for their examinations and achieving educational outcomes is significantly dependent on the effectiveness of lecturers. It has been observed that there exists a statistically significant correlation between lecturer characteristics and student academic outcomes. Furthermore, it is noted that lecturer attributes exert influence over teaching and learning dynamics within the classroom environment. It has been established that a connection exists between lecturer factors and student performance. Teaching methodologies serve as mechanisms for conveying knowledge or experiential learning to students.

The pedagogical approaches employed should facilitate the lecturer in delivering the curriculum by progressing from the familiar to the unfamiliar; from the rudimentary to the intricate; thereby constructing new knowledge and concepts upon the foundation of students' prior experiences or understanding, thus rendering the learning process significant to the learners by accomplishing the prescribed objectives. Consequently, for practical disciplines such as computer keyboarding, the significance of demonstrative methodologies, dialogic strategies, and programmemed instruction techniques cannot be overstated. This is primarily due to the fact that these methodologies enable lecturers to achieve effective and efficient pedagogical practices in teaching computer keyboarding, subsequently leading to students excelling in this particular manipulative skill. As computers become ubiquitous within both educational institutions and domestic environments, one necessitates resilient training and an investment of time and commitment for the mastery of typing skills. Although voice recognition technology is

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accessible for text input into computers, it remains to be determined if it will supplant the keyboard as the primary modality for interacting with computing devices[175].

2.5 Summary of Gaps in Literature Review

Despite the comprehensive nature of the research, several gaps remain unaddressed. Firstly, the study primarily emphasizes lecturers' factors and teaching methodologies, it inadequately considers students' perceptions and experiences regarding their learning processes. Researchers in a study, highlight that students' engagement is crucial for effective learning outcomes. Including student feedback could provide valuable insights into how different teaching methods impact their learning experiences. Secondly, although infrastructural challenges are acknowledged, the thesis does not thoroughly examine how institutional policies or administrative support affect teaching effectiveness. It was noted that, systemic factors within educational institutions significantly influence educational outcomes. A more detailed exploration of these contexts could enrich the findings and provide a comprehensive understanding of the educational landscape.

Additionally, the study appears to rely heavily on quantitative data to assess academic outcomes without incorporating qualitative methodologies that could reveal deeper insights into the teaching-learning process. A researcher advocates for mixed-methods approaches to capture a fuller picture of educational phenomena, enhancing the depth and applicability of findings related to teaching effectiveness. Lastly, the research does not adequately address how cultural attitudes towards education and technology might influence both lecturers' teaching methods and students' learning outcomes. Recent studies indicate that cultural context plays a significant role in shaping educational practices and student engagement. Understanding these cultural dimensions is vital for improving academic outcomes. Several scholars provide relevant insights that support these identified gaps. A researcher emphasized that, effective learning environments

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often incorporate various instructional strategies, including technology-enhanced learning. This suggests a need for broader exploration beyond traditional methods to improve educational practices. Studies advocate for a student-centered approach that considers learners' perspectives to enhance educational practices. This underscores the importance of incorporating student feedback in evaluating teaching effectiveness. A researcher discusses how systemic factors within educational institutions can either facilitate or hinder effective teaching practices, suggesting that a comprehensive analysis should include these dimensions for a more holistic understanding. Another researcher argues for mixed-methods approaches to capture nuanced understandings that quantitative data alone may not reveal, advocating for a more comprehensive exploration of teaching effectiveness. While group of researchers illustrate how cultural differences shape educational experiences, indicating that understanding local contexts is vital for improving academic outcomes.

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Chapter Three

Methodology

This chapter describes the procedures, method and instruments used for the study under the following sub-headings:

3.1 Research Design

3.2 Population of the Study

3.3 Sample and Sampling Technique

3.4 Research Instrument

3.5 Validity of the Instrument

3.6 Reliability of the Instrument

3.7 Method of Data Collection

3.8 Method of Data Analysis

3.8 Ethical Approval

3.1 Research Design

Descriptive survey research design was used for this study Descriptive survey employed a mixed-methods research approach that combines quantitative analysis and qualitative insights through a comprehensive literature review to gather existing data, insights, and models[1]. The descriptive survey research design was chosen because it helped the researcher easily to obtain information on influence of lecturer's factors and methods of teaching on students' academic outcome in computer keyboarding skills

3.2 Population of the Study

The population of the study comprised (1105) one thousand one hundred and five 200 level Business Education students in seven (7) federal and state Colleges of Education, Southwest, Nigeria. The two (200) level students stand preferably as population having

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undergone computer keyboarding as a course in 100 level and still taking advance of it which is word processing as another course in their 200 level (second year) in the College. The below table describes the population of the study.

Table 3.2.1 Population of the Study

S/N	Names of Institution	Respondents
1.	Federal College of Education, Osiele, Abeokuta, Ogun State	166
2.	Federal College of Education, Iwo, Osun State	127
3.	Federal College of Education (Tech.), Akoka, Lagos State	169
4.	Federal College of Education (Special), Oyo, Oyo State	159
5.	Sikiru Adetona College of Education, Science and Technology (SACOETEC), Omu-Ajose Ogun State	148
6.	Osun State College of Education, Ilesa	167
7.	College of Education, Ero, Akure, Ondo State	169
	Total	**1105**

Source[2]

3.3 Sample and Sampling Techniques

The research used the entire population as the sample since the total population under study was not too much to work with. Hence, total number of (1105) one thousand one hundred and five 200 level Business Education students from seven (7) federal and state Colleges of Education, Southwest, Nigeria served as sample population. Purposeful random sampling technique was used to select the respondents. Purposive sampling also called Judgmental sampling is used for the researcher to use her judgment to decide on which respondents to choose and picks only those who best meet the purposes of the

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study among the levels in Business Education students from Colleges of Education in each state of the Southwest states in Nigeria.

Table 3.3 Sample of the Study

S/N	Names of Institution	Respondents
1.	Federal College of Education, Abeokuta, Ogun State	166
2.	Federal College of Education, Iwo, Osun State	127
3.	Federal College of Education (Tech.), Akoka, Lagos State	169
4.	Federal College of Education (Special), Oyo, Oyo State	159
5.	Sikiru Adetona College of Education, Science and Technology (SACOETEC), Omu-Ajose Ogun State	148
6.	Osun State College of Education, Ilesa	167
7.	College of Education, Ero, Akure, Ondo State	169
	Total	**1105**

Source[2]

3.4 Description of the Research Instrument

The research instrument was structured questionnaire. The questionnaire was aimed at examining Lecturer's factors and Method of Teaching on Student's Academic Outcome in Computer Keyboarding Skills in Colleges of Education in Southwest, Nigeria. The questionnaire is preferable because of the design of the study and increases the likelihood of obtaining accurate information. The Questionnaire were constructed in two major sections which are Section A and B. Section A dealt with the bio-data of the respondents which consists of data such as: Gender, Age, and Level while Section B dealt with the items statements form from research questions It contained twenty (20) items which

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would be grouped into four (4) responses scale, using the Likert-Scale such as Strongly Agree (SA), Agreed (A), Disagree (D), Strongly Disagree (SD)

3.5 Validity of the Research Instrument

To obtain validity of the instrument, the researcher gave the instrument to experts in research methodology to make inputs by correcting the mistakes and suggesting a better way of arriving at an instrument that guarantees face and content validity, before the instrument was finally approved.

3.6 Reliability of the Research Instrument

The reliability which has to do with the consistence of the responses of the course was used in measuring what is source to measure[2]. The reliability of the instrument was established by conducting a pilot study on 200 level Business Education students of St. Augustine College of Education, Yaba Lagos State which were outside the study sample. The questionnaires were administered on two instances to the respondents and were retrieved immediately when they finished answering the questionnaire. The score from the administered questionnaires was used for reliability test with a correlation coefficient of 0.68 which indicated it was good and reliable.

3.7 Method of Data Collection

The researcher collected letter of introduction from the Department of Art and Social Science Education, Lead City University. Ibadan. The researcher with the help of well-trained research assistants administered the questionnaires through permission being taken from the Dean and Heads of Department of each of the Colleges of Education used as sample population after which the researcher administered and collected the fully completed questionnaires from the students.

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3.8 Method of Data Analysis

The data that was collected through the questionnaire administered was analyzed using both descriptive and inferential statistics. Descriptive statistics of frequency, percentage, mean, and standard deviation was utilized to address the research questions while, inferential statistics of multiple regression analysis was employed to test the hypotheses, maintaining a significant level of 0.05.

3.9 Ethical Approval

Every individual studying in institution of higher learning, instructor or every member of a community possesses the inherent right to be protected from the intrusive scrutiny of the public. Consequently, the researcher ensured that respondents provided their informed consent prior to their involvement in the research. Before the commencement of the instrument administration, the participants were thoroughly briefed on the methodologies and aims of the study, and all participants granted their consent. Furthermore, the responses of all participants were handled with the utmost confidentiality; their personal data was managed with exceptional care, ensuring that no unauthorized individuals or entities had access to any of the participants' information. The participants also derived benefits from this research as they were instructed and guided to freely pick their notion on the subject matter on their field. The researcher endeavored to maintain objectivity throughout the study by eschewing any potential conflicts of interest that could undermine the objectives of the research.

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Endnotes

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Chapter Four

Results and Discussion of Findings

4.1 Questionnaire Return Rate

A total of one thousand, one hundred and five (1,105) copies of the questionnaire were administered to 200 level Business Education students in all the Colleges of Education in South-West, Nigeria. Out of these, one thousand and one (1001) copies were successfully retrieved, accounting for 90.6% of the total. Among the retrieved questionnaires, nine hundred and nine (909) copies were deemed useful for the analysis, accounting for 82.3% of the total.

4.2 Demographic Data Analysis

This section presents demographic information of respondents

Table 4.1 Age Distribution of Respondents

Age	Frequency	Percentage
16-20	474	52.1
21-25	403	44.3
26-30	27	3.0
31 years and above	5	0.6
Total	**909**	**100.0**

Source: Field Work 2025

Table 4.1 outlines the age distribution of respondents in the study. The results reveals the following: age 16-20: 474 (52.1%), age 21-25 403 (44.3%), age 26-30: 27 (3.0%) and 31 years and above 5 (0.6%). The result indicates a significant age disparity among the

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college of education students in South West, Nigeria with a substantial majority being students between the ages of 16 to 20 years (52.1).

Table 4.2: Gender Distribution of Respondents

Gender	Frequency	Percentage
Male	337	37.1
Female	572	62.9
Total	**909**	**100.0**

Source: Field Work 2025

Table 4.2 outlines the gender distribution of respondents in the study. The result reveals the following: Male: 337 (37.1%) and Female: 572 (62.9%). The result indicates a significant gender disparity among College of Education students in South West, Nigeria with a substantial majority being female (62.9%). The gender distribution observed in the research findings may be influenced by a combination of social, cultural and historical factors. Also, several potential reasons could contribute to the observed gender distribution.

4.3 Presentation of Answers to Research Questions

This sub-section contains tables showing analysis of responses to answer formulated research questions.

Research Question One: What is the level of academic outcome in computer keyboarding skills in Colleges of Education in South West, Nigeria?

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Table 4.3: Descriptive Statistics of Academic Outcome in Computer Keyboarding Skills in Colleges of Education in South West, Nigeria

S/N	Items	SA (%)	A (%)	D (%)	SD(%)	Mean	STD
1	Students do perform excellently in computer keyboarding due to available facilities for students to practice with.	636 (70)	255 (28.1)	14 (1.5)	4 (0.4)	3.68	.526
2	Students attain practical skills that enhance their academic outcome in computer keyboarding apart from knowledge on computer literacy.	455 (50.10)	426 (46.9)	24 (2.6)	4 (0.4)	3.47	.573
3	The working condition of lecturers improves students level of academic outcome in computer keyboarding course	503 (55.3)	323 (35.5)	63 (6.9)	20 (2.2)	3.44	.719
4	Application of touch typing tutor software and other Computer Aided Instruction for learning improve better academics outcome.	442 (48.6)	415 (45.7)	43 (4.7)	9 (1.0)	3.42	.631
5	Every student has important influence on their academic outcome through practical session in computer keyboarding.	422 (46.4)	436 (48.0)	39 (4.3)	12 (1.3)	3.39	.636
6.	The emergence of digital age with modern innovation and equipment encourages students' better academic outcomes.	451 (49.6)	390 (42.9)	51 (5.6)	17 (1.9)	3.40	.683

Average Weighted Mean = 3.48 General Decision = High

Source: Field Work 2025
Key: SA = Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree and STD = Standard Deviation
Threshold: 0-1.49 = very low; 1.50-2.49 = Low; 2.50-3.49 = High and 3.50 and above Very High.

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Table 4.3 presents a summary of responses to various statements about students' academic outcomes in computer keyboarding. The responses are categorized into four levels: Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD). Also, the mean and standard deviation (Std. D) for each item provide insights into the central tendency and variation of responses. For item 1: "Students do perform excellently in computer keyboarding due to lecturers' competency and available facilities for students to practice with." The vast majority (98.1%) of students agree that their excellent performance in computer keyboarding is due to the competence of their lecturers and the availability of facilities. The high mean (3.68) indicates strong agreement with the statement, while the low standard deviation (0.526) suggests that most students share similar views, with little variation. For item 2, "Students attain practical skills that enhance their academic outcome in computer keyboarding apart from knowledge on computer literacy." Nearly all students (97%) agree that practical skills gained from keyboarding enhance their academic performance beyond just basic computer literacy. With a mean of 3.47, the responses show a strong agreement, and the standard deviation (0.573) indicates that most students' responses are consistent, with slight variability.

For item 3, "The working condition of lecturers improves students' level of academic outcome in computer keyboarding course." The majority (90.8%) of students believe that their lecturers' working condition in computer keyboarding helps improve their academic performance. The mean of 3.44 suggests general agreement, though the slightly higher standard deviation (0.719) reflects more variability in opinions, indicating that some students are less certain about the impact of interest on their academic success. Item 4: "Application of touch typing tutor software and other Computer Aided Instruction for learning improve better academics outcome." About 94.3% of students agreed that touch typing tutor software and other Computer Aided Instruction contribute to both academic

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success. The mean of 3.42 indicates strong agreement, while the standard deviation (0.631) shows some variation in responses, though the overall consensus is positive. For Item 5**:** "Every student has important influence on their academic outcome through practical sessions in computer keyboarding." A significant majority (94.4%) of students feel that practical keyboarding sessions help them control their academic performance since its hands-on activities. The mean score of 3.39 shows that students generally agree with this statement and the moderate standard deviation (0.636) suggests that while most students agree, there is some variability in their responses. On item 6, "The emergence of digital age with modern innovation and equipment encourages students' better academic outcomes." The majority (92.5%) of students believe that emergence of digital age with modern innovation in teaching and learning in computer keyboarding helps improve their academic performance. The mean of 3.40 suggests general agreement, though the slightly higher standard deviation (0.683) reflects more variability in opinions.

Generally, across all items, most students (90% or more) either strongly agree or agree with the statements, showing a strong positive and high academic outcomes in computer keyboarding. The mean scores range from 3.39 to 3.68, which indicates that the students largely agree with each statement. The relatively low standard deviations (between 0.526 and 0.719) suggest that the responses are clustered around the mean, meaning there is general consistency in students' views, though there is slightly more variation in responses to items related to personal interest and practical influence on outcomes.

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Research Question Two: What is the status of lecturers' factors (lecturers' Salary, working conditions, teaching experience) in computer keyboarding skills in Colleges of Education in Southwest, Nigeria?

Table 4.4: Descriptive Statistics status of Lecturers' Factors (Lecturers' Salary, Working Conditions, Teaching Experience, Teaching Facilities) in Computer Keyboarding Skills in Colleges of Education in Southwest, Nigeria

S/N	Items	SA (%)	A (%)	D (%)	SD (%)	Mean	STD
1	Lecturer's teaching computer keyboarding often witness inadequate or irregular salary payments which frequently lowered their morale, dedication and commitment in discharging their duties.	398 (43.8)	443 (48.7)	54 (5.9)	14 (1.5)	3.35	.668
2	Lecturers teaching computer keyboarding are not operating under good working conditions which reduce their quality of their lecture delivery and productivity.	414 (45.5)	413 (45.4)	66 (7.3)	16 (1.8)	3.35	.691
3	Computer keyboarding lecturers possess competent teaching experience and adequate classroom management that stir up expected academic outcomes in computer keyboarding	434 (47.7)	411 (45.2)	51 (5.6)	13 (1.4)	3.39	.661
4	Lecturers are provided with quality of teaching facilities, dependable power sources, internet connectivity, and computer-aided instruction (CAI) software.	434 (47.7)	403 (44.3)	51 (5.6)	21 (2.3)	3.38	.697
5.	The teaching and learning environment during computer keyboarding instruction delivery encourages lecturers to perform their best.	510 (55.3)	313 (35.5)	63 (6.9)	20 (2.2)	3.44	.719
Average Weighted Mean = 3.36				**General Decision = High**			

Source: Field Work 2025
Key: SA = Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree and STD = Standard Deviation
Threshold: 0-1.49 = very low; 1.50-2.49 = Low; 2.50-3.49 = High and 3.50 and above Very High.

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Table 4.4 presents descriptive statistics on lecturers' factors (salary, working conditions, teaching experience, teaching facilities and learning environment) and their perceived influence on students' academic outcomes in computer keyboarding skills at Colleges of Education in Southwest Nigeria. These statistics reflect the collective opinions of the respondents based on the items. For item 1, "Lecturer's teaching computer keyboarding often witness inadequate or irregular salary payments which frequently lowered their morale, dedication and commitment in discharging their duties.". The data shows that a significant majority of respondents either strongly agree (43.8%) or agree (48.7%) that salary as a lecturers' factor are crucial in improving students' academic outcomes in computer keyboarding. Only a small portion disagreed (5.9%) or strongly disagreed (1.5%). The mean = 3.35, which indicates that, on average, respondents agree with the statement and the standard deviation (Std. D) = 0.668 suggests moderate variability in responses, showing consistency in agreement among respondents.

For item 2, "Lecturers teaching computer keyboarding are not operating under good working conditions which reduce their quality of their lecture delivery and productivity". Similarly, most respondents strongly agree (45.5%) or agree (45.4%) that lecturers' unconducive working condition would negatively affect in teaching pedagogy for computer keyboarding and students' academic outcome. A smaller percentage disagreed (7.3%) or strongly disagreed (1.8%). The mean = 3.35, suggesting that the majority of respondents support this view. Std. D. = 0.691, which indicates slightly more variability compared to Item 1, but still suggests overall agreement. For item 3, Computer keyboarding lecturers possess competent teaching experience and adequate classroom management that stir up expected academic outcomes in computer keyboarding. The majority of respondents strongly agree (47.7%) or agree (45.2%) that effective teaching experience and classroom management are products of lecturers' factors. Disagreement

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was very low, with only 5.6% disagreeing and 1.4% strongly disagreeing. The mean = 3.39, showing a high level of agreement. Std. D. = 0.661, indicating relatively low variability, meaning responses were quite consistent. For item 4, respondents largely believe that Lecturers are provided with quality of teaching facilities, dependable power sources, internet connectivity, and computer-aided instruction (CAI) software. Most respondents either strongly agree (47.7%) or agree (44.3%), while only a small portion disagreed (5.6%) or strongly disagreed (2.3%). The mean = 3.38, indicating a high degree of agreement among respondents. Std. D. = 0.697, showing a moderate level of variation in responses, though still within a reasonable range. For item 5, "The teaching and learning environment during computer keyboarding instruction delivery encourages lecturers to perform their best and bringing about students' better academic outcome". Similarly, most respondents strongly agree (55.3%) or agree (35.5%) that lecturers' unconducive working condition would negatively affect teaching pedagogy for computer keyboarding and students' academic outcome. A smaller percentage disagreed (6.3%) or strongly disagreed (2.2%). The mean = 3.44, suggesting that the majority of respondents support this view. Std. D. = 0.791, which indicates slightly more variability compared to Item 1, but still suggests overall agreement.

Overall, across all the items, the respondents overwhelmingly agree that lecturers' factors such as lecturers' salary, working conditions, teaching experience, learning environment and teaching facilities play a vital role in enhancing students' skills of computer keyboarding in Colleges of Education in Southwest Nigeria. The mean scores for all items are consistently high (ranging between 3.35 and 3.39), demonstrating that most respondents have a positive view of lecturers' factors influence on academic outcomes in computer keyboarding. The standard deviations (ranging between 0.661 and 0.697) show that while there is some variability in responses, most participants generally agree with

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the statements. These results emphasize the importance of supporting lecturers in various aspects, including improving their working conditions and compensation, to enhance educational outcomes in computer keyboarding and related courses.

Research Question Three: What is the degree to which teaching methods (discussion method, demonstration method, **(CAI)** Computer Assisted Instruction) enhance computer keyboard skills in Colleges of Education in South West, Nigeria?

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Table 4.5: Descriptive Statistics of the Degree to which Teaching Methods (Discussion Method, Demonstration Method, (CAI) Computer Assisted Instruction) enhance Keyboarding Skills in Colleges of Education in South West, Nigeria

S/N	Items	SA (%)	A (%)	D(%)	SD(%)	Mean	STD
1	Discussion method brings a fundamental change in the students during the process of knowledge transmission in computer keyboarding.	472 (51.9)	367 (40.4)	60 (6.6)	10 (1.1)	3.43	.666
2	Demonstration method helps lecturers to achieve lesson specific objectives and desirable students' academic outcomes in computer keyboarding.	459 (50.5)	382 (42.0)	51 (5.6)	17 (1.9)	3.41	.683
3	Lecture method when solely used in computer keyboarding instruction delivery negatively affects students' academic outcome.	404 (44.4)	411 (45.2)	76 (8.4)	18 (2.0)	3.32	.710 .
4	Lecture method denies students exploratory aspects of learning as they are passive compared to other discussion and demonstration method.	466 (51.3)	415 (45.7)	25 (2.8)	3 (0.3)	3.48	572
5	Computer Aided instruction enhances effective teaching and learning process in computer keyboarding through immediate feedback on students' performance	449 (49.4)	381 (41.9)	60 (6.6)	19 (2.1)	3.39	.703 .
6.	Any or combination of teaching approach(s) must be relevant to the student's level and the kind of instructional content it is intended to facilitate.	458 (50.4)	399 (43.9)	35 (3.9)	17 (1.9)	3.40	672
7.	Application of appropriate method of teaching facilitates attitudinal changes and better students' academic outcome in computer keyboarding course.	441 (48.5)	404 (44.4)	48 (5.3)	16 (1.8)	3.43	661
	Weighted Average Mean = 3.38		**General Decision = High**				

Source: Field Work 2025

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Key: SA = Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree and STD = Standard Deviation
Threshold: 0-1.49 = very low; 1.50-2.49 = Low; 2.50-3.49 = High and 3.50 and above Very High.

Table 4.5 presents data from a survey that evaluates perceptions of teaching methods in relation to academic outcomes, particularly in computer keyboarding. The table includes several key metrics: strongly agree (SA), agree (A), disagree (D), strongly disagree (SD), mean score, and standard deviation (Std.D) for each statement. Here's an interpretation of the data: For item 1: "Discussion method brings a fundamental change in the students during the process of knowledge transmission in computer keyboarding." A large majority of respondents either strongly agree (51.9%) or agree (40.4%) that discussion method as a teaching method results in a fundamental change in students. The mean score of 3.43 (out of 4) indicates strong overall agreement with this statement. The low standard deviation (0.666) suggests there is relatively little variation in responses, meaning most respondents share a similar view. For item 2, "Demonstration method helps lecturers to achieve lesson specific objectives and desirable students' academic outcomes in computer keyboarding." Again, a significant majority (50.5% strongly agree and 42.0% agree) believe that the demonstration method is key to achieving lesson objectives and positive academic outcomes. The mean score of 3.41 indicates strong agreement. The standard deviation of 0.683 suggests slightly more variation in responses compared to Item 1 but still reflects consensus.

For item 3: "Lecture method when solely used in computer keyboarding instruction delivery negatively affects students' academic outcome " A majority of respondents either strongly agree (44.4%) or agree (45.2%) that lecture method when solely used contributes to students low academic performance. The mean score of 3.32 shows overall agreement, though slightly less emphatically than the previous items. The standard

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deviation of 0.710 indicates more variability in opinion, suggesting some differences in how strongly respondents feel about this issue. For item 4: "Lecture method denies students exploratory aspects of learning as they are passive compared to other discussion and demonstration method." A significant portion of respondents (51.3% strongly agree and 45.7% agree) believes that students are always passive instead of having interactive practical time with the lecturer. The mean score of 3.48 indicates strong agreement while the standard deviation of 0.572 suggests moderate variation in responses, with most participants agreeing on the importance of varied teaching strategies.

For item 5, "Computer Aided instruction enhances effective teaching and learning process in computer keyboarding." Again, a significant majority (49.4% strongly agree and 41.9% agree) believe that the Computer Aided instruction enhances effective teaching and learning process in computer keyboarding. The mean score of 3.39 indicates strong agreement. The standard deviation of 0.703 suggests slightly more variation in responses but still reflecting consensus. For item 6: " Any or combination teaching approach(es) must be relevant to the student's level and the kind of instructional content it is intended to facilitate." A majority of respondents either strongly agree (50.4%) or agree (43.9%) that any lecture method or combined lecture methods must be related to instructional content intended to facilitate to attain good academic outcome. The mean score of 3.40 shows overall agreement, though slightly less emphatically than the previous items. The standard deviation of 0.672 indicates more variability in opinion, suggesting some differences in how strongly respondents feel about this issue.

For item 7: Application of appropriate method of teaching as a whole facilitate attitudinal changes and better students' academic outcome in computer keyboarding course " A large majority of respondents either strongly agree (48.5%) or agree (44.4%) that

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discussion method as a teaching method results in a fundamental change in students. The mean score of 3.43 (out of 4) indicates strong overall agreement with this statement. The low standard deviation (0.661) suggests there is relatively little variation in responses, meaning most respondents share a similar view.

Overall, the responses show that there is a strong agreement that effective teaching methods are essential for student learning and performance. The highest levels of agreement are seen in Items 1 and 2, indicating a broad consensus that teaching methods: discussion method, demonstration method, Computer Assisted Instruction (CAI) are pivotal in driving change in students and achieving specific academic objectives. The variation in responses is relatively low, indicating consistency in how participants perceive the role of teaching methods in education. This data supports the argument that proper allocation and use of teaching strategies are crucial for improving student outcomes, particularly in technical courses like computer keyboarding.

4.4 Hypotheses

H_o1: There will be no significant combined influence of lecturer's factors (Lecturers' Salary, working conditions, teaching experience, teaching facilities) and methods of teaching (discussion method demonstration method, **(CAI)** computer assisted instruction) on academic outcome of students in computer keyboarding skills in Colleges of Education in Southwest, Nigeria.

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Table 4.6: Summary of Regression Analysis showing the Combined Influence of Lecturer's Factors (Lecturers' Salary, Working Conditions, Teaching Experience, Teaching facilities) and Methods of Teaching (Discussion Method Demonstration Method, (CAI) Computer Assisted Instruction) on Academic Outcome of Students in Computer Keyboarding Skills in Colleges of Education in Southwest, Nigeria

R = .508

R Squared = .258

Adjusted R Square = .257

Standard Error of the Estimate = 1.45418

ANOVA

Model	Sum of Square	Df	Mean Square	F	Sig
Regression	667.345	2	333.672	157.791	.000
Residual	1915.872	906	2. 115		
Total	2583.217	908			

Dependent Variable: Students' Academic Outcome in Computer Keyboarding Skills
Predictors: (Constant), Lecturers' factors and teaching methods
Source: Field Work 2025

Table 4.6 presents the multiple correlation (R), the multiple correlation squared (R^2), and the adjusted R^2 (Radj), highlighting combined influence of lecturers' factors and teaching methods on students' academic performance in computer keyboarding skills at Colleges of Education in South West, Nigeria. The results show a Multiple Regression coefficient of R = .508, R^2 = .258, and an adjusted R^2 = .257, indicating a positive correlation. The variance explained by the model is 25.7%, meaning that 25.7% of the variation in academic outcomes in computer keyboard skills is attributed to the predictor variables in the model.

Additionally, Table 4.6 shows the F-test results, which assess the linear relationship between the independent and dependent variables. The F-ratio (2,906) = 157.791, $p < 0.05$ is significant, confirming that the model reliably predicts students' academic

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performance in computer keyboarding skills at colleges of education in South West, Nigeria.

H_o2: There will be no significant relative influence of lecturer's factors and methods of teaching on academic outcome of students in computer keyboarding skills in Colleges of Education in South West, Nigeria.

Table 4.7: Summary of Regression Analysis showing the Relative Influence of Lecturer's Factors and Methods of Teaching on Academic Outcome of Students in Computer Keyboarding Skills in Colleges of Education in South West, Nigeria

	Unstandardized Coefficient		Standardized Coefficient		
Model	B	Std.Error	Beta	t	Sig.
(Constant)	9.337	9.337		20.465	.000
Lecturer's Factors	.299	.299	.294	9.111	.000
Teaching method	.298	.032	.301	9.323	.000

Dependent Variable: Students' Academic Outcome of Students in Computer Keyboarding Skills

Source: Field Work 2025

Table 4.7 presents the standardized beta (β) coefficients, which indicate the contribution of each independent variable (lecturer-related factors and teaching methods) to the model in predicting the dependent variable (students' academic performance in computer keyboard skills). The results show that all predictor variables significantly influence students' academic outcomes in computer keyboard skills, with [$\beta = .299$, $t(139) = 9.111$, $p < 0.05$] and [$\beta = .298$, $t(139) = 9.323$, $p < 0.05$].

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4.5 Discussion of Findings

Research question one aimed at identifying the level of academic outcome in computer keyboard skills in Colleges of Education in Southwest, Nigeria. Findings revealed that academic outcome in computer keyboard skills in Colleges of Education in Southwest, Nigeria is high. This can be attributed to several interrelated factors. Firstly, students do perform excellently in computer keyboarding due to lecturers' competency and available facilities for students to practice with. If colleges provide modern computers, relevant software, and ample learning materials, students are more likely to practice and develop their keyboarding skills effectively. Additionally, the working condition of lecturers. the presence of qualified lecturers cannot be overstated. Experienced and skilled lecturers working under good conditions employ effective teaching methodologies and greatly enhance students' learning experiences, leading to improved outcomes.

Application of touch typing tutor software and other Computer Aided Instruction for learning and learning environments can further contribute to this high level of skills. A supportive learning environment, characterized by access to tutoring and mentorship, can facilitate skills in keyboarding. Every student has important influence on their academic outcome through practical sessions in computer keyboarding. Additionally, when students support one another, they can share knowledge and strategies that enhance their skills. Lastly, the emergence of digital age with modern innovation and equipment encourages students' better academic outcomes. The methods of teaching applied in the colleges reflect students' actual abilities, aligned with learning objectives and focused on practical applications which encourage students to perform at their best.

The finding is supported by several studies, suggesting positive outcomes associated with effective keyboard instruction. For instance, a study found that students using interactive computer software achieved notable proficiency in typing, enhancing their keyboard

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skills and academic outcomes[1]. This finding aligns with a study that demonstrated that computer-aided instruction significantly improved students' keyboarding skills in Nigerian colleges, reinforcing the idea that integrating technology into teaching methods yields positive results for typing skills[2]. Additionally, research showed that students, who employed structured learning strategies, including practical computer skills, achieved higher educational outcomes[3]. This suggests that foundational computer skills, such as typing, can contribute meaningfully to students' overall academic success[3]. Further supporting these conclusions, some scholars developed a method for evaluating learning outcomes that revealed high proficiency in skill-based learning, such as typing, when structured effectively within the curriculum[4]. Research also observed that face-to-face instruction in practical skills like typing led to stronger academic results than online methods, emphasizing the benefits of hands-on, in-person learning environments for developing proficiency[5].

Other research challenges the assumption that high keyboard skills universally translates to academic success. A study found that students with specific learning disorders often struggle with typing speed and accuracy, indicating that even well-structured keyboard instruction may not lead to high proficiency for students with learning disabilities[6]. Another study also found that students' motivation and self-efficacy had a more significant influence on their academic outcomes than skills like typing, suggesting that high keyboard proficiency alone may not be sufficient to predict overall academic success[7]. Similarly, research examined students' performance in MOOCs, where keyboarding is a key skill, and found inconsistent academic outcomes, implying that typing skills may not be universally beneficial across all educational contexts[8]. A study also noted that while incorporating technology in the classroom provides modest benefits, it may not substantially improve student outcomes, raising questions about the

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impact of keyboarding on broader academic success[9]. Finally, research found that, the emergence of digital age with modern innovation and equipment encourages students' better academic outcomes suggesting that keyboard skills play a critical role in every academic discipline.

The second research question aimed at examining the status of lecturers' factors (lecturers' salary, working conditions, and teaching experience, teaching facilities) in computer keyboard skills in Colleges of Education in Southwest, Nigeria. It was discovered that the status of lecturers' factors (lecturers' Salary, working conditions, and teaching experience facilities) in computer keyboard skills in Colleges of Education in Southwest, Nigeria is high. This suggests that several key elements are positively influencing lecturers' effectiveness in teaching these skills. First, salary that lecturers receive can significantly impact their job satisfaction and performance. A competitive salary can provide financial security, which allows lecturers to focus more on their teaching responsibilities rather than worrying about their financial situations. This, in turn, can lead to better engagement in the classroom and a commitment to student success while reverse is the case if they witness inadequate or irregular salary payments. Also, the working conditions within the Colleges play a vital role. Lecturers teaching computer keyboarding are not operating under good working conditions which reduce their quality of their lecture delivery and productivity. Supportive environments with reasonable workloads can foster a more effective teaching atmosphere. The findings further revealed that, lecturers are provided with quality of teaching facilities, dependable power sources, internet connectivity, and computer-aided instruction (CAI) software/ When lecturers have the right tools and a conducive environment, they are better positioned to deliver high-quality instruction in computer keyboard skills. Teaching experience is another influential factor. Experienced lecturers often possess a wealth of

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knowledge and practical skills that can enhance their teaching effectiveness. They are typically more adept at addressing diverse learning needs and implementing effective teaching methods. Their experience can also provide them with insights into the best practices for teaching keyboarding skills, leading to improved student outcomes.

Supporting this view, a study concluded that fair compensation and strong motivation are key drivers of lecturer performance in higher education institutions in Indonesia[11]. Compensation was shown to encourage lecturers to engage more deeply in teaching, research, and community outreach, thus enhancing their performance and contributing to institutional success[11]. Similarly, a scholar found that a positive work environment including supportive professional relationships and adequate facilities contributed significantly to lecturers' effective teaching as they discharge their duties[12]. In this study, lecturer factors correlated strongly with teaching effectiveness and better academic outcome in computer keyboarding.

Further supporting the study, a scholar identified that a conducive work environment combined with motivation greatly enhances job satisfaction and lecturer engagement in universities[13]. Institutions that prioritize motivational factors alongside favorable work conditions benefit from improved teaching quality as lecturers are more committed to their roles. Research also found that public service motivation, or the drive to serve society through education, is a significant factor influencing lecturer performance[14]. This motivation, coupled with job satisfaction, was linked to higher teaching effectiveness, suggesting that intrinsic motivation to serve can amplify the positive effects of a supportive work environment[14]. Similarly, research found that both self-motivation and adequate compensation were directly correlated with improved lecturer performance, reinforcing that financial and motivational support can drive commitment to educational quality[15].

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On the other hand, contrasting research suggests that these factors alone may not fully account for teaching effectiveness, particularly in challenging educational environments. For example, a scholar found that despite efforts to improve salaries and conditions, lecturers in rural Zimbabwe universities continued to report low motivation due to financial instability and high workloads, which negatively impacted their teaching quality[16]. This finding emphasizes that, in some contexts, external pressures and resource constraints may overshadow efforts to improve work conditions. A study also examined Vietnamese universities and found that while salary and work conditions do contribute to job satisfaction, they were less influential than peer relationships and engagement with students[17]. This suggests that intrinsic and relational factors may play a larger role than financial incentives in sustaining lecturer motivation. Research also argued that passion for teaching itself is a primary driver of teaching effectiveness, positing that lecturers motivated by a genuine love for teaching are more likely to excel[18]. In this view, compensation and conditions are important but may be secondary to intrinsic passion. Research also found that social factors such as perceived justice and enjoyment in the workplace were stronger predictors of job performance than compensation, especially when assessing lecturers' creativity and engagement in new teaching methods[19]. This research suggests that emotional and social aspects of the work environment can significantly impact lecturer performance.

Research question three was raised to determine the degree to which teaching methods (discussion method, demonstration method, (CAI) computer assisted instruction) enhance keyboard skills in Colleges of Education in South west, Nigeria. The result shows that the degree to which teaching methods (discussion method, demonstration method, (CAI) computer assisted instruction) enhance keyboard skills in Colleges of Education in South west, Nigeria is high. This highlights the importance of diverse instructional strategies in

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promoting skill acquisition. First, the discussion method fosters an interactive learning environment and brings fundamental change where students can engage actively with the content. Through discussions, students can share ideas, clarify concepts, and explore keyboarding techniques collaboratively. This method encourages critical thinking and problem-solving, allowing students to better internalize the skills they are learning.

The demonstration method is particularly effective for teaching practical skills such as keyboard skills. It helps lecturers to achieve lesson specific objectives and desirable students' academic outcomes in computer keyboarding By observing a lecturer demonstrate keyboard techniques and functions in real-time, students can visually grasp the mechanics of using a keyboard. This method allows for immediate feedback and opportunities for students to practice under the guidance of their lecturer, reinforcing their learning and boosting their confidence. Computer-assisted instruction (CAI) takes a modern approach to teaching, integrating technology into the learning process. CAI programmes often provide interactive exercises, tutorials, and assessments that cater to individual learning paces. This personalized approach can help students strengthen their keyboarding skills through repetition and varied practice. The immediate feedback provided by CAI can also enhance students' understanding of their progress, allowing them to focus on areas needing improvement[20].

Several studies affirm the value of these teaching methods for improving keyboarding skills. A study applied a lesson-study framework to the demonstration method, finding that repeated cycles of demonstration and practice enhanced students' basic teaching and keyboarding competencies, suggesting that guided practice solidifies skills over time. In addition, studies outside keyboarding, such as those on microeconomics, suggest that discussion-based methods may enhance comprehension and retention better than lecture-only approaches, highlighting the value of active, student-centered learning for complex

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tasks given to leaners[21]. Similarly, some authors demonstrated CAI's success in teaching functional math to students with intellectual disabilities, highlighting how its interactive design kept students engaged and improved learning retention[22]. This suggests that CAI can be particularly valuable for foundational skill development through engaging, repetitive exercises. Research also highlighted CAI's general effectiveness in enhancing student performance across disciplines in Nigeria, pointing to CAI's interactive elements and tailored feedback as critical factors in improving students' skills of complex skills[23].

It is posited that not all studies agree on the universal efficacy of these methods. Some research reveals limitations, especially with CAI. For instance, research found that CAI did not significantly improve social skills among students, suggesting that CAI may be less effective for skills that rely heavily on interpersonal interaction rather than technical repetition[24]. Some authors reviewed CAI for students with visual impairments, noting that while CAI provided accessibility, it fell short in promoting skills of complex skills without additional instructional support, highlighting the importance of human guidance alongside technological methods[25]. A study also found that the positive effects of CAI on literacy skills tended to diminish over time, with long-term benefits less pronounced as students advanced[26]. This raises questions about CAI's sustainability for skill skills without continuous reinforcement. Research also found that while CAI improved learning outcomes in a controlled environment, it sometimes reduced student engagement in settings where teacher-student interaction was limited[27]. The study suggested combining CAI with methods that promote direct feedback to ensure a more holistic learning experience.

Other studies indicate that demonstration alone may lack effectiveness without engagement or feedback. A study discovered in music education that lecturers who solely

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used demonstration, without interactive engagement, saw lower retention and skill development among students, emphasizing the need for active participation[28].

The first hypothesis was tested to examine the significant combined influence of lecturer's factors (lecturers' salary, working conditions, teaching experience, teaching facilities) and methods of teaching (discussion method demonstration method, **(**CAI) computer assisted instruction) on academic outcome of students in computer keyboard skills in Colleges of Education in Southwest, Nigeria. The result shows that lecturers' factors and methods of teaching has a significant combined influence on academic outcome of students in computer keyboard skills in Colleges of Education in Southwest, Nigeria, which led to the rejection of the null hypothesis stated. Several studies affirm the positive impact of lecturer' factors, and effective teaching methods on student outcomes. For example, some authors observed that lecturer (lecturers' salary, working conditions significantly impact performance, which positively affects student engagement and learning[29]. The research supports the idea that motivated lecturers using varied instructional strategies can enhance students' academic outcomes.

Similarly, research highlighted that extrinsic motivator, such as salary, and intrinsic factors, such as self-efficacy, were critical to lecturer performance[30]. The study suggested that well-supported lecturers were more effective in employing methods like CAI, which in turn led to improved student performance, especially in skill-oriented courses[30]. Further supporting this, a study demonstrated that lecturer competencies, especially motivation and experience, had a strong positive influence on student satisfaction and loyalty, which are directly linked to engagement and academic success[31]. Additionally, research emphasized that lecturer capacity and teaching quality had both direct and indirect impacts on student outcomes, suggesting that skill-based learning is most

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effective when students are taught by motivated, experienced lecturers employing interactive teaching methods[32].

Conversely, other studies suggest that lecturer factors and teaching methods alone may not guarantee student success, particularly when external conditions or student attributes also play a critical role. A study concluded that while teaching skills are important, they may not independently drive intrinsic student motivation, implying that other influences could play a larger role in academic success[33]. In a study of international students, it was observed that lecturer factors and teaching methods were less critical to students' academic performance than the students' own motivation to integrate socially and academically[34]. This finding, especially in diverse settings indicates that, student' engagement and personal drive may outweigh lecturer influences in determining academic success[34]. Similarly, a study found that while motivated lecturers positively impact foreign language learning environments, their influence on student performance was not as strong as expected, suggesting that motivation alone, without sufficient instructional support, may have limited effects[35]. Finally, a study discovered that lecturer discipline and organizational factors, rather than individual motivation, more strongly influenced student interest in learning[36]. The findings imply that institutional factors and structural support may be crucial to fostering environments conducive to academic success, particularly for technical skills like keyboard skills.

Hypothesis two was tested to examine the significant relative influence of lecturer's factors and methods of teaching on academic outcome of students in computer keyboard skills in Colleges of Education in Southwest, Nigeria. The result shows that lecturers' factors and methods of teaching has a significant relative influence on academic outcome of students in computer keyboard skills in Colleges of Education in Southwest, Nigeria, which led to the rejection of the null hypothesis stated. Several studies support the notion

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that effective teaching methods and salary, experienced lecturers enhance students' performance in skill-based courses. A study found that teaching skills, along with student discipline, positively influence learning outcomes[37]. The study highlighted that skilled, well-prepared lecturers contribute to improved academic outcomes, particularly when students are also engaged in the learning process[37]. Similarly, a study also found that teaching methods played a major role in student success, with instructional approaches accounting for a substantial portion of students' learning outcomes in a college setting[38]. This reinforces the view that instructional strategies significantly affect student outcome, particularly in practical courses where demonstration and hands-on practice are key. Some scholars reported similar findings among students, where motivational strategies and teaching approaches were strongly linked to higher academic outcome, underscoring that motivated teaching and interactive strategies improve learning in specialized skills training[39].

In contrast, other studies point to the limits of lecturer influence and instructional methods alone. A study noted that in resource-poor settings, even effective teaching methods may have limited success in producing higher-order learning outcomes[40]. This suggests that external conditions, such as resource availability, can impact the effectiveness of lecturer-driven instructional methods[40]. Similarly, a study found that although lecturer capability and interactive methods were beneficial, structural factors such as assessment and evaluation methods had a stronger impact on academic performance[41]. This implies that lecturer attributes and teaching styles alone may not always drive student outcomes without broader support structures. Lastly, a study reported that while lecturer discipline positively influenced student motivation, it had a limited direct effect on student interest in learning. This finding suggests that lecturer

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attributes might support academic success more indirectly, with student motivation and institutional factors playing primary roles.

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Chapter Five

Conclusion

This chapter focuses on the summary of findings, conclusions, recommendations (based on the findings of the study), contribution to knowledge and the areas of further research.

5.1 Summary of Findings

The research aimed at investigating the influence of lecturers' factors and methods of teaching on student's academic outcome in computer keyboarding skills in Colleges of Education in Southwest, Nigeria. The study revealed a high level of academic outcome in computer keyboarding skills among students, attributed to several interrelated factors. Application of touch typing tutor software and other Computer Aided Instruction for learning and learning environments contribute to this high level of skills Access to modern computers, relevant software, and ample learning materials enhances students' practice and skill development. A supportive learning environment, characterized by access to tutoring and mentorship, can facilitate skills in keyboarding while peer support fosters collaboration and knowledge sharing. Additionally, the methods of teaching applied in the colleges reflect students' actual abilities, aligned with learning objectives and focused on practical applications which encourage students to perform at their best.

The second research question examined the status of lecturers' factors including salary, working conditions, and teaching experience in computer keyboard skills. The findings revealed that these factors are generally high, suggesting several key elements positively influence lecturers' effectiveness in teaching keyboarding. Lecturers' salaries significantly impact their job performance. Competitive salaries provide financial security, allowing lecturers to focus on their teaching responsibilities rather than financial concerns, which

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enhance their classroom engagement. Working conditions also play a vital role; supportive environments that offer access to necessary resources and manageable workloads foster effective teaching. Furthermore, experienced lecturers bring extensive knowledge and practical skills, enabling them to address diverse learning needs and implement effective teaching methods.

The third research question sought to determine the extent to which teaching methods specifically, discussion, demonstration, and computer-assisted instruction (CAI) enhance keyboarding. The results indicated a high degree of effectiveness for these instructional strategies. The discussion method fosters an interactive learning environment where students actively engage with content, sharing ideas and exploring keyboarding techniques collaboratively. This approach encourages critical thinking and problem-solving, aiding students in internalizing the skills they learn. The demonstration method is particularly effective for teaching practical skills like keyboard skills; observing a lecturer demonstrate keyboard techniques allows students to grasp the mechanics of using a keyboard in real time. This method provides immediate feedback and opportunities for practice under the lecturer's guidance, reinforcing learning and boosting confidence. CAI offers a modern approach to teaching, integrating technology into the learning process. These programmes typically provide interactive exercises, tutorials, and assessments tailored to individual learning paces, helping students strengthen their skills through varied practice and repetition. The immediate feedback from CAI enhances students' understanding of their progress and allows them to focus on areas needing improvement.

The study also tested two hypotheses. The first hypothesis examined the significant combined influence of lecturers' factors and teaching methods on students' academic outcomes in keyboard skills. The results indicated a significant influence, leading to the

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rejection of the null hypothesis. The second hypothesis tested the relative influence of these factors on academic outcomes and similarly revealed a significant relationship, resulting in the rejection of the null hypothesis.

5.2 Conclusion

In conclusion, the study highlights the critical factors influencing computer keyboarding skills in Colleges of Education in Southwest Nigeria. The study revealed a high level of academic outcome in keyboarding among students in Colleges of Education in Southwest Nigeria. The study also emphasizes the importance of lecturers' salaries, and conducive working conditions teaching facilities, all which are essential for fostering an effective teaching atmosphere. Motivated lecturers who feel valued and supported are more likely to engage in innovative instructional strategies that benefit students. Additionally, the experience and expertise of lecturers play a crucial role in addressing diverse learning needs and enhancing educational outcomes. Ultimately, this research highlights the need for continuous investment in educational resources, lecturer support, and curriculum development to further improve keyboard skills among students. By addressing these key elements, Colleges of Education can better prepare students for the demands of the digital world, ensuring they acquire the essential skills necessary for their future careers.

Also, teaching methods played a major role in student success, with instructional approaches accounting for a substantial portion of students' learning outcomes in colleges of education. This reinforces the view that, instructional strategies significantly affect student outcome, particularly in practical courses where demonstration and hands-on practice are key. Demonstration method is particularly effective for teaching practical skills such as keyboard skills. By observing, a lecturer demonstrates keyboard techniques

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and functions in real-time, students can visually grasp the mechanics of using a keyboard. This method encourages critical thinking and problem-solving, allowing students to better internalize the skills they are learning. In the same vein, discussion method allows students to share ideas, clarify concepts, and explore keyboarding techniques collaboratively. It was concluded that, discussion method fosters an interactive learning environment where students can engage actively with the instructional content. Computer-assisted instruction (CAI) takes a modern approach to teaching, integrating technology into the learning process. Computer Aided instruction enhances effective teaching and learning process in computer keyboarding through immediate feedback on students' performance.

5.3 Recommendations

Based on the findings of this study, the following recommendations were made:

1. Since students in Colleges of Education in Southwest Nigeria are doing well in keyboarding, schools should offer more advanced classes or workshops to help them build on this skill.

2. Since the factors influencing lecturers' effectiveness in teaching keyboarding are strong, Colleges of Education should continue to support and enhance these conditions. This could include maintaining competitive salaries, improving working conditions, provision of adequate facilities and providing opportunities for professional development.

3. Given the effectiveness of teaching methods like discussion, demonstration, and Computer Assisted Instruction in improving keyboarding, Colleges of Education should continue to employ and refine these approaches in their curriculum.

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Additionally, investing in training for lecturers to effectively utilize these methods can further enhance student engagement and learning outcomes.

4. Colleges of Education should focus on enhancing lecturers' factors and methods of teaching. This can be achieved by ensuring that lecturers are well-supported through competitive compensation, conducive working conditions, and professional development opportunities. Additionally, the colleges should continue to implement and innovate effective teaching methods in their programmes, creating a comprehensive approach that maximizes student learning and success in keyboarding.

5. To leverage the significant relative influence of lecturers' factors and teaching methods on students' academic outcomes in keyboarding, Colleges of Education should conduct regular training sessions for lecturers focused on best teaching practices and modern instructional techniques. Additionally, institutions should implement mentorship programmes where experienced lecturers guide newer staff in effectively using various teaching methods.

5.4 Contribution to Knowledge

The study contributes to knowledge in several ways, encompassing empirical, theoretical, and practical dimensions. Empirically, the research offers valuable data on the level of keyboarding skills among students in Colleges of Education in Southwest Nigeria. By examining the influence of factors such as lecturers' motivation, salary, working conditions, and teaching experience, alongside various teaching methods, the study identifies key variables that significantly influence academic outcomes. This data enhances the existing body of research by providing specific insights relevant to this educational context. Theoretically, the study applies Herzberg's two-factor theory to

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explore the relationship between intrinsic and extrinsic factors affecting lecturers' effectiveness. This application deepens our understanding of how salary can influence both lecturer satisfaction and student performance, particularly in technical courses like keyboard skills. Practically, the findings of the study provide actionable recommendations for Colleges of Education, emphasizing the need to support lecturers through competitive salaries, improved working conditions, and opportunities for professional development. Such support is crucial for enhancing teaching practices and ultimately improving student outcomes in keyboarding. Furthermore, the study encourages the adoption of effective teaching methods, including discussion, demonstration, and computer-assisted instruction, offering lecturers practical strategies to enhance student learning experiences.

5.5 Suggestion Areas for Further Studies

Future research should explore additional measures of lecturers' factors and methods of teaching that were not examined in this study. It would also be beneficial to replicate this research in secondary schools, and other higher institutions to gain a more comprehensive understanding of these dynamics across different educational contexts. While this study focused on lecturers' factors and teaching methods, future research could investigate the influence of student-centered factors, such as learning styles, motivation, socioeconomic background, and prior computer exposure, on keyboarding. Another area for studies is whether there is a gender-based difference in keyboard skills and how these differences may relate to teaching methods or lecturers' factors. This could provide insight into potential gender disparities and ways to address them. Lastly, expanding the scope of the study to include various states or regions, or even conducting a nationwide analysis, would significantly enrich our understanding of how these factors interact on a larger scale.

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Questionnaire

Lead City University, Ibadan

Faculty of Education
Department of Arts & Social Science Education

Dear Respondent,

Please, this questionnaire is designed to obtain information on **"Lecturer's factors, Teaching Methods and Students' Academic Outcome in Computer Keyboarding Skills in Colleges of Education in Southwest, Nigeria".** The research is for academic purpose.

The research, therefore, requires your cooperation in giving appropriate answers to the questions below and all information given will be treated with utmost confidentiality.

I will appreciate your quick response.

Yours faithfully,

The Researcher

Section A

Respondents Bio-data

Tick [√] as appropriate to you in in this section

1. Age Group: 16-20 [ ] 21-25 [ ] 26-30 [ ] 31 years & above [ ]
2. Institution's Name: …….
3. Gender: Male [ ] Female [ ]
4. Level: 100 [ ] 200 [ ] 300 [ ]

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Section B

Tick the appropriate responses in the space provided at the end of each statement with Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD)

S/N	ITEMS	SA	A	D	SD
1.	Students do perform excellently in computer keyboarding due to available facilities for students to practice with.				
2.	Students attain practical skills that enhance their academic outcome in computer keyboarding apart from knowledge on computer literacy.				
3.	The working condition of lecturers improves students level of academic outcome in computer keyboarding course				
4.	Application of touch typing tutor software and other Computer Aided Instruction for learning improve better academics outcome.				
5.	Every student has important influence on their academic outcome through practical session in computer keyboarding.				
6.	The emergence of digital age with modern innovation and equipment encourages students' better academic outcomes.				
7.	Lecturer's teaching computer keyboarding often witness inadequate or irregular salary payments which frequently lowered their morale, dedication and commitment in discharging their duties.				
8.	Lecturers teaching computer keyboarding are not operating under good working conditions which reduce their quality of their lecture delivery and productivity.				

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9.	Computer keyboarding lecturers possess competent teaching experience and adequate classroom management that stir up expected academic outcomes in computer keyboarding				
10.	Lecturers are provided with quality of teaching facilities, dependable power sources, internet connectivity, and computer-aided instruction (CAI) software.				
11.	Lecturer's teaching computer keyboarding often witness inadequate or irregular salary payments which frequently lowered their morale, dedication and commitment in discharging their duties.				
12.	Discussion method brings a fundamental change in the students during the process of knowledge transmission in computer keyboarding.				
13.	Demonstration method helps lecturers to achieve lesson specific objectives and desirable students' academic outcomes in computer keyboarding.				
14.	Lecture method when solely used in computer keyboarding instruction delivery negatively affects students' academic outcome.				
15.	Lecture method denies students exploratory aspects of learning as they are passive compared to other discussion and demonstration method.				
16.	Computer Aided instruction enhances effective teaching and learning process in computer keyboarding through immediate				

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	feedback on students' performance				
17.	Any or combination of teaching approach(s) must be relevant to the student's level and the kind of instructional content it is intended to facilitate.				
18.	Application of appropriate method of teaching facilitates attitudinal changes and better students' academic outcome in computer keyboarding course.				
19.	The combined influence of lecturer's factors and methods of teaching makes quality of students' performance remains a top concern for lecturers locally, regionally, nationally and globally.				
20.	Relative influence of lecturer's factors and methods of teaching provides individualized student attention to weak students and have an impact on academic outcome of students in computer keyboarding.				

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Bio-data

A. Personal Data

1.	**Full Name:**	Olaiwola Seun SODAMOLA
2.	**Residential Address:**	2, Awolaja Street, Fola-Agoro Akoka, Lagos State
3.	**E-mail:**	elderdj2002@gmail.com
4.	**Mobile Number:**	08023998945
5.	**Date/Place of Birth:**	25th March, 1978/Ogun
6.	**Nationality:**	Nigerian
7.	**Name and Address of Next of Kin:**	Mrs Sodamola Oluwaseun (Wife) 2, Awolaja Street, Fola-Agoro Akoka, Lagos State

B. Education Background

	Institutions Attended	Qualifications Obtained	Dates
1.	Lead City University, Ibadan	PhD in view	2021 till date
2.	University of Lagos, Akoka	M.Ed	2015
3.	University of Nigeria, Nsukka	B.Sc (Ed)	2006
4.	Federal College of Education (Tech), Akoka	NCE	2002
5.	General Certificate Examination	GCE	2000

C. Work Experience:

As Lecturer II 2023 – Till Date

Federal College of Education (Tech), Akoka, Lagos.

1. Lecturing Business Education Students in Area of Specialization as Required by the Head of Department.
2. Supervising Students' Research Project at the final level.
3. Acting as examiner in courses taught or any course scheduled for supervision.
4. Supervising Students' Teaching Practice (TP) and Students' Industrial Work Experience Scheme (SIWES) activities, as required by the College.
5. Assisting in Departmental Result Processing

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As Lecturer III 2021 – 2023

1. Lecturing Business Education Students in area of specialization as required by the Head of Department.
2. Supervising Students' Research Project at the final level.
3. Acting as examiner in courses taught or any course scheduled for supervision.
4. Supervising Students' Teaching Practice (TP) and Students' Industrial Work Experience Scheme (SIWES) activities, as required by the College.
5. Assisting in Departmental Result Processing

As Assistant Lecturer 2017-2020

1. Lecturing Business Education Students in area of specialization as required by the Head of Department.
2. Assisting and acting as examiner in course taught and course scheduled for supervision.
3. Assisting in Students' Research Project Work.
4. Assisting in Word Processing Laboratory
5. Assisting in Departmental Result Processing

D. Professional Membership

2018 Registered Teacher, Lecturers' Registration Council of Nigeria (TRCN)

2018 Member, Association of Business Lecturers of Nigeria (ABEN)

2009 Member, Nigeria Institute of Management (Chartered)

2008 Member, National Institute of Marketing of Nigeria (Chartered)

E. Conference Attendance

Workshop and Date:

1. Sodamola, S.O., Anokwulu, Sodamola S.O. & Igweh A.O. Impact of Entrepreneurship Education on Youth Job Creation and Employability among Students in Tertiary Institutions in Lagos State. Being a Paper Presented at Center for Entrepreneurship Development Yaba College Technology 2nd International Conference Held on Wednesday23rd –Thursday 24th April 2025.
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3. Sodamola S.O. Impact of Entrepreneurship Education as a Means of Palliating Poverty among Graduates in the Pandemic era. Paper Presented at WICE Annual Conference at F.C.E (T) Okene Kogi State, 2021.

F. Published Articles:

1. David, S. & Sodamola, S.O. (2025) Influence of Lecturers' Factors on Academic Achievement in Business Education Programme among South-West Colleges of Education in Nigeria Zamfara International Journal of Science Technology Education and Mathematics (ZIJSTEM) 2(1). Gusau, Zamfara.

2. David, S. & Sodamola, S.O. (2025) Methods of Teaching Computer Keyboard Mastery in the Word Processing Laboratory FUDMAJEM Journal of Educational Management (FUDMAJEM, Volume 3, N0.1, 2025 Dutsin-Ma, Katsina State.

3. Sodamola S.O. (2023) Business Education and Digital Skills In Solving Unemployment Among Business Education Graduates Akoka Journal of Business Education, (AJOBE) FCE(T) Akoka Lagos.

4. Sodamola S.O. & Igwe, A. (2022) Entrepreneurial Intention for Sustainable Development Among Business Education Students in Lagos State. Faculty of Art and Education, International Journal of Office Administration and information Management, (IJOAIM), 3(1), 2023.

5. Sodamola S.O. (2018) A Review of the Impact of Office Automation on Job Performance of Secretaries: A Publication of Akoka Journal of Business Education (AJOBE) FCE(T), Akoka Lagos 3 (1), 121 – 129.

G. Seminars/Workshop Participations

1. Online Business Marketing and Project Writing — April 2023

2. International Council for Education, Research and Training (ICERT) in Partnership with (UNESCO) — June 2022

3. Federal Republic of Nigeria Industrial Training Fund.
   Train the Trainer Capacity Building workshop at
   Nigerian Institute of Medical Research, Yaba, Lagos. — Sept. 2019

4. Project Supervision and Setting of Examination Questions.
   Organized by the Directorate of Quality Assurance.
   Federal College of Education (Technical), Akoka, Lagos. — June 2019

5. E-Publishing for Academic Staff at Federal College of Education (Technical), Akoka, Lagos. Organized by the Research and Publication Committee. — May 2019

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The University Compliance Certification

This is to certify that the thesis by Olaiwola Seun SODAMOLA with the matric number LCU/PG/002770 in the Department of Arts and Social Science Education, Faculty of Education, Lead City University, Ibadan, Oyo State, Nigeria is in full compliance with the approved University format and style.

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Signature **Date**

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