Exploring the Effectiveness of Learning Theories in Improving Students' Learning Skills at University Level

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Abstract

Learning theories concentrate on the mental and behavioral processes involved in learning, such as problem solving, critical thinking, and decision making. Learning theories play a critical role in the learning process as these provide a method for students to acquire knowledge and skills by interacting with their surroundings and their cognitive abilities. The purpose of this study was to explore the effectiveness of learning theories in improving students' learning outcomes at the university level. The nature of the study was descriptive. The population of the study included university students enrolled in various disciplines. The sample of the study was comprised of 165 university students. Survey questionnaire was used as research tool. The survey questionnaire included statements about familiarity, preferences, and perceived effectiveness of different learning theories. Data were analyzed using statistical techniques; frequency and percentages for responses related to perceptions of learning theories. Findings showed that exposure to various learning theories have positively influenced students' engagement and interest. Therefore, it is suggested to promote student-centered learning environments that encourage active participation, critical thinking, and application of knowledge, aligning with the principles of effective learning theories.

Keywords: *Effectiveness, Learning Theories, Cognitive, Learning Outcomes*

1. Introduction

Learning theories play a critical role in the learning outcomes of university students. There are three major learning theories: behaviorism, cognitivism, and constructivism. Cognitivist psychology emphasizes the importance of internal mental processes in comprehending behavior. This approach focuses on how people think about and process information, as well as how the brain stores and retrieves this information (Ismail, 2022). Cognitivist psychology is an approach to psychology that focuses on the mental processes

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involved in learning, such as problem solving, critical thinking, and decision making (Bahrain, 2021). This approach assumes that mental processes can be studied and understood, and that these processes can be used to explain behaviour. Diverse beliefs and views of individuals about the nature, origin and limits of knowledge are being reflected differently in different theories (Thomas, 2020). It has been indicated by Harasim (2017) that based on the application of these theories, every teacher sets some assumptions about instructional strategies and diverse learning styles of students.

Cognitivist learning theory emphasizes the learners' active role in constructing knowledge and understanding. This approach seeks to understand how students think and learn, as well as assisting students in becoming more effective problem solvers and decision makers (Jung & Roh, 2022). Cognitive perspective indicated that students can build their capabilities based on available knowledge and resources and these can also support students to ensure the employability of their skills as well (Peng et al., 2021). Constructivism is a philosophical and psychological theory that proposes that knowledge and learning are constructed through an active process of interaction between the learner and their environment (Ismail, 2022). Constructivism is based on the idea that people construct their own meanings and understanding of the world based on their past experiences and the information they are given. Constructivism has been studied in a variety of fields, including psychology, education, and sociology.

Various researchers have developed a variety of definitions that attempt to capture the essence of constructivism. Jean Piaget (1972), for example, defined constructivism as the belief that knowledge is created by the individual rather than passively received from the environment. According to Vygotsky (1978), "learning is an active process of constructing knowledge, rather than a passive process of absorbing information. Constructivism also includes the idea that learners are active agents who construct their own knowledge and understanding by interacting with their environment (Mcleod, 2023). As a result, John Dewey (1938) argued that "learning is the active process of designing and building meaning and information from knowledge" (Hidayatullah, 2022). Constructivist definitions refer to the philosophical approach to knowledge that is based on the observation that knowledge is actively constructed by the learner rather than passively received. This approach is based on the notion that learners, rather than being passive recipients of knowledge, are actively involved in constructing meaning from their experiences.

Constructivism also contends that knowledge is constructed in an individual's mind and that teaching is an active process of constructing new

understanding by integrating prior information with newly acquired knowledge. It has been indicated by Cervetti and Hiebert (2019) that during the practice of constructivism learning theory in classroom, teachers focus on practical teaching and it results in improved academic performance of students.

Learning theories are being practiced by every teacher in teaching learning process, no matter teachers are fully aware from these theories or not (Bates, 2014). Learning environment needs to be designed in such a way that it can enable students to absorb, learn, apply and transfer new knowledge as well as to fortify the benefits acquired from this knowledge (Peng et al., 2021). It can be possible only in that way if pertinent learning theory keeping in view the content and context requirements is being practiced conscientiously. The efficacy of learning theories in enhancing student learning outcomes at the university level remains a subject of considerable debate and ambiguity. Despite the existence of various pedagogical approaches and learning theories, there exists a gap in understanding their direct impact on improving student's learning outcomes within higher education settings. This gap underscores the need for a comprehensive investigation into the specific mechanisms through which learning theories manifest and influence the educational landscape at the university level. Consequently, this study aimed to explore the effectiveness of diverse learning theories in enhancing students learning outcomes, identifying the challenges faced in their implementation, and providing insights into optimizing their application for improved academic achievements within university environments.

1.1 Objectives of the Study

Objectives of this study were to:

1. explore the incorporation of learning theories in teaching methodologies.
2. identify the role of learning theories in enabling students to connect theoretical concepts with real-life applications.
3. highlight the role of various learning theories in improving students' engagement and interest in classroom.
4. identify the role of learning theories in improving students' abilities related to critical thinking and problem solving.
5. ascertain that how the application of learning theories can contribute to better retention and application of knowledge among students.
6. analyze the overall influence of learning theories on academic performance and achievement of students.

2. Literature Review

Constructivism is a philosophical school of thought that views learning as the process of vigorously creating knowledge rather than passively accepting it. Constructivism has attained popularity in recent years and is used in a broad range of educational settings. It is based on Jean Piaget's, Lev Vygotsky's, and John Dewey's theories. According to these theorists, learning takes place through a procedure of assimilation and accommodation in which learners take in additional knowledge, process it, and better understand the world (Kurt, 2021). The importance of the learners' experience is emphasized by constructivism. It believes that trainees should be endorsed in their learning and provided the chance to investigate and construct their own knowledge about the subject (Gurevitch et al., 2018).

Amongst the most important areas of constructivist research has been in education. Constructivist teaching methods, which emphasize active learning, creative thinking, and collaborative effort, have been shown in studies to assist students in better understanding and learn new information (Jaleel & Verghis, 2015). A meta-analysis conducted by Sasan and Rabillas (2022) indicated that students who received instruction based on constructivist principles outperformed than students who obtained traditional instruction on standardized assessments and had higher levels of conceptual knowledge. Constructivism has been shown in research to be effective in explaining how people form beliefs and make sense of new information. According to research studies, people actively develop innovative knowledge by relating it to their previous experiences and knowledge.

The constructivist theory has been used in the philosophical field to explain the characteristics of scientific knowledge and how it develops over time (Clark, 2018). Some people contend that constructivism may offer a more satisfying account of scientific knowledge than outdated notions that have seen science as the pursuit of universal reality (Ismail, 2022). Nevertheless, some researchers argue that constructivism places too much emphasis on the individual's contribution to shaping knowledge, and that it ignores the ways in which awareness is shaped by factors such as culture, history, and power. Critics also contend that constructivism is difficult to operationalize and empirically validated, making it difficult to make definitive conclusions about its effectiveness (Toraman & Demir, 2016).

Cognitivist learning aims at understanding internal processes in learning and concentrating on the learner's active development of knowledge. Cognitivist theories emphasize the importance of internal mental processes in understanding and problem-solving, and as such, there are several strategies that teachers can

use to implement cognitivist in the classroom like concept mapping and problem solving etc. (Jung & Roh, 2022).

Social Constructivism emphasises the role of social interactions and cultural norms in shaping people's understanding of the world (Mercadal, 2018). It implies that knowledge is not a passive reflection of reality, but is presented through conversations with one another. Cognitive Constructivism focuses on how people actively construct their own understanding of the universe through cognitive processes (Gurevitch et al, 2018). It entails that individuals actively create their own memorizing facts on their own experiences and perspectives.

Since constructivism emphasizes problem-solving and critical thinking, educators may design activities and assignments that encourage students to think critically about just the information they are beginning to learn and to solve problems related to the subjects they are attending at the university (Gurevitch et al, 2018). Constructivism is typically implemented in the classroom with a focus on active learning, problem solving, and collaboration. Some of the key strategies and techniques that educators may employ to incorporate constructivism into their teaching encompass: providing opportunities for hands-on, experiential learning; encouraging collaboration and peer learning; promoting reflective thinking; using real-world examples, applications and adapting instruction to students' prior knowledge (Thompson, 2018). It is important to remember that implementing constructivism in the classroom is not a one-size-fits-all approach; it requires adjustments and flexibility to adapt to the students' strengths and level. Constructivism is not an easy approach; it necessitates more effort, planning, and time than the traditional methods.

3. Research Methodology

3.1 Research Design

The study was descriptive in nature and involved quantitative approach.

3.2 Population and Sample

The population of the study included university students enrolled in various disciplines. Using stratified random sampling technique, 165 university students (enrolled in various disciplines) were taken as sample.

3.3 Instrumentation

The survey questionnaire was comprised of two sections. First section consisted of demographic information: age, gender, academic major, etc. and second portion consisted of statements based on perceptions about learning theories and effectiveness of learning theories in improving students' learning outcomes at university level.

3.4 Data Collection

Data were collected electronically and in-person based visits of the selected institution. Questionnaires were distributed among the selected sample of university students. And clear instructions and informed consent were provided before participation.

4. Data Analysis and Interpretation

SPSS (version, 25) was used for data analysis. Moreover, statistical techniques; frequency, percentages for demographic variables and Likert-scale responses related to perceptions of learning theories while mean scores and standard deviation to analyse perceived effectiveness of learning theories.

Figure 1

Responses about incorporation of learning theories in teaching methodologies

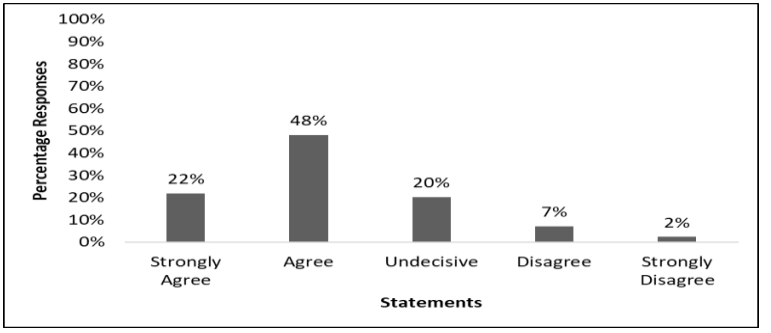

Figure 1 depicts the cumulative percentage average of university students' responses with respect the incorporation of learning theories in teaching methodologies. This presents that 22% university students strongly agree regarding incorporation of learning theories in teaching methodologies, 48% agree, 20% are undecisive, 7% disagree and only 2% strongly disagree.

Figure 2

Responses about how learning theories help to connect theoretical concepts to real-life applications

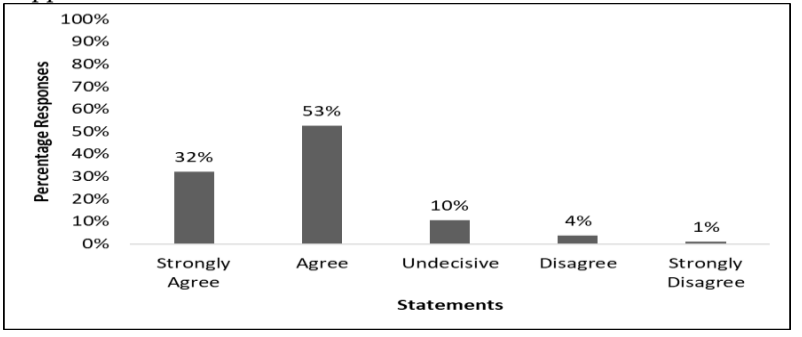

Figure 2 represents the cumulative percentage average of teachers' responses regarding learning theories help to connect theoretical concepts to real-life applications in the field of study. This showed that 32% university students strongly agreed with learning theories help to connect theoretical concepts to real-life applications in the field of study, 53% students agreed, 10% were undecisive, 4% disagreed while 1% strongly disagreed.

Figure 3

Responses about exposure to various learning theories has positively influenced engagement and interest in classroom

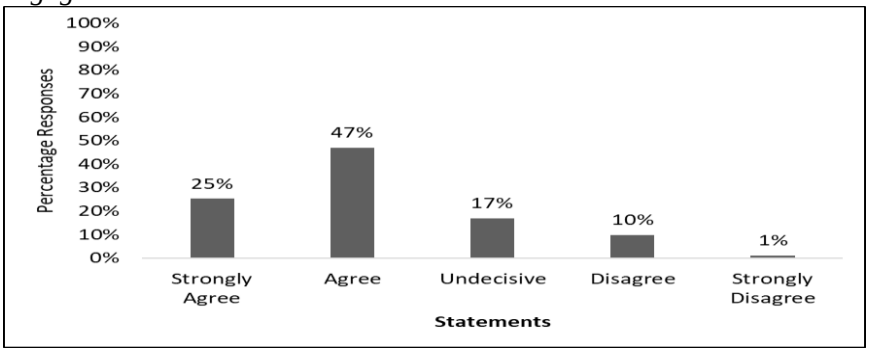

Figure 3 depicts the cumulative percentage average of university students' responses with respect to "exposure to various learning theories has positively influenced my engagement and interest in learning". The analysis presents that 25% university students strongly agreed regarding exposure to various learning theories has positively influenced engagement and interest in learning, 47% agreed, 17% were undecisive, 10% disagreed while only 1% strongly disagreed.

Figure 4

Responses about the role of learning theories in improving students' ability to critically analyse and solve problems related to course content

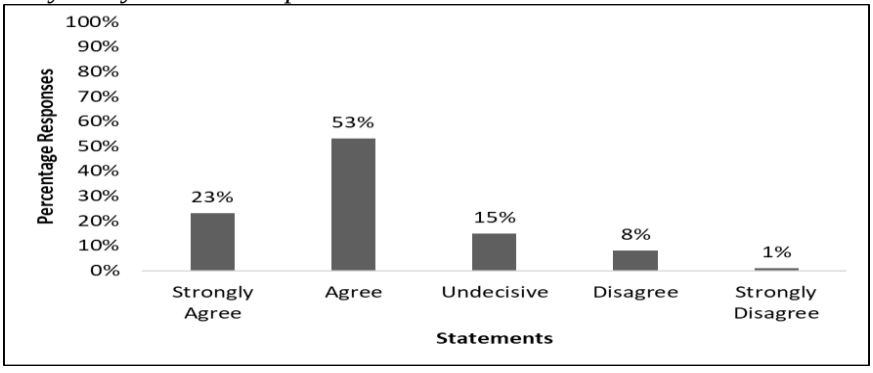

Figure 4 depicts the cumulative percentage average of university students' responses with respect to the role of learning theories in improving students' ability to critically analyse and solve problems related to course content. The analysis presents that 25% university students strongly agreed, 47% university students agreed, 17% were undecisive, 10% disagreed and only 1% strongly disagreed.

Figure 5

Responses about the application of learning theories in ensuring better retention and application of knowledge in academic coursework

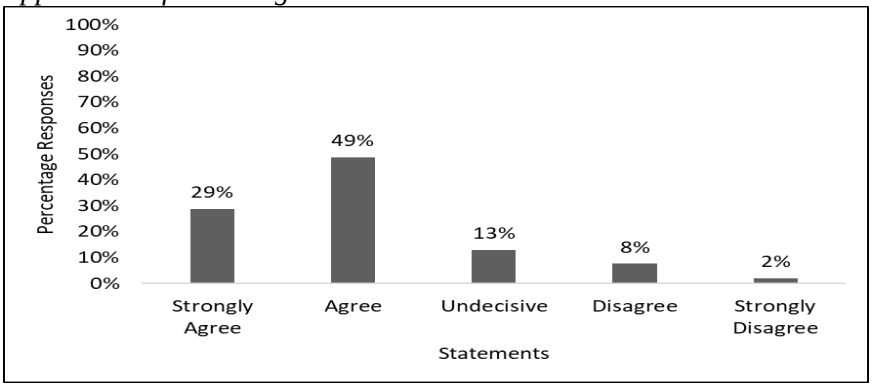

Figure 5 depicts the cumulative percentage average of university students' responses with respect to the application of learning theories has contributed to better retention and application of knowledge in my academic coursework". This presents that 29% university students strongly agreed, 49% students agreed, 13% remained undecisive, 8% disagreed and only 2% strongly disagreed.

Figure 6

Responses about learning theories have positively impacted overall academic performance and achievement

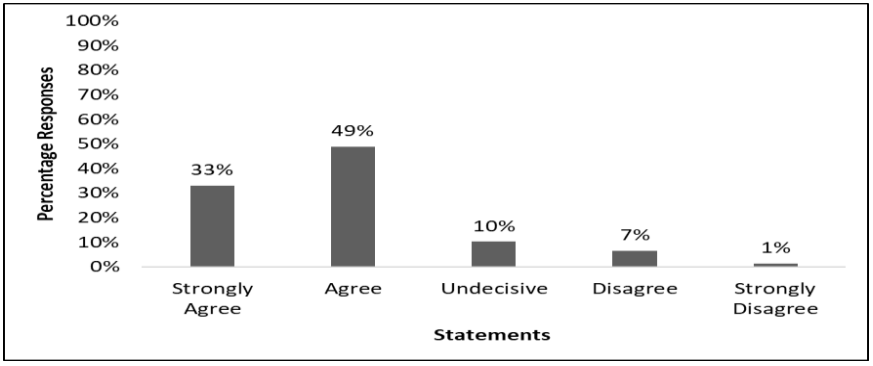

Figure 6 depicts the cumulative percentage average of university students' responses with respect to the learning theories have positively impacted overall academic performance and achievement. This presents that 33% university students strongly agreed, 49% students' agreed, 10% were undecisive, 7% disagreed and only 1% strongly disagreed.

5. Discussion and Conclusion

Findings of the study indicated that students' exposure to various learning theories has positively influenced their engagement and interest in classroom. These findings have been supported by Banihashem et al. (2022) who indicted that application of learning theories creates opportunities for teachers to encourage collaboration and peer learning. This finding also reflected that application of learning theories has contributed to better retention and application of knowledge in students' academic coursework. Gurevitch et al. (2018) also explored that practice of learning theories by teachers enable students to use real-world examples and applications. Findings of this study indicated that learning theories have positively impacted overall academic performance and achievement of students. These findings are aligned with the findings of study conducted by Cervetti and Hiebert (2019) as they also indicated that successful implementation of learning theories can result in improved academic performance of students.

Cognitive learning is an essential component of the learning process. It is a method for students to acquire knowledge and skills by interacting with their surroundings and their cognitive abilities. The more tasks and challenges that learners are exposed to, the better they will be able to retain the acquired knowledge and skills and apply them in future situations. Learning through cognitive processes can contribute to a more holistic and effective learning experience. Constructivism research has generally supported the theory's basic tenets, which suggest that individuals actively construct their own perceptions of the world through cognitive and social processes. However, some argue that it is challenging to implement and test, and that it places too much emphasis on each individual.

6. Recommendations

Based on findings of the study, following recommendations were drawn;

1. Learning theories can improve students' abilities to critically analyze and solve problems related to course content. It is therefore suggested to foster collaborative initiatives between different disciplines to provide opportunities to students for solving problems related to various dimensions.
2. Application of learning theories has positively impacted students' overall academic performance and achievement; therefore, it is suggested that

sustained impact of learning theories on long-term students' learning outcomes may be explored by conducting longitudinal studies.

3. As findings indicated that practice of learning theories in classrooms can enable students to connect theoretical concepts with real-life applications, therefore it is suggested that professional development programs and workshops may be offered for faculty to expand their understanding and application of different learning theories in teaching practices.
4. Findings showed that exposure to various learning theories have positively influenced students' engagement and interest. Therefore, it is suggested to promote student-centered learning environments that encourage active participation, critical thinking, and application of knowledge, aligning with the principles of effective learning theories.

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