

The Effects of Active Learning and Their Approach on Students' Engagement

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Abstract: While economic growth has spurred innovation across many industries, until recently, the global education system followed conventional teaching methods. This has not only impacted young people's potential but has also contributed to the issue of unemployment and lower job success rates. A contributing reason to this state of affairs is the low level of student involvement. The purpose of this study was to investigate the variables that influence student engagement in higher education and to ascertain how active learning pedagogies affect students' engagement levels. Assessing students' existing knowledge levels in order to properly deliver lessons is the main barrier to student involvement, according to an analysis of 50 higher education level 3–7 students. Therefore, improving students' cognitive, learning, and emotional behaviours through the use of gamification, collaborative learning, and peer learning would increase their level of engagement through the impartation of practical information.

Key Words: Active learning; engagement; game-based learning; pedagogical approach.

1. INTRODUCTION:

The 21st century is seeing greater opportunities in education and employment due to technological advancements. Nonetheless, traditional teaching and learning methods are still used in the education sector globally, which has led to a number of bottlenecks including low outreach, high dropout rates, absenteeism, and stunted learning potential (1). In STEM (Science, Technology, Engineering, and Mathematics) education, this is especially common. Students' motivation, self-efficacy, and degree of engagement are factors that continuously impact retention, persistence, and academic success (2). According to Miller, (3), student engagement is the desire, willingness, or obligation of students to take part in a learning process and effectively assimilate information in order to develop their critical thinking skills.

The idea of active learning has drawn a lot of attention as a means to create a student-centered instructional module that not only increases students' capacity for learning but also helps them develop their competencies and skills. According to Harttikainen et al. (2019), active learning is an instructional approach that emphasises the use of student-centered, instructor-led activities and methods. Active learning-based strategies, as a constructivism-based learning paradigm, challenged the conventional notion of learning, which views external sources as the only means of imparting knowledge to students. Deep learning approaches focus on understanding rather than memorization of active learning strategies. For instance, students become aware that knowledge is a product of their own self-construction through active learning-based instructional modules, and that each student has a responsibility to

But as the digital revolution gained momentum and people's reliance on technology increased, it became clear that the conventional teaching approach needed to be replaced. The need to implement an active learning-based instructional method was further supported by the ways in which active learning-based strategies, such as class discussion, learning cell, think-pair-share, debate, collaborative learning group, learning cell, or class game, fulfilled the behavioural, cognitive, and emotional engagement of students (4). The education system has started modifying its learning mechanism in response to the growing demand for individuals who can think critically, solve problems, and adapt to changes in order to support the development of the quickly changing economy.

2. LITERATURE REVIEW: A nation's economic growth has brought about modifications to its educational system. The need to introduce practicality and make concepts understandable has emerged with the transition from traditional

to modern forms of education. This resulted in the development of a novel idea known as pedagogy. In order to enhance students' learning abilities and raise their level of engagement and participation, educational institutions now employ pedagogical practises.

PEDAGOGY AND ITS METHODS:

Pedagogy is a term that refers to a teacher's efforts, approaches, and strategies for influencing the learning of others. Pedagogy defines the art of building the educational curriculum (activities, interactions, routines, experiences, and planned or unplanned events) by focusing on stated theories, empirical studies, evidence-based research, political aspects, individual or group reflections, community requirements and expectations, and involving educator's expertise or experience (5). The teaching pedagogical approach was divided into four categories: behaviourism, constructivism, social constructivism, and liberationism. A teacher-centric approach, which uses direct instruction or lecture-based teaching mechanisms to educate students, was one of these approaches' behaviourism.

PARTICIPATION OF STUDENTS

The term "student engagement" describes the time, energy, and other resources that students and educational institutions devote to ensuring the best possible experience and maximising learning opportunities (6). Student engagement is regarded as a measure of learning and personal growth, and it directly contributes to achieving desired results, grades, and satisfaction. According to Fredericks (2011), there are three types of engagement: intellectual, academic, and social. Student learning can only be optimised when all three types of engagement are present. Students' lack of engagement has an impact on their social functioning in addition to their academic performance. Low academic achievement, a high dropout rate, high unemployment, social exclusion, low income, involvement in crime, and health problems are all correlated with high rates of student disengagement (7-10). The only way to maximise productivity at work is to have involved and psychologically invested students. Therefore, in order to encourage students' intellectual, emotional, and academic engagement, educational institutions must incorporate activities that support student-led practical projects, applied academic skills, and active learning (7). These exercises improve evaluation, communication, and decision-making abilities. Thus, active learning empowers students to invent and create new avenues for professional growth (11).

STRATEGIES FOR CONNECTING PEDAGOGICAL LEARNING AND STUDENT ENGAGEMENT

The pedagogical model was developed to describe the activities that teachers engage in in order to provide students with a more practical learning experience by engaging them in intellectually challenging work. This cycle of learning is divided into five stages: Engage, Explain, Explore, Evaluate, and Elaborate (Department of Education and Training, 2018). Some of the common strategies for implementing pedagogical learning models based on these domains are as follows:

INVESTIGATE FIRST METHOD

Using this approach, teachers assign assignments that push students' existing knowledge while also encouraging them to research new topics, pose questions about them, compile pertinent data, and come up with original thoughts and viewpoints. According to Victoria (2018), this tactic aids in guiding students' learning and fostering the development of critical thinking and preconceived notions.

PEER EDUCATION METHODOLOGY

Peer learning is a strategy in which students learn with each other in both formal and informal contexts, in addition to from educators. People who belong to similar groups tend to cooperate and support one another in learning under this instructional teaching mode. Peer learning strategies include things like blogs, online discussion forums, and classroom discussions. This type of instruction helps students develop their social and cognitive skills in addition to teaching them education-related topics (12).

COOPERATION AND NETWORKING APPROACH

This approach fosters collaborative relationships, which in turn inspires students to learn and work together. Students participate in activities such as role play, wherein they are split up into groups and assigned tasks to complete. This method helps students develop their teamwork-based skills in addition to their social interaction abilities (12).

LEARNING THROUGH GAMES

A game-based learning strategy is a way for teachers to engage their students and help them learn new material by utilising gaming principles. By tying the games to the lessons, teachers hope to inspire students to learn. Students

studying political science or economics can enhance their knowledge through game-based learning techniques such as virtual stock trading competitions and mock parliaments. This approach facilitates the creation of an enjoyable learning environment and gives students the chance to apply their knowledge in real-world situations (5-10). All of these techniques support students in learning new ideas, forming relationships with others, and gaining useful information. Giving people the chance to engage in more social and personal interaction, pedagogical approaches aid in promoting emotional, behavioural, and cognitive engagement.

THEORETICAL STRUCTURE

The theoretical framework for this study is displayed below.

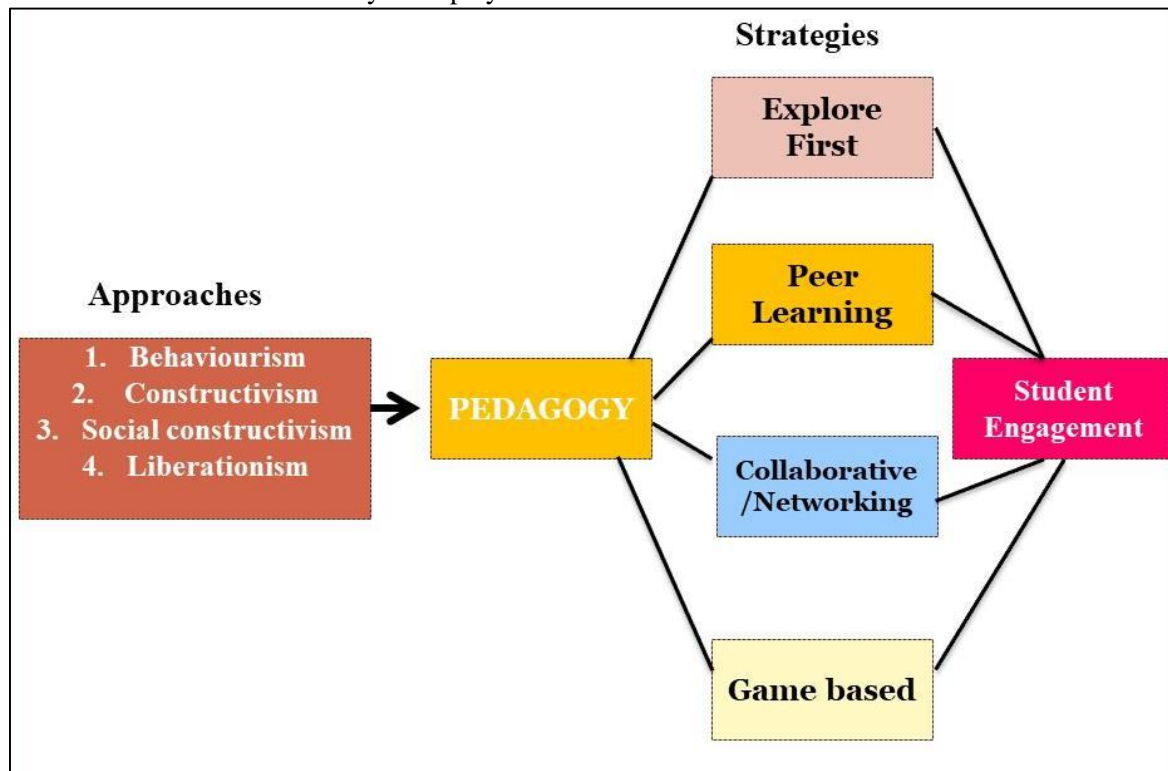


Figure 1: Theoretical framework of the research

As seen in Figure 1, there are four primary categories of pedagogical approaches: constructivism, behaviourism, social constructivism, and liberationism. Every strategy offers a unique way to put the learning mechanism into practise. However, the explore first strategy, peer learning strategy, collaborative/networking strategy, and game-based learning are being used to increase student engagement due to the growing relevance of active learning and the need to improve the capability and knowledge of the younger population. Each of these tactics contributes to students' increased understanding and more engaged learning environment.

3. RESEARCH DESIGNATION:

Research methodology is the theoretical or systematic articulation of the guiding principles and techniques that are applied to achieve the study's objectives. This action research employs an experimental research design to investigate how active learning strategies affect students' level of engagement. Employing both qualitative and quantitative research methods, the study focuses on assessing the usefulness of active strategy for students pursuing higher education. Using a semi-structured questionnaire, data for analysis 102 was gathered from students enrolled in level 4 (first year undergraduate) through level 7 (master's degree). The UK students enrolled in the programmes that we directly teach—also referred to as home students are the study's targeted population.

VIEWS REGARDING HOW PRACTICAL PEDAGOGY APPROACHES ARE CURRENTLY BEING USED

In light of this need to adapt the learning process, we have begun implementing certain practises, such as Padlet, Kahoot, and discussions. These are a few pedagogical techniques that make use of the game-based learning strategy, experimentation learning, and peer learning. While some students noted that "earlier the focus was only on the syllabus-based requirements about a concerned topic which was though informative but less interacting," all students have noticed

a change in our teaching methodology. Unlike the previous few sessions, though, the open house discussions give us a chance to voice our opinions and consider other possibilities.

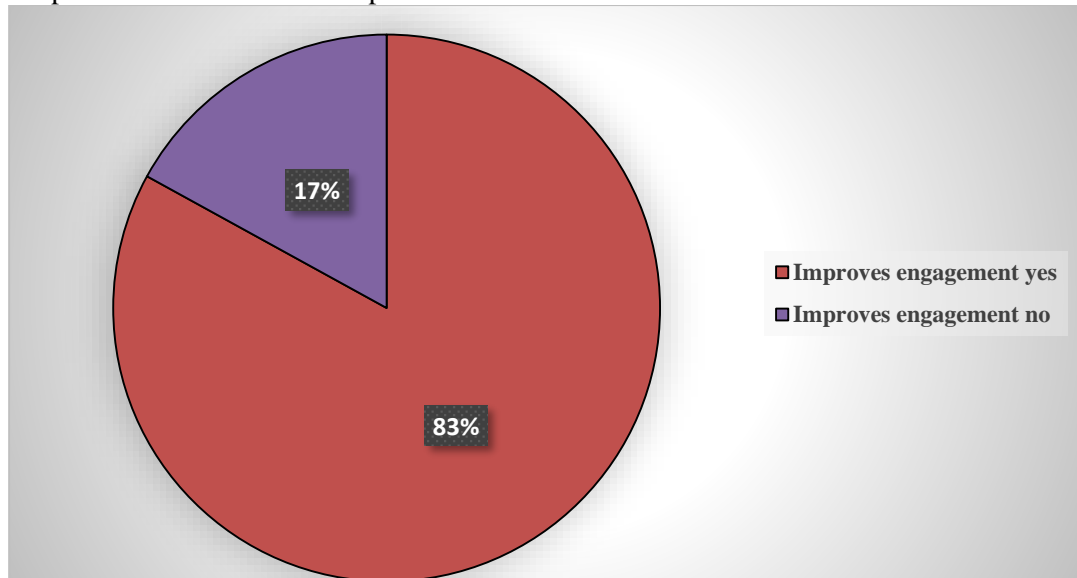


Figure 2: Pedagogical approach impact on engagement

OBSTACLES TO PARTICIPATION

Students were questioned about the primary factors influencing their participation in the teaching activities, with an emphasis on the disparities in their perspectives regarding the pedagogical approaches. Roughly 38% of the students said that language barriers prevent them from understanding the way the curriculum is currently taught. Every student has a different pace of adjustment, which makes learning challenging for them all. Furthermore, roughly 32% of the students claim that because each student has a different background, their knowledge level varies. It might take the form of a different teaching style, a different stream, or a lack of clarity on fundamental concepts.

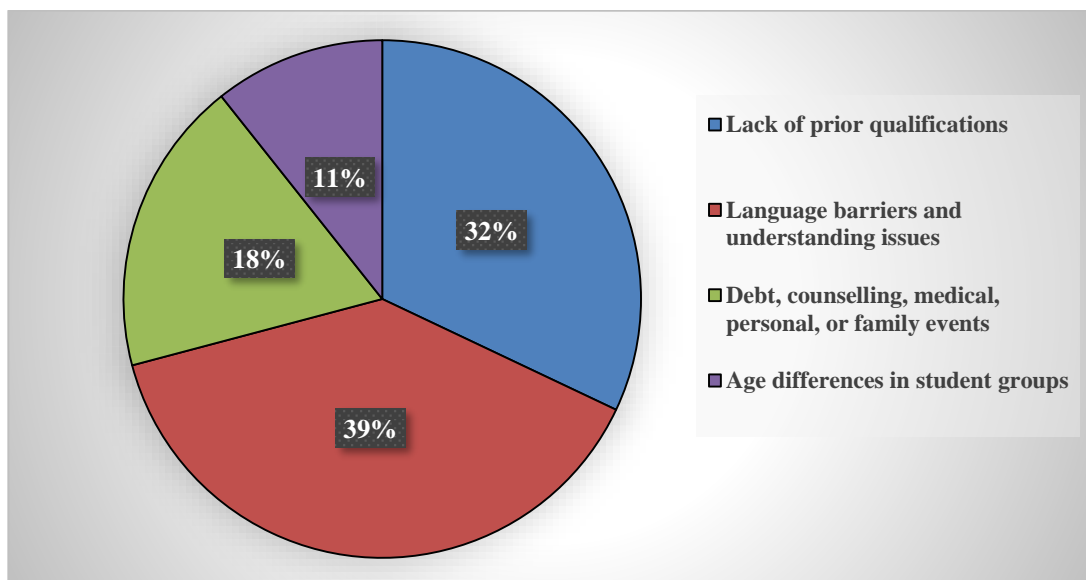


Figure 3: Factors acting as hinderance in student engagement

TECHNIQUES FOR INCREASING STUDENT INVOLVEMENT

The responses of the students were analysed to determine the effectiveness of the strategies currently in use in influencing their engagement.

MENTAL ACTION

Regarding cognitive behaviour, or students' inclination to participate in the learning process, the analysis is displayed below.

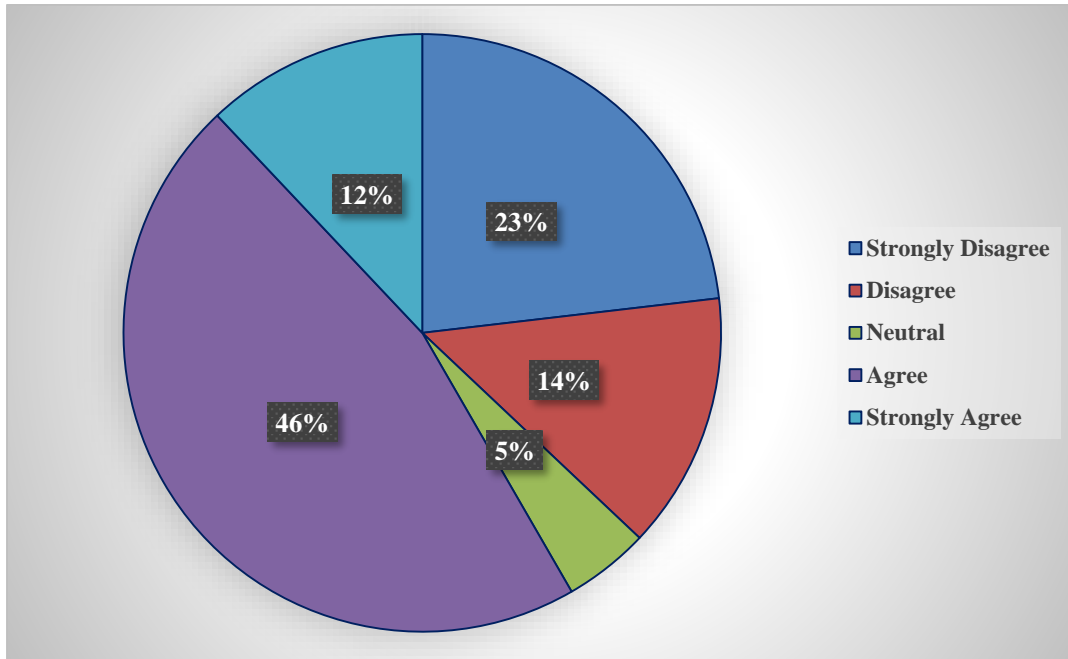


Figure 4: Pedagogical approaches significance on Cognitive Behaviour

Just 30% of the students thought that there had been little to no change in their willingness to learn as a result of the study mechanism change, while about 64% of the students responded favourably to the impact of applying the pedagogical approaches on their willingness to learn. The aspect-wise analysis is displayed below.

ACQUIRING KNOWLEDGE OF CONDUCT

Learning behaviour indicates a young person's comprehension and familiarity with a particular idea. The following displays the students' comments regarding how pedagogical strategies affect learning behavior.

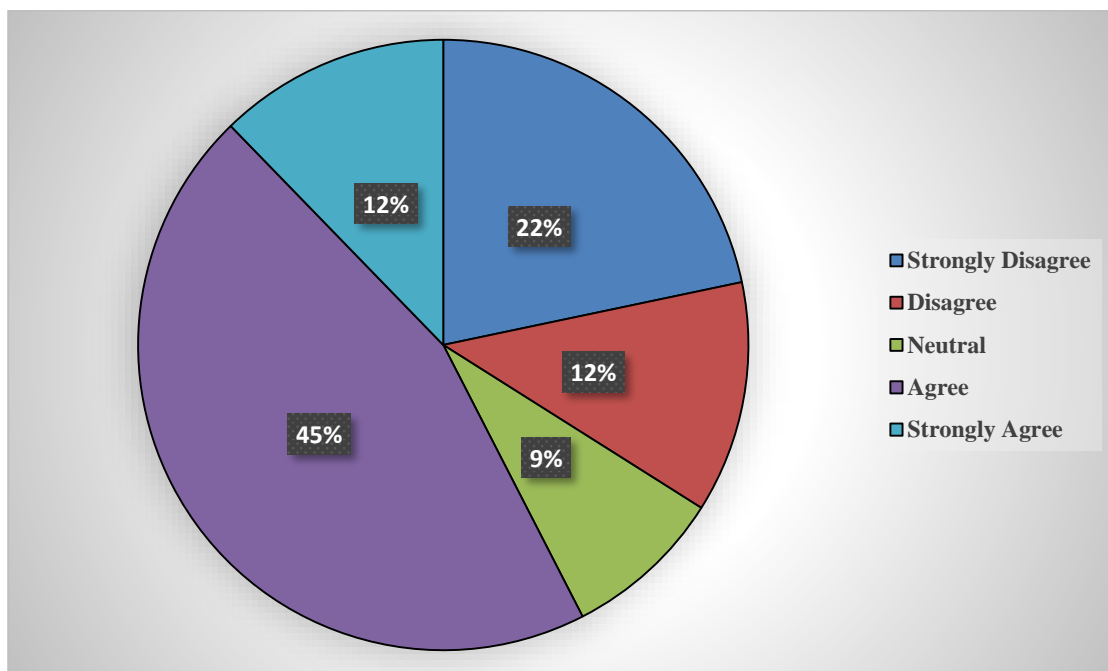


Figure 5: Pedagogical approaches significance on Learning Behaviour

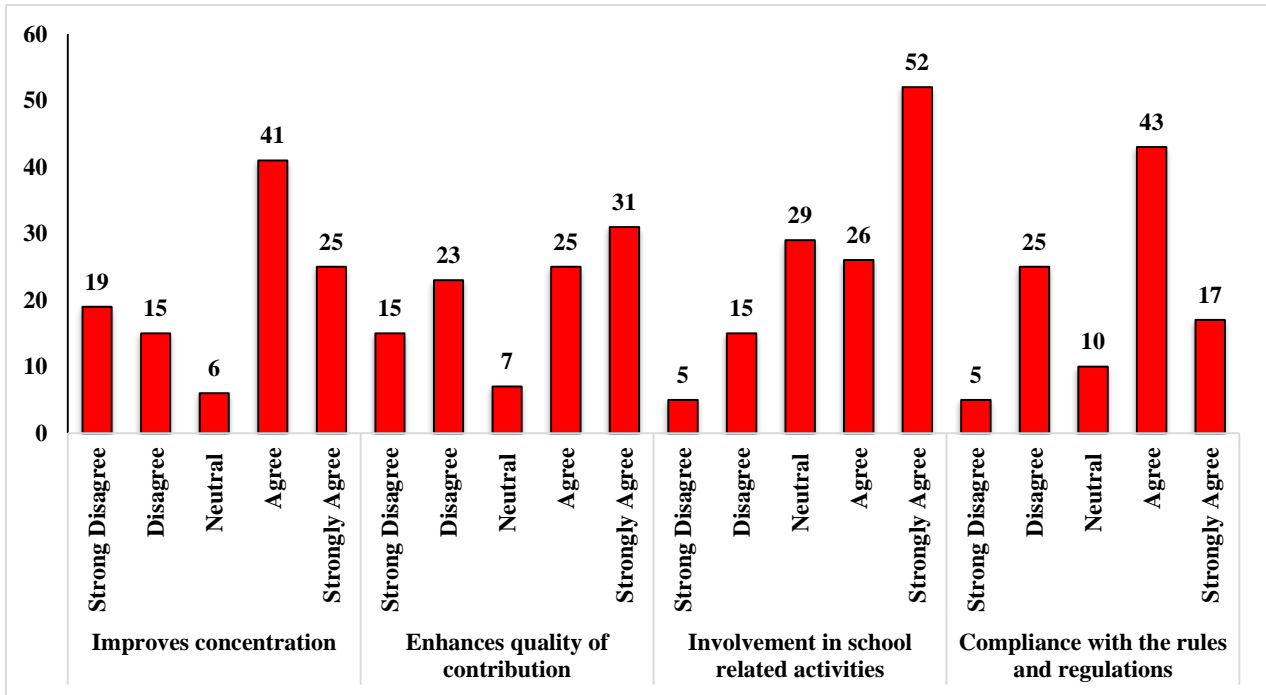


Figure 6: Graphical representation of Learning Behaviour aspects

EMOTIONAL CONDUCT

Students' emotions are explained by their emotional behaviour, which keeps them engaged and excited about the lessons being taught. The following is an analysis of how pedagogical approach affects emotional behaviour: According to the above figure, roughly 72% of students agreed that game-based and collaborative strategies encouraged them to participate actively in class activities. In fact, they felt that working in groups encouraged them to learn. Just 20% of the students said that while pedagogical approaches offered engaging study options, they did not significantly increase students' interest. Below is an aspect-by-aspect analysis of emotional behaviour.

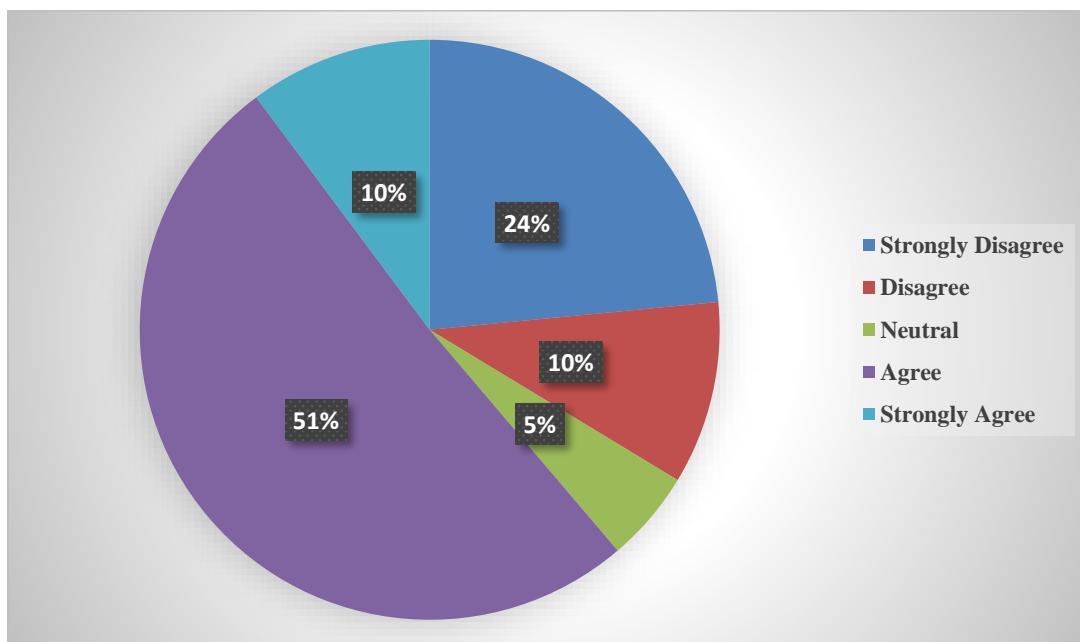


Figure 7: Pedagogical approaches significance on Emotional Behaviour

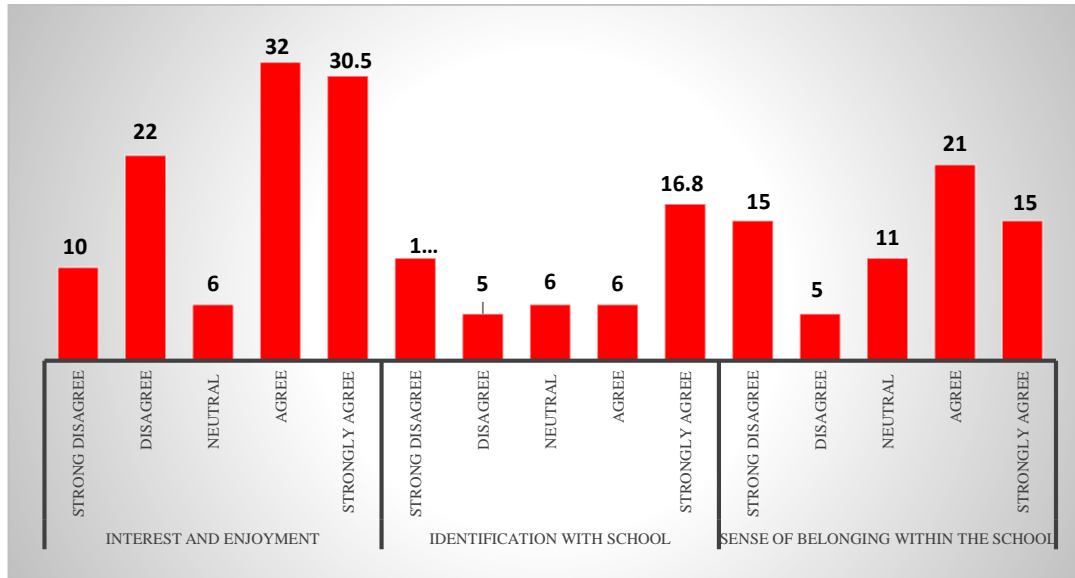


Figure 8: Graphical representation of Emotional Behaviour aspects

4. ANALYSIS, SUMMARY, AND FUTURE IMPLICATIONS

These days, student engagement—especially in higher education—is a crucial concern for educational institutions. This is because classes are taught using the traditional instructional method, which finds it difficult to engage students when there is little to no interaction. In order to address the issue and improve students' academic performance, pedagogical approaches to instruction must be used. Students can improve their social interaction skills through these teaching methods that use the game-based learning, collaborative learning, or peer learning strategies. These techniques also serve as instruments for evaluating the current knowledge levels of the pupils. The results of this action study on the pedagogical strategies used by fifty college students demonstrate that students accept the beneficial effects of these strategies. These methods aid in the virtual evaluation of real-world situations and the practical application of knowledge, raising students' knowledge levels and producing engaging learning environments.

As a result, it is necessary to alter the teaching methodology and employ an interactive learning tool. Even though the study only looks at the perspectives of 50 students, more data is needed to extrapolate the findings to other educational contexts, such as those in developing nations. Nonetheless, since low levels of student commitment and engagement with learning are a global issue, the analysis's conclusions can be trusted. Subsequent research in this area can compare the skill sets of students receiving instruction using the conventional method and the impact of these learning approaches in a practical setting.

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