Research Article

International Journal of Teaching and Learning Sciences

Affective Learning Outcomes and Assessments through its Pedagogical Applications in Higher Education: A Longitudinal Study in Affective Learning Implementation

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Abstract

This longitudinal study was undertaken to assess the Affective Learning Outcomes and establish the effects of this theoretical application on the academic achievement and learning experiences of students in an international university. The primary objective of this study was to identify the importance of affective teaching methods and to evaluate the affective learning conditions that foster positive student growth and enthusiasm for course work. The population of the study comprised of students registered for a particular course over three years at an international university. The whole population of students registered for this course was considered as the sample with Control Group (38 students), Batch 2 (38 students) and Batch 3 (38 students) making up the sample for this study. For the intent of this study, Affective Domain Taxonomy was implemented using Cooperative Learning Structures of STAD and Jigsaw classroom. The results indicated that Batch 2 & 3 that were taught with affective learning pedagogy showed similar results to the taxonomy of Affective Learning and both these groups showed significantly better results over the control group. Furthermore, it was found that students were not only reported as attending classes with enthusiasm and submitting all required assignments on time, but they also cooperated in group activities and showed positive attitude to developing the skills in a dynamic learning environment.

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1. Introduction

The modern teaching pedagogies are poised to adapt to the ways in which a modern student learns and interprets the teaching occurring in the classroom. With recent developments in the form of blended learning, now teaching is not limited to only classroom or institutional setting but rather, it takes a broader approach to incorporate environments that can enrich and enhance the learning of individuals beyond the classroom. While traditional approaches of lectures, direct instructions, and textbook rooted in centuries-old practices, have provided a foundation for education, they are increasingly being complemented by modern pedagogical approaches to create dynamic learning environments [1]. In the milieu of modern higher education, it is imperative that the motivation of students to engage in learning process is drawn from internal sources and not only through extrinsic procedures of grades, attendance, and reward/punishment mechanisms. Internal motivation is a driving force that originates from within students which makes them carry out learning activities, ensures the continuity of learning activities, provides direction in learning activities so that they can achieve desired goals [2]. Overall wellbeing of students is well-documented to be associated with academic engagement and greater academic motivation [3] and although extrinsic motivation can support the development of internal motivation, research indicates that the level of interest, involvement and cooperation among students in class setting can be important factors to inculcate intrinsic motivation. This research set out to understand the learning theory further by probing into the vague domain of student "emotions" and "feelings" associated with learning.

Affective learning of Krathwohl (1964) [4] with its innovative applications plays a critical role in motivating the students to enhance their leaning journeys through active involvement in the learning process. This longitudinal study aims to provide valuable insights for educators and researchers to the application of Affective Learning Theory to achieve remarkable results in student motivation, learning attitudes, and self-regulation behaviours. Additionally, the study addresses key challenges faced by higher education and proposes strategies for adapting to these evolving dynamics. In due course, this research will assist educators in developing effective institutional strategies that foster environments that provide enriched emotional experiences and intrinsic motivation for learning participants.

2. Research Problem Identification

There is growing criticism against higher education institutions that in their pursuit of profit maximisation they are increasingly ignoring the nuanced approach to deploying educational policies and practices that enhance the student well-being. It is essential for higher education institutes to embrace the implementation of comprehensive learning outcomes that improve the quality of education students receive. This longitudinal study employed such an approach – Affective Learning Theory and implemented its principles to investigate the improvement in learning outcomes at an international university.

3. Literature Review and Theoretical Framework of the Study

The prodigious research on learning theories has been ongoing for the longest time but the arrangement of various taxonomies still in use today were first developed and described between 1956-1972 in the US. Most notable among these is the Bloom's taxonomy on Cognitive aspects of learning. This taxonomy had permeated teaching and instructional planning for almost 50 years, before it was revised in 2001 [5]. In these early works, there were attempts to dissect and classify the varied domains of human learning- cognitive (knowing or head), affective (emotions, feelings or heart) and psychomotor (doing, tactile or hand/body). Bloom's taxonomy for Cognitive learning had been a staple in teacher training and professional preparation before Anderson and Krathwohl instituted an updated version in 2001 [6]. Krathwohl in 1964 is attributed to the original description of Affective domain. The scope of this research is limited to the "heart" domain and for its intent and purpose, Krathwohl's taxonomy is further explained in detail later. There are many significant works for psychomotor domain, but Anita Harrow (1972) [7] is considered as pioneer for her works on the physical actions undertaken to support cognitive and affective learning. Interestingly, more complex learning objectives can be written so that they meld 2 or 3 of these domains [8].

The ongoing economic restructuring, globalisation, development of technologies and other factors require a paradigm shift in the teaching pedagogies to foster attitudes relevant towards change, innovation and other topicalities of life [9]. But in the implementation of affective approach, the vagueness of the topic can pose to be a problem. Firstly, the affective domain could be about the teacher's approach to teaching. Secondly, the affective domain could be about appealing to the emotional attributes of students as a deliberate form of engagement by eliciting emotional reactions of say, anger at an injustice, enthusiasm for an achievement etc. to some teaching material. In both these cases there is a reliance on the teacher to establish a learning environment. The third perspective to affective teaching is one where students are asked to engage in the development and understanding of their own motivations, attitudes, values and feelings [10]. Consequently, affective teaching emerges as an efficient way the new learning pedagogy can be developed for better education policy and for development of holistic skills in the students but is not without its implementation challenges.

While the importance of affective domain is widely recognised, there is an absence of concrete guidelines for lecturers. As affective domain focuses on internalising attitudes, values, and responses, which contribute to socialisation and behaviour, it also interplays with cognitive domain [11]. Numerous studies have shown that social, emotional, behavioural, and character skills matter for areas of gaining cognitive knowledge and general wellbeing [12]. But in the context of assessment and implementation of cognitive outcomes, existing research has identified that teaching and assessment activities with an affective focus are underrepresented in higher education [13]. To eliminate the vagueness, affective teaching techniques often employ novel approaches like physical education and sports for the holistic development [14], gamification or game-based learning as positive influence on students' engagement, motivation, attitude and enjoyment [15], flipped learning to achieve positive results on students' perception and emotions [16], and experiential or self-directed learning [17], all of which foster skills for lifelong learning and transformational learning experiences that encompass the affective domain.

3.1. Krathwohl et al.'s Affective Taxonomy

This study utilises the Krathwohl et.al.'s Affective Learning Taxonomy and develops instruments for the implantation of this theory to achieve and assess affective outcomes. It is worthwhile to spend some time investigating this theory in all its details and challenges.

Krathwohl's affective domain taxonomy is perhaps the best known of any of the affective taxonomies. This taxonomy is ordered according to the principle of internalization which refers to the process whereby a person's affect or feelings towards an object pass from a general awareness level to a point where affect is "internalized" and consistently guides or controls the person's behavior [18]. Affective learning involves changes in feelings, attitudes and behavior. Bloom's seminal work in learning theories also included a hierarchy of affective learning [19] while [4] who worked with Bloom in 1964, is credited with the model that includes five levels: receiving, responding, valuing, organizing, and characterization. Figure 1 presents the taxonomy of affective learning where the hierarchy representation shows the levels through which learners pass as they progress in the internalization of values [20].
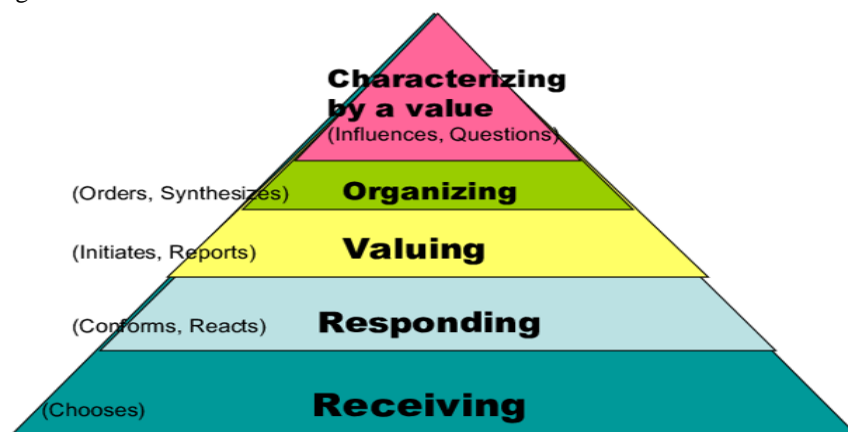
Figure 1: Krathwohl et.al.'s Affective Domain Taxonomy (Source: Neuman &Friedman, 2010) [20].

Evidence shows that different kinds of behaviors develop in the learners after a teaching activity. Some of these behaviors crop up in the learning experiences where the learner feels comforted, esteemed, and rewarded. Thus, they are positive and much wanted simply because they are likely to involve the learner and keep him progressing while learning [21]. The parts are listed from the lowest to the highest level and are describes as follows [22].

1) Receiving- Is the learner aware of or responding to the environment?
i) Receiving verbs; accept, ask, attend, choose, describe, develop, follow, give, identify
2) Responding- Can the learner show a new behavior due to an experience? The focus is on interest, seeking and enjoyment.
i) Responding Verbs: answer, assist, complete, comply, conform, cooperate, discuss.
3) Valuing – Does the learner show involvement and commitment? The focus is on attitudes and appreciation.
i) Valuing Verbs; accept, devote, complete, defend, describe, initiate
4) Organizing- Has the learner combined and conceptualized a new value giving it priority? The focus is on philosophy of life
i) Organization verbs: adhere, arrange, combine, organize, prepare, display, explain
5) Characterization- Does the learner act consistently with the new value? The focus is on patters of adjustment.
i) Characterization verbs: act, internalize, listen, qualify, revise, solve

Figure 2: presents the poster that summarizes Krathwohl and Bloom's Affective Domain Taxonomy from the works of Lease, 2018.
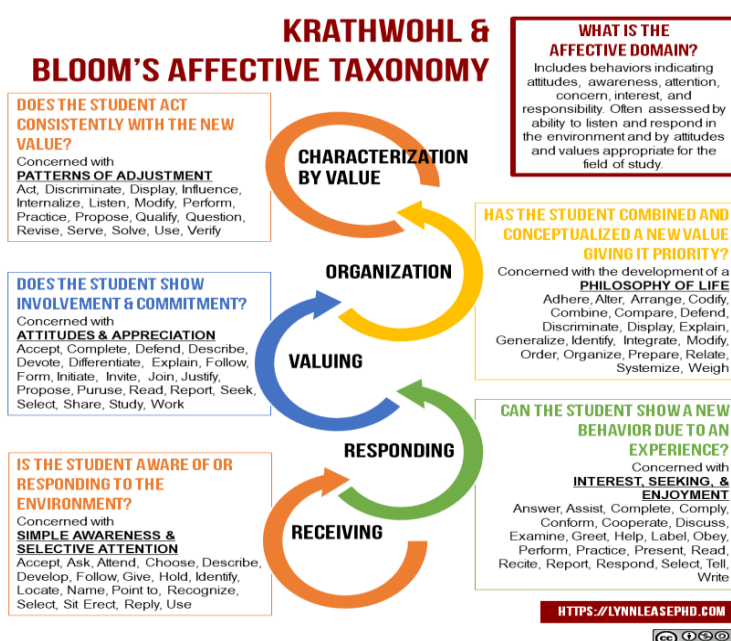

Figure 2: Krathwohl & Bloom's Affective Domain Taxonomy (Source: Lease, 2018) [22].

This summary provides structure and guidelines in formulating clear, measurable, and directed learning objectives. It assists educators in planning effective teaching and facilitates the evaluation of student learning outcomes. The application of this taxonomy brings benefits in curriculum development, instructional design, selection of appropriate teaching strategies, and evaluation of learning outcomes [23]. In Figure 3, the Krathwohl's Taxonomy verbs are shown as adapted into the test statements of this study for better application of the affective domain.
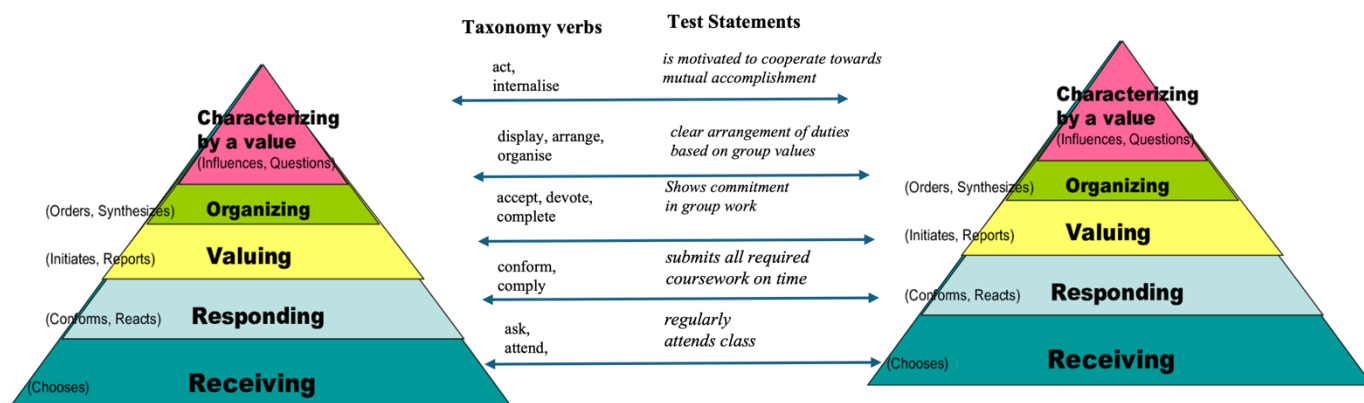

Figure 3: Krathwohl & Bloom's Affective Domain Taxonomy and its Adaption as Test Statements.

3.2. STAD and Jigsaw Classrooms: Cooperative Learning Structures.

To further the effectiveness of the implementation of Krathwohl's Taxonomy, this research utilised the cooperative learning structures of STAD and Jigsaw Classrooms which are student-cantered learning approaches that place students at the centre of the learning process [24]. These approaches seek to facilitate students to learn independently, collaborate and think critically. According to Feng et.al (2022) [25], knowledge is not gained passively but rather by active dialogue, active inquiry, and the production of meaning with the assistance of setting produced by others and based on prior knowledge and experience. Through this process learners continually expand and modify their current knowledge and experience through the interaction of new and old experiences. Due to this, STAD and Jigsaw Classrooms can provide real application of cooperative learning [26].

Student Teams Assessment Divisions (STAD) were developed with the aim of having students work in Cooperative Learning teams to learn academic content [27]. It consists of five major components: Teams, Class Preparation, Quizzes (in this research, the instructor used skills tests), Improvement Scores and Team Rewards. Figure 4. presents these five components and their adaption to this study's objectives.

Components of STAD	Example of Practical Adaption
Teams: Students are organised into groups. In their groups, students are required to practice learning tasks and help each other.	The class of 38 is organised into 4 groups. Each group consists of members with clear skills and abilities to contribute to group tasks.
Class Preparation: During class each group is presented with clear group goals to help achieve the overall learning objective of the course.	The class is clearly assigned learning goal for the end of semester. Group meeting are held to provide resources and manage skills or each member.
Quizzes: Students are tested at various intervals to assess progress.	Each group submits progress report and determines future course of action and challenges in group meetings.
Improvement Scores: Groups earn points to move forward to next level of preparation	Groups are provided with timely and constant feedback to identify improvement avenues and mitigate any challenges.
Team Recognition: Groups get collective scores teams are recognised in class for their work	Each group is given detailed assessment of their work based on project rubric and are rewarded for their work.

Figure 4: The five Components of STAD and their Adaption (adapted from the works of Casey & Fernandez, 2019) [28].

Elliot Aronson devised the Jigsaw Classroom in 1971 to address ethnic tensions in the then recently desegregated Austin, Texas, and now this technique is administered to provide competitive learning environment. In Jigsaw classrooms the class is split into small, heterogeneous groups called Home Groups where students spend most of their time to learn and compete. In each group there are *experts* that filter the information and knowledge from class and adapt decisions according to strengths and weaknesses of group. The jigsaw technique requires a carefully planned lesson, clearly divided, interdependent sub-tasks, effective instructor facilitation, and because students may need time to adjust to this technique, instructor patience and commitment [29]. In Figures 5. we can see how this research utilised both STAD and Jigsaw in the backdrop of Krathwohl et al's affective taxonomy and compared to traditional pedagogies.

Affective Taxonomy	Traditional	STAD	Jigsaw
Receiving	Students receive stimuli from the teacher.	Students receive group goals	Students receive instructions from both the teacher and their peer
Responding	Students consider their success in course to be their individual performance in class	Students begin to engage in interactions with their peers and view them as helpful to their performance	Students look for guidance from their teachers and their groups experts.
Valuing	Students learn to value a good individual performance.	Students appear excited by their own improvement and praise their peers.	Students begin valuing the opinions and ideas of others and seek feedback from peers.
Organising	Students organise their activities based on ability	Individuals and groups identify strategies/tasks and organise based on strengths and weaknesses of the group	Students prioritise time effectively and balance their activities on the advice of both teachers and peers.
Characterisation	Students are either engaged or disengaged in their course.	Students value input from peers towards independently achieving tasks	Students cooperate with other group members because they value them

Figure 5: Affective Learning Outcomes in Traditional, STAD and Jigsaw (adapted from the works of Casey & Fernandez, 2019) [28].

4. Objectives of the study

Following objectives were established for the study:

1. To identify the effectiveness of Affective Learning Methodology on student achievement along the taxonomy of affective learning.
2. To evaluate how the results, differ from the batch where such methodology was not employed.
3. To ascertain the learning conditions under affective learning theory

5. Research Design & Methodology

This longitudinal study employed quantitative research techniques to compare the samples collected over a period of three years at an international university.

The sample comprised of 38 students registered for the test course in the fall semesters of 2023-2024, referred as Batch 2 (*B2*) and 38 students 2024-2025 referred as Batch 3 (*B3*). A third sample was collected from 38 students registered for control group in the fall semester of 2022-2023, referred as batch Control 1 (*C1*).

Throughout this research, the course contents, teaching faculty and syllabus remained constant to ensure complete observation of the learning outcomes. Only, Teaching Methodology, was manipulated during B2 and B3 to adapt to Affective Taxonomy to measure the results. Affective Taxonomy was not adapted to C1.

Total population sampling technique was used to measure the responses to the independent variable. The outliers to the sample were excluded which included students leaving mid-semester or not completing the course for some other reasons. Only students that completed the entire course and sat for the final exam were included. This resulted in total 114 valid observations from all batches.

The data was collected from faculty and student sources using feedback questionnaire on university portal and interviews with some members to ensure thorough understanding. Questionnaire comprised of 6 statements pertaining to five learning outcomes of Affective taxonomy and evaluated on a 7-point Likert Scale with anchors "Strongly Disagree" (1) and "Strongly Agree" (7).

6. Hypotheses of the study

The study was based on the following hypotheses:

H_{01}: There is no difference in means of Batches B3 & B2.
H_{02}: There is no difference in means of Batches B2 and C1
H_{03}: There is no difference in means of Batches B3 and C1

7. Instrument Validity and Reliability

The research questionnaire was pre-validated, and its construct validity was confirmed through factor analysis. The scale proved to have a very good internal consistency with a Cronbach's α coefficient of 0.8 [30]. The instrument also has Face Validity as presented in Figure 6 and was confirmed by three academics.

Test Item	Test Statement	Survey Questions
Receiving	Students listen attentively to lecture or class	Students regularly attend the class.
Responding	Students comply with the procedures and follow directions of the teacher	Students submit all required assignments on-time, in correct formats and with showing effective learning.
Valuing	Students show a level of commitment Students propose plans for teamwork Students exhibit enthusiasm to learning	Student-led, faculty supported group work
Organising	Students can effectively arrange different values, prioritise information and time effectively	Clear arrangement of duties based on strengths and weaknesses of the group members.
Characterising	Students internalise the values and exhibit desired learning behaviour without extrinsic prompters	Students are motivated to independently work to meet goals Students show a high level of co-operation with group members and mutual accomplishments.

Figure 6: Face Validity of Test Statements (Source: 2025 Field Survey).

8. Data Findings and Analysis

The aim of this longitudinal study is to determine the effectiveness of Affective Learning Theory as a teaching pedagogy at an international university of higher education. To this aim, the theory was applied to students of a particular course for two years 2023-2024 and data was deemed to be comparably improved from the control group of 2022 for the same course which was not exposed to Affective Learning Theory. Although there were overall improvements in learning outcomes responses in batches B2 & B3 both, B3 showed the highest improvement in terms of outcome "Responding" *($\overline{X}_{B3}$=7) and outcome "Organising" *($\overline{X}_{B3}$=7) while batch B2 also showed the highest improvement in outcome "Organising" * ($\overline{X}_{B2}$=7). Details are shown in Tables 2 & 3. The control group C1's highest response (See Table 1) was for outcome "Cooperation

in Group" * ($\overline{X}_{C1}$=4.97). In 2022, C1 was given an opportunity to work on their course deliverables in groups but they were not organising their efforts independently towards any learning objectives. In 2023, B2 was given an opportunity to organise a student-led awareness campaign as a part of course deliverables while working in groups to this end. However, in 2023, B3 was given maximum autonomy to develop the student-led guest speaker session but they were also provided with maximum faculty-support at class and departmental level. This resulted in highest results observed in this batch with excellent attendance, on-time submissions of all course work, clear organization of their independent guest speaker session based on group members' strengths and weaknesses, as well of clear exhibition of enthusiasm and co-operation in group work.

Furthermore, B2 Strongly Agreed** (See Table 4) with statements where they found satisfaction in participating in class activities and were able to follow all course guidelines showing effective learning. B3 also exhibited similar tendencies**(See Table 5) although to a higher degree, but, more importantly, they also internalised the values of commitment and enthusiasm identifying with the behaviours required for long-term achievement of growth and success.

If one is to compare the two batches B2 & B3 we can see a similar pattern of agreement to test items in both batches (See Figure 7). Both the batches responded positively to requirements of regularly attending the class and of willingly and actively participating in all class activities. They were able to identify with the course requirements as part of their own value systems and were motivated to invest their time and energy in working in independent groups with academic and institutional faculties only playing a supportive role. In most aspects, they responded positively to consistently work toward the group improvements and breakdown complex situations through problem solving to attain mutual accomplishments.

In the control group we see a high number of responses as "Don't Know" (See Table 1) which might be interpreted to mean that the students were struggling to understand how the course content or assignments pertained to their learning outcomes. Such behaviour can be indicative of students just scraping along to pass the course without much deeper learning or scholarship.

The t-test presented in Table 6 further confirms these finding that batches B2& B3 have very similar results. While t-test results in tables 7&8 show that when these batches are compared to control group their responses to research variables and test items are significantly different.

Consequently, we can interpret the data to accept or reject our null hypotheses:

H_{01}: There is no difference in means of Batches B3 & B2. According to Table 6, P=0.2>P=0.05 therefore, we accept H_{01} at $\propto= 0.05$

H_{02}: There is no difference in means of Batches B2 and C1 According to table 7, P=0.000066<P=0.05 therefore, we reject H_{02} at $\propto= 0.05$

H_{03}: There is no difference in means of Batches B3 and C1 According to table 7, P=0.000033<P=0.05 therefore, we reject H_{02} at $\propto= 0.05$

Conclusively, we can state that batches *B2* and *B3* show a highly positive response to learning outcomes which may have occurred due to the conditions of the application of Affective Learning theory. Statistically, both these batches show a significant level of improvement over the responses of *C1* to the learning outcomes.

Table 1: Descriptive Statistics for sample C1 (Source: Field Survey 2025).

2022-2023 (Control Batch - C1)											
Receiving		**Responding**		**Valuing**		**Organising**		**Ind. Learning**		**Coop. Group**	
Mean	4.21	Mean	4.05	Mean	3.3	Mean	3.76	Mean	4.58	Mean	4.97*
Standard Error	0.24	Standard Error	0.33	Standard Error	0.2	Standard Error	0.30	Standard Error	0.22	Standard Error	0.17
Median	4.00	Median	5.00	Median	3.0	Median	3.50	Median	4.00	Median	5.00
Mode	3.00	Mode	5.00	Mode	2.0	Mode	6.00	Mode	4.00	Mode	5.00
Standard Deviation	1.49	Standard Deviation	2.05	Standard Deviation	1.4	Standard Deviation	1.85	Standard Deviation	1.37	Standard Deviation	1.08
Sample Variance	2.22	Sample Variance	4.21	Sample Variance	2.0	Sample Variance	3.43	Sample Variance	1.87	Sample Variance	1.16
Range	6.00	Range	6.00	Range	4.0	Range	6.00	Range	4.00	Range	4.00
Minimum	1.00	Minimum	1.00	Minimum	2.0	Minimum	1.00	Minimum	3.00	Minimum	3.00
Maximum	7.00	Maximum	7.00	Maximum	6.0	Maximum	7.00	Maximum	7.00	Maximum	7.00
Sum	160.00	Sum	154.00	Sum	125.0	Sum	143.00	Sum	174.00	Sum	189.00
Count	38.00	Count	38.00	Count	38.0	Count	38.00	Count	38.00	Count	38.00

Table 2: Descriptive Statistics for sample B2. (Source: Field Survey 2025).

2023-2024 (Batch 2- B2)

Receiving		*Responding*		*Valuing*		*Organising*		*Ind Learning*		*Coop. Group*	
Mean	5.92	Mean	6.79	Mean	6.32	Mean	7*	Mean	5.55	Mean	5.605
Standard Error	0.16	Standard Error	0.08	Standard Error	0.15	Standard Error	0	Standard Error	0.17	Standard Error	0.139
Median	6.00	Median	7.00	Median	7.00	Median	7	Median	6.00	Median	6.000
Mode	7.00	Mode	7.00	Mode	7.00	Mode	7	Mode	6.00	Mode	6.000
Standard Deviation	0.97	Standard Deviation	0.47	Standard Deviation	0.93	Standard Deviation	0	Standard Deviation	1.06	Standard Deviation	0.855
Sample Variance	0.94	Sample Variance	0.22	Sample Variance	0.87	Sample Variance	0	Sample Variance	1.12	Sample Variance	0.732
Range	3.00	Range	2.00	Range	3.00	Range	0	Range	4.00	Range	4.000
Minimum	4.00	Minimum	5.00	Minimum	4.00	Minimum	7	Minimum	3.00	Minimum	3.000
Maximum	7.00	Maximum	7.00	Maximum	7.00	Maximum	7	Maximum	7.00	Maximum	7.000
Sum	225.00	Sum	258.00	Sum	240.00	Sum	266	Sum	211.00	Sum	213.000
Count	38.00	Count	38.00	Count	38.00	Count	38	Count	38.00	Count	38.000

**Table 3:** Descriptive Statistics for sample B3. (Source: Field Survey 2025).

2024-2025 (Batch 3- B3)

Receiving		*Responding*		*Valuing*		*Organising*		*Ind Learning*		*Coop. Group*	
Mean	6.47	Mean	7*	Mean	6.55	Mean	7*	Mean	5.63	Mean	5.71
Standard Error	0.13	Standard Error	0	Standard Error	0.15	Standard Error	0	Standard Error	0.18	Standard Error	0.16
Median	7.00	Median	7	Median	7.00	Median	7	Median	6.00	Median	6.00
Mode	7.00	Mode	7	Mode	7.00	Mode	7	Mode	6.00	Mode	5.00
Standard Deviation	0.80	Standard Deviation	0	Standard Deviation	0.92	Standard Deviation	0	Standard Deviation	1.13	Standard Deviation	0.96
Sample Variance	0.63	Sample Variance	0	Sample Variance	0.85	Sample Variance	0	Sample Variance	1.27	Sample Variance	0.91
Range	3.00	Range	0	Range	3.00	Range	0	Range	4.00	Range	4.00
Minimum	4.00	Minimum	7	Minimum	4.00	Minimum	7	Minimum	3.00	Minimum	3.00
Maximum	7.00	Maximum	7	Maximum	7.00	Maximum	7	Maximum	7.00	Maximum	7.00
Sum	246.00	Sum	266	Sum	249.00	Sum	266	Sum	214.00	Sum	217.00
Count	38.00	Count	38	Count	38.00	Count	38	Count	38.00	Count	38.00

Table 4: Data responses to research variables on Likert-Scale for sample B2. (Source: Field Survey 2025).

2023-2024 (Batch 2-B2)

	Receiving	Responding	Valuing	Organising	Ind Learning	Coop. Group
1	0	0	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	2	1
4	3	0	3	0	3	1
5	10	1	3	0	12	15
6	12	6	11	0	14	16
7	13	31	21	38	7	5
Sum	38	38	38	38	38	38
	Receiving	Responding	Valuing	Organising	Ind.Lng	Co-op Group
Strongly Disagree	0%	0%	0%	0%	0%	0%
Disagree	0%	0%	0%	0%	0%	0%
Somewhat Disagree	0%	0%	0%	0%	5%	3%
Don't Know	8%	0%	8%	0%	8%	3%
Somewhat Agree	26%	3%	8%	0%	32%	39%
Agree	32%	16%	29%	0%	37%	42%
Strongly Agree	34%	82%**	55%	100%**	18%	13%

Table 5: Data responses to research variables on Likert-Scale for sample B3. (Source: Field Survey 2025).

2024-2025 (Batch 3 -B3)						
Likert-Numerals	**Receiving**	**Responding**	**Valuing**	**Organising**	**Ind Learning**	**Coop. Group**
1	0	0	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	2	1
4	1	0	3	0	4	1
5	4	0	2	0	9	15
6	9	0	4	0	14	12
7	24	38	29	38	9	9
Sum	38	38	38	38	38	38
	Receiving	**Responding**	**Valuing**	**Organising**	**Ind.Lng**	**Co-op Group**
Strongly Disagree	0%	0%	0%	0%	0%	0%
Disagree	0%	0%	0%	0%	0%	0%
Somewhat Disagree	0%	0%	0%	0%	5%	3%
Don't Know	3%	0%	8%	0%	11%	3%
Somewhat Agree	11%	0%	5%	0%	24%	39%
Agree	24%	0%	11%	0%	37%	32%
Strongly Agree	63%	100%**	76%**	100%**	24%	24%
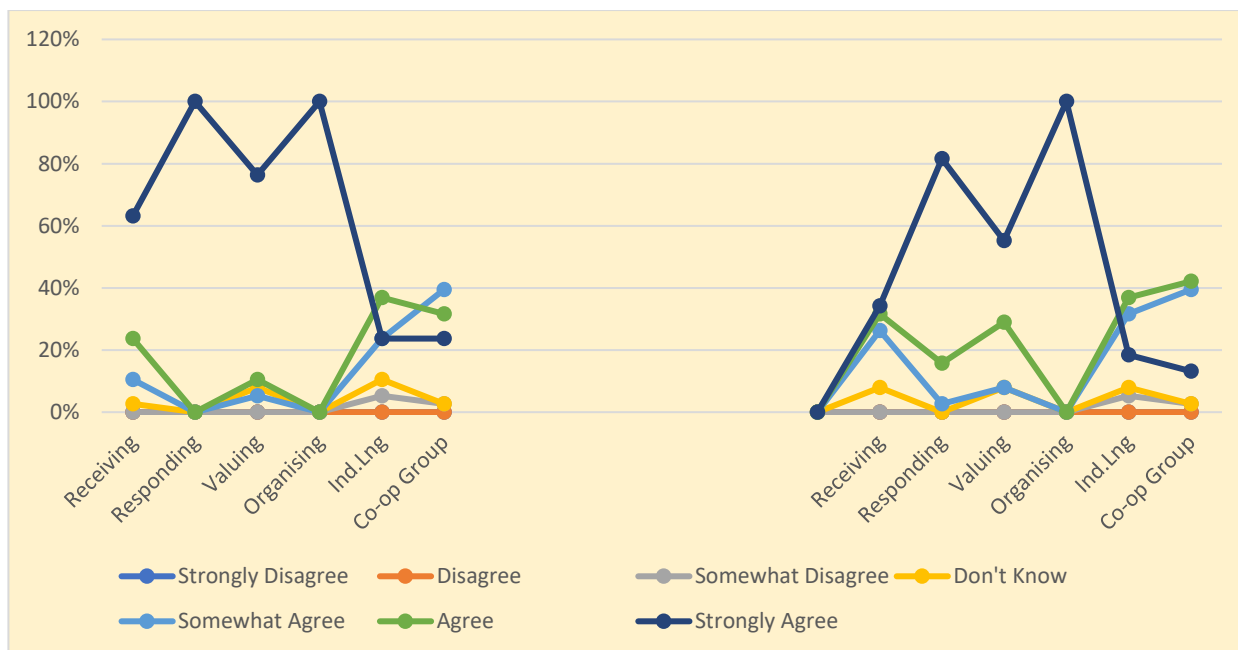
Figure 7: Data Response comparison in B2 & B3 (Source: 2025 Field Survey).

Table 6: Two- Sample comparison of the research variables based on t-test for Sample B2 & B3 (Source: Field Survey 2025).

t-Test: Two-Sample Assuming Equal Variances		
	Batch 3	*Batch 2*
Mean	6.366666667	6.16666667
Variance	0.370666667	0.36666667
Observations	6	6
Pooled Variance	0.368666667	
Hypothesized Mean Difference	0	
df	10	
t Stat	0.570523696	
P(T<=t) one-tail	0.290457449	
t Critical one-tail	1.812461123	
P(T<=t) two-tail	0.580914898	
t Critical two-tail	2.228138852	

Table 7: Two- Sample comparison of the research variables based on t-test for Sample B2 &Control batch C1 (Source: Field Survey 2025).

t-Test: Two-Sample Assuming Equal Variances		
	Batch 1	*Batch 2*
Mean	4.083333333	6.16666667
Variance	0.357666667	0.36666667
Observations	6	6
Pooled Variance	0.362166667	
Hypothesized Mean Difference	0	
df	10	
t Stat	-5.99604871	
P(T<=t) one-tail	6.64035E-05[1]	
t Critical one-tail	1.812461123	
P(T<=t) two-tail	0.000132807	
t Critical two-tail	2.228138852	
[1]P(T<=t) One tail= 0.000066		

Table 8: Two- Sample comparison of the research variables based on t-test for Sample B3 &Control batch C1 (Source: Field Survey 2025).

t-Test: Two-Sample Assuming Equal Variances		
	Batch 1	*Batch 3*
Mean	4.083333333	6.36666667
Variance	0.357666667	0.37066667
Observations	6	6
Pooled Variance	0.364166667	
Hypothesized Mean Difference	0	
df	10	
t Stat	-6.55359876	
P(T<=t) one-tail	3.22179E-05[2]	
t Critical one-tail	1.812461123	
P(T<=t) two-tail	6.44358E-05	
t Critical two-tail	2.228138852	
[2] P(T<=t) One tail= 0.000032		

9. Discussion

The discerning body of research available on the topic of Affective Learning as a pedagogy is stressing the roles of students in the learning sessions (Filho et. al., 2018) [31]. While universally, teachers are known to be the main dispensers of knowledge and are an essential part of instructional learning cycle (Derakhshan, et.al., 2021) [32] educational transformations are necessary because the level of student interest in the teaching and learning is low when the conventional approach of lecture-based classroom sessions is employed (Kamarudin, Ain, and Malek., 2019) [33]. Exploring new ways of learning benefits the students according to their cognitive and affective domains. Well-designed strategies can peak student interest in learning and can act as motivators to engage in learning complex concepts with enthusiasm (Hui & Mahmud, 2023) [34].

This research set out to establish the magnitude to which Affective Learning can achieve positive student learning outcomes. The results presented in the previous section, clearly establish this connection and present Affective Leaning Theory applications as prominent strategic shifts in the futuristic teaching pedagogies in higher education. Among the factors related to scholastic achievement in higher education, several research show that the social communication of learners with teachers and peers produces more positive learning results [35,36,37].

This longitudinal study reiterates these findings in the contexts of batches where Affective Leaning Theory was applied, we see a remarkable upward change in student interest in class and subject, their active levels of class participation, clear demonstration of problem solving, ability to prioritise their time effectively, and lastly, to cooperate in group activities to successfully complete the course objectives. These findings carry weight for the institutes and universities to impart expedient skills and concepts for their students.

Nevertheless, the enduring goal of educational institutes and universities to engage students in meaningful learning experiences can largely be facilitated by the teachers that train the students to not only develop their knowledge and skills but also inculcate affective aspects of enthusiasm, decision-making and problem-solving [38]. Higher education institutions in many countries face the criticism for not paying much attention to affective learning outcomes in the curriculum often due to the absence of this central link in the attainment of its far-reaching educational goals. Recruiting and training qualified and productive academic staff who can deliver a higher education curriculum that emphasises learning in the affective domain, and who can measure and document evidence on how affective

learning is accomplished, are all urgent matters for higher education teaching [39]. The results of this research could only be made possible through institutional leveraging of effective academic faculty.

10. Recommendations

The incontrovertible evidence from this study points markedly to the need for academic faculty training in the affective learning domains. This emerging perspective on learning demands solicitation of credible teachers that can elicit purposeful emotional involvement from the students. One such way is to train the academic faculty in presenting or demonstrating credible role model behaviour that is consistent with the desired attitude in students and that is positively reinforced [40]. Teacher trainings in understanding the taxonomy of Affective Learning can generate debate to its effective implementation by using novel approaches in diagnosing and evaluating student's learning through the utilisation of Krathwohl et al. taxonomy (1964) [4]. Cultivating the pursuit of two Cooperative Learning structures: Student Teams Assessment Divisions (STAD) and Jigsaw Classroom, also used in this study, can promote the development of students' affective learning [28].

11. Conclusion

The significant differences between the Control Group *C1* findings and *B2 & B3* results are indicative of the success of Affective Learning Theory and its application to higher education. With its emphasis on cooperative learning structures, employing techniques of STAD and by creating autonomous groups as a part of Jigsaw classrooms, the learning experiences were enriched and enhanced for students as a part of this study. Student knowledge related to taught content was enriched with affective learning techniques. Positive attitudes towards group work and overall attainment of course objectives were appreciated and rewarded which reinforced the desired student aptitudes and peaked their interest and enthusiasm during the course.

The overall Affective Learning conditions of receiving, responding, valuing, independent learning and characterisation were maintained to increase the involvement of students [41]. It can be stated that under these learning conditions the students showed positive learning outcomes as well as positive emotional environment supported their individual contributions, trust in group work and internalising the values of confidence and empathetic attitude towards other members through constant and timely feedback, appreciation, and acknowledgement.

As a result of these affective learning conditions students showed most significant improvements in organising their groups towards the attainment of course objectives by recognising their own abilities, limitations and values and developing effective problem-solving skills. Under this condition they learned to prioritise time effectively and to meet the needs of the group, the course and the institute.

Other areas of significant improvement were in their active participation during class and group activities. They showed the ability to generate new ideas and concepts and realised the importance of discussion and questioning to fully understand them.

Moreover, the students showed a genuine desire to improve and excel in their group activities by going beyond the prescribed assignments and by showing complex level of commitment where they assumed responsibility for the effective functioning of the group. They showed positive responses to initiative, shared studies, and truly democratic processes of learning [42].

Lastly, the research also concludes the role of teachers in the universities to enhance the process of learning and for motivating and inspiring students by tapping into the affective domain. It is, indeed, the academic faculty that play an important role in enriching the learner's enjoyment and create positive learning environments [43].

12. Theoretical and Managerial Implications

This study contributes to the field of learning pedagogies where Affective Learning is presented as the process of acquiring knowledge, skills and attitudes through emotional engagement. It recognises that affective learning environments foster positive learning outcomes for both students and institutes. It, therefore, strongly implies that universities and educational institutes integrate affective learning by creating supportive environments that are likely to result in higher levels of internalisation and positive outcomes. They can develop collaborative projects where the students are given autonomy to expand their skills and values. Increased engagement can lead to more profound learning experience.

13. Limitations and Future Research Suggestions

Although this longitudinal approach is useful to explore the long-term issues identified in the conclusion section the findings were still largely contingent on the quality of teaching conducted in and out of the class. Without proper faculty training in the theory and application of Affective Learning, these findings would not be possible. Hence, it remains an institutional duty to impart sufficient teacher training in this pedagogy and theory. Moreover, these findings were limited to one course in one university. To truly draw universal comparison, future researchers might be conducted as similar studies in multiple teaching environments especially vis-à-vis, blended or online learning.

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