# Student Engagement and Academic Achievement as Precursors to Knowledge Management: Dynamics of Post COVID Offline Classroom Student Engagement and Achievement

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## ABSTRACT

**Purpose:** Conclusive evidence from Pre-Covid research has exhibited a moderately positive correlation between Students' Engagement with Academic Achievement(AA) as significant precursors of student-centred learning (Hao Lei et al., 2018). Gunuc and Kuzu (2014) defined Student Engagement (SE) in terms of psychological, emotional, cognitive and behavioural reactions to the students' learning process. However, the dynamics aligned to these constructs remains ambiguous for want of research on Behavioural, Cognitive & Emotional engagement of students in Post Covid offline classroom of higher educational institutions (HEIs). This study measured Student Engagement basis the three sub-constructs, its impact on Academic Achievement, and its subsequent impact on Knowledge Management, given the fact that there is a perception that post covid offline classrooms have suffered on the mentioned accounts.

**Design/Methodology/Approach**: A structured questionnaire catering to constructs of components of Student Engagement viz Emotional, Cognitive, Behavioural Engagement, Academic Achievement & Knowledge Management was floated amongst the target population, and Structural equation modelling evaluated the inter-relationship dynamics between the constructs.

**Findings:** Structural Equation Modelling (SEM) was applied after confirmatory analysis. Examination of Path coefficients revealed that Emotional Engagement, Behavioural Engagement and Cognitive Engagement have significant relationships with Academic Achievement. The results also conveyed that Academic Achievement relates to Knowledge Management conclusively in offline classroom settings Post Covid.

**Originality/Value:** Pedagogical research & teaching-learning outcomes in research mandate the significance of Student Engagement & the subsequent effect on Academic Achievement and Knowledge Management in HEIs. This study reinforced the relevance of this equation and its applicability in Post Covid offline classrooms in HEIs of North India.. 300 university & college students were a part of this study to evaluate the Post Covid learning paradigm, as offline classes took over.

**Keywords:** Student Engagement, Academic Achievement, Knowledge Management, Post Covid, Offline classroom

## Introduction

The constructs of Student Engagement, Academic Achievement & Knowledge Management (KM) have been under the scanner to bring forth the importance of teaching & learning alignment in academic classrooms & campus. Research reveals a relatively positive and robust connection between SE and AA in the pre-covid times. Bomia et al. (1997) defined SE as the eagerness, demand, desires, inspiration and victory of students in the process of learning. The

Engagement Theory(ET) posits a model for teaching technology-based concepts (Kearsley & Schneiderman, 1999), wherein students need to be engaged in learning activities in a meaningful manner, either via interaction with others or in some worthwhile tasks. Hu and Kuh (2001) opined that SE means time allocated by the students to educational activities and as the standard of associated attempts towards achieving desired outcomes. Stovall (2003) perceived SE as the time students spend on tasks and their readiness to participate in ventures. Krause and Coates (2008) state that SE is directly proportional to high-quality learning outcomes. These statements reveal the commonality of the perceived definition of SE in Higher Education.

A vital feature of the teaching-learning outcome, i.e. SE, does not only demands being vigorous but also involves the notion and connection of things around (Harper & Quaye, 2009). It revealed that SE and AA are dominated by several aspects pertaining to the method of reporting the process of SE, along with some more independent aspects, as per Fredricks, Blumenfeld, and Paris (2004) and Shernoff and Schmidt (2008). It culminated in the fact that SE has three facets of engagement: behavioural, cognitive, and emotional. Degrees of student involvement in learning and associated activities imply their Behavioural Engagement. On the other hand, Cognitive Engagement implies a student's cognitive plan of action during learning practices (Fredricks et al., 2004; Walker, Greene, & Mansell, 2006). Emotional Engagement (EE) comprises students' reactions to all learning aspects, such as the feeling of association or weariness, apprehension or fascination (Finn, 1989).

In light of this discussion, it merits a comprehensive detailing of the constructs of Student Engagement involved viz Emotional Engagement, Behavioural Engagement, Cognitive Engagement, and the dependent construct of Academic Achievement & Knowledge Management.

## A. Emotional Engagement

Mubeen et al. (2016) investigated the relationship of Knowledge Management (KM) with emotional intelligence and its effect on organizational accomplishments. It also advocated the significance of emotional intelligence and learning in influencing KM and individual achievements in an organization. Iqbal et al. (2022) used the structural equation modelling approach, which found that the factors like self-motivation and self-awareness positively link with study habits, whereas factors like emotion regulation and social skills have an indirect relationship. The study concluded that providing an intellectual environment to the students will build a strong connection with their emotions. Shafait et al. (2021) examined the direct impact of KM procedures on innovative accomplishments. It also investigated the arbitrating character of self-directed learning towards KM procedures. The study further revealed that by using emotional intelligence, the academy fraternity of the higher educational institutions could stimulate the Knowledge Management (KM) processes and enforce self-directed learning to enhance creative performance. Rechberg (2019) critically investigated emotional intelligence and its impact on individuals' participation in KM practices. The study suggested that emotional intelligence originates through skills of effective communication, teamwork and social awareness, which subsequently results in adaptability to the environment and maximum satisfaction towards the same.

## B. Cognitive Engagement

Kew et al. (2021) attempted to investigate the intellectual and interactive engagement of the students towards e-learning through discussion forums using the technique of content analysis. The research findings revealed that more than 50% of the students exhibited a reduced degree of intellectual participation and engagement, whereas some posts written by the students contributed to a high level of intellectual ability. The study also advocated that creating discussion forums is a critical activity of online learning, giving students a platform to express their ideas. The study necessitated the creation of a healthy cognitive environment, which would help the students and the teachers to minimize the learning gap. Barlow et al. (2020) argued that cognitive engagement is a crucial component when it comes to providing a holistic educational experience to students. The study attempted to explain the need to measure and evaluate the process that provides educational information to the students to foster an

intellectual and interactive environment. The results showed that active cognitive engagement occurs when the students take notes in the class in writing as it helps them to process that acquired knowledge. Gao and Kuang (2022) attempted to search for a new forecasting agent of knowledge hiding with respect to the field design. This study concluded that immense cognitive loading had increased the intellectual engagement of various trees, reducing knowledge hiding. The study used two theories to study the knowledge hiding concept among students: the cognitive learning theory and the cognitive engagement theory. NC et al. (2021) attempted to figure out the effect of online teaching towards recognizing the level of the students' learning absorption and also to analyse the impact of students' cognitive engagement towards their learning through online classes, and also to evaluate the impact of students' learning abilities from online classes. This paper clearly describes all these factors contributing to active student listening to online classes. The study concluded that most students who focused too well in the classes had full concentration, a better understanding, and sound cognitive engagement in online classes.

### C. Behavioural Engagement

Dost et al. (2016) made an attempt to explore the learning behaviour of different University students through the vision of different Knowledge Management dimensions. It was examined that there is a strong relationship among factors like trust, willingness to share, habit, learning absorption, and incorporating technology motivation. The study concluded that knowledge sharing among students comes through factors like technology and trust, which stimulates and emotional engagement of the students towards learning as they move ahead towards creating a robust knowledge-sharing climate and environment. The study also highlighted the behavioural abilities exhibited by the students through the vision of Knowledge Management. Ghadirian et al. (2014) conducted a critical review study explaining that sharing knowledge is essential for meaningful dissemination. Different factors must be recognized for knowledge sharing in learning communities that develop a robust emotional intelligence learning environment. The study provided insight into the identification of key factors that the

curriculum developers adopt, which resulted in successful knowledge sharing. The study also highlighted the apparent need for sensitivity towards learning to stimulate and create a conducive learning environment and emotional engagement. Xu & Li (2022) conducted in-depth scrutiny of different behaviours that regulated knowledge sharing among the teachers and the students in different universities in China, which reflected upon the intentions and attitude to share the knowledge and how it led to their self-control. The study concluded that the teachers' positive intentions of knowledge sharing impacted the students' knowledge-sharing behaviours positively, whereas self-control was a negative factor when examining knowledge sharing. In order to foster intense knowledge sharing, the intentions of sharing knowledge of the teachers should be enhanced first, and self-control should be relaxed.

Raza et al. (2018) explored and examined the impact of different factors like the point of view, trust, and personalized values on inspiration levels and recognition of attitude of knowledge sharing by university students. Using the approach of structural equation modelling, the results of this study revealed that aspects like student behaviour, personalized values, trust, inspiration and words positively impact knowledge-sharing behaviour.

### D. Academic Achievement

Jain and Gupta (2019), through their case study, examined the role of the KM system in the higher education sector based on students' performance. In this study, a conceptual model was constructed using the factors of the KM system, which revealed that these characteristics have a notable impression on the performance of students. The studies suggested different measures for higher education institutions towards enhancing the performance of students through effective use of KM systems, using different ranking parameters.

### E. Knowledge Management

In contemporary research, knowledge has two epistemological dimensions. Hislop (2005) identified on the basis of knowledge's nature that it has a stance of objectivism comprising directly gained knowledge and a standpoint based on practice comprising implicit

knowledge. Cook & Brown (1999) and Asudani (2005) posit the stance of objectivism-based epistemology of ownership, in which knowledge acquires the value of an asset (Empson, 2001).

The nature of such knowledge comprises documents, working methods, information technology and datasets, whereas a standpoint based on practice recognizes knowledge as culturally fabricated and intrinsically implicit in an individual. This point of view is called the epistemology of practice (Cook & Brown, 1999), where knowledge is considered in motion (Fahey & Prusak, 1998; Empson, 2001). The perspective implies the human mind as the repository of such knowledge, which depends on the perspective of the knowledgeable (Venzin, Von Krogh, & Roos, 1998). These perspectives provide insights into the nature of knowledge conceptualization.

Knowledge Management practices based on an objectivist perspective opine that organizational knowledge can be implicit and that it can be converted into direct shape. This perspective allows knowledge sharing effectively within or across organizations, leading to procedures, solutions and best practices. Any equipment, tools or operating systems, capturing, storing, and organizing particulars comprises the technology usage. Similarly, the supply side of KM comprises catching, systematizing, and splitting vital knowledge for optimization. The practice-based point of view defines that information cannot be codified. It is a socially constructed, inherently tacit phenomenon. Knowledge is about doing or knowing, and thereby dynamic in nature. Individuals do not possess it in the form of static or objective knowledge (Cook & Brown, 1999). From a perspective of practice, the sort of information is also embedded and exhibited in people's actions. These perspectives call for a holistic interpretation of Knowledge Management that caters to academic and strategic rigor.

*Outcomes & Discussion*
A multitude of studies has highlighted awareness of the compelling connection between SE and SA. However, there are fewer studies pertaining to the investigation of relationships between SE and AA and its impact on KM, primarily in higher education (HEIs). Most of the studies concentrate on school-centric dimensions, and therefore, this study strives to explore the association between SE and AA in offline classrooms Post-Covid, in higher education viz universities & colleges of North India. The study caters to the dimensions of the efficacy of SE to identify the magnitude to which SE predicts AA and, subsequently, KM. The paper attempts to revisit the constructs of SE, SA & KM from a systematic literature review, elaborated via different constructs, in order to draft a questionnaire of 38 questions. The motive was to analyse any changes, with respect to research-based equations of posited constructs, Post Covid in the offline classroom. The positive outcomes would enable HEIs to focus on the development of KM strategies in a futuristic perspective, without any perceived or hearsay negative fall-out of Covid on teaching learning in offline classrooms.

**Hypothesis**
H1. There is a significant relationship between student emotional engagement in offline classrooms Post-Covid and their academic performance.
H2. There is a significant relationship between student cognitive engagement in offline classrooms Post-Covid and their academic performance.
H3. There is a significant relationship between student behavioural engagement in offline classrooms Post-Covid and their academic performance.
H4. There is a vital connection between students' academic performance Post-Covid and the KM thereof.

**Methodology**
This study is based on college and university student-collected primary data. A comprehensive questionnaire was developed. We have posed 38 questions about various constructs. The questionnaire was transformed into a Google form to collect data online. Each question was constructed on a scale of 1 to 5 (Strongly Agree, Agree, Neither Agree nor Disagree, Disagree and Strongly Disagree). Emotional Engagement, Cognitive Engagement, Behavioural Engagement, Academic Achievement, and Knowledge Management are the study's constructs. The gender distribution of students is 63.67 percent female and 36.33 percent, Male respondents.

Firstly in the measurement model, the item loadings were tested and were noticed above the recommended value of 0.60 (Chin, 1998). Then the composite reliability (CR) and AVE were applied to test the constructs' Convergent Validity (CV). The values were noticed above the proposed values of .07 and .50 (Hair et al., 2006), thereby holding the CV. Finally, the discriminant validity was assessed. According to Fornell & Larcker (1981) the discriminant validity is upheld "when the square root of each construct's AVE (diagonal values) is larger than its corresponding correlation coefficients". The overall findings of CFA have been represented in table 1 and table 2. After this model, the fit was checked, indicating that the data suits the model perfectly. *Chi-square = 1942.34*, with Degrees of freedom = 619 at probability level =.000 (P < 0.05), *CMIN/DF = 2.845, GFI = 0.892, AGFI= 0.887, CFI= 0.921, IFI = 0.912, RMSEA = 0.043.*"

**Table 1 Measurement Model/CFA Results**

|  |  | Loadings | AVE | CR |
|---|---|---|---|---|
| Emotional Engagement | EE1 | .895 | | |
| | EE2 | .918 | | |
| | EE3 | .905 | 0.793 | 0.958 |
| | EE4 | .885 | | |
| | EE5 | .873 | | |
| | EE6 | .865 | | |
| Cognitive Engagement | CE7 | .519 | | |
| | CE6 | .748 | | |
| | CE5 | .811 | | |
| | CE4 | .815 | 0.562 | 0.898 |
| | CE3 | .783 | | |
| | CE2 | .806 | | |
| | CE1 | .722 | | |
| Behavioural Engagement | BE7 | .418 | | |
| | BE6 | .697 | | |
| | BE5 | .829 | | |
| | BE4 | .768 | 0.529 | 0.884 |
| | BE3 | .745 | | |
| | BE2 | .730 | | |
| | BE1 | .824 | | |
| Academic Achievement | AA1 | .610 | | |
| | AA2 | .737 | | |
| | AA3 | .743 | | |
| | AA4 | .715 | | |
| | AA5 | .651 | | |
| | AA6 | .621 | | |
| | AA7 | .774 | 0.532 | 0.916 |
| | AA8 | .647 | | |
| | AA9 | .673 | | |
| | AA10 | .664 | | |
| | AA11 | .683 | | |
| | AA12 | .755 | | |
| Knowledge Management | KM5 | .875 | | |
| | KM4 | .866 | | |
| | KM3 | .886 | 0.769 | 0.943 |
| | KM2 | .880 | | |
| | KM1 | .878 | | |

Goodness of fit indices

| X² | df | GFI | AGFI | CFI | IFI | RMSEA |
|---|---|---|---|---|---|---|
| 1942. | 619 | 0.892 | 0.887 | 0.921 | 0.912 | 0.043 |

Note: X² = Chi-square; df = degree of freedom; CFI, comparative fit index; IFI =incremental fit index; GFI =goodness-of- fit index; AGFI = adjusted goodness-of-fit-index; RMSEA = root-mean-square error of approximation AVE = Average Variance Extracted, CR = Composite Reliability

**Table 2 Results of Convergent Validity and Discriminant Validity**

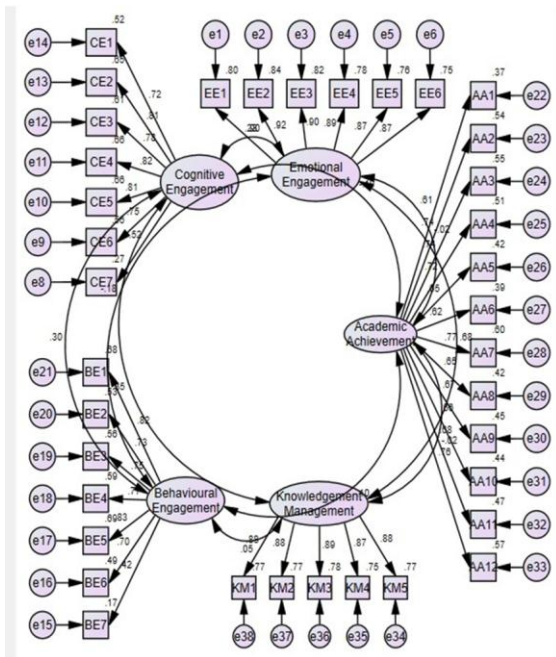| | CR | AVE | Academic Achievement | Emotional Engagement | Cognitive Engagement | Behavioural Engagement | Knowledge Management |
|---|---|---|---|---|---|---|---|
| Academic Achievement | 0.916 | 0.532 | **0.691** | | | | |
| Emotional Engagement | 0.958 | 0.793 | -0.023 | **0.890** | | | |
| Cognitive Engagement | 0.898 | 0.562 | -0.098 | 0.231 | **0.750** | | |
| Behavioural Engagement | 0.884 | 0.529 | 0.101 | -0.185 | 0.304 | **0.727** | |
| Knowledge Management | 0.943 | 0.769 | -0.020 | 0.676 | 0.352 | 0.045 | **0.877** |



**Figure 1: Measurement Model**

### Data Analysis
Structural Equation Modelling (SEM)
After confirmatory factor analysis, the next stage was testing the suggested hypotheses with the help of structural equation modelling (SEM). The findings revealed that the statistics suit the model appropriately. "*Chi-square = 242.278, with Degrees of freedom = 3* at

Probability level =.000 (*p<0.05*); *CMIN/DF = 2.827; GFI = 0.901; AGFI = 0.891; CFI=0.921; IFI= 0.910; TLI= 0.935; RMSEA= 0.041*".
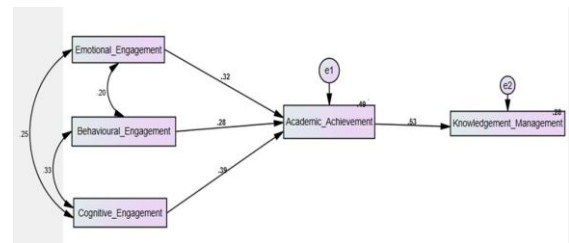


**Figure 2 SEM Results**

The SEM results and the path coefficient have been presented in figure 2. From the examination of path coefficients, it was discovered that EE has an essential association with AA. Also, the findings show that Behavioural Engagement and Cognitive Engagement have significant relationships with Academic Achievement. The results also showed that AA is positively related to acknowledgement. The hypotheses results are summarized in Table 3, given below.

Earlier studies like Li., S (2021) adopted an analytical framework to study cognitive engagement via critical analysis by reviewing the present-day measurement methods in a more comprehensive academic environment.

**Table 3 Results of Hypotheses Testing**

| | | | | Estimate | SE. | CR. | P | Results |
|---|---|---|---|---|---|---|---|---|
| H1 | Emotional Engagement | to | Academic Achievement | .322 | .052 | 8.560 | *** | Supported |
| H2 | Behavioural Engagement | to | Academic Achievement | .281 | .055 | 5.619 | *** | Supported |
| H3 | Cognitive Engagement | to | Academic Achievement | .395 | .052 | 4.567 | *** | Supported |
| H4 | Academic Achievement | to | Knowledge Management | .532 | .041 | 2.746 | *** | Supported |

This study successfully reduced the constraints associated with different measures of CE. Mayordomo et al. (2022) measured the effect of perceived feedback upon feedback and EE. The quasi-experiment revealed a strong relationship between CE and EE, with feedback relying on feedback perception. The results found that knowledge sharing is positively related to the performance of an individual and all the factors mentioned. According to Walberg's theory of AA, the psychological attributes of individual learners and their instantaneous psychological atmosphere have an impact on the educational results viz cognitive, behavioural, and emotional (Reynolds & Walberg, 1992). Advancement in educational skills in the young generation of India is the requirement of this era which will decide the fortune of India in becoming a developed nation. (Kaurav, & Yadav, 2017). The current study explored the constructs in Post-Covid times similarly, and conclusive outcomes corroborated the previous research of Pre-Covid times.

## Limitations & Implications

The study has implications for further exploratory, causative & inferential research paradigms, which might enunciate the requisite dimensions that would eliminate any gaps in Knowledge Management in crises as well as post-crisis. The disruption caused by Covid 19 and its subsequent impact on teaching-learning has been well documented. However, there is a dearth of research & evaluation on the spectrum of various dimensions associated with different educational terrains. Interventions are blurred in nature, and therefore it would augur well for academia to have some predictability & probability analysis that might serve to build resilience towards disruption-induced change and its management, as has been dealt with in this paper vis a vis Student Engagement & Academic Achievement in offline classrooms Post Covid. Moderator analysis has not been applied due to paucity of time, and that can be done in future research. Similarly, Faculty centric variables pertaining to the same constructs, and their impact on Student Engagement, Achievement & Knowledge Management remain plausible research dimensions. Therefore the theoretical & managerial implications of the outcomes of this paper, and further research on the limitations thereof, are of consequence to strengthen the HEI ecosystem, pedagogy, Knowledge Management and academic rigor.

## Conclusion

In order to bridge the gap of the previous studies, this study validated the research on higher educational institutions on the basis of the above-mentioned factors in order to evaluate the experience of Post Covid learning. The studies found that factors like emotional engagement, behavioural engagement, and cognitive engagement have a strong connection with AA, and AA has a supportive relationship with KM. Therefore, recapitulating the study remains a significant topic of discussion to analyse the students' engagement and its impact on Academic Achievement and Knowledge Management.

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