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Activity Based Learning: A Pedagogic Solution for Student Evolution

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Abstract

As envisaged by the NEP 2020, pedagogy must steadily evolve to make learning more experiential, holistic, inquiry-driven, discovery-oriented, learner-centered, retentive and enjoyable. The contrasting reality however, is that, classrooms today continue to be characterized by rote learning, lackadaisical attitude of learners and a disproportionate over-emphasis of the cognitive domain. The immediate need thus, is to liberate students' minds from the existing stagnant state of 'still learning' so as to help them ascend to the desired academic altitudes of 'skill learning' proposed by the NEP 2020, imbuing learners with skill sets of the 21st century. Ushering in this paradigm shift would call for promoting 'activity' from the status of 'noun to verb' on the horizons of curricular transactions. Activity Based Learning (ABL) could well serve as a springboard to achieve that ideal. This Mixed Method Research endeavored to evaluate the efficiency of ABL in augmenting the development of the 3 domains of learning. The sample comprised of 100 B.Ed students of a private-aided Teacher Education college, affiliated to the University of Mumbai. An achievement test was administered to a sub-sample of 26 student teachers opting for the subject of Environmental Education. Correlation of their test scores with Domain-based Development indicated a significantly high positive relationship between the 2 variables, implying the effectiveness of ABL as a forerunner of Academic Achievement. Qualitative analysis of feedback procured through focus group interviews presented important

implications that could prove helpful to classroom teachers to invigorate their existing curricula so as to make education primarily learner-centric.

Keywords: activity based learning (ABL), academic achievement, domain-based development

Introduction

Activity Based Learning can best be summarized in the words of the popular quote by Benjamin Franklin, “Tell me and I forget, teach me and I may remember, involve me and I learn.” Simply explained, activity-based learning refers to a teaching methodology wherein the content is delivered or enriched through diverse activities which contribute to making learning more interesting, retentive and engaging. It is student-centric and the teacher’s role is that of a facilitator, guiding learners and monitoring the learning process. The key highlight is that students learn independently and at their own pace. John Dewey’s theory of ‘learning by doing’, is conceptualized as experiential learning (Griffin, 1992) and is geared in the direction of activity-based learning. As defined by Bonwell and Eison (1991), ABL is anything that involves students in not only doing things, but more importantly thinking about what they are doing. Being predominantly student–centric, it provides challenging learning tasks which are engaging and suitable for all students catering to different learning styles (Singal et al., 2018). Singh (2015) proposes that concepts can be taught easily using this method and student learning is enhanced providing for concrete learning. In an activity-driven teaching-learning environment, students can work together, learn by doing and engage in cooperative learning (Rama, 1998).

Today, activity-based education has taken on newer connotations such as, ‘outdoor education’, ‘adventure education’, ‘environmental education’, and ‘challenge education’ (Robert, 2014). All these terms suggest that students must be allowed to learn by doing themselves, adding a child-centric dimension to the process. As suggested by Shaheen, Shah, and Naqeeb (2019), when learners use the ABL framework, they become more active and progressive in their learning journey, take on greater responsibility for their learning and master how to apply what they learn to real world situations. ABL also enables students to seek help from their peers which in turn enhances their effort and motivation positively (Deci and Ryan 2000).

The invaluable worth of ABL in transforming students from passive recipients of knowledge into active participants still remains to be explored. Further, there is scarcity of research exploring the impact of this learning strategy in contributing to the simultaneous development of the cognitive, affective and psychomotor domains, a target which traditional classroom teaching finds challenging to achieve. This research endeavours to assess the Domain-based Development of student teachers participating in an ABL instructional module and aims to establish the likely role of this pedagogy as a determinant of Academic Achievement.

Objectives

1. To assess the contribution of ABL to the 3 domains of learning
2. To assess the relationship if any between Domain-based Development attained through ABL and the Academic Achievement in student teachers

Hypothesis

1. There is no significant relationship between Domain-based Development attained through ABL and the Academic Achievement of student teachers.

Research Methodology

Subjects: The present investigation is a Mixed-method research. The sample comprised of 100 student teachers of a private-aided Teacher Education college, affiliated to the University of Mumbai selected by the purposive sampling technique.

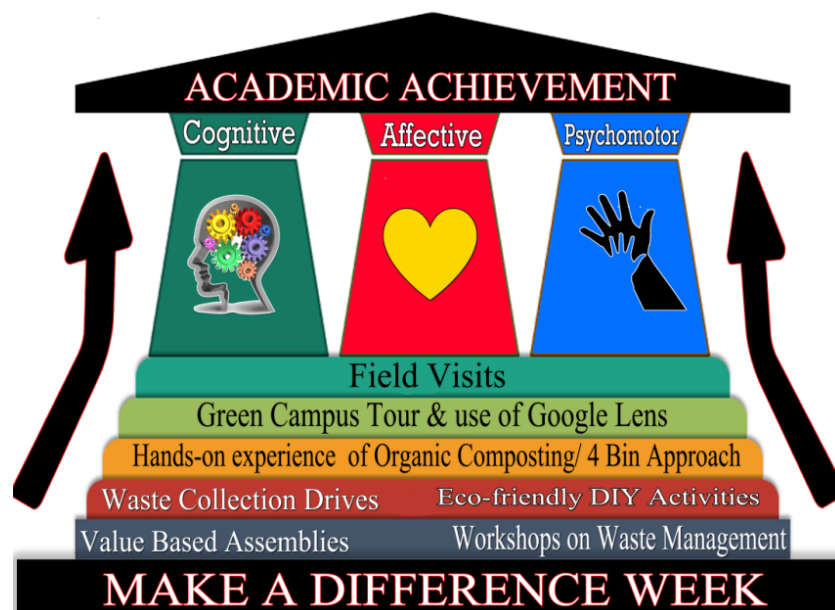
Methods: The instructional module encompassed myriad activities under the event titled ‘Make a Difference Week’ wherein all participants were alerted to their role as Green Warriors. Activities ranged from Value-based Assemblies on pressing environmental issues, workshops on Waste Management, eco-friendly activities like ‘Batti Bandh’, making pollution catchers, bird/butterfly feeders, recycling old clothes using tie-n-dye, creating self-watering systems for plants, preparing organic home-made detergents/cosmetics to name a few. The Green highlight was a Campus tour wherein students learnt about 33 species of trees, climbers, shrubs and creepers on their own college campus using Google Lens. The module oriented them to a real-life hands-on-experience of composting of organic waste, the 4 bin approach of Waste Management, Waste collection Drives and a practical encounter with theoretical concepts like Rain Water Harvesting and solar panels both of which are installed on the campus. All 100 student teachers enrolled for the B.Ed. Course participated in the ABL Module. On completion they were administered a 4 point Likert Scale with items pertaining to the 3 domains of learning.

A written test of 15 marks containing questions from the B.Ed. EVS syllabus was administered to a sub-sample of 26 EVS students to assess their content knowledge as well as application ability. Their performance on the module reflected through Domain-based Development and their Achievement Test scores were correlated to assess any possible relationship between ABL and Academic Achievement. The ABL Module is diagrammatically represented in Figure 1. Qualitative Analysis comprised of Focus group interviews with a sub-sample of 26 EVS students. The questions presented to them were:

- How was ABL different from the traditional Lecture Method of instruction?
- In what way has ABL enhanced your learning of the subject?
- What did you enjoy most about ABL?

Figure 1

The Activity-Based Learning Module



Statistical Methods

The scores were tabulated and then analyzed using descriptive and inferential statistics. Descriptive analysis included magnitude of the learning outcomes relating to the 3 domains of learning. The values of the same are depicted in Table 1. Inferential statistics was carried out using Karl Pearson's Coefficient of Correlation to compute the likely relationship between the Domain-based Development and Achievement Test scores of the EVS students. When P value was less than 0.05, the difference was considered statistically significant and highly significant when P-value was less than 0.01 and 0.0001. Table 2 shows the data summary of the same.

Results

Table 1 shows the magnitude of the learning outcomes relating to the 3 domains of learning for the total number of students. The findings indicate that for all the 3 domains tested, the magnitude of outcomes obtained was high, thus indicating that Activity-based Learning led to holistic development of the student teachers catering to simultaneous development of head, hand and heart.

Table 1

Magnitude of the Learning Outcome of the Three Domains

Domain	N	Mean	% mean	Magnitude
Cognitive	100	7.71	95.17	High
Affective	100	7.44	90.6	High
Psychomotor	100	7.73	95.5	High

Testing Hypothesis 1

The null hypothesis states that there is no significant relationship between Domain-based Development attained through ABL and Academic Achievement.

Correlation between Domain-based Development and Academic Achievement

Table 2 shows the significance of the coefficient of correlation 'r' between Domain-based Development (DBD) attained through ABL and Academic Achievement (AA).

Table 2

'r' Values and Significance of 'r' between DBD and AA

Group	No. of participants	Df	Obtained 'r'	Tabulated 'r' at 0.05 Level	Tabulated 'r' at 0.01 Level	P-Value	Level of Significance
Sub-sample	26	24	0.8742	0.388	0.496	<0.0001	0.01

Interpretation

The 'r' value between Domain-based Development and Academic Achievement is 0.8742, which is positive, high in magnitude and significant at the 0.01 level. Thus, the null hypothesis is rejected. This implies that the higher the Domain-based Development attained through Activity-Based Learning, higher will be the Academic Achievement of learners.

Discussion

An analysis of the results indicates that there is a significant relationship between Domain-based Development of student teachers through Activity-Based Learning and their Academic Achievement. The higher academic achievement of the student teachers on successful completion of the instructional module suggests that the Activity-based Learning approach significantly contributed to their mastery of the subject dealt with i.e. E.V.S. This can well be justified keeping in mind that conventional classroom teaching lacks interest, activity and interaction for learners. These findings are corroborated by earlier research which also strongly suggests that Activity-Based Learning helped students to score higher on their achievement tests by gaining proficiency in school subjects (Batdi 2014). In yet another study on ABL by Rubin et al. (2014), it was observed that the topics of learning were grasped better by students. Similar findings have been reported in a study by Woolfolk (2008) suggesting that knowledge, motivation and self-discipline which are characteristic of ABL are factors that can influence independent learning of students making them confident, proactive and responsible in the completion of academic tasks. It trains students to learn throughout life without much need for guidance and to adapt during the learning process.

A subject like EVS is technical and many concepts are abstract making it difficult and heavy for students to comprehend and relate to. However, in reality this subject relates directly to life and the real world. Thus, enriching the curriculum with activities, experiences, field visits and projects helped to infuse interest, excitement, creativity, innovation, critical thinking and collaboration in the teaching-learning process. Knowledge obtained in this manner was more

retentive, easily comprehensible and self-constructed. With regards to the Psychomotor domain of learning, this mode of instruction provided tangible experiences to the participants giving them a platform to showcase their green gene, creativity, dexterity and innovation. The Affective Domain was not left behind, as the student teachers became more aware and sensitive to their role as Green Warriors in conservation of the environment. Their enthusiasm, interest, attitude and appreciation in the learning process took the lead being reflected in their whole-hearted participation in the ABL module. Results of a study by Birgin et al. (2010) also similarly reported that ABL influenced the understanding of concepts positively, making the learning experience fun and more meaningful. Further, teaching enriched with activities affected student perceptions towards learning positively (Kosterelioglu and Yapici, 2016).

More importantly ABL contributed to self-directed learning among the student teachers. This finding is parallel with that of Field, Duffy, and Huggins (2015) who also opined that Activity-Based Learning developed self-directedness in learners which is a key factor in attaining learning success. This learning attribute enables learners to learn independently, without relying on others. Students engaging in this pedagogy exhibit a keen sense of determination and feel accountable for overcoming their learning problems. This self-directedness however, will only result if students are in control of their learning activities, monitor their own improvement, and actively participate in the learning process (Fry, Ketteridge, and Marshall, 2009) which is the chief highlight of ABL.

Qualitative Analysis

The focus group interviews conducted as a part of the Qualitative analysis revealed significant benefits of this student centric pedagogy. Among the reasons cited for the same the participants mentioned that it was a ‘fun-way’ of learning, provided hands-on experience, went beyond the syllabus, alerted them to their role and responsibility in environmental conservation, helped them feel involved and engaged in constructive learning, offered more scope for exploration, discovery and innovation extrapolating the knowledge they obtained to their own lives and daily activities. The most popular highlight of ABL for members of the focus group was that it relieved them of academic pressures and instead made the real world their classroom.

Table 3

Response Obtained through Focus Group Interviews

Research Questions	Determinants	Number
How was ABL different from the traditional Lecture Method of instruction?	It was activity driven	26
	It went beyond the syllabus	24
	It helped them feel involved and engaged in learning	26
	It offered more scope for exploration, discovery and innovation	25
In what way has ABL enhanced your learning of the subject?	It alerted them to their role and responsibility in environmental conservation	23
	It served as a means of constructive learning	25
	It helped them extrapolate the knowledge they obtained to their own lives	24
	They could remember what they learnt much better	26
What did you enjoy the most about ABL?	It was a ‘fun-way’ of learning	26
	It provided hands-on experience	25
	It made the real world their classroom	25
	It was a student-centric way of learning	26

Conclusion

The multiple benefits of Activity-based Learning cannot be denied. It is the need of the hour that this pedagogy acquires pivotal position on the teaching-learning continuum if learners are to be transformed into thinkers and constructors of their own knowledge. Experience has always been the best teacher and this holds true even on the instructional landscape. If ABL is given a rightful chance to usher in an educational evolution, there would be many more 'Isaac Newtons' in our world.

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