Role of Non-Cognitive Antecedents in The Perceived Learning Satisfaction; A Case Study At Idukki, Kerala

Vijay Kuriakose and Paul V Mathew
Research Scholars, Cochin University of Science and Technology (CUSAT), Kerala, India

Abstract
Creation of a suitable learning environment requires enhanced attention and meticulous planning. As the predictors of learning, these components obviously influence the performance, learning and satisfaction of students. The present study was to understand the role of key antecedents of learning satisfaction based on the study conducted at the educational institutions at Idukki district of Kerala in India. An analysis using Structural Equation Modeling (SEM) found that effectiveness of teachers, quality of course content/syllabus and refreshments are the key predictors of effective learning among the considered components.

Key words: Learning Environment, Perceived Satisfaction and skill enhancement

1. INTRODUCTION
When countries all over the world are pacing in the direction of creating buoyant economies, potential human resource is fast becoming a dividend and gauge for growth. The same also increased the relevance of harnessing resources by inculcating necessary skill sets to people in all possible arenas of life. This in turn made the policy makers to consider skill development aspects in policy making and strategic decisions. It was in the wake of these developments, governments step in to missions aimed at assuring employability of students come out from educational institutions. As skill enhancement platforms require meeting certain basic components while moving with specific objectives, present study looks in to the role of possible antecedents of the perceived effectiveness of skill development programs. Being the final verdict on the effectiveness of a learning environment lay in learning outcomes (Tom, et al., 2009), it majorly emphasized on students satisfaction towards key components of the effective learning environment.

2. STUDY CONTEXT
The students of higher secondary and under graduate programmes (arts, science & commerce) who undergo skill development courses of the Sate Skill Development Project (SSDP) of government of Kerala are population considered for the study. The study was being conducted at twelve educational institutions in Idukki district consists of three colleges and nine higher secondary schools. Idukki district is in the high ranges of Western Ghats region of Kerala often famous for spices and picturesque locations. Being the descendants are earlier inhabitants, settlement of the tribals can still be seen in this region. Hence also, students are from diverse back grounds and face lots of challenges in continuing their education.

3. OBJECTIVES OF THE STUDY
Very broadly, the study aims at understanding the non-cognitive components of learning and to analyze the influence of these components on the learning outcomes of students. Being the components require explanation and justification, a brief description on the rationale of the study is given in the next chapter.

4. RATIONALE AND JUSTIFICATION
The term environment denotes the totality of the surroundings and conditions in which something which consists of a wide set of features that affect learning. An ideal learning environment can be defined as a setting where intentions and design cannot account for everything that happens; some elements escape control or are at least unintended; which encompasses learning resources and technology, means of teaching, modes of learning, and connections to societal and global contexts (Tom, et al., 2009).
Kappan (1987) while discussing about eleven key factors to creating a positive school environment considered program curriculum, activities, and policies; process teaching and learning styles, problem-solving and communication; resources materials, and school facilities as the general factors or non-cognitive elements. Researchers broadly divided components required for a positive learning environment into social/emotional environmental, the learning environment, and the physical environment. (Adesoji & Segun, 2008) have conducted a study on the achievement and learning of secondary school students of chemistry in Nigeria and found that variables - attitude to learning, background knowledge, teacher attitude, attendance, and environment related variables like class size, laboratory adequacy, and school location influence students in various ways.

Steve, et al., (2005) categorized predictors of learning into four; systems and processes, products and services, communications, and environment. It reviewed the impact of learning environments on students’ achievement, engagement, affective state, attendance and well-being. The importance of how a school is generally run and of its overall ethos is suggested by many authors. Authors argued that style of teaching and room organization are linked, although it is not clear which is cause and which is effect. In particular, inadequate temperature control, lighting, air quality and acoustics have detrimental effects on concentration, mood, well-being, attendance and, ultimately, attainment. The contribution of effective staff communication to student performance, organizational factors, school and classroom context, physical and architectural features, aggregate student characteristics, classroom climate, and teacher characteristics and staff morale are crucial aspects of the learning environment.

UNESCO (2007) considered effectiveness of teacher as the central point of learning and pushed for investing more on teacher professional development. Being quality issues of teachers would have a cascading effect over a long period; particular care has to be taken to ensure that teachers enter the profession with adequate academic credentials and professional training. Volley (2002) and AIHW (2014) also argued that teachers quality will have affect the employability prospects of students. According to Steve, et al., (2005), teachers’ attitudes and behavior are vitally important to the use made of space and their genuine involvement in empowerment of individuals, produces greater satisfaction among students. They concluded that teachers’ attitude and behavior along with physical elements in the classroom improve comfort, well-being and probably attitude - and so, perhaps, improve achievement.

UNESCO (2007) in its report on learning specifically stated that curriculum research has a central place in dealing with the issue of learning. Curriculum and teaching-learning material make learning more meaningful; the curriculum has to be grounded in the present but preparing for the future. Relevant attention should be paid in curriculum and teaching approach to create a more engaging learning environment, schools need to adopt a curriculum and teaching approach that is suitable to students’ prior knowledge, experiences, interests and aspirations and it must also be relevant to their local environment, culture and language (Bourke, et al., 2000). Doyle & Hill (2008) stressed for adopting a curriculum and teaching approach that is tailored to the needs of students, thereby creating a more responsive learning environment.

A conducive learning environment can directly improve children's health and effective learning that requires multiple components which contribute to the performance and satisfaction of students (WHO). While mentioning on the health and physical environment of school students, World Health Organization (WHO) prescribes “the physical school environment encompasses the school building and all its contents including physical structures, infrastructure, furniture, and the use and presence of chemicals and biological agents; the site on which a school is located; and the surrounding environment including the air, water, and materials with which children may come into contact, as well as nearby land uses, roadways and other hazards”.

The OECD (2006) defines “educational spaces” as “a physical space that supports multiple and diverse teaching and learning programmes and pedagogies, including current technologies; one that demonstrates optimal, cost-effective building performance and operation over time; one that respects and is in harmony with the environment; and one that encourages social participation, providing a healthy, comfortable, safe, secure and stimulating setting for its occupants”. Additionally, the concept
of “quality design” relates to school construction and, more particularly, defining a quality physical learning environment has become critical the world over.

Farounbi (1998) found that students tend to understand and recall what they see more than what they hear as a result of using laboratories in the teaching and learning of science. Laboratory and practical affect students’ satisfaction and learning. Laboratory adequacy which is a school environment factor has been reported to affect the performance of students (Raimi, 1998; Adeyegbe, 2005). ICT (Information Communication and Technology) has a significant role in improving learning environment (Smeets, 2005; UNESCO, 2007; Tom, et al., 2009). The study revealed that chances of using open-ended ICT applications, which are expected to contribute to the power of learning environments, were greater with teachers who created powerful learning environments for their pupils, and when there were more computers available to pupils. Hence, ICT may function as a facilitator of active learning and higher-order thinking (Alexander, 1999; Jonassen, 1999).

Adesoji & Segun (2008) reported that there exists a relationship between school location and student academic achievement. He cited (Adepoju, 2001); students in urban schools manifest more brilliant performance than their rural counterparts. Additionally, Ogunleye (2002; Ndukwu (2002) and Warwick (1992) reported a significant difference in the achievement of students in urban peri-urban areas.

According to Lehtinen (1997), the simultaneous enhanced interaction between the student and the teacher, on the one hand, and the physical environment, on the other, optimizes new information flows. Cab, et al., (2011) and Tom, et al., (2009) found that a significant change in the physical learning environment is needed to facilitate the acquisition of skills that are important for society. AIHW (2014) and Tom, et al., (2009) indicated that school-based factors, such as the teaching approach and the school environment, are of primary importance to improving educational outcomes of Indigenous students.

The link between good nutrition and cognitive ability has also been suggested by other researchers (Blades, 2001; Colquhoun, Lyon, & Alexander, 2001). Considering the poor nutrition and stunted growth in world over which hindering the learning capacity of children, UNESCO (2007 and WHO called for providing nutritious food along with serving food for thought. Various initiatives aiming at inclusive education hints that economic backwardness still a reason for stunted growth and poor learning. Schools have a role both in the meals and snacks provided and with regard to the information about healthy living provided to students and their families.

Alonso (2007) emphasized on the governance and resource management includes policies for creating and sustaining environments to support teaching and learning. Management or institutional support, personnel, family members, and community collaborators, and relevant policies and procedures are required to create safe and supportive learning environments (UNESCO, 2007). (Kappan, 1987) also gave special mention on institutional support for learning.

Classroom attendance is essential for educational success. AIHW, (2014) cited (MCEETYA AESOC, 2014) reported that there is a strong correlation between school attendance and academic achievement. The correlation between attendance and achievement is very stronger for early secondary students than it is for primary school students, where the correlation is relatively weak (McRae, 2007).

The sole objectives of skill development project of Kerala framed as “to create employment opportunities to unemployed youth in Kerala and to enhance the skill sets of the labor force in general, emphasizing industry linkages and to enhance the employability of the students graduating from regular academic courses by introducing additional skill acquisition programmes along with the regular studies” (SSDP) Additionally, learning is a latent variable, typically measured as academic performance in continuous assessment and end of term examinations (Behrens, Mislevy, & Dicerbo, 2012).

SSDP put forth a concept of lifelong learning which is the continuous building of knowledge and skills throughout one’s career, aimed at enhancing social inclusion, active citizenship and personal development, but also competitiveness and employability; along with continuous up-skilling (SSDP; ASAP, 2013). The satisfaction of the beneficiary is often being considered as an index of effectiveness of a program and which is an ultimate consideration for researchers in the field (Walden University,
Considering theoretical backgrounds, students’ satisfaction and perceived learning were considered as the dependent variables (outcomes or effect) in the study. As an antecedent of an effective learning environment and students’ performance studies considered various non-cognitive components along with cognitive factors (Gray, et al., 2014; Laurie & Schreiner, 2009). Non-cognitive factors in this context are the factors that are directly or indirectly related to performance, learning and satisfaction of students. Though there are multiple components which predict the learning environment of students; based on the literature review and expert opinion survey (Laurie & Schreiner, 2009; ASAP, 2013; Bindu, 2014; Reji Kumar, 2009), variables like teacher effectiveness, course content (Syllabus), financial aids, infrastructure facilities, flexible class timings, accessibility to the institution, refreshments, practical/activities and institution support were identified as the key independent variables (causes).

### Independent Variables (Antecedents) vs. Dependent Variables (Learning Outcomes)

<table>
<thead>
<tr>
<th>Independent Variables (Antecedents)</th>
<th>Dependent Variables (Learning Outcomes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course content (Syllabus)</td>
<td>Overall Satisfaction</td>
</tr>
<tr>
<td>Teacher Effectiveness</td>
<td>Perceived Learning</td>
</tr>
<tr>
<td>Financial aids (TA)</td>
<td></td>
</tr>
<tr>
<td>Infrastructure facilities</td>
<td></td>
</tr>
<tr>
<td>Class Hour (flexible class timings)</td>
<td></td>
</tr>
<tr>
<td>Accessibility to the institution</td>
<td></td>
</tr>
<tr>
<td>Refreshments</td>
<td></td>
</tr>
<tr>
<td>Practical/activities</td>
<td></td>
</tr>
<tr>
<td>Institution support</td>
<td></td>
</tr>
</tbody>
</table>

In nutshell, non-cognitive factors are the predictors/contributors of antecedents of the learning satisfaction of students. Being the entire outcome variables are psychological constructs, it was termed as ‘perceived’ which are the satisfaction of an individual towards the course overall, learning and confidence to be employed. A diagrammatic representation structurally depicting these linkages is shown in the diagram (Dig.1).

![Diagram](image)
5. METHODOLOGY

The study adopted stratified random sampling method for data collection. It is a technique which when subpopulations within an overall population vary, dividing members of the population into homogeneous subgroups before sampling. Population consists of 520 students were divided in to six strata based on the opted skill courses and sampling unit was selected from the skill course randomly. Thirty percent (150) of students from each batch were considered for data collection. A questionnaire consists of five point Likert scale to measuring variables administered among students to collect the data. Scales adopted from UNESCO (2007) and Adeyegbe (2005) were used in the study.

6. DATA ANALYSIS AND FINDINGS

The purpose of many research projects is to analyze causal relationships between variables. A structural equation model with all constructs used in the study was analyzed using Warp PLS 2.0 for identifying significant relations between variables of interest in the study. Structural Equation Model (SEM) is a statistical technique for testing and estimating those causal relationships based on statistical data and qualitative causal assumptions. SEM is a confirmatory technique used to determine whether the model developed for the research is valid for data. It is a combination of factor analysis and multiple regressions (Rejikumar, 2012).

Partial Least Square (PLS) is considered ideal, if the conditions relating to sample size, independence, or normal distribution are not met, and if prediction is more important than parameter estimation. All the basic assumptions of reliability, validity, and fit indices of measurement model and structural model were found significant. Software packages IBM SPSS and WARP PLS were used for the data analysis.

6.1. Analyses of Causal Relationship

Casual relationship study or the analysis on the role of role of antecedents on perceived learning, and satisfaction of students has been done using a regression equation. Details of the regression results are shown in table below.

<table>
<thead>
<tr>
<th>Antecedents</th>
<th>LEARNINGS</th>
<th>SASTISFACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sig.</td>
<td>β</td>
</tr>
<tr>
<td>TEACHER EFFECTIVENESS</td>
<td>0.01</td>
<td>0.29</td>
</tr>
<tr>
<td>INFRASTRUCTURE</td>
<td>0.25</td>
<td>0.06</td>
</tr>
<tr>
<td>CLASS TIMINGS</td>
<td>0.23</td>
<td>0.07</td>
</tr>
<tr>
<td>ACCESSIBILITY</td>
<td>0.16</td>
<td>0.10</td>
</tr>
<tr>
<td>REFRESHMENTS</td>
<td>0.01</td>
<td>0.33</td>
</tr>
<tr>
<td>FINANCIAL AIDS</td>
<td>0.02</td>
<td>0.21</td>
</tr>
<tr>
<td>SYLLABUS</td>
<td>0.01</td>
<td>0.27</td>
</tr>
<tr>
<td>INSTITUTIONAL SUPPORT</td>
<td>0.01</td>
<td>0.22</td>
</tr>
<tr>
<td>PRACTICALS</td>
<td>0.01</td>
<td>0.29</td>
</tr>
</tbody>
</table>

Table: 6. Hypotheses Results

Yellow shade remarks significant relation where as ‘β’ value is the strength of the relation. Significant value (Sig) is the reflection of the result in the population. 0.05 significant levels imply 95% confidence; in other way, in 95% cases or with possibility of 5% difference/error, the found result in the sample likely to repeat in population. Any value 0.05 or below is significant. The regression or path coefficient ‘β’ value reflects a unit change in the independent variable creates corresponding changes in the dependent variable provided the relation should be significant.

It was found that syllabus and Skill teacher effectiveness contribute towards learning and satisfaction of students. The high ‘β’ value of relationship between syllabus and overall satisfaction, teacher effectiveness and learning reiterate the quality of the course content/syllabus and teacher in the success of skill development programs and its contribution towards learning satisfaction. Effectiveness of
teacher is crucial in the learning and satisfaction of student’s whereas infrastructure plays a significant role in the satisfaction of students. Surprisingly, students perceive refreshments influence their satisfaction and learning. Both the hypotheses connecting accessibility were found not significant. But students perceived ‘practicals’ as a better predictor of learning and satisfaction.

7. DISCUSSION

This study identified the major non cognitive factors that enhance learning and perceived satisfaction of the participants. As predicted earlier, the empirical study proved the role of teacher effectiveness in improving the learning and perceived satisfaction of the participants. Hence it is necessary to identify qualified resource persons to deliver the program. Experience, knowledge level, way of delivering, and ability to maintain the attentions of the participants are necessary to improve the learning effectiveness and satisfaction of the participants. Moreover, participants who are satisfied with the teacher will by word of mouth can become the ambassadors of the program. From this study we can attribute lack of teacher effectiveness could be the major reason for the failure of different programs. Hence, executing agency of such programs should give prime priority to the teacher effectiveness.

The other non-cognitive elements that have influence on both the satisfaction and learning is syllabus of the program. Participants expect the syllabus should be competent enough to meet the need of the time. The syllabus must be designed in such a way that it should meet the theoretical and industrial needs of the particular position. Updated syllabus can improve the morale and can have positive effect on the satisfaction and learning. An outdated syllabus may bring down the interest of the participants and can generate boredom and negatively affects the satisfaction and learning process. Syllabus should meet the academic and industrial needs so that the participants feel competent enough to meet the demands of the job.

The study proved refreshments provided during the program also affects the learning and perceived satisfaction of the individuals. Refreshments in the form of nutrients are necessary to maintain the energy level of the participants so they will have required concentration and attention. The study empirically proved teacher effectiveness, syllabus and refreshments are the major non cognitive elements which have significant impact on learning and perceived satisfaction of the participants.

The other con cognitive factors that have significant relation on learning only are financial aids, institutional support and practicals. Financial aids are necessary to have required resources to conduct the program. Effective implementation is possible only if there are enough financial resources. The study proved along with theoretical content practicals is also vital to improve the learning of the practicals. Synchronization of theory and practical provide better results. Since, prime objective of these programs are to improve the skills and thereby improving the employability imparting practical experience will definitely enhance the effectiveness of the program.

The success of any program depends on the support provided by the implementing agencies. The government, colleges, local self government and other agencies should actively involve in these programs. Periodical review and monitoring will help to maintain the spirit of such programs. The other factor which has influence only on satisfaction is infrastructure. This possibility was predicted earlier in the literature review and is empirically proved here. Ambience of the classroom, audibility, usage of audio video aids, seating arrangements, can improve the perceived satisfaction of the participants. Studies have proved that modern developed infrastructure can boost the confidence of the participants and can positively affect the satisfaction of the participants.

The findings of this study are vital for the implementing agencies to improve the effectiveness of the programs. Studies hitherto focused only on the cognitive elements that contribute towards the satisfaction and learning. This study empirically tried to identify the major non cognitive factors that influences the perceived satisfaction and learning.

8. CONCLUSION

To harness the demographic dividend of a country effectively, fastidious endeavors in skill enhancement and training is required. Experiences of at Idukki invariably proved the importance of addressing subtle elements of skill development program implementation. The study flashed light in to the triggering elements of skill development which can produce manifold impact in learning and
satisfaction of students. In order to create a suitable environment for learning, better attention should be paid on the course content and effectiveness of skill development executives along with addressing the basic concerns of students.

REFERENCES


