

# **A New Paradigm in Education: Student Centered Learning -A Case Study**

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## **Abstract**

Several scholars have admitted that education is one of the most important factors that help in bringing about social and economic development in any given society. This as a result of the fact that it is through this mechanism of education that various categories of manpower are developed. This case study outlines a work-based study to be implemented in civil engineering department of Periyar Centenary Polytechnic College and includes key factors for the study such as aim, scope, analysis, research as well as possible alternatives to be considered. The focus of the study lies upon change management in teaching learning process and the primary objective is to improve the academic performance adopting student centered learning, to transform technical education to meet the needs of industry.

**Keywords:** *Student Centered Learning, Academic Performance, Methodology, Placement, Assessment, Employability*

## **Introduction:**

Education is a systematic training and instruction designed to transmit knowledge and develop skills in individuals. Education is a process of changing the behavior pattern of individuals in the desired direction. Education also involves a continuing development in knowledge, skills and habits whose broad understanding and application enable individual to contribute meaningfully towards the growth of their society.

**Bello (1981)**, said the success or failure of any educational endeavor depends ultimately upon the method adopted by the teacher. Methodology is first a science and then a way of teaching and teaching strategies.

**Collins O'Brien (2003)** defines Student-centered learning is an instructional approach in which students influence the content, activities, materials and pace of learning. Teaching and learning styles are changing in recent years and there has been a noticeable move from lecture based activities towards more student centered activities.

***“Tell me and I forget, teach me and I may remember, involve me and I learn.”***

Benjamin Franklin

Periyar Centenary Polytechnic College re-examined their existing teaching methodology and practices in order to produce learning through active participation.

The management area chosen for this study falls into the teaching learning domain and the primary focus is student centered learning to improve the academic performance of the students and meet the industrial needs.

***Identification:*** An analysis of teaching methodology in the civil engineering department suggests how Theory of Structures could be taught in such a way to make the students to develop a feel for structures actually behave.

***Justification:*** Student centered learning is,

- ❖ The reliance on active learning rather than passive learning
- ❖ An emphasis on deep learning and understanding
- ❖ Increased responsibility and accountability on the part of the student and teacher.
- ❖ An increased sense of autonomy in the learner
- ❖ An interdependence between teacher and learner

***Handelson et al (2004)*** in an article in science stated "there is mounting evidence that supplementing or replacing lectures with active learning strategies and engaging students in discovery and scientific process improves learning and knowledge retention."

The ***aim*** of the study is to improve the academic performance through student centered learning in Civil Engineering department.

The ***scope*** of the study investigates and examines new management changes by adopting the student centered learning to improve the academic performance. The changes are introduced for improving and enhancing the management of teaching and learning.

The ***objectives*** of Student Centered Learning are

- ❖ To promote critical thinking skills of students
- ❖ To involve students actively in the learning process
- ❖ To promote higher achievement and class attendance
- ❖ To provide training in effective teaching strategies to the next generation of teachers
- ❖ To enhance the skill building and practice
- ❖ To improve the performance of weaker students
- ❖ To build self esteem in students

- ❖ To help teachers change their roles from the teaching process to become facilitators of the learning process
- ❖ To create environment where students can practice building leadership skills

There is growing evidence that courses with learner-centered approaches, that use active learning strategies in learning processes - enhance academic achievement and promote the development of important learning skills, such as critical thinking, problem solving, and the ability to cooperatively work with others.

Student Centered Learning approaches confirm positive influence on academic performance attitudes towards learning and persistence in programs. Student Centered Learning, if implemented properly, offers benefits to all, including the institution, students, staffs and employers involved.

#### **Benefits of Students:**

- ❖ Application of theory and knowledge to practical problems.
- ❖ Development of problems solving and decision making skills
- ❖ An Increased Motivation to Learn
- ❖ Independence and Responsibility in Learning
- ❖ Due Consideration for Student Need
- ❖ Wider range of relevant experiences to draw on for job interviews and easier transition into the workplace

#### **Benefits for Teachers:**

- ❖ Teachers can benefit from Student Centered Learning as much as the students in their classes. Below is a list of what such benefits can include
- ❖ A More Interesting Role for the Teacher
- ❖ Positive Impact on Working Conditions
- ❖ Continuous Self-Improvement
- ❖ Increased Learner Motivation and Engagement
- ❖ Professional Development for Academia
- ❖ Focusing teacher's knowledge about the technological tools in learning.
- ❖ Applying ideas and Teaching Methods in practice.
- ❖ Creates the conditions for students to encounter challenging situations in a controlled manner.

- ❖ Teaching environment can be structured to enhance the learning,

### **Institutional Benefits:**

- ❖ Quality Enhancement
- ❖ The Status of the Teaching Profession
- ❖ Better Retention Rates in organisations
- ❖ Attracting Students
- ❖ An Ongoing Improvement Process
- ❖ Fostering a Lifelong Learning Culture

### **Employers Benefits:**

- ❖ Creative students for companies
- ❖ Accepting the responsibilities
- ❖ Team work
- ❖ More knowledgeable Skill executing employees

While information can be remembered if taught through books and lectures, true understanding and the ability to use knowledge in new situations requires learning in which student study concepts in-depth, and over time and learning that is founded in direct experience.

Therefore, Student Centered Learning for active learning is that it allows students to build understanding that is functional and to develop the ability to inquire them, in other words, to become independent learners.

## **II.SOURCES OF DATA AND INFORMATION FOR THE PROJECT**

Sources of data and information for this project include primary data based on interviews with students about teaching and learning strategies, surveys conducted with student and alumni regarding difficulty of subject, questionnaires sent to employer to know about the student's skill and knowledge and discussion with staff to know their interest in student centered learning. Secondary data which investigated and recorded the result percentage of the subjects, the mark range of the subject, the placement record sand the attendance particulars of students.

These data's were interrupted quantitatively and the analysis and outcomes are obtained. The qualitative analyses were made by interviewing with students and staff and finding

the learning outcomes.

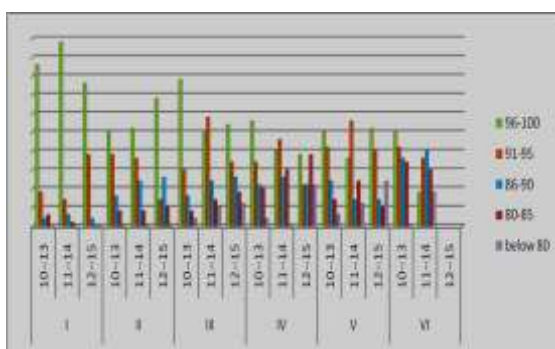
The structured interview method was adopted and questions were prepared to elicit responses from the learners, staff and employers. Simple questions to students, open class discussions and meetings with the faculty regarding the course content and methods proved to be more useful than questionnaire.

### III.ANALYSIS OF THE DATA AND INFORMATION FOR THE STUDY

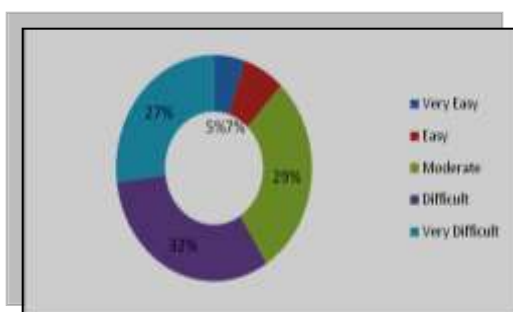
The most important component of the project was the analysis of existing teaching learning practices in civil engineering department and another important aspect was indentifying the views and inputs of student and staff.

The data and analysis for this project was carried out over a three month period from June - Aug 2014 with the participation of civil engineering faculty, students, the placement officer, the employers and student service manager. Qualitative and quantitative data were analyzed from the educational data collected in the classroom. The various items given in the questionnaire has been tabulated and presented for analysis. The figure below shows data regarding the attendance variations (figure 1) identification of difficulty (figure2), the range of marks of theory of structures (figure3) and the placement details (figure4). The teaching learning methods adopted the alternatives for traditional teaching, the result analysis of the subject. This shows the details of the subject in which the students feel difficult and the response towards their level of interest in skill and knowledge.

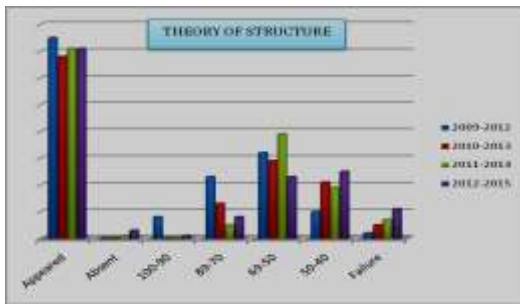
**Fig:1 – Attendance details of three batch of students**



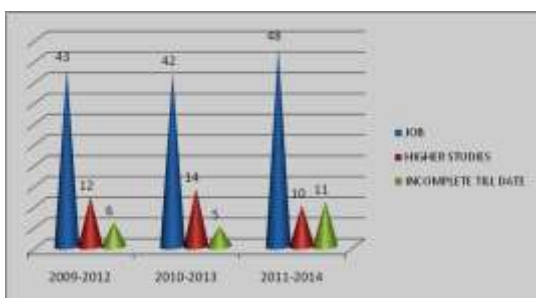
**Fig:2 – Feedback from students regarding Theory of structures**



**Fig: 3 – Mark Range of Theory of Structures**



**Fig:4 – Career Details**



#### **IV. FINDINGS**

##### **Based on Teachers Opinion:**

- ❖ Little is done to promote student centered learning
- ❖ The level of interest in understanding the skill and knowledge was found to be low
- ❖ Failure in theory of structures was more.
- ❖ The attendance of students gradually decreased from first year to second year to third year.
- ❖ Institution should have enough facilities for student centered learning.
- ❖ Most students have got the mark range between 50 - 69.

##### **Based on Students Opinion:**

- ❖ Only traditional lecture method is adopted
- ❖ Feel difficulty in learning Theory of Structures.
- ❖ More percentage of students has arrears in Theory of Structures even after completion of course.
- ❖ Students expressed interest on demonstration, case study, group discussion, video presentation method of teaching.
- ❖ ICT is very much helpful for improving the technologies.

### **Based on Employer Opinion:**

- ❖ The concept of learning outcomes is not properly understood and applied.
- ❖ More emphasis to be given to knowledge and skill

An overall result of the analysis indicates that in order to improve the academic performance, to have a depth of knowledge in the subject, to get a better job ,to improve the attendance there is a need for change management system in teaching and learning process and it is applied to the difficult subject "Theory of Structures"

### **V. ENHANCEMENT OF STUDENT CENTERED LEARNING**

Regarding teaching learning methodology the student centered learning is the alternative and the project's primary aim is to use alternative options for traditional teaching method. Secondary aim necessary to fulfill the primary aim is to change the faculty attitude and their teaching style. Institutional development needs to take place constantly and for improving the academic performance of the student in all aspect the student centered learning should be made sustainable. This is the first time implementation of Student Centered Learning approach in our institution that is to be genuine, reflexive and open to development and improvement.

Some of the staff members suggested that as an enhancement to student centered learning the use of computers, the Internet and the advanced information systems (ICT) may be imparted. The use of email enhances student Centered Learning as an active rather than passive medium. The use of Internet within the classroom can improve collaboration and communication among classmates and faculty and make the class more interactive. Instead of finding an alternative, reinforcing the concept which requires continuous change effort and updating is necessary.

### **CONCLUSION:**

Student Centered Learning characterized by innovative methods of teaching which aim to promote learning in communications with teachers and other learners and which take students as active participants in their own learning Student Centered Learning can be implemented in a meaningful manner keeping in mind the benefits of this learning approach this leads to the improvement of teachers overall teaching experience and students overall learning experience. Hence, transforming the technical education to meet the needs of industry.

## REFERENCES

- Angelo, T. A., & Cross, P. K. (1993). *Classroom Assessment Techniques: A Handbook for College Teachers*(Second ed.). San Francisco, CA: JosseyBass.
- Benjamin Franklin for learning definition
- European Journal scientific Research @ Euro Journal Publishing, Inc (2010) <http://www.Eurojournals.com/ejsr.htm>
- Handelson et al (2004) in an article in science for Introduction.
- <http://www.facultyfocus.com>
- Huba, M. E., & Freed, J. E. (2000). *Learner-Centered Assessment on College Campuses: Shifting the Focus from Teaching to Learning*. Needham Heights, MA: Allyn & Bacon.
- Learning CIRT Network Centre for the integration Research, teaching and learning
- Learning pyramid sources National Training Laboratories Bethel, Maine
- Smith, K. A., Sheppard, S. D., Johnson, D. W., & Johnson, R. T. (2005). Pedagogies of engagement: classroom-based practices. *Journal of Engineering Education*, 94(1), 1-16
- Through NET <http://www.wikipedia.org> for General reference about each topic.