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Traditionally instructors focused on what they are teaching, and not on what the students are learning. Student-centred teachings shift the focus from teachers to the students. In higher education student-centred teaching approach is increasingly being encouraged. In this approach teachers do not employ a single teaching method. However, a variety of different types of methods that shifts the role of the instructors from givers of information to the facilitator are employed. The instructor creates learning environments that motivate students for learning.

A diagram illustrating the relationship between Knowledge, Experience, Teacher, and Class of Students. At the top, two ovals labeled 'KNOWLEDGE' and 'EXPERIENCE' have arrows pointing down to a central rounded rectangle labeled 'Teacher'. An arrow then points from the 'Teacher' box down to a group of eight circles arranged in a 3x3 grid (with the bottom-right circle missing), which is labeled 'Class of Students'.

JEET

Figure1 shows the traditional teacher-centered teaching. It is discipline-specific where students sit in rows and teacher teaches them which is required to pass the examination.

In short,

Teaching refers: Transferring knowledge / experience

Learning refers: Acquiring Knowledge

In order to clarify the concept of Student-centred Learning, I shall compare it with more traditional way of teaching, usually called as 'Teacher-centered Learning' based on certain parameters. This may help you to clarify the notions of 'Student-centered teaching' and 'teacher-centered teaching'. Table 1 shows this comparison.

Table 1: Student centered teaching vs. Teacher-centered teaching

Parameters	Student-centered Teaching	Teacher-centered Teaching
Heart of Educational System	Student	Teacher
Knowledge	Transmitted from teacher to students	Acquired by students
Learning Environment	Student Centered	Teacher Centered
Student Participation	Passive	Active
Role of Teacher	Leader	Facilitator
Learning Assessment	One-dimensional testing Few Tests, Mainly for grading	Multidimensional Testing, Many Tests, for ongoing feedback
Emphasis	Learning correct answers	Developing deeper understanding
Performance Standard	Competitive approach, Individualistic	Supportive approach, Collaborative

2. Student Centered Teaching

A. Overview



The major concern of student centered teaching approach is: Are they Learning? In student-centered teaching student should be at the heart of our educational efforts. Students and teachers interact equally, instead of listening to the teacher exclusively. Since, group work is encouraged, students learn to collaborate, help and communicate with one another. Figure 2 shows the student-centered teaching approach.

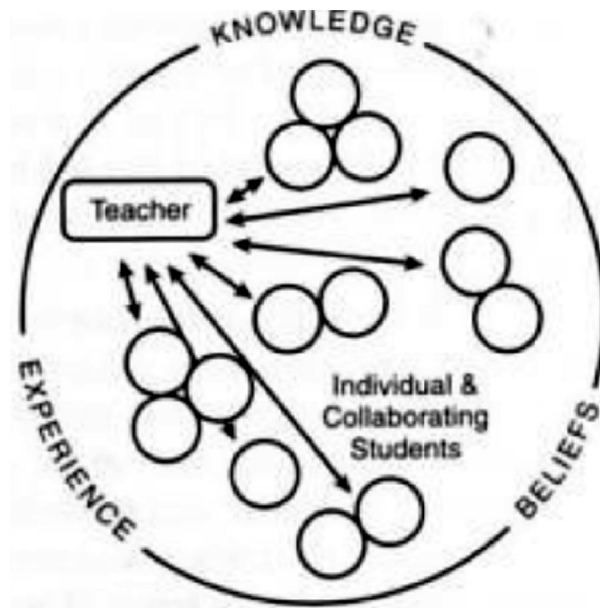


Figure2: Student-Centered Teaching

It implies two main shifts:

1. From thinking about what we teach to how and why we teach something to the students.
2. From thinking about teacher's performance to thinking about the student learning and learning processes.

B. Principles of Student Centered Learning

"student-centered" teaching gives students choice in content and voice in product. It uses an actual person as an audience and designs learning experiences.

There are 4 principles of student-centered learning which are required to consider as we design curriculum and instructions [4]:

Space

- helps to foster creativity in students
- That is Creative
- That is Dynamic

- That is Mobile
- That is Emotionally safe
- That is Cognitively agitating

Place

- Providing safe and appropriate places to learn and work
- That students believe they can impact
- That stirs enthusiasm & curiosity of students
- That they connect with in fundamentally "non-academic" ways
- That reflects their needs

Choice

- In learning strategies, literacy strategies, etc.
- In content & priority
- In media forms and content distribution
- In audiences for their work
- In pace & sequence

Voice

- That grows as their understanding does
- That reflects who they really are
- In classroom/Laboratory conversations
- In local community as well as around national & global events

3. Methodology

This methodology emphasizes group learning and collaboration. Students work in small groups, access data from the Internet, work together on problems, discuss solutions with their instructor, and present their results.

The instructor serves as a facilitator, Students work in groups to learn, and activities are structured to emphasize collaborative, active, student-based learning

The 3 activities are structured for this lab as follows:

- Activity A: It gives freedom to the students and honor their passion and interest
- Activity B: Provides opportunity to serve the society
- Activity C: Industry Visit

A. Activity A: Learn New Technology/software

Objective:

1. To honor student passion and interest
2. To create borderless learning territories for students.

Learning must matter to the learner. This activity gives autonomy and responsibility to students for material they learn. Students learn in different ways and have different learning styles. Students choose what they will learn and how they will learn. It keeps students engaged in their own learning and enabling them to achieve their dreams and goals. This part gives students choice and voice, finding ways to design learning experiences that tap into what students value. Here are five steps which are developed for creating a student-centered learning:

1. Prepare group of 3 or 4 students
2. Select the new technology which is not included in curriculum
3. Do detail study of selected technology and develop a utility/application.
4. Prepare Report and present it in front of in-charge faculty.

Table 2 shows some of the technologies/software the students have learnt and presented.

Table 2: Sample Technologies/Software's

Technology/ Software	Description
Anti Tracks	Clean up junk, duplicate files, erase tracks, eliminate spam, and protect sensitive data.
have learnt and	
KeePass	Open source password Manager
F#	A mature, open source, cross-platform, functional-first Programming Language
presented.	
PEARL	Scripting Language
Komodo Edit	Free, fast and multi language code editor
Ruby	Programming Language
2-D Animation	An android Application

B. Activity B: community Services

Objective: To demonstrate digital literacy as well as social responsibility

As an engineer it is our social responsibility to utilise the knowledge acquired to benefit the people around us. This activity gives great opportunity to students to help the community

The following are the guidelines given to the students:

1. Visit to various colleges/school/Nagarparishad and create awareness about IT

OR

Develop software and donate it to open source community.

Areas covered under Community Services	Name of Organization (or Community Addressed)	Location
School Children	Vijaymala Ashramshala	Kapuskhed
Youth students	Chate Coaching to Classes	Islampur RIT.
Agriculture wing table the Sample Services	Farmers Follo Table 3 shows Community students have	Urun, Anantnagar & Rajbageshwar areas of Islampur city
Highschool undertaken.	Shiye Highschool, Junior College, Shiye	Shiye, Kolhapur
Education	Shivkedar, Vidyalaya	Kande
Nagarparishad	Karad Nagarparishad	Karad

Table 3: Sample Community Services student have Assessment: The teacher becomes a participant and co-learner in discussion, asking questions and

Areas covered under Community Services Name of Organization (or Community Addressed) Location

C. Activity C: Industry Visit

The following are the guidelines given to the students:

1. Identify the industries and get the permission letter.
2. Visit the industry and observe their working culture.
3. Make a report of it and submit to in-charge faculty.

Assessment: The teacher becomes a participant and co-learner in discussion, asking questions about working culture of industry.

4. Observations And Findings

The Student-centered teaching approach benefited the students to improve and deepen their understanding about the facts. But it has some drawbacks as well. In this section we will discuss the pros and cons of the methodology which is used to implement student centred teaching.

Advantages of using Student-Centered Teaching

- Students effectively learn communicative and collaborative skills through group work.
- Students learned to complete tasks independently.
- Students interact with one another and participate actively.
- Learning skills of the student are developed.
- The roles of instructor became facilitative rather than didactic.
- The responsibility for learning shifts from the instructor to the students.
- Student-centered teaching method uses assessment as a part of the learning process.
- Learning becomes interesting and enjoyable.
- students retained more of the concepts that they chose to address
- Disadvantages of using Student-Centered Teaching
- Sometimes group work can become problematic as students prefer to work alone.
- When students are working on different stages of the same project then it becomes difficult for teacher to manage all students.
- Some students may miss important facts because the teacher doesn't deliver instruction to all students at once.

Conclusion

After adopting this methodology it was identified that students get more enthusiastic, motivated and curious to learn new things. Group activities encouraged them to demonstrate creativity, communication, and collaboration. Activity A and B gives them opportunity to learn new technologies and understand social responsibility. Students became capable of accepting more responsibility for their own learning. As future teachers it is our responsibility to care about our student's effective learning and try to teach them from all different aspects.

References

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