

# CONFLUX

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ON  
SUSTAINABLE EDUCATION:  
LOCAL AND GLOBAL PROGRESS AND CHALLENGES**

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## **Innovative Teaching Learning Strategies for Sustainability**

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### **Introduction**

The field of education all over the world is swept by a paradigm shift that is the result of a new awakening in the teaching- learning process. The traditional chalk and talk method can no longer enthuse the students, the colleges of education continuously strive to innovate methods that will sustain their interest and make the learning process more productive and interesting. The usual way of thinking about and doing is replaced by a new and different way. As we increasingly move toward an environment of instant and infinite information, it becomes less important for students to know, memorize, or recall information, and more important for them to be able to find, sort, analyse, share, discuss, critique, and create information. Student-centered mind-sets view the learner as primary and unique agents of learning, engagement, and connection, as opposed to teacher-centered mind-sets which tend to view learners as passive and uniform vessels.

## Characteristics of Education

To better understand the content of traditional education, let's look at some of its basic features.

- Education takes place in the physical space between the four walls of the classroom.
- In traditional education, the teacher has full control over the learning environment.
- Training is carried out as planned and at the time.
- Face-to-face communication between teachers and students.
- Strict adherence to textbooks.
- All students learn in the environment.

Therefore, traditional education is limited to time and space and does not change. It is not adapted to the needs of children. One way a teacher matters is by putting the teacher's interests above the needs of all students. Teachers do what they think is best for their students and rarely leave room for improvisation. Traditional teaching is very expensive compared to online teaching. Includes infrastructure and maintenance costs. The emphasis is on classroom theory, although there is always much learning for application in the classroom setting. The tight schedule does not leave much time for practice. Daily travel using traditional methods becomes a disadvantage. This can have a financial impact on students and can also affect the quality of education. For example, the education process may be interrupted in cases such as heavy rains, other natural disasters or epidemics. Traditional teaching methods are limited to geography.

## **Characteristics of Traditional Teaching**

1. Teaching students in the environment causes students to work hard and cause learning stress.
2. Student-Centered teaching involves teaching specific skills.
3. Teaching students to encourage students to think about what they learn and how they learn it.
4. Student-Centered teaching motivates students by giving them some control over their learning.
5. Student education encourages collaboration.

So, every day in most classrooms teachers work harder than students. Teachers who have a foundation for learning teach students how to think, solve problems, evaluate evidence, analyse arguments, and form opinions; these are all important learning skills for curriculum knowledge. Challenges students' perspectives on learning and encourages them to take responsibility for the learning decisions they make; while preparing for the exam, while reading, whether they correct what they wrote or check their answers. Teachers with a foundation in learning find ethical ways to empower students. Professional educators work to establish standards that encourage commitment to learning.

Sustainability in Teaching and Learning (STL) is the goal of developing integrated education so that students have the skills to succeed.

Sustainability in teaching and learning includes:

1. Course outcomes that focus on the development of such competencies.
2. Instructional strategies that provide opportunity for students to practice and get feedback
3. Assessment that directly measures student skill level in the competencies.

By learning security, students will develop the knowledge, skills and abilities needed for the future. Students can:

### **Participate in the Intercultural Society**

- Make verbal and non-verbal journeys between different cultures to communicate their understanding of security.
- They can use their knowledge and skills to meet international or local needs.

**They can adopt different perspectives and opportunities to solve security problems.**

### **Improves Relationships**

- They can solve the group's problems while solving problems.
- They understand and respect others' needs, thoughts and actions regarding sustainability.

### **Leveraging Technology**

- They can develop new technologies to solve security problems.
- They can choose or use technology to solve security problems.
- They can make decisions about the ethics of using or adapting technology to solve security problems.



### **Adaptive Design and Problem Solving**

- They can use skills, abilities, ideas, or methods acquired in one situation to solve technical problems, secured in a special way for new situations.

### **Communication Topic**

- They can write or talk about security issues in a way that is shared and supported.
- They can adjust my speaking or writing to **the** needs of the audience to ensure balance.
- They have the ability to listen and respond to different people and different or conflicting ideas.

### **Improving Well-Being**

- They can evaluate my motivation and actions to gain insight into my thoughts and feelings about sustainability.
- They have the ability to confidently try the untested and risk ideas (failed or successful) to solve problems.
- They can expand on new ideas or specific ideas, questions, models, or products to create new knowledge or frontiers.

Examples of student-centred learning and teaching strategies/ methods for sustainability

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Outside of the lecture format

In the Lecture

Independent projects

Buzz groups (short discussion in twos)

Group discussion

Pyramids/ snowballing (Buzz groups continuing the discussion into larger groups)

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Peer mentoring of other students	Cross- overs ( mixing students into groups by letter/ number allocation)
Debates	Rounds (giving turns to individual students to talk)
Field-trips	Quiz
Practical	Writing reflections on learning
Reflective diaries, learning journals	Students class presentations
Computer assisted learning	Role play
Choice in subjects for study/ projects	Poster presentations
Writing newspaper article	Students producing mind maps in class

### **Innovative Teaching and Learning Strategies to Improve Student Learning**

#### **Think-pair-share**

Think-pair-share is a collaborative teaching strategy. It can be used to help students form individual ideas, discuss and share with the others in-group. It can be used before reading or teaching a concept and works better with smaller groups.

#### **Problem-based Learning**

Problem-based learning is a student-Centered pedagogy in which students learn about a subject through the experience of solving an open-ended problem found in trigger material.

## **Educational Games**

Educational games are games explicitly designed with educational purposes, or which have incidental or secondary educational value.

## **Peer Instruction**

Peer teaching is an evidencebased, interactive teaching method. Teachers often notice a wide range of abilities in their classes. Certain content may be familiar to some students, but may be completely new to others. Teachers can pair or group students with more experience with the content with students with less experience, allowing the more experienced students to participate in some of the activities.

## **Pause lecture**

Teachers use this technique to pause occasionally during lectures to allow students to reflect on their learning. During the pause, the instructor may request that students record the key points of the lecture, answer a specific question, or create their own questions about the material. Students have the option to work individually or in pairs to share their reflections and answers.

## **Role Play and Skits**

Role playing has the potential to be an effective way for learners to test their skills and abilities with the kinds of roles or positions they anticipate encountering in the real world. Role

playing demands students to think on their feet and use their knowledge or ideas to tackle a problem or issue.

### **Jigsaw**

Students are divided into groups for the jigsaw activity, with each group focusing on a different aspect of a larger project. After the groups complete their assigned task, the instructor divides the students into new groups that have at least one representative from each of the initial groups. To finish the larger project, learners in this new group piece together the work from their original groups. The jigsaw is a collaborative effort, and each student has a chance to act as an expert or instructor when bringing the knowledge from the original group to the new group.

### **Student Demonstration**

Rather than lecturing or leading the class through a demonstration, we can turn the class over to the students to show one another how to work through a particular task or problem. For instance, a library instructor could ask learners to demonstrate the steps they took to locate a book or article, or to share the criteria they used to evaluate a website. The instructor can act as a coach from the side-lines, offering feedback or suggestions if the learner gets stuck, while allowing the learners to take on a teaching role.

### **Concept Mapping**

In concept mapping, learners create visual representations of the connections or relationships between ideas. Generally, a learner will begin with a single idea and brainstorm to

identify other words and concepts, which they arrange around the original idea, with lines illustrating how the concepts relate. The new words could be used to describe subtopics, broader topics, and related topics. The original idea may cause students to identify research questions on the topic, audiences concerned or impacted by the topics, action steps, and so on.

### **Brainstorming/Carousel**

Brainstorming allows students to identify anything they think is related to the topic. Students can share their knowledge by completing these assignments individually or in groups. Rotational brainstorming is a fun way to brainstorm in groups. In this version, teachers can identify different aspects or subtopics of the topic they are teaching and post them on large pieces of paper around the classroom. One subtopic is assigned to small groups of students for brainstorming. The group moves on to a new subtopic and after a few minutes adds their own contributions to the previous group's work.

After each group has reviewed each subtopic, the initial group reviews and synthesizes all of their brainstorming on the subtopics and presents it to the class.

### **Discussion**

Active learning can be achieved through discussion, which is a popular and well-known method. Discussions can occur in both large and small groups, but small groups tend to be more conducive to in-depth discussion and increased student participation.

During the discussion, students take time to reflect on and respond to readings, questions, or other prompts.

### **Experiential Learning**

Experiential learning activities can encompass hands-on laboratory experiments, internships, practicums, field exercises, study abroad, undergraduate research, and studio performances.

### **Critical Thinking**

Critical thinking is the intellectually disciplined process of actively and skilfully conceptualizing, applying, analysing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action.

### **Z-A Approach**

The Z-A Approach is designed to first explain the application side of a subject. The instructor should begin by describing the application of a concept and then the consequences of using it.

## **Mobile Learning**

Mobile learning, also referred to as m Learning, is a way of accessing learning content through mobile devices. This method empowers learning at the point of need, enabling users to access content whenever and wherever suits them.

## **Service-learning**

The pedagogy of service-learning involves integrating academically relevant service activities that address human and community needs into a course. Through the combination of service and reflection in a structured learning environment, students connect knowledge and theory to practice.

## **Show and Tell: Reversing Teacher- student Roles**

The Show and Tell technique can be used in various forms depending on the subject content and the age group of the students. Putting the students into the role of a teacher makes the students look deeper into the assigned problem.

## **Practical Examples: Connecting theory with Environment**

The introduction of practical examples into the subject matter serves as an enhancement and is complementary to the concepts taught in the classroom.

## **Guided Team Projects: Introducing Practical Experience into Classrooms**

Team projects give learners an opportunity to work in a team environment, applying concepts learned in the classroom. Students work together in teams generating ideas/solving problems/ illustrating concepts while giving the entire class opportunity to participate and reflect during the presentation.

## **Open-Ended Labs: Making Learners Think Deeper**

This learning strategy is all about exploring alternative methods of doing things which results in a deeper understanding on what works and what does not while fostering creativity and lateral thinking.

## **The Flowchart technique: Organizing Flow of Thought**

The technique of flow-chart, is a tool for representing the flow of information among various stages in the development of a concept; in the formulation or analysis of a problem; providing linkages between various steps; and presenting information/ thought.

## **Open- Ended Quizzes: Moving Students Away from Memorization**

The open-ended quiz is intended to stimulate students' creativity and help students think deeply about the material covered in the classroom.

## **4MAT: Catering to Multiple Learning Preferences**



The 4 MAT approach caters to the multiple learning profiles of students ( recall, understanding, application and synthesis) and each lesson is planned to focus on each preference. Learners are encouraged to participate in all approaches thereby learning through the preferred approach while strengthening their weaker areas.

### **Conclusion**

Thus, our challenge as educationists lies in reinventing education for the 21<sup>st</sup> century – in the interest of our children, our students and their education for sustainability. In order to empower students to analyze, reflect, and take action for a sustainable world, the learning and educational process must be experienced in the context of citizenship; that is, it must be designed, planned, and implemented having global sustainability as a framework, thus developing societal awareness, values, and principles. We need to do away with the belief that ‘one size fits all’ and replace it with the noble thought that there lies strength in diversity. We need to bridge the gap between how students live and how they learn. As Alvin Toffler, the renowned writer has said, “The illiterate of the twenty-first century will not be those who cannot read or write, but those who cannot learn, unlearn and relearn.” As educators, we are called to be agents of change in an ever-changing world.

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