Cooperative Learning strategies
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Objectives of this Module

By the end of this module participants will be able to:

1. Use cooperative learning strategies for effective teaching
2. Design suitable activities that encourage active learning and student participation using the above teaching methods
Group assignment-inventing and selling a product

Using the guidelines below, you are to invent an electronic consumer product. You have 20 minutes to work.

- Product name
- Objectives on invention
- Why the product
- Target market
- Parts of the product
- How to use
- Cost per unit
- Benefits of the product
Ideas! Ideas! Ideas!

1. Brainstore – “idea factory” in Switzerland
2. Honda
3. Sony Play Station
4. Starbucks and Magic Johnson
5. “Selling hamburgers to the Cantonese? You must be joking!”
The old paradigm of teaching versus the new paradigm
The old paradigm

1. Transferring knowledge from teacher to students
2. Filling passive empty vessels with knowledge
3. Classifying students via grade
4. Impersonal relationships among students and between teacher and students
5. Competitive/Individualistic
6. Any expert can teach
The new paradigm

1. Knowledge constructed by students and faculty.
2. Students are active constructor, discoverer, and transformer of knowledge.
3. Faculty develops students' competencies and talents.
4. Good personal relationship between faculty and students.
5. Cooperative learning in classroom.
6. Good teaching requires trained teachers.
What “Is” and “Is Not” a Cooperative Group

- Pseudo Group
- Traditional Group
- Cooperative Group
- High-Performance Cooperative Group
Rationale for using cooperative learning strategies in the classroom

- Promotes **Active Learning**
- Provides opportunities for students to **cross-fertilize**
- Promotes **creative and critical thinking**
- Challenges students to develop **entrepreneurial minds**
- Promotes higher-levels of **self-esteem and self-confidence** in students
- Helps prepare students for the **workforce**
- Allows teachers to switch roles from a teacher to a **facilitator/navigator**
RESEARCH ON CL

- 90 years of research and 600 studies show CL results in more higher-level reasoning, more frequent generation of new ideas and solutions, and greater transfer of what is learned within one situation to another.

- Good to assign formal cooperative tasks
ELEMENTS OF COOPERATIVE LEARNING

- Positive interdependence
- Promotive interaction
- Individual accountability
- Interpersonal and small group skills
- Group processing
Experiential Learning Circle - David Kolb

Concrete experience
Activists

Testing in new situations
Pragmatists

Observation & reflection
Reflector

Forming abstract concepts
Theorists
Learner - Autonomy and Experiencial Learning

- brainstorming
- testing new ideas
- decision making

Experience

Critical Reflection

- discussing with peers
- gathering ideas/examining
- reflecting on 'self'
- decision making

Further Critical Reflection

Abstract Conceptualisation

- relating theory with practice
- gathering knowledge + skills
- decision making

Active Experimentation

- brainstorming ideas
- testing new ideas
- receiving feedback
- examining ideas/decision making

- working on feedback
- reflecting on 'self'
- examining ideas
- gathering knowledge, concepts + skills
Experiential Learning or ‘Learning by Doing’

- Experiential learning stresses personal involvement, self-initiation and evaluation by the learner e.g. riding a bicycle
Teacher’s Role (Facilitating)

- Setting a positive climate
- Clarifying the purposes
- Organizing learning resources
- Balancing intellectual and emotional components of learning
- Sharing feelings and thoughts with learners, but not dominating
Facilitating Learning

- The student participates completely in the learning process and has control over its nature and direction.
- It is based upon direct confrontation with practical, social, personal or research problems.
- Self-evaluation is the principal method of assessing progress or success.
Project, Problem and Inquiry-based Learning

- Project-based learning
- Problem-based learning
- Inquiry-based learning
Stages in Problem-based Learning

- Encountering and defining the problem
- Accessing, evaluating and utilising information e.g. using the internet
- Synthesis and performance – constructing a solution
Problems in Implementation

- Cultural change – students used to traditional models where the teacher is the ‘sage’ will need to change
- Need for group-work – not all students like group-work
- Constructing problems – may be difficult for the teacher
- Teacher as a facilitator
- Awarding of marks to group members
- Free rider problem
Strategies for effective CL

- Teachers **must invest time** building cooperative skills and enforcing self-assessment of them
- Done thorough **games, problem solving simulations and case studies**
Small group discussion

Activity 3 – Strategies for cooperative learning
Strategies for effective CL (1)

- Team Member Teaching

Knowledge Outcomes: Like a jigsaw puzzle, each member of the team is assigned a portion of the whole. Ultimately responsible for knowing all, each group member teaches the others about their piece. Learners need explicit preparation in how to effectively communicate information to others.
Strategies for effective CL (2)

- Team Effectiveness Design

Cooperative Skills and Knowledge Outcomes: whatever material is to be learned is presented to teams in the form of a manuscript or text followed by a multiple choice test requiring conclusions or inferences, not locating information in the readings. After completing the test, learners join teams of five to discuss the questions and arrive at consensus as to the most valid answer to each question, without consulting the reading. Then, a key is distributed and learners score individual answers as well as the team answers.
Effective strategies for CL (3)

- **Student Teams – Achievement Divisions**

  **Knowledge Outcomes:** Learners study the material in heterogeneous groups as above, but instead of taking a test, learners play academic games to show their individual mastery of the subject matter. At a weekly tournament, learners are matched with comparable performing learners from other teams. Assignments to the tournament tables change weekly according to a system that maintains the equality of the competition.
Effective strategies for CL (4)

- Performance Judging a Design

Skills Outcomes: here learners first study how to develop and apply appropriate criteria for judging performance on a skill, such as writing an essay, giving a speech, or constructing a tool chest. They test their cooperatively developed criteria on a product produced anonymously by someone else. Then the learners are assigned the task of creating their product for other members of the team to review.
Effective strategies for CL (5)

Clarifying Attitudes Design

Attitude Outcomes: The teacher prepares an attitude questionnaire, usually a multiple-choice inventory. Each learner selects from the range of alternatives those that most accurately represent his or her views. Next, teams meet to reach agreement on which of the alternatives represents the soundest action in a particular circumstance. They examine the differences between previous attitudes and discuss together how each may want to be consistent with the agreed-on description of the soundest attitude.
Keys to Cooperative Learning

- Teacher planning is critical
- Student engagement is mandatory
- Assessment is vital
- Quality work is essential
- Constant student monitoring is required
- Time requirements must be established
- Trust, cohesiveness, and responsibility must be promoted
Criticisms of Cooperative Learning

• Heterogeneous grouping may hold back those with the greatest academic talent
• Some students benefit more by individual work
• Rating, grading, or rewarding students based on group-work may not be fair to the student who works the hardest
Summary

- Cooperative learning requires *much time, organization, and structure*, but it is an ideal way to focus group work on specific tasks and to mandate individual responsibility.

- Cooperative learning requires *positive interdependence, face-to-face interaction, individual accountability, student involvement, and good listening skills*. 
Learning Objective

- By the end of this session, you should be able to plan project work for your students which encourages cooperation, and ensures positive interdependence and accountability.
REFLECTION

How students learn vs How we teach-
research findings by Prof Lion F. Gardiner

Article: “Why we must change: The
research Evidence”
How students learn vs How we teach- research findings by Prof Lion F. Gardiner

Article: “Why we must change: The research Evidence”

- One national study has revealed that only 35 percent of faculty strongly emphasize their institution’s curricular goals. Only 12 percent utilize feedback from their earlier students and 8 percent use the viewpoints of experts in instructions.

The conclusion: The faculty interviewed seemed to teach as they had been taught....
“Faculty in another national study ‘overwhelmingly’ said developing effective thinking was their primary educational purpose, but most of the 4000 course goals they submitted related to teaching concepts in their disciplines, rather than developing the intellectual skills they said were so important.”
Prof Gardiner’s research findings...con’t

“...involving students in discussion fosters retention of information, application of knowledge to new situations, and development of higher-order thinking skills- and discussions do this much better than lectures do... “

...Yet 70 to 90 percent of professors use the traditional lecture as their primary instructional strategy
Prof Gardiner’s research findings...con’t

“In a study of 155 class sessions at four different institutions, questioning of students comprised only 0.2 percent to 9.2 percent of class time”
Prof Gardiner’s research findings...con’t

... in most courses, transmission of facts from teacher to students and discussion that requires only the recall of facts are the dominant class activities., regardless of discipline, the number of weeks into the semester, or size of institution”.
Prof Gardiner’s research findings... con’t

“The median cognitive level in classes of 15 or fewer students was analysis. In classes of 16 to 45 students the median was comprehension. In large classes of 46 to 300 students the median intellectual activity was recall.”
Prof Gardiner’s research findings...con’t

- “If students are not thinking during lectures, what are they doing? Their attention drifts after only 10 to 20 minutes.

  Up to 15 percent of their time is spent fantasizing.
Prof Gardiner’s research findings…con’t

- After watching their teachers work 1000 problems in class and solving another 3000 themselves outside class, ‘after four years, engineering students showed negligible improvement in problem-solving skills.’
Prof Gardiner’s research findings...con’t

- Only 14 percent of 745 research university students said they had ever been formally taught how to study, in high school or in college.
Prof Gardiner’s research findings…con’t

“Only 17 percent of 1700 faculty respondents at a research university said they use essay tests. These same respondents claimed only 13 percent of their questions required problem-solving.”
Small group discussion

Prof Gardiner’s research findings

- What are the implications of the above research evidence to the teaching and learning process at university level?
Notable Sayings

- “The mediocre teacher tells.
- The good teacher explains.
- The superior teacher demonstrates.
- The great teacher inspires.”

William Arthur Ward
Thank you