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Online active teaching approach for problem-based module

Saeed, Nagham ORCID: <https://orcid.org/0000-0002-5124-7973> (2021) Online active teaching approach for problem-based module. In: UWL Festival of Learning and Teaching 2021, 08 Jul 2021, UK. (Unpublished)

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UWL Festival of Learning and Teaching July 2021

Online Active Teaching Approach for Problem-based Module

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School of Computing and Engineering

Introduction

Motivation

1. The sudden shift from traditional to e-learning education has encouraged researchers to evaluate and review the available active teaching and learning models to propose and create an active online teaching and learning methods.
2. It is surprising to find that there is little research done on Electrical and Electronic Engineering (EEE) students to evaluate their engagement with these methods.



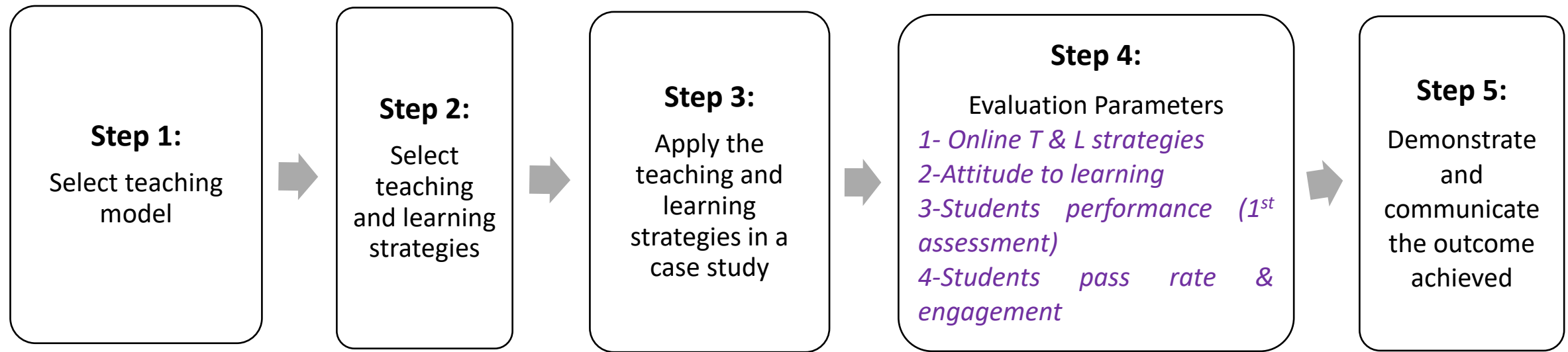
an active online teaching and learning methods

Aims

Evaluate active online Teaching and Learning strategies and its effect on students' engagement and performance.

Methodology

Steps to evaluate active online Teaching and Learning strategies and its effect on students' engagement and performance.



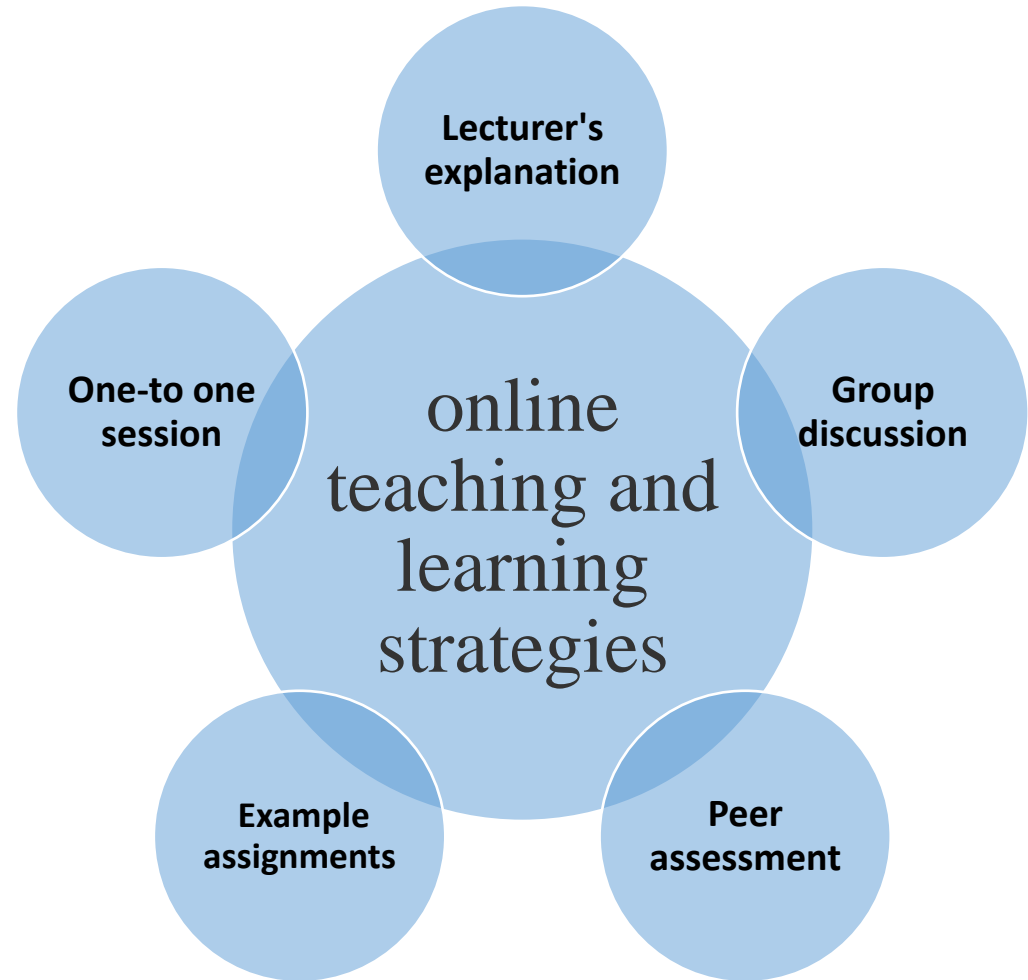
Research Model and Procedure

Step 1: Teaching model

- The teaching model used for the Applied Engineering Project (AEP) module merged the problem-based learning model (Hydrie et.al., 2020) with the just-in-time teaching model (or flipped classroom).
- The problem-based learning model was the most appropriate learning model to deliver the APE module's learning outcomes.
- Whereas the strategy of using the just-in-time teaching (UWL Flux) model shifted the focus of teaching from knowledge transmission to knowledge structuring by students and encouraged the use of tasks.

Step 2: Online Teaching and Learning strategies

- A collection of **online Teaching and learning strategies** were implemented throughout the delivery of the Applied Engineering Project (AEP)- EEE foundation students
- These strategies were used through the pandemic period to keep students thoughtfully engaged and motivated while enabling a safe, non-judgmental environment where views and perspectives are encouraged.
- The teaching approach includes group discussion, teacher's explanation, previous students' exemplars (Hendry et.al., 2016), peer assessment and one-to-one sessions.
- The delivery was supported by the university's e-learning platform (Blackboard Ultra, AppsAnywhere, etc.).



Step 4: Questionnaire

Near the end of the module, a students' questionnaire was taken. To address the first three evaluation parameters

1- Online T & L strategies

2-Attitude to learning

3-Students performance (1st assessment)

Questions

Responses 12

L3 Questionnaire

The purpose of this questionnaire is to collect your perceptions of one-to one sessions, peer assessment, group discussions, teacher's explanation, previous students' work as exemplars in the modules taught By Dr. Saeed. The information you provide will be strictly confidential and only the researchers will have access to information on participants. A report of the study may be submitted for publication, but individual participants will not be identifiable in such a report. To answer, please select the most appropriate number. Do not spend a long time on each statement: your first reaction is probably the best one.

Name: *

Short answer text

Course: *

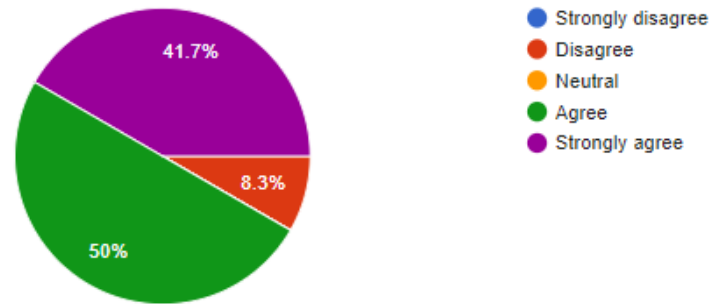
Short answer text

Step 4: 1- Online T & L strategies

One-to one session

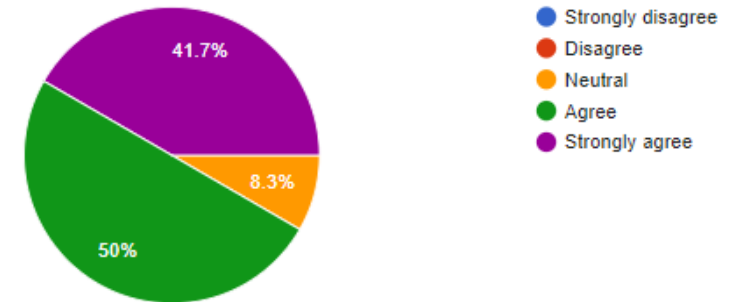
1- The parallel one-to one session a) was useful for completing my assignment

12 responses



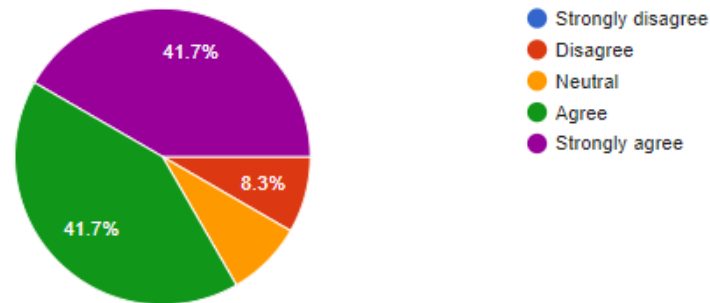
1- The parallel one-to one session c) was useful to discuss my ideas and help me to reach the right

12 responses



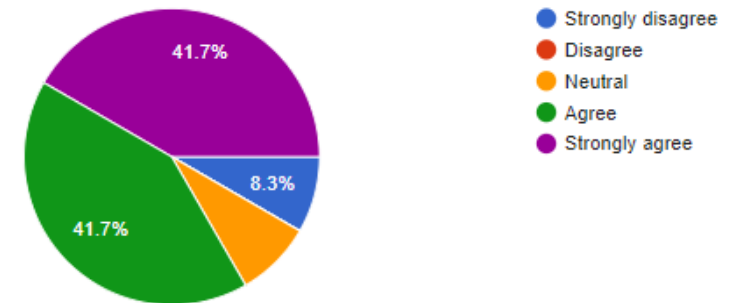
1- The parallel one-to one session b) was useful for improving the quality of my work

12 responses



1- The parallel one-to one session d) kept me on track and motivated me to reach my expectations.

12 responses

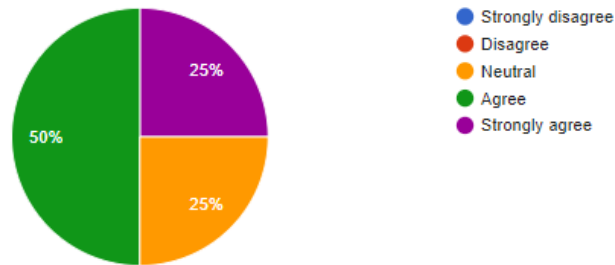


Step 4: 1- Online T & L strategies

Peer assessment

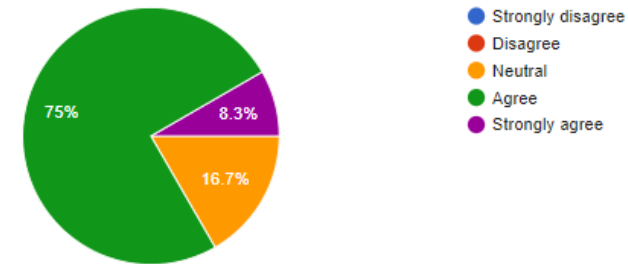
2-Peer assessment (Google form or Poll everywhere) a) The exercise became easier to understand when the teacher explained each session

12 responses



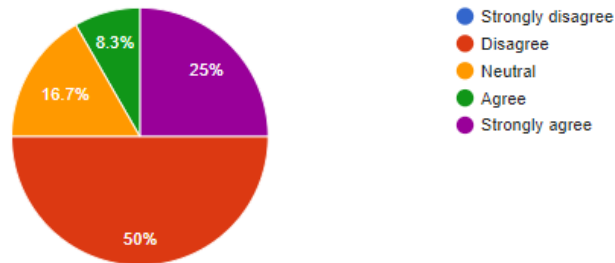
2-Peer assessment (Google form or Poll everywhere) c) This exercise raises awareness of what is expected from me

12 responses



2-Peer assessment (Google form or Poll everywhere) b) I found this exercise difficult

12 responses

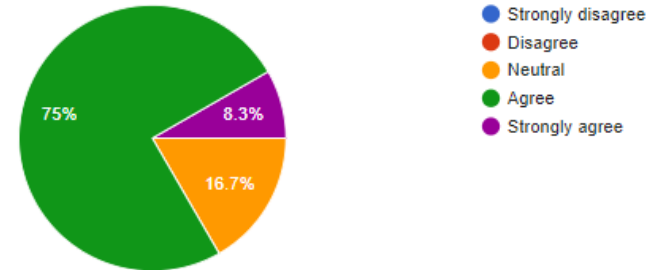


Step 4: 1- Online T & L strategies

Group discussion

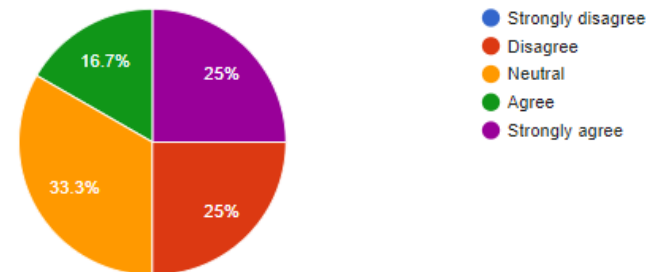
3- Group discussion a) During our group discussion, I learned that my peers' views about the quality of the work differed

12 responses



3- Group discussion b) I found discussing the work in my group challenging

12 responses

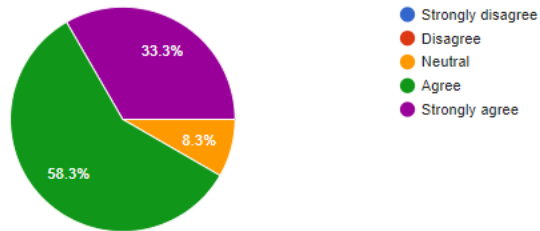


Step 4: 1- Online T & L strategies

Lecturer's explanation

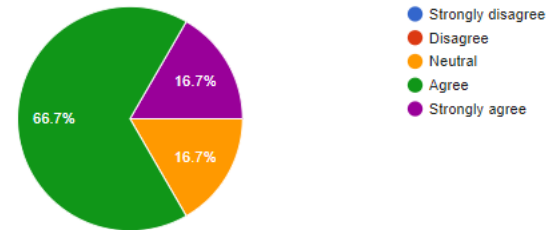
4-Listening to the teacher's explanation a) I found recorded lectures useful

12 responses



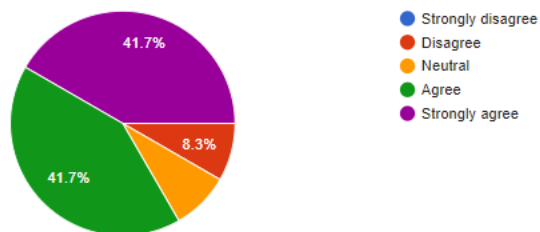
4-Listening to the teacher's explanation c) I was able to relate the teacher's explanation of the way the example assignments were written to the way I would approach writing assignments

12 responses



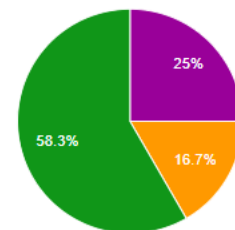
4-Listening to the teacher's explanation b) The teacher made it clear what was expected for a well-written assignment

12 responses



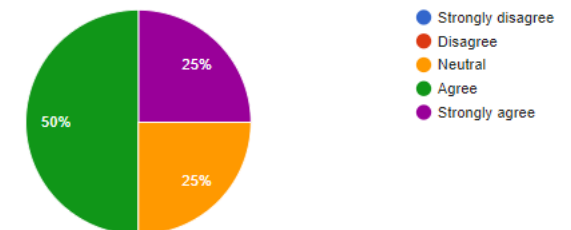
4-Listening to the teacher's explanation d) I found UWL flux model useful including the material provided

12 responses



4-Listening to the teacher's explanation e) I found the management technique to motivate students useful (Progress monitoring sheet and MSG check list).

12 responses

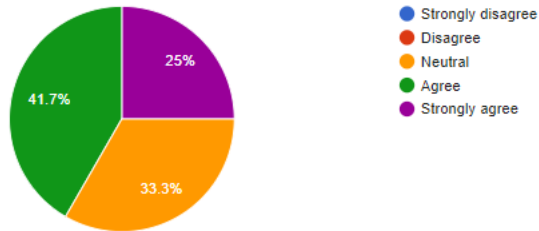


Step 4: 1- Online T & L strategies

Example assignments

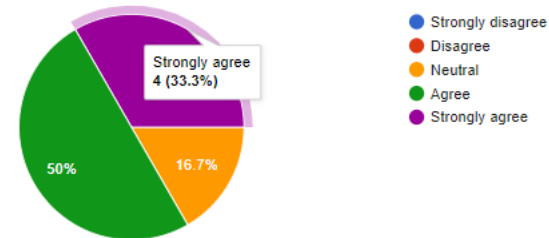
5- The example assignments a) showed me how to do my assignment

12 responses



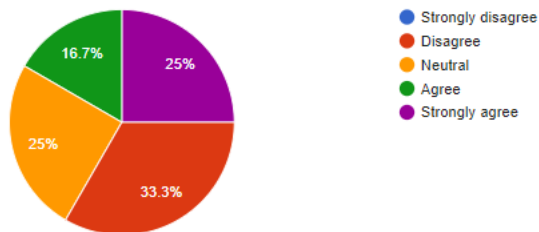
5- The example assignments c) Improved my concentration

12 responses



5- The example assignments b) Seeing the examples of assignments made it hard for me to be creative in my assignment

12 responses

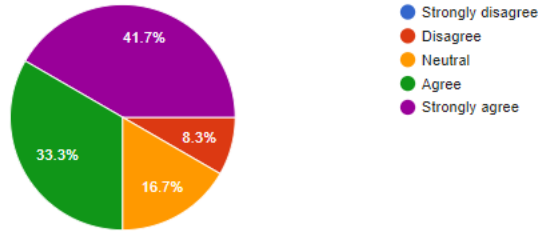


Step 4: 1- Online T & L strategies

Overall

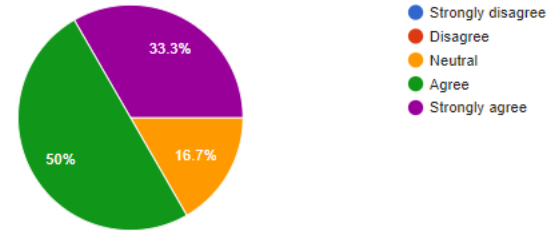
7- Overall a) The above techniques were useful to engage me in the course/module.

12 responses



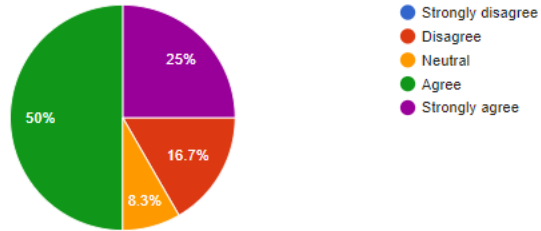
7- Overall c) I am able to apply what I learned in other units of study

12 responses



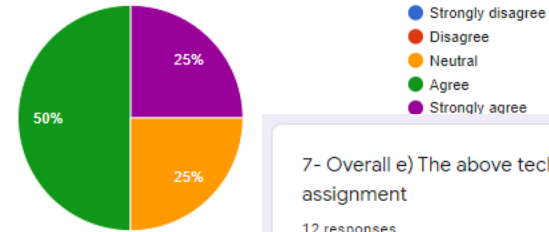
7- Overall b) The above techniques gave me the confidence to be able to do well in my modules.

12 responses



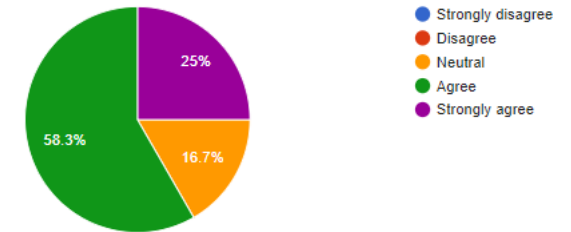
7- Overall d) The above techniques led me to think about the quality of work I wanted to achieve in my assignment.

12 responses



7- Overall e) The above techniques helped me to learn about the structure of a good assignment

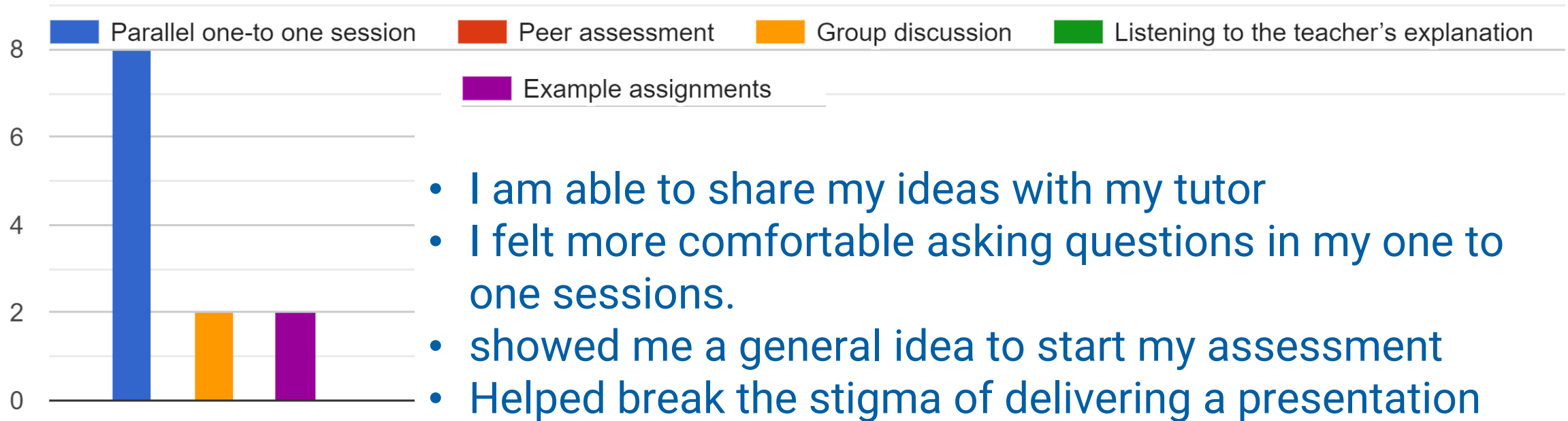
12 responses



Step 4: 1- Online T & L strategies

Overall

Rank from 1–5 the techniques usefulness



Students Comments

One-to one session

- I am able to discuss my ideas with my teacher and find and a reasonable solution
- I am happy with the help provided
- I really enjoy the one to one sessions as I get good feedback and tips on how to improve.

Peer assessment

- Exercise helped us to be aware of online presentation, and how to deliver it.
- I am now confident in my learning because of the above statements

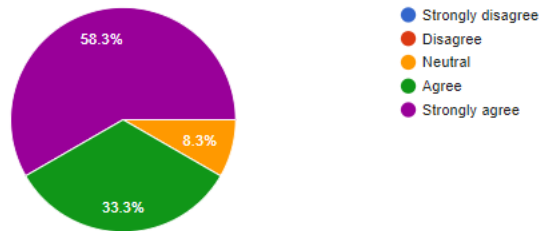
Group discussion

- Different views and opinions and form of expressing through email or text message didn't give the sense of group

Step 4: 2- Attitude to learning

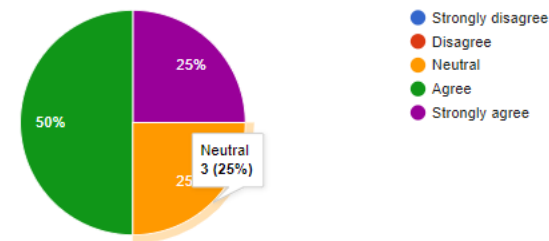
6- Attitude to learning a) I found myself attending lesson on time

12 responses



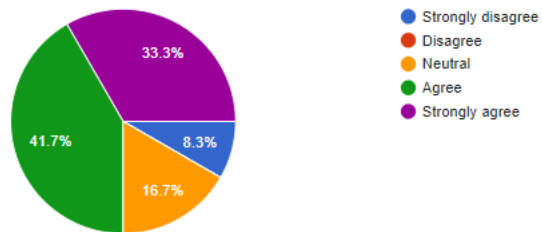
6- Attitude to learning c) I have been challenged to find answers for my questions.

12 responses



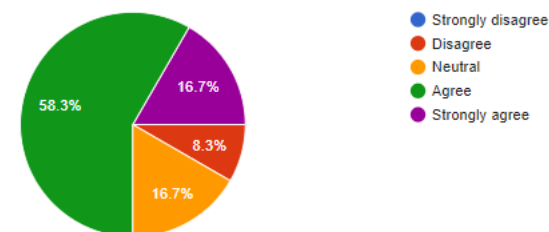
6- Attitude to learning b) I enjoy participating in the lesson

12 responses



6- Attitude to learning d) My interest in the course/ subject was increased

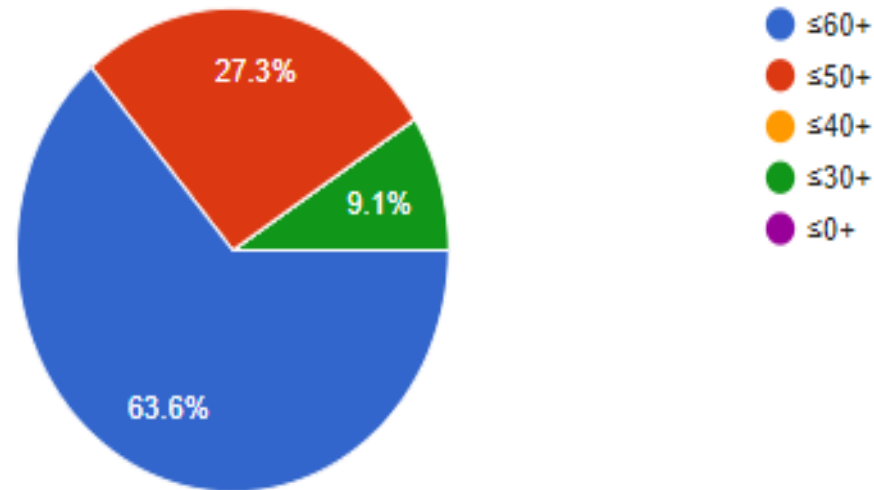
12 responses



Step 4: 3-Students performance (1st assessment)

Please select the grade that you received for your assignment (first assessment of the Applied Engineering Project)

11 responses



Step 4: 4-Students pass rate & engagement

- AEP module pass rate was 75 % (including non engaged students).
- AEP Assignments were submitted on time.
- Students didn't feel the need to the take the advantage of the uncapped resit.

Step 5: Summary of Findings

- I have found the benefits of online active strategies in student learning in terms of student engagement, ownership of learning, development of critical thinking and problem-solving skills.
- The findings from this case study showed **improvement across student engagement and overall achievement**.
- The results were constructive and promising as the students' input will enable me to enhance the tools used for more active learning approaches.

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Thank You for Listening