The interactivity effect in multimedia learning

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1 Philosophy

The paper[1] aims to study whether the addition of interactivity in Learning system increases the learning process.

2 Summary

A Group of 33 students(22 male and 11 female) are selected from a school and they are taught the working of a bicycle pump. One of the group is taught using interactive simulation and then their are self assessment questions but the other group is taught using non interactive system involving text and images only. They are given two quizzes after this demonstration. One quiz is to evaluate memory by recalling facts and the other quiz is regrading the application of taught content. On the basis of performance in quiz by both groups, author concludes that interactivity helps in better understanding and deep learning of course material. Students were randomly divided in two subgroups and were taught 12 stages of working of bicycle pump(in a computer laboratory).

2.1 Screen for Non Interactive Section

For Non interactive group(containing 17 participants) the screen contains a digram of pump with a description of each stage in down phase and up phase.

![Figure 1: Demonstration for Non Interactive Group][1]

[1]: figure1.png
2.2 Screen for Interactive Section

For Interactive group (16 students) first screen consist of diagram of a pump and the screen consist of a next button which when repeatedly presses, shows various stages of working of pump (Both groups were given a time limit of one hour for lesson and quiz).

Screen for Interactive group is as shown below

![Screen for Interactive Group](image)

Figure 2: Demonstration for Interactive Group

2.3 Learning Hypothesis

- **Active Learning Hypothesis**
  As per active learning Hypothesis learning should increase as we increase interactivity in the content

- **Passive Learning Hypothesis**
  As per passive learning hypothesis the learning will remain same till the content to be taught is same. This hypothesis denies any role of interactivity in learning.

3 Observations

The following results were obtained after the quiz.

- Relation between Time spent on lesson and Transfer Score
- Relation in time spent on lesson and time spent on test
- Scores of two groups
3.1 Relation between Time spent on lesson and Transfer Score

- There is no relation between time spent on Lesson Learning and the score.
- Marks of Interactive group is more than non-interactive

![Figure 3: Time spent on lesson and Transfer Score](image)

3.2 Relation between Time spent on lesson and Time spent on test

There is no relation in time of lesson and time of test.

![Figure 4: Time spent on learning and time spent on test](image)
4 Positive points

- Passive Learning Hypothesis is denied
- The students were selected that none of them had a background in physics.

5 Problem/s identified

The interactivity used was less like there was no use of videos and animations.

6 Feedback

We can use videos animations and quizzes all at one place for example in the book itself for better understanding

References