

<b>The Study Number in The List</b>	<b>:</b>	<b>The Sixth</b>
<b>The Study Title</b>	<b>:</b>	<b>The Effect of Using PDEODE Strategy in Teaching Mathematics on Developing Achievement, Reflective Thinking and Retaining Them of The Secondary Stage Students' with Different Achievement Levels'</b>
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**Abstract:**

The current study aimed at exploring the effect of using PDEODE strategy in teaching mathematics on developing achievement, reflective thinking and retaining them of the secondary stage students' with different achievement levels'. The researcher prepared a student book and a teacher's guide to teach "trigonometry unit" using PDEODE strategy. The researcher also prepared an achievement test of trigonometry unit that is studied by first year secondary students, second term, and a test of reflective thinking.

The validity and reliability for both the tests are made. The study sample includes 172 students; the experimental group includes 84 students. They are divided according to the previous level of achievement into (24 low, 36 medium, 24 high). The control group includes 88 students; they are also divided according to the previous level of achievement (28 low, 34 medium, 26 high).

The researcher administered the tools to gain pre-data, then taught trigonometry unit for the experimental group

students using PDEODE strategy while teaching the control group according to traditional methods. Finally, the researcher administered the tools to gain post data.

The study results revealed that the experimental group performed better than the control one in the post achievement and reflective thinking test of mathematics in each skill of reflective thinking skills (reflection and observation , detecting fallacies , giving convincing explanations , getting conclusions and developing proposed solutions) and in the test as a whole . The study also revealed learning retention using PDEODE strategy in achievement and reflective thinking of secondary stage students' with different achievement levels' .In addition, the study revealed that there is an interaction between instructional treatment (PDEODE strategy, traditional methods) and achievement (low, medium, high) of first year secondary stage students' achievement and reflective thinking. The study, finally, revealed that there is a positive correlation, significant at 0.01, between the experimental group scores in the post administration of both achievement and reflective thinking tests in mathematics.

The study recommended that it is necessary to prepare guides for math teachers in different stages according to PDEODE strategy and to rely on it in teaching mathematics as it has an effective role in developing achievement and reflective thinking and retaining them.

**Key Words:** PDEODE strategy , Achievement , reflective thinking , trigonometry , learning retention