ABSTACTS OF PAPERS PRESENTED IN THE SPECIAL ARABIC SESSIONS

THE INTERACTION BETWEEN THE LEARNER'S COGNITIVE STYLE AND A PROPOSED TEACHING STRATEGY BASED ON LAB. ACTIVITIES AND CONSTRUCTIVE LEARNING, AND ITS EFFECT ON THE CONCEPTUAL CHANGE OF PLACE VALUE AND DEVELOPING ALGORITHMS UNDERSTANDING IN PRIMARY STAGE PUPILS

Research Summary Prepared by
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This study dealt with two variables: the learner's cognitive style (impulse/reflection) and a proposed teaching strategy based on lab. Activities and constructive learning as for the individual effect of each. It also dealt with the effect of the interaction between them on the conceptual change of place value and developing the decimal fractions algorithms understanding in primary stage pupils.

The sample of the study included (140) pupils of four primary classes in Sharkia Governorate in Egypt. This sample was divided into two groups. The experimental group was (70) pupils and was taught the decimal fractions unit using a strategy designed by the two researchers in the light of the lab activities and constructive learning, while the control group was (60) pupils and was taught the same unit using the current method. The subjects of the sample were classified according to their cognitive style (impulse/reflection) in the light of the results of matching familiar shapes test. That classification took place after removing the pupils featured by slow-pace with inaccuracy and those featured by fast-pace with accuracy, because they represent the middle classes in the cognitive (impulse/reflection) style. And to know the misconceptions of the place value concept, the researchers applied the diagnostic test which they prepared for that purpose. They also designed and then applied an objective test for measuring the range of developing pupils, understanding the decimal fractions algorithms. Thus, the scores were recorded and treated statistically.

The results showed the superiority of the proposed teaching strategy to the current method regardless of the cognitive (impulse/reflection) style, and the superiority of the pupils of reflection style to the pupils of impulse style. It was also revealed that the interaction between the proposed teaching strategy and the cognitive (impulse-relfection) style had a statistically significant effect as for the conceptual change of place value and the development of understanding decimal fractions algorithms. In the light of the results revealed, the researchers presented some recommendations and suggestions.

THE EFFECT OF A PROPOSED PROGRAM TO LEARN MATHEMATICS MULTI MEDIA ON STUDENTS' ACHIEVEMENT AND ATTITUDES TOWARDS MATHEMATICS AT THE PRIMARY LEVEL

Dr. Mohamed Ahmed Yousef

Problem of the research:

The problem of the research is treated through of the following questions:-

What is the form of the suggested program to learn mathematics by using multi media through computer.

What the effect of the suggested program on the mathematical achievement of the students in primary stage.

What is the effect of the suggested program on the attitudes of the students in primary stage.

Tools of the research:
An achievement test in mathematics.
An attitude measurement towards mathematics.
Questionnaire for teachers and students' views.
The program on CD-Rom.
Teacher's manual.
Procedures of the research:
Reviewing the previous related studies and references.
Preparing the suggested program.
Preparing the tools of the research.
Proving the validity and the reliability of these tools.
Choosing the research sample including 30 pupils.
Pre-application of the research tools.
Application of the program of the experimental group.
Post-application of the research tools (Achievement test, and attitude measurement).
Analyzing the data and interpreting the results.
Results of the research:
There are statistically significant differences between the means of the experimental group scores and the control group scores in post application in the achievement test and the attitude measurement in favour of the experimental group.
There are statistically significant differences between the means of the experimental group scores in the two application (pre and post) in the achievement test and the attitude measurement in favour of the post application.

The effectiveness of a suggested enrichment Interdisciplinary Unit in Art Design Using The Isometric Style in Developing some Art Abilities and Spatial Imagination for Second Year Secondary School Students.

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The Present age is that of Knowledge and information explosion. This has made the world direct its attention towards knowledge by connecting the natural sciences, Mathematics, arts, and humanities together. The new name will be "Interdisciplinary Sciences" instead of considering each branch of science a separate unit. This conception, in its integrated form, is required by the global world in which we live and the challenges of the 21^{st} century.

This research resulted from that perspective. It aims at finding a perspective for an enrichment disciplinary unit in art design using the isometric style, and showing its effects in developing some artistic abilities, and spatial imagination for a sample consisted of (82) Second year secondary students.

Findings:

1. Building up a disciplinary unit for art design using the isometric style through the Knowledge unity between arts and mathematics. This will realize the first proposal of the research.

- **The suggested unit is effective in developing the following abilities:**

2. Artistic formulation

3. Feeling shade and light.
4. Forming the isometric perspective.
5. Spatial imagination.

Since it scored an adjusted gain ratio greater than 1.2 by using Blake adjusted gain ratio.
Research recommended a group of items depending on the present research findings to complement that research, some researches are suggested to be conducted.

Research Summary

The Effectiveness of a competency-Based Proposed programme for Student Teachers in Mastering Teaching Skills of function Graphing and Decreasing their Teaching Anxiety

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This research aims at designing a proposed programme based on the necessary competencies which a student-teacher of mathematics in the faculty of education needs for teaching the skills of function graphing in secondary stage. It also aims at measuring the effectiveness of the proposed programme in meeting the student-teacher teaching skills of function graphing, as well as studying its effect on decreasing their teaching anxiety.

With a diagnostic test developed by the researcher, he could define a list of the necessary cognitive competencies which the student-teacher needs to master teaching the skills of function graphing, while the behavioral competencies defined via a performance rating. Thus, a competency-based programme in function graphing was built.

The sample of the study consisted of (20) student teacher of mathematics in Zagazig faculty of education. They were divided into two equivalent groups: The experimental group of size (10) ten student-teachers, studied the programme proposed by self-learning, and micro teaching technique in training to teach the skills of function graphing. The control one, of the same style was not exposed to any experimental variables.

To test the hypotheses of the study, the researcher prepared rating scales for the performance of student-teachers of mathematics in teaching function graphing skills, as well as another scale for determining the level of their teaching anxiety in function graphing.

Results of the study indicated that the proposed programme was effective in mastering teaching function graphing and decreasing their teaching anxiety. Besides, There were significant differences between the two groups in favoure of the experimental one.

In the light of the results reached, the researcher presents some recommendations and suggestions related to the results.

A Field study of the Present Situation of Teaching Mathematics in a Foreign Language for Egyptian Students in the Basic Stage of Education

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Nowadays, huge numbers of Egyptian students has been joining language schools where mathematics and science are being taught in foreign languages, parents have given many reasons for joining their children in language schools. Besides, the Ministry of education has issued many ministerial decisions such as the one issued in 1972 and that of 1985 whereby governmental schools were established under the name of experimental

schools. In these schools, Mathematics and science are being taught in a foreign language mainly English.

Varied points of views were expressed; some approved teaching Mathematics and science in a foreign language and other opposed and disapproved that.

The researcher developed a field study research on the situation of teaching Mathematics in a foreign language to find out the following:

The differences in achievement between those who study mathematics in a foreign language and those who study it in Arabic.

The obstacles which are found by the students, teachers, parents and supervisors in learning and teaching Mathematics in a foreign language.

The differences in attitudes towards mathematics between those who study it in foreign language and those who study it is Arabic.

The study is limited to:

1. Students of third and fifth primary and those of third preparatory stage.
2. Achievement in learning Mathematics, first term 1998-1999.
3. Students who learn Mathematics in either English or French.

The researcher applied the tools of the study on third and fifth grade primary level students and those of third prep. Level students in every school where the study was carried out.

Results were statistically analysed and it is found that:

- There are statistically significant differences between the students who learn Mathematics in either English or French and the students who learn it in Arabic, in both primary and preparatory levels, on the achievement test the results were in favour of the students who learn math in either English and French.

- Students attitudes towards learning Math in the primary stage were higher for those who study it in a foreign language, while student's attitudes towards learning Math in prep stage were higher for those who study it in Arabic.

The study came to its recommendations in light of the research results.

Uses of Calculators in Teaching Mathematics in Primary Education in Egypt

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Although the use of calculators is widespread in many areas, yet it is still debatable in teaching mathematics in primary education.

The issue must not be reudced to whether calculators should be used or not, rather, muich more concern should be given to how it can be used and its benefit.

The paper includes three sections; problem identification, answering research questions and conclusions.

The problem of the present paper is:

How can calculators be used to contribute better to the achievement of aims of education in primary education.

To deal with this problem, the following questions should be answered:

What is the state of art of using calculators in teaching in primary education in Egypt.

What are the dominated ideas concerning the use of calculators in teaching mathematics in primary education (among pupils, parents mathematics education in Egypt)?

What are the results achieved when such activities were introduced to some teachers and supervisors, being practised, within some training sessions?

THE RELATIVE EFFECTIVENESS OF A PROPOSED STRATEGY FOR TEACHING SOLID GEOMETRY AND THE DE BONO STRATEGY IN DEVELOPING GEOMETRIC CREATIVITY AND CREATIVE PERCEPTIONS IN SECONDARY STAGE

Research Summary

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There is a fundamental need to develop creativity in society in general and in subject matters in particular. But it is noticed that teachers focus on some teaching styles that prevent learners from producing creative solutions. In solid geometry students solve geometric problems and theories by the information they repeat without understanding it, the matter that necessitates changing the nature of presenting the learning material based on a new strategy for teaching solid geometry. This strategy is to be functioned to develop the whole creativity (i.e. creativity as a general ability), the geometric creativity (i.e. creativity as a specific ability) and the creative perceptions.

Since De Bono - the developer of the CORT Programme for teaching creative thinking - sees that his programme develops the whole creativity (i.e. creativity as a general ability) in any subject - matter with no exceptions, this research aimed to build a proposed strategy for teaching solid geometry as a way for developing creativity, then to determine which is more effective in developing the whole creativity and the geometric creativity and creative perceptions, the strategy proposed by the researcher or the strategy of De Bono. And since solid geometry is one of the subject matters that are easily forgotten by many students, the study also aimed at determining which strategy is more effective - the proposed one or the De Bono's - as for the continuity of whole creativity, geometric creativity and creative perceptions in students for a long period of time.

The research problem was formed in many questions in order to accomplish its aims. The researcher followed the descriptive approach as well as the experimental one. He presented a survey of some previous studies showing the similarities and differences between the present study and the previous ones, and how far he got benefit from them. Besides, he formulated some assumptions and hypotheses for the study, described its procedures in order to test the hypotheses validity. The study revealed many results such as:

1. The two strategies have nearly the same effectiveness in developing the whole creativity (as a whole and its particular components) of students in two strategies in the post and postponed application of Williams Test of Creative Abilities.
2. The students of the proposed strategy are superior to those of De Bono's for the development of geometric creativity (as a whole and its particular components) in the post and postponed application of geometric creativity test designed by the researcher.
3. The students of the proposed strategy are superior to those of De Bono's in the post and postponed application of Williams Test of Creative Perceptions.

Thus, the results indicated the effectiveness and the superiority of the proposed strategy to that of De Bono's in developing the geometric creativity and its particular components, and in developing the creative perceptions and preserving them for a long period of time in secondary school students.