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A Comparative Study of Effectiveness of Concept Attainment Model and Advance Organizer Model in Teaching of English in Teacher Education Course

Iftikhar Ahmed, Aijaz Ahmed Gujjar and Akhtar Ali

Introduction

Education and teaching are intimately interwoven. There can be no real education without teaching. Effective teaching implies knowledge and skills related to teaching as an art. To be a teacher one must have trained in teacher education. Teacher education is based upon all formal and informal activities and experiences which help to qualify a person to discharge his responsibility more efficiently (Good, 1973).

Teacher education helps teacher to minimize his troubles and to foresee that it would save the children through which teacher himself has under gone (Aggarwal, 1997). Teacher education let teachers appreciate educational theories, methods and models of teaching. Model of teaching is an exciting and rapidly developing field that hold much promise both as scientific enterprise and means of improving cognitive abilities of the learners.

According to (Wittrock 1986) models of teaching are designed to shape and implement these strategies to help learners to develop their capacity to think clearly and wisely and builds social skills and commitment. Models of teaching supports their teaching in the

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creation of proper environment and various components of teaching are interrelated. (Siddiqui 1993) perceived a model of teaching is a plan or pattern that can be used to shape curricula, to design instructional material and to guide instruction in classroom setting. Model provides guidance to teacher, to attain the goal of instructions (Chauhan 1989).

Concept Attainment Model

Concept attainment model is built around the study of thinking conducted by Brunner. Concept attainment model is concerned with two related ideas: (i) nature of the concepts (ii) thinking process used in concept learning (Brunner 1977).

Concepts are the building blocks for structuring knowledge of different disciplines. A concept is assumed to be a set of specific objectives, which share common attributes. Concept learning is regarded as the identification of concepts attributes, which can be generalized to newly encountered examples and discriminate examples from non-examples. This model of teaching is applied in all subjects and at all grade levels. A concept attainment model is also used in the english language teaching.

Concept attainment model has three phases these are:

- i. Presentation of data and identification of concept
- ii. Testing attainment of the concept
- iii. Analysis of thinking strategy (Woolflok, 2003)

Teacher helps students learn new concepts by providing them:

- i. Definition of concept
- ii. Many and various examples
- iii. Provision of Non-examples
- iv. Examples and non-examples simultaneously
- v. Classification of examples
- vi. Development of examples of the concept by the student (Ormard 1990)

Concept attainment model involves inductive reasoning and teacher makes students to develop and test their hypotheses to coin their own definition. Hence, concept attainment model is student centered and it requires fairly flexible class room setting. Teachers have students to arrive at their own conclusion so it may be time consuming strategy.

Advance Organizer Model

Advance organizer model is designed to provide students with a cognitive structure for making sense out of data, teacher presents in the classroom. This model has its origin in

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meaningful verbal learning theory . Meaningful verbal learning explain, how mind process, interpret and store new information as well as with the organization and presentation of the material to learner (Bhalwanker 1989).

Advance organizer models purpose is to convey large amount of information efficiently and economically. Advance organizer is a statement made by the teacher ahead of teaching (Woolflok 2003).

Advance organizers provide ideational scaffolding. It helps students to activate their prior knowledge and link it the later retention. Students are able to see conceptual view what is to come, alertness eases reception ,order organization, coherence and symmetry and create links between prior and after information makes it very potent tool for teaching vast amount of information. Teacher generally use two types of advance organizers. These are comparative and expository.

Other Organizers

Comparative organizers connect new learning with the old one through analogy and comparisons. Expository organizers are presented at a high level of generality that the concept be presented. It may well be called subsumer, a definition of general concept (Woolfolk 2003).

Functions of Advance Organizers

Both types of advance organizers are important as they facilitate the process of assimilation and accomodation in learning. The functions of advance organizers vary from subject to subject and grade level. The type and form of advance organizer, depends on teacher's choice. The strength and effectiveness of the advance organizer model very much depends on efficacy of the teacher. Advance organizer model of teaching has three phases:

- i. Presentation of advance organizer
- ii. Presentation of learning material
- iii. Evaluation and feedback from improving cognitive structure of the student (Ormard. 1990)

High order knowledge and skills based upon concepts abstract ideas, may be taught effectively by using advance organizer model. While using it teacher must ensure understanding and retentivity of the learner. Advance organizer model is teacher-oriented and demand, superb teacher for its application having based upon deductive reasoning it may prove time saving (Shuell 1981).

Objectives

- i. To define the concept attainment model and advance organizer model

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- ii. To compare the effectiveness of concept attainment model and advance organizer model

Population

As the purpose of this study was to measure the comparative effectiveness of CAM and AOM in teacher education course at M.A level, therefore M.A education students studying the subject teaching of English constituted the population of the study.

Sample

The sample of the study consisted of 46 students teachers. On the basis of pretest they were placed in three groups randomly. Each group comprised 23 students.

Design of the Study

This study was experimental in nature. Experimental research is the most valid type of research. It can truly test hypothesis concerning cause and effect relationships. It represents the most valid approach to the solution of educational problems, both theoretical and practical. In an experiential study the researcher manipulates at least one independent variable, controls over relevant variables and observes the effects on one or more dependent variables. The independent variable also referred as experimental variable. The dependent variable is termed as criterion variable.

Characteristics of Experimental Research

Experimental research incorporates a high degree of control over the variables of study. Proper control over the variables permits to establish caused relationships among research variables. The two defining characteristics of experimental research are:

- (1) Manipulation of an independent variable.
- (2) Control over extraneous variables

An independent variable is a variable whose values are chosen and set by the experimenter. To manipulate independent variables, subjects must be exposed at least two levels of that variables. The specific conditions associated with each levels are called treatments of the experiments. The variables whose values researcher observes and records in experimental at design is called the dependent variables. The group receiving the treatment is called the experimental groups. The control group is treated exactly like the experimental group except that is not exposed to the experiential treatment.

The second characteristic of experimental research is control over extraneous variables. Extraneous variables are those that may affect the behavior researcher wish to investigate. Extraneous variable can be controlled by two ways.

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- (1) Hold extraneous variable constant.
- (2) Randomize its effects across treatment.

Ho:1 There is no significant difference in the mean scores of trainee teachers taught through concept attainment model and advance organizer model.

Table 4.1. Significant of difference between the Mean scores of trainee teachers laugh through concept attainment model and advance organizer model on post achievement test.

Group	N	df	Mean	S.D	t-value
CAM	23	22	76.91	10.35	6.23*
AOM	23	22	59.78	8.16	

* Significant at 0.05 level

Table value 2.02

Interpretation

Table 4.1 explains that t-value 6.23 is significant at 0.05 level of significant .So the null hypothesis that there is no significant difference between students achievement in academic test taught through concept attainment model and advance organizer mode is rejected. Students in concept attainment model gain higher mean score(67.91)than students in the advance organizer model (59.78).so it is concluded that students in concept attainment model produced better performance.

Ho: 2 There is no significant difference in the mean scores of high achievers trainee teachers taught through CAM and AOM.

Table 4.2. Significant of difference between high achievers taught through CAM and AOM.

Group	N	df	Mean	S.D	t-value
CAM	12	11	82.67	4.075	8.85*
AOM	12	11	67.50	4.317	

* Significant at 0.05 level

Table value 2.02

Interpretation

Table 4.2 explains that t-value (8.85) is significant at 0.05 level of significance. So the null hypothesis that “there is no significant difference between students achievement in academic test taught through the concept attainment model and advance organizer model is rejected and it is concluded that there significant difference between the achievement of both groups. Students in concept attainment model gain higher mean scores (82.67) than students in advance organizer model group. It is evident from the results that performance of concept attainment model group was batter.

Ho:3 There is no significant difference in the mean scores of low achievers trainee teachers taught through CAM and AOM.

Table 4.3. Significant of difference between low achievers taught through CAM and AOM.

Group	N	df	Mean	S.D	t-value
CAM	11	10	70.64	6.727	6.7*
AOM	11	10	51.36	8.103	

* Significant at 0.05 level

Table value: 2.02

Interpretation

Table 4.3 reflects that t-value (6.7) is significant at 0.05 level of significance. So the null hypothesis that there is no significant difference between students’ academic achievement taught through the concept attainment model and advance organizer model is rejected and it is concluded that there is a significant difference between the achievements of both groups. Students in concept attainment model group gain higher mean score (70.64) than

students in advance organizer model group. So it is stated that students in concept attainment model group displayed improved better performance.

HO: 4 There is no significant difference in the pretest and posttest achievement scores of trainee teachers taught through concept attainment model.

Significant of difference between the mean scores of trainee teachers taught through concept attainment model.

Group	N	df	Mean	t-value
CAM Pre-test	23	22	59.39	-10.53
CAM Post-test	23	22	77.91	

Interpretation

Table No 12.4 explains that t value (10.53) is significant at 0.05 level of significance. So the null hypothesis that there is no significant difference in the mean scores on the pretest and post test of trainee teachers taught through concept attainment models is rejected and it is concluded that there is significant difference in the mean scores of pretest and the posttest of trainee teachers taught through concept attainment model. Students in posttest gain higher mean scores (77 .91) than students in pretest group taught through concept attainment model on the academic achievement test.

HO: 5 There is no significant difference in the pretest and posttest achievement scores of trainee teachers taught through advance organizer model.

Significant of difference between trainee teachers taught through advance organizer model on pretest and posttest academic achievement

Group	N	df	Mean	t-value
AOM Pre-test	23	22	60.21	0.83
AOM Post-test	23	22	57.86	

Interpretation

Table No 4.14 explains that t value (0.83) is non significant at 0.05 level of significance. So the null hypothesis that there is no significant difference in pretest and posttest achievement scores taught through advance organizer model is confirmed and it is concluded that there is no significant difference in the mean scores of trainee teachers taught through advance organizer model. Although students pretest group gain higher mean scores (60.21) than students in the posttest group (57.86) on academic achievement test but this is not statistically significant, so the null hypothesis is accepted.

HO: 6 There is no significant difference in the mean scores of high achiever and low achievers trainee teachers taught through concept attainment model.

Significant of difference in mean scores of high achievers and low achievers trainee teachers taught through concept attainment model.

Group	N	df	Mean	t-value
CAM High achievers	11	10	82.18	
CAM Low achievers	11	10	72.54	13.44

Interpretation

Table No 4.16 shows that 't' value (13.34) is significant at 0.05 level of significance. so the null hypothesis that there is no significant difference in the high and low achievers trainee teachers taught through concept attainment model is rejected and it is concluded that there is a significant difference between the achievement of both groups on the academic test. Students in the high achiever group gain mean scores (82.18) is greater than the mean scores of low achievers which is (72.54). So the null hypothesis is rejected.

HO: 7 There is no significant difference in the mean scores of high achieves and low achievers trainee teachers taught advance organizer model.

Group	N	df	Mean	t-value
AOM High achievers	11	10	66.54	
AOM Low achievers	11	10	49.45	12.34

Interpretation

Table No 4.17 explains that t value (12.34) is significant at 0.05 level of significance. So the null hypothesis that there is no significant difference between high achievers and low achievers taught through advance organizer model is rejected. High achievers gain mean scores (66.54) which are greater than the mean (49.45) of low achievers trainee teachers. So in the light of result null hypothesis is rejected.

Ho: 8There is no significant difference in the mean scores of pretest of CAM and posttest of AOM group.

Significant of difference in the mean scores of pre-test CAM and posttest of AOM group.

Group	N	df	Mean	t-value
CAM Posttest	23	22	60.21	
AOM Pre-test	23	22	77.91	7.59

Interpretation

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Table No 8 explains that t Value (7.59) is significant at 0.05 level of significance. So the null hypothesis that there is no significant difference in the mean scores of pretest and posttest achievement scores of concept attainment model and advance organizer model is rejected, because there is significant difference in the two means. Advance organizer model group attained mean (77.91) which is greater than the means (60. 21) of concept attainment model. So the null hypothesis is rejected.

Education trainee teachers studying teaching of English constituted the population of the study. Total sample comprised 46 trainee teachers. In each group there were 23 respondents. The trainee teachers of M.A Education of Federal College of Education H-9 Islamabad were selected as sample of the study. Only the trainee teachers studying teaching of English were included in the sample. Sample students were assigned to three groups. Three groups were equated on the basis of the pre-test scores administered before the start of experiment in the subject of English.

Experimental group's concept attainment model and advance organizer model were extended treatments, whereas control group was taught with traditional method. Before the start of the treatment lessons were planned and prepared. Two different teachers having equal qualification and experience taught experimental and control groups. Treatment was extended at the same time and same duration. The experiment lasted for 10 weeks. In order to adjudge treatment effects teacher made posttest was administered to the experimental as well as control group soon after the treatment was over. This test aimed to measures the academic achievements of the trainee teachers comprising the sample of the study. No mortality occurred during the treatment and response was hundred percent. Final test was administered to 46 trainee teachers. Experiment was conducted in Federal college of Education H -9 Islamabad.

Achievement scores of the sample were obtained tabulated and computed. Difference between the mean was worked out. Significance of difference between the means scores of the two groups on the variable of post test achievement was calculated at significant 0.5 levels by applying independent t-test.

Conclusion

Following conclusions were arrived at on the basis of the findings:

- 1- Study results proved that concept attainment model emerged as effective instructional strategy in teaching of English.
- 2- It was identified that high achievers trainee teachers registered better academic performance thought through concept attainment model.
- 3- It was noted that low achievers trainee teachers produced better results taught through concept attainment model.

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So, it may be stated that concept attainment model turned up effective instructional strategy. There was difference in the mean scores when high and low achievers of experimental and control group were compared. but trainee teachers taught through concept attainment model registered better performance on the posttest as well.

Discussion

This study was entitled to comparative effectiveness of concept attainment model and advance organizer model. In concept attainment model, emphasis is given to cognitive development and from the theory of learning it has been established that cognitive development facilitates more learning.

The most important aim of this model is to acquaint the students with pre-existing concepts. Advance organizer model is concerned with and is derived from the theory of meaningful verbal learning. This model requires that learning material should be organized in such a way so that information are presented meaning fully so that process of learning may be triggered.

The results of the study negate the major hypothesis that there is no significant difference between trainee teachers taught through concept attainment model and advance organizer model. Sample included in the concept attainment model exhibited superior performance when compared with advance organizer model. So the null hypothesis that there is no significant difference in the mean scores of trainee teachers taught through concept attainment model and advance organizer model is rejected. This finding verifies the results of the study conducted by Siddique (2006).

Comparison between pretest and posttest between experimental and control group indicates that concept attainment model group exhibited superior performance on the posttest but there is no significant difference in the pretest and the posttest group performance taught through advance organizer model. This view is supported by the study of Gilmore conducted in (2005).

The results indicate that the major hypothesis that there is no significant difference in the mean scores of trainee teachers, taught through concept attainment model and advance organizer model was rejected. The reason may be that both strategies work upon opposite assumptions. Concept attainment model calls for inductive reasoning and reflection on part of students. It permits greater freedom and chance of discussion. Therefore students may have ample and adequate opportunities to discover the concept.

The results of study were mostly in line with those of previous researches carried out in other cultures. Concept attainment model may have proved superior because it is highly student centered and students must engage themselves in critical thinking and analytical

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reasoning. As students are supposed to discover and infer rules from examples. This technique is unusual in Pakistani culture. The concept attainment model demands high level of participation on the behalf of the students. In contrast advance organizer model is based on deductive reasoning and is teacher-oriented. In both strategies teacher dominates the proceeding and students receive information in finished form. It does not demand high level of critical reasoning.

Most of the time students remain passive recipient of the information. Apathy non-involvement low level of participation may have resulted in poor achievement. But it may not be inferred that trainee teachers taught through advance organizer model perform worse. Post-test achievement performance was not disheartening at all. Trainee teachers instructed through advance organizer Model produced promising output. But these strategies proved deficient against concept attainment model in the subject of teaching of English, they produced poor performance.

The results of the study conducted in specific conditions never mean that methods engendered low performance must be wholly discarded. Results may be reversed in altered conditions by different teachers. The difference might also be attributed to students' previous exposure to traditional method and advance organizer Model, because both are built around on common propositions.

The results of the study disclosed that concept attainment model turn out to be more handy instructional strategy as compared to advance organizer model and traditional method.

Results of the study proved that those teaching strategies are more effective in which students participate actively study also highlighted that novel method of teaching should be introduced to bring qualitative change in the fields of teachings. This change is needed in teacher education programme.

The study was conducted in the subject of teaching of English as foreign language. So, the results of the study may be generalizable only to students studying teaching of English in M.A Education as elective course. The results of the study may not be generalizable to all English teaching class room.

Since the study was conducted in a teacher education college, sample included in the experiment had no or poor background in the course of teaching of English. Results, however, were consistent with the efforts ventured in the past. Concept attainment model emerged as potent instructional tool for teaching of English as the findings of study made a case for this.

In the light of the results of the present study it may be impressed upon the master trainer that planned and systematic transition should be incorporated in teacher education course

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with special reference to teaching of English. In a sophisticated and technologically advanced era, incredible advancements have been made in instructional methodology, and now the teachers have more and innovative instructional tools at their disposal.

Therefore, they should have the knowledge and ability to use these tools according to the situation. Enormity and complexity in the arena of knowledge demand that worldwide accepted and recognized methods of teaching with special reference to cognitive science should be accorded attention. There is rapid increase in realization that model based teaching may create big difference in the field of teaching.

So, the results of this study are applicable to only the class room where in the teaching of English is being offered as methodology paper in the M.A. education course.

Recommendations

Analysis, interpretation and conclusions of the present study indicate that the modern teaching strategies in the form of models of teaching should be applied in Pakistan classroom setting. The aim of teaching should be not only to acquaint the learners with the knowledge of their subjects but also develop awareness of the surroundings.

The teacher seems to be more active than the learner in the present day teaching learning process. The teacher has shown steadfast resistance in accepting and implementing new instructional strategies. He or she seems to be totally in dark about the development and advancements that have been made in the field of teaching after the advent of cognitive psychology. This may be due to the excessive work load of the teachers, that does not enable them to implement new instructional techniques. Or may be due to overloaded curriculum of the school, they are not in position to introduce new techniques in teaching. New techniques in teaching learning process always help in developing the interests of the learners to understand the instructional material well. New teaching strategies should be given due consideration.

General Recommendations

On the basis of the findings and conclusions following suggestions are made.

1. Models of teachings should be incorporated in Teacher Education Courses at different levels.
2. Curriculum workers should realize the importance and contribution of cognitive psychology in the domain of instructions. Curriculum should be designed accordingly.
3. Master trainers should acquaint themselves with different models of teaching and their applicability to different subjects.

4. Master trainers should be provided with adequate training in handling the various model of teaching.
5. Master trainers should be encouraged to use a variety of teaching models.
6. New models of teaching should be shaped which may cater to the needs and requirements of Pakistani students.

Specific Recommendations

The researcher recommended the following suggestions for further exploration and experimentation.

- (1) Extended use of concept attainment model and advance organizer model should be made in other subjects and grades. Because results of study in one subject may not be generalized to other subjects.
- (2) Advance organizer model and concept attainment model should be employed in rural areas institutions to determine their effectiveness. Because social economic status and back ground knowledge of the students constitute significant difference in Rural and Urban areas.
- (3) Application of the concept attainment model and the advance organizer model should be verified on boys and girls. As astonishing differences has been recorded between the performance of male and female students in the field of Education Psychologists and Educationists have been unable to explain and establish the authentic factory which underlies the variation. Further exploration in the field of teaching may contribute some support to explain the cause.
- (4) Concept attainment model and advance organizer model alone cannot offer everlasting and permanent solution to the challenges teacher encounters in teaching. Other models of teaching may produce positives results when compared with these models. Hence, it is recommended that other models of teaching should also be tested to work out more viable instructional pattern for Pakistani students.
- (5) Instructional materials should be developed on the basis of these two models of teaching for different subjects and different grade levels.
- (6) The models from the same family namely information processing family of models of teaching can be taken to assess their comparative effectiveness with concept attainment model and advance organizer model.
- (7) Teacher should employ and prefer model based teaching in the classroom setting. Our teachers have kept to worn out instructional strategies. Their dogmatic approach has caused serious setback to the quality of education in order to fill the gap some repair work should be done. To fill the gap model based teaching may be a worthwhile effort in its direction.
- (8) Both models should be used in teachers training colleges.

- (9) Teachers should be provided adequate training to prior to using them in the classroom.
- (10) An experiment with greater number of students from different institutions, representing a wide range of intelligence should be planned to examine the results of this study.
- (11) The control and experiment groups were not organized on the bases of chronological age of the students. The present study therefore points out an area which needs further experimentation.
- (12) Study in the models of teaching is warranted especially at lower grades and in different subjects, since at lower level student's minds are not firmly set, they can easily adjust and adapt themselves to innovative instructional techniques.

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