



Effect of Ausubel Model of Learning on Academic Achievement in the Subject of Social Studies at Secondary Level

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Abstract:

This study was carried out to investigate the effectiveness of Ausubel's model of learning on academic achievements in the subject of social studies at the secondary level. The objectives of the study were (i) to compare the effect of Ausubel's learning model and Traditional methods on students' achievements in the subject of social studies; (ii) to measure the effect of Ausubel's learning model on the students' motivation towards learning. A total of 50 students studying at Peshawar Model School District Mardan Campus were randomly selected. A Pre-test, Post-test equivalent group experiential design was used. Descriptive and inferential statistical procedure was used to analyse the collected data. Statistical techniques such as percentage, mean, and t-test were used to analyse the collected data. The result of the study showed that the Ausubel model of teaching had a significant effect on students' achievements in the subject of social studies, and had a significant effect on students' performance, and the learner was motivated towards learning and took an interest in learning. Hence, it is recommended that teachers use the Ausubel model of teaching to teach the Social Studies subject. The education department should arrange teachers' refresher courses for the Ausubel model of teaching. It is also recommended that teachers adopt the Ausubel model of teaching while teaching at the secondary level. This study is beneficial for students, educational managers, researchers, and curriculum developers.

Key Words: Ausubel's Model, Social Studies, Students' Motivation, Secondary Level, Achievement in the Subject of Social Studies.

Introduction

Ausubel (1918-2008), a prominent American psychologist, was born in New York. His most significant contributions to the fields of cognitive science, child psychology, and educational learning science were centered around the development and research of advanced organizers (Hagedoorn, 2002). Ausubel was strongly inspired by Jean Piaget's instruction, particularly Piaget's concepts of conceptual frameworks, which he linked to his interpretation of how individuals find information. "People acquire[d] information mostly by being revealed immediately to it instead of going through discovery," according to Ausubel, cited in Wool (2010). Some types of representational equivalency between language (symbols) and mental environment are used to produce meaning. Two processes are essential in learning: (i) reception, which is used for meaningful verbal learning, and (ii) discovery, which is used for idea formulation and problem solving (Schunk, 2012). Ausubel pointed out that reception also becomes meaningful by appropriate uses of different teaching techniques, and a badly handled discovery method also promotes rote memorization. So Ausubel forced the proper presentation of teaching materials and contents rather than what method is used (Hassard, 2003).

Review of Literature

Taber (2009) has highlighted Ausubel's theory's clear connection to the teacher's role, trying to make it far more suitable for attention and adoption than almost any hypothesis. Ausubel's method is based mostly on the learner's past information and how much it combines with existing learning in constructing his mental images. Johns (2009) stated that whenever two interrelated ideas are presented collectively, the learner learns little about each of them as if they had been presented individually. The ideas appear to obstruct the processes of knowledge acquisition. Kempa and Nicholls (1983) maintained that the contributions of pre-existing knowledge are subsumed in classroom activities according to Ausubel's theory. They looked for a link connecting cognitive structures and problem-solving abilities in learners. Effective issue responders have a much more sophisticated cognitive framework than bad solving problems, according to the researchers. Ring and Novak (1971) cited by Ally (2004), described similar results while looking at the impact of learners' current knowledge system on developing new skills in view of previous college chemistry performance. Adhakari (2010) stated that another teaching tool based on Ausubel's learning theory is the concept map, whose major aim is to connect concepts in a rational order, and explains linkages in new information to old information while at the same time forcing the learner to externalize those links and hence making the learners independent learners. Learners can utilize a concept map to learn about the process of knowledge building and knowledge structure (meta-know), as well as to understand how to study (meta-learning). These concepts are essential not only for the students but for the teachers as well.

Statement of the Problem

Ausubel's model approach is a significant method for learners to learn social studies. The study goal is to investigate Ausubel's model of learning on academic achievements in the subject of social studies at the secondary level.

Objectives

Objectives of the study were:

1. To compare the effect of Ausubel's learning model and Traditional methods on students' achievements in the subject of social studies.
2. To measure the effect of Ausubel's learning model on the students' motivation towards learning.

Hypotheses

The null hypotheses were as:

- H₀₁.** There is no significant difference between the effect of Ausubel's model of teaching and Traditional methods of teaching.
- H₀₂.** There is no significant difference between the mean scores of high achievers of the experimental and control groups according to their motivation.

Materials and Methods

Population

All grade-VI students of the elementary level of Khyber Pakhtunkhwa studying in the Social Studies subject constituted the population of the study.

Sample

By using a convenient random sampling method, the school named Peshawar Model School District, Mardan Campus, was selected for the research study. Fifty boys of grade VI were the sample of this study.

Research Design

The study was experimental in nature. The sample was further divided randomly into two groups, the Experimental and the control group, after the Pre-test and Post-test. The symbolic representation of the research experimental design name, The Pre-test-Post-test Equivalent-Group Design, was the following.

$R_E = O_1 \quad T \quad O_2$
$d_{RE} = O_2 - O_1$
$d_{RC} = O_4 - O_3$
$D = d_{RE} - d_{RC}$

Where, RC= Randomly Selected Control Group
R_E= Randomly Selected Experimental Group

O₁ is the observation based on the pre-test of the experimental group; T is the treatment given to the sampled students, while O₂ is the observation based on the post-test of the experimental group.

O₃ is the observation based on the pre-test of the control group; O₄ is the observation based on the post-test of the control group.

d_{RE} is the difference between the pre-test and post-test of the experimental group.

d_{RC} is the difference between the pre-test and post-test of the control group (Farooq & Tabassum, 2017).

Research Instrument

To measure the students' performance, pre-test and post-test were used as research instruments. There were 30 items in the test. Each carries equal marks.

Pre-test and Post-test

The researcher developed a pre-test and post-test with the help of a subject expert and supervisor. Both tests were prepared based on the cognitive domain with objectives of lesson plans as well as objectives of the study.

Procedure

Lesson plans were developed by the researcher from the selected lessons of the textbook for both groups. All the lesson plans had the same learning outcomes, but the control group was treated through the lecture/reading method, and the experimental group was taught through Ausubel's model. The teacher conducted activities by using the format of 4ps, i.e., preparation, presentation, practice, and performance. To motivate the learners, arm-up activities were carried out for the first two days. T

These activities resulted in catching the interest of the learners, and then gradually other skills activities were carried out. The duration of the class was forty minutes. Almost all the factors, such as teachers' qualifications, course contents, treatment length, class timings, and time duration, were the same. The researcher tried to establish the same conditions of teaching for both groups. The control group was taught for three days a week through the reading method, while the experimental group was taught for three days a week through Ausubel's model. The duration of treatment was six weeks. The researcher observed the activities of both teachers.

Data Collection

Data was collected personally through pre-test and post-test. An observational sheet was also developed to measure the behavioral patterns of the students. For each week, students' participation, performance, and improvement were observed. Each observation was also awarded marks 2, 2, and 1, respectively.

Results and Findings

Data collected through both the tests, i.e., pre-test, post-test, and observational sheet, were tabulated, analyzed, and interpreted through t-test and percentage, respectively. Results acquired by statistical treatment were tested at a significant level of 0.05.

Hypothesis #1.

Table 1

Significant Difference Between the Effect of Ausubel's Model of Teaching and Traditional Methods of Teaching

Group/ Test	N	Mean	SD	V	df	t-value	Effect
Pre- Pre- Experimental Test	25	15.04	2.908	8.456	24	18.41	Significant
Post- Experimental Test	25	26.64	2.215	4.906			

Significance level = 0.05,

Table Value = 2.063

Table 1 illustrates that the calculated t-value of the pre-experimental and post-experimental group was 18.41, which was greater than the table value 2.063, which was significant at a significance level (0.05; hence, the null hypothesis is rejected. It means that there was a significant effect of Ausubel's method on students' achievement in social studies.

The mean value of the score of the students in the pre-test experimental group is 15.04. It is less than a post-test of the experimental group. It shows that the performance of the students with the help of Ausubel's model of teaching was much better than the traditional method of teaching.

Table 2

Significant Difference Between the Learning of Students in the Subject of Social Studies Taught Through Ausubel's and Traditional Teaching Methods

Group/Test	N	Mean	SD	V	df	t-value	Effect
Post-Control Test	25	16.92	3.839	14.743			
Post-Experimental Test	25	26.64	2.215	4.906	48	10.96	Significant

Significance level = 0.05, Table Value = 2.010

Table 2 illustrates that the calculated t-value of the experimental and control group was 10.96, which was greater than the table value 2.010, which was significant at a significance level (0.05; hence, the null hypothesis is rejected. It means that there was a significant difference between the learning of students in the subject of social studies taught through Ausubel's and the Traditional teaching method. The mean value of the score of the students in the post-control group is 16.92. It is less than a post-test of the experimental group. It shows that the performance of the students with the help of Ausubel's model of teaching was much better than the traditional method of teaching.

Hypothesis 02.

Table 3

Significant Difference Between the Mean Scores of High Achievers of the Experimental and Control Groups According to their Motivation

Group/Test	N	Mean	SD	V	df	t-value	Effect	Motivation Score	%
High Achiever Experimental Test	25	26.64	2.21	4.90	33	10.39	Significant	609.2	81.22%
High Achiever Control Test	19	18.42	2.85	8.14				447	78.42%

Significance level = 0.05, Table Value = 2.034

Table 3 illustrates that the calculated t-value of high achievers of the experimental and control group was 10.39 which was greater than the table value 2.034 which were significant at significance level (0.05) and the motivation of experimental group students was 81.22% which were greater than the motivation of control group students 78.42%; hence the null hypothesis is rejected. It means that there was a significant difference between the mean scores of high achievers of the experimental and control groups according to their motivation. The mean value of the score of the students in the High Achiever control group is 18.42. It is less than the High Achiever of the experimental group. It shows that the performance of the students with the help of Ausubel's model of teaching was much better than the traditional method of teaching.

Discussion

A study was conducted to explore the application of the Ausubel model of learning for the subject of social studies at the secondary level. Ausubel studied the nature of meaning and argued that the outer world gets meaning only via the learner's creation of it in the contents of awareness. According to Ausubel, new information, learning, and productivity are all dependent on the appropriateness of cognitive structures, while the creation of appropriate cognitive structures is also dependent on successful learning methods. There are three prerequisites for significant learning to occur: (1) the contents must have a logical meaning; (2) The correct integration of new knowledge and concepts into the learners'

current cognitive structures is required; (3) the students should be actively involved in the new concept of knowledge and there must be adequate contact between the tendencies. Meaningful learning through lecture-style instruction is not mechanical or passive learning; it is a type of active learning if it satisfies the requirements for meaningful learning. This is advocated by Ausubel (Ausubel, 1961). According to Hassard (2003), Ausubel forced the proper presentation of teaching materials and contents, rather than what method used. According to Ausubel's learning theory, new concepts can be integrated into more inclusive conceptions or ideas. According to Ausubel (1960) and Gupta (2004) the Ausubelian teaching approach outperforms standard teaching methods in terms of enhancing student success in physics theory and practice. In comparison to standard teaching methods, the Ausubel teaching technique helps secondary school learners enhance their conceptual knowledge in the subject of physics (Ausubel, 1960; Zaman, 1996).

Conclusion and Recommendations

The result of the study showed that the Ausubel model of teaching had a significant effect on students' achievements in the subject of social studies. It was concluded from the results that the Ausubel model of teaching had a significant effect on students' performance, and the learner was motivated towards learning. The better results in academic achievements of the experimental group and students gained better knowledge from the learning process, as compared to the control group. It was concluded from the results that the Ausubel model of teaching had a significant effect on students' achievement. Hence, it is recommended that teachers should use the Ausubel model of teaching to teach the Social Studies Subject. The education department should arrange teachers' refresher courses for the Ausubel model of teaching. The result of the study showed that the Ausubel model of teaching had a significant impact on students' performance, and the learners were motivated towards learning. Hence, it is recommended that teachers should adopt the Ausubel model of teaching while teaching at the secondary level. It was concluded that the Ausubel model of teaching had a significant motivational effect on students. Keeping the benefits of the Ausubel model of teaching should be included in the curriculum of teachers' training for pre-service courses.

Declarations

Ethical Approval and Consent to Participate: This study strictly adhered to the Declaration of Helsinki and relevant national and institutional ethical guidelines. Informed consent was not required, as secondary data available on websites was obtained for analysis. All procedures performed in this study were in accordance with the ethical standards of the Helsinki Declaration.

Consent for Publication: Not Applicable.

Availability of Data and Materials: Data for this study will be provided upon a written request to the corresponding author.

Competing Interest: The authors declare that they have no competing and conflicts of interest.

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