An Investigation on the Permanence of the Knowledge of the Students Who Succeeded Gestalt Learning According To Different Variables in Teaching Process

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SYNOPSIS

Introduction

In order to improve students’ achievements, reasoning skills, science process skills and other abilities, many teaching techniques have been developed and put into practice in science lessons. In this process, it is well known that if the knowledge that has newly been gained by the students is applicable or useable in solving students’ daily life problems, meaningful learning takes place (Gürses & Yalçın, 2000). It means students should form the information meaningfully; otherwise it is liable to be forgotten. Gestalt learning theory, based on cognitive learning and aims to provide permanent learning, takes attention with the studies on providing permanency of knowledge. Gestalt theorists think from a different point of view from behaviorists. Unlike the behaviorists they state that the human behaviors cannot be oversimplified, otherwise the explanations about students’ learning would be inadequate.

Wertheimer, who is one of the outstanding Gestalt theorists, applied the theory to problem solving processes. He linked the famous scientists’ (like Galileo and Einstein) problem solving techniques with the Gestalt learning theory and tried to explain problem solving process in this way.

The basic qualities of such learning can be as the following (Senemoğlu, 2001; Kazancı, 1989):

- The transition from pre solution to solution is immediate and complete.
- The performance qualities gained through insight and based on solution are usually direct and perfect.
- Problem solving abilities gained through insight remembered for a long time.
- A principle gained through insight could be adapted to the solutions of the other problems.
• The intelligent individuals gains insight solutions faster.
• In the problems solving through insight, there is trial.
• The formation of the motives is an important factor to provide insight.

Without trying actively, it is accomplished by mental trials. Solution is immediate and complete. There are two possibilities for the problem, it is solved or not. There is not something in between. However the solution process might take longer.

The permanency of the cognitive learning, their application and solving problems using the knowledge, show the success of the aim.

The Purpose of the Study

The students who accomplished Gestalt learning:
1. Is there a difference in pretest scores between them and the ones in the control group?
2. Is there difference in pretest scores between their pretest and end test scores?
3. Is there difference in end test scores between them and the ones in the control group?
4. Do the pretest scores differ according to their demographic variables?

Methodology

Relational survey method was used in the study. Relational survey method is the model aiming to explain the existence and level of change between two or more variables (Karasar, 2000). The target population of the study consisted of the students who took and passed Physics I course at Kırşehir Education Faculty Science Teaching Department. The sample was 140 students selected randomly from the ones who took Physics I.

In order to collect the data, the researcher prepared an academic success test with 10 items including semi structured items. In the evaluation of the questions, the ones answered completely correctly were regarded as correct and the others as incorrect. The correct items got 1 point; the incorrect and unanswered items got 0. Thus, the scores that the students could get from the test were between 0 and 10.

To be able to determine the students in the group who accomplished Gestalt learning the scores of sample 140 students were ordered from the highest to lowest. According to the distribution of the scores, to set two groups, the groups who had the differences concerning their learning sources. Depending on this aim measurement and evaluation references were cited and 27% was seen as the segment to define the top and bottom groups (Tekin, 1996). So, the top 27% was taken as the ones accomplished Gestalt learning and defined as the group to be observed. The bottom 27% was taken as the control group.

The pretest application of the academic success test was done at the beginning of spring semester of 2003-2004 academic year. The posttest application was done about two months later. Any experimental study was not done during this period, just the level of the change in their knowledge was examined. The data gathered through pretest and posttest was analyzed with statistical methods.
Results

1. According to the findings of the study, average pretest score of the students who accomplished Gestalt learning (\(\bar{x}=5.05\)) was higher than the ones in the control group (\(\bar{x}=1.52\)). The success point did not reduce for the observed group in two months time and the level of their knowledge was seen to be permanent (\(\bar{x}=5.10\)). Moreover, a statistically difference was found between the posttest application scores of observed group and control group; and seen that there is an increase in observed group’s scores.

2. The observation groups’ pretest success point was analyzed according to their demographic variables and seen that there was no difference.

3. The percentage of the correct and incorrect answers were found out and the items answered incorrectly were found to be the relative velocity, cause and effect law, friction force, mass gravity, momentum and angular momentum.

Discussion and Suggestions

According to the findings, students who cannot learn properly or correctly go on their learning in this way; dissimilarly the ones who learn the topic as a whole and comprehend the relations between the items continued the permanency of their learning.

When the study analyzed, the following suggestions can be made:

1. In Gestalt learning theory, the individuals do not perceive the subjects as separately but as organized and united subjects. Teacher’s explanation of the general framework of the course at the beginning of the semester will increase the level of permanency of learning.

2. Insight problem solving skills might need a long pre solution stage. Therefore, the students might be provided adequate time to search for new information about the problem, restructure the problem, find possible solutions and test it mentally.

3. Deficiencies in the subject, inconsistent items and complex parts include motivating points for the students. These points must be stressed while teaching and questions must be created in the students’ minds and they must be asked to solve them.

References


