Bulletin of Environment, Pharmacology and Life Sciences
Bull. Env. Pharmacol. Life Sci., Vol 4 [8] July 2015: 83-89

Online ISSN 2277-1808
Journal's URL:http://www.bepls.com
CODEN: BEPLAD
Global Impact Factor 0.533
Universal Impact Factor 0.9804

ORIGINAL ARTICLE **OPEN ACCESS**

The Effect of Presenting Advance Organizer On The Extent Of Learning Accounting Concepts For Second Grade High School Students

Abolghasem Yaa qubi, Hosein Mohaqeqi, Nasrin Taheri Khoshbin
Department of Psychology, Abu Ali Sina University, Hamedan, Iran
Department of Psychology, Abu Ali Sina University, Hamedan, Iran
Department of Humanities, Hamedan Branch, Islamic Azad University, Hamedan, Iran
Email: taheri.khoshbin@gmail.com

ABSTRACT
It seems that using advance organizer by teachers increases the learning and for this purpose, we investigated and compared accounting learning with and without advance organizer. The statistical population of this study was all female high school students in academic year of 2011-2012, equal to 263 students. Two test and control groups were selected by random sampling. Results showed that, accounting learning which we divided into three categories of practical learning, comprehension and formula learning, can be increased with advance organizer. We used covariance analyze in this study and the results were significant at =10%. First result of this study suggests that, teaching with the use of advance organizers is effective on practical learning of accounting. Second result of the study is that, teaching with the use of advance organizers is effective on the understanding of accounting concepts.
Keywords: Advance Organizer Model, Accounting Learning, High School Students, Accounting

Received 21.04.2015 Revised 10.06.2015 Accepted 22.06. 2015

INTRODUCTION

In our complex world, everyone needs education. The educational materials contain concepts that need prerequisites to be taught and without these prerequisites they cannot be taught [1]. Therefore, for learning, this hierarchy is identified: setting goals, learning and gaining meaning from the text content. In this three-step process, initially, readers determine their goals from studying then, considering the purpose, the content will be under associations and inference and this step, in the third stage will lead to better learning [2]. Moreover, Froebel Ennis has stated three similar steps in the process of studying and learning as follows: first, attention, generalization and identifying the purpose of the study,second: reading and translating texts into one's own languages (association and inference) and third, linking the studied contents with advance organizer learned contents that eventually leads to better understanding [3].

Ausubel (1960) first introduced advance organizer in meaningful verbal learning. Meaningful learning is linking new content and learner's cognitive structure [4]. Advance organizers are provided to students as a summary in the beginning of the lesson. However, it is not only a summary, but it includes materials that advance organizers intend to learn. As expressed by Gage and Berliner (1988) advance organizer may be a summarized written or oral content, which compared to what is going to be learned, has higher generality and inclusiveness in terms of being abstract [5].

Advance organizer model has is a three-step action. First, presenting the advance organizer, second, presenting the intended content or lesson and third, consolidating the recognition structure [6]. Four major features of advance organizers are :

- They are being presented before the lesson
- They meant to recall the previously learned knowledge that are related to the topic
- They are more abstract comparing to the main topic and contain more specific concepts
- They reveal the relationship between prior information and the presented lesson

It should be added that, using advance organizers are advantageous in two conditions: a) when the student has no relevant knowledge to relate with new learning and b) when there are information related but not as understood by teacher [1].

Despite all the research and activities in this field, but there is room for more work. As we investigated the variable of present work in Hamadan city, we found that, there was not such a study therefore, there is a shortage which is the stimulus of present work: whether presenting advance organizer has an effect on learning accounting among second grade high school students.

It was mentioned that, there is some researches in this field that our work is based on their result that will be noted in the following. Due to the complexity and importance of the"learning" there are various definitions for it. The most well-known is as follows: "relatively durable changes that is resulted by experience and cannot be associated with the temporary states of the body such as sickness, fatigue, or medicines" [7]. Therefore, the learner, through learning, acquires the ability to do various things. However, sometimes, this ability delays for a while. Therefore, to inform the extent of learning, we refer to observable behavior of an individual or more precisely, his/her performance which is the observable aspect of learning.

Obviously, such a process has rules i.e. learning rules. Among these rules are as following. The principle of readiness, the principle of previous experiences which means that, previous experiences are the bases of current understanding, the principle of transfer in learning, the principle of whole to component relation i.e. the more inclusive is the content with the related components as a whole, the more deep is learning and finally, the principle of understanding in learning.

Among all of the theories of learning, the meaningful verbal learning theory of Ausubel, due to its higher relationship with school learning, is considered here. He believes that, non-school learning such as animal's learning, conditioning, parrot-like learning and other types of learning, are often unrelated to school learning. For him, authentic school learning is meaningful verbal learning [8]. Theory of meaningful verbal learning considers three facts:

- How knowledge (curriculum content) is organized,
- How the brain processes new information (learning)
- How teachers, when teaching, can use learning program [6]

This method is based on attracting and linking new knowledge with existing knowledge by making it eligible as a part of the existing structure. The process that provides the capturing and linking is called "inclusion making" [9]. Based on meaningful learning theory, learning, in fact, is an inclusion process and it is possible through two ways: 1) derivative inclusion and 2) inclusion of correlation.

Derivative inclusion means that, when a new material or a specific part of a subject, confirms and strengthens the related prior knowledge i.e. existing knowledge in the cognitive construe of an individual, or explains it more clearly, the process of combining two material and the resulted learning is called derivative inclusion. In addition, the inclusion of correlation means that, when learning a new material requires a type of transmission of a learned concept available in the cognitive structure in order to make changes or renewal of the form of both old and new material, the inclusion process will be from correlation type [6]. About the fashion of teacher's interaction with students in advance organizer model, it can be said that, in this model, the teacher presents the advance organizer concepts and educational materials, and the student are recipients of the materials. Teachers should ensure that, learners have understood advance organizer and can relate it to the materials presented after. There are some ways to ensure this: first, teacher, during teaching in appropriate occasions, retells the advance organizer and second, after introducing advance organizer, the teacher pauses for a while so that, the students can recognize the general material as the linking agent of former and new content [10].

LITERATURE REVIEW

Di Vesta and Di Cintio (1997) through studying the effects of relevant advance organizers and the time of recalling the memories found results similar to prior works as the increase of the extent of recalling the related parts. Furthermore, they found that, advance organizers adjust the duration of working memory. While, individuals with high working memory had received the highest scores, but individuals with lower working memory took more benefits from advance organizers. Individuals with lower working memory, who had received advance organizers, have much better performance compared to the individuals who had not received them. The performance difference between these two groups was higher than the difference between individuals with higher working memory [11].

Van den Broek et al., (2001) also examined the effect of question-type advance organizers along with age factor. Advance organizer questions organizers helped students to control their study in the direction of these questions but younger students did not take the advantage of questions, maybe due to the lack of experience in the process of studying and the disability to control this process [12]. Kang (1997)

investigated the effect of using advance organizers on learning of students. The results indicated the significant difference between groups with and without receiving advance organizers [13]. Kaakinen et al., (2002) studied the effect of relevant advance organizer related (in the form of text background) on two factor of remembrance and the time of staring at different parts of a text. In this work, the participants read an article explaining the similarities and differences of four faraway countries. Each group has received the advance organizers related to the features of a country. The participants, significantly, remembered the related parts more than unrelated parts. This study showed that, the relationship at staring at related parts is more than at unrelated parts that showed a reciprocal interaction with working memory [14].

With the knowledge of what has already been conducted and concerning the present shortages, our general goal is to compare the effect of presenting and not presenting advance organizers on learning accounting principles in the second grade high school and three minor goals are as follows:

- Determining the effect of presenting advance organizer on the extent of practical learning of accounting lessons
- Determining the effect of presenting advance organizer on the extent of learning accounting formulas, and
- Determining the effect of presenting advance organizer on the extent understanding the concepts of accounting.

METHODOLOGY

In this study, hypotheses are as follows:

- Presenting advance organizer increases the practical learning of accounting lessons.
- Presenting advance organizer increases the understanding of concepts.
- Presenting advance organizer increases learning accounting formulas.

The statistical population of this study was all female high school students in Hamadan at second grade of accounting discipline in academic year of 2011-2012, equal to 263 students. Given that, the minimum sample size for experimental researches is 15 persons for each group [15] therefore, we selected 20 students from high schools via multi-stage cluster sampling and randomly divided into two groups of test and control. This study is a quasi- experimental design in the form of unequal control groups. This design issued when it is not possible to use experimental designs [16, 17].

Moreover, we benefitted descriptive statistics including graphs, statistics such as the mean and standard deviation as well as inferential statistics including multivariate variance analysis. The SPSS software was used to analyze the data. To measure subjects learning extent we used a test including 20 multiple-choice questions created from educated content and the reliability coefficient was calculated by their searcher and found to be 76%.

RESULTS

Descriptive results are presented in the form of tables and charts as follows:

Table 1. Information about the descriptive findings of pre-test and post-test for control and test groups

Group	The test	Variable	Mean	Standard deviation
Test	Pre-test	Practical learning	14.5	3.64
		Understanding	15	3.88
		Learning the formulas	14.2	4.1
Test	Post-test	Practical learning	16.8	3.39
		Understanding	16.7	3.88
		Learning the formulas	17.3	4.1
Control	Pre-test	Practical learning	15	3.97
		Understanding	14.8	4.5
		Learning the formulas	14	4.3
	Post-test	Practical learning	15.4	3.45
		Understanding	14.3	3.87
		Learning the formulas	14.7	3.84

Post-test score indicate a significant increase in the scores of test group. Moreover, the data also suggest that, the pre-test scores of control group have not a considerable difference with post-test score of this group. The following diagram shows the irrelevant and terminal values of the data.

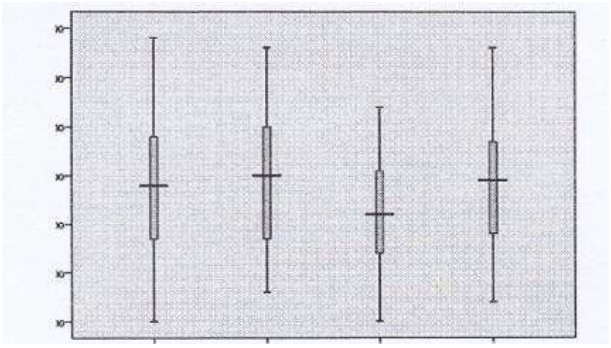

Fig. 1. Box plot to control terminal and irrelevant values

According to the chart above, for each of the four score levels, there are no irrelevant and terminal values and the shape of the data and their dispersion is almost normal distribution around the mean. In addition, the length of the rectangle in this diagram, which shows the distribution of scores, is almost identical except post-test scores of the test group.

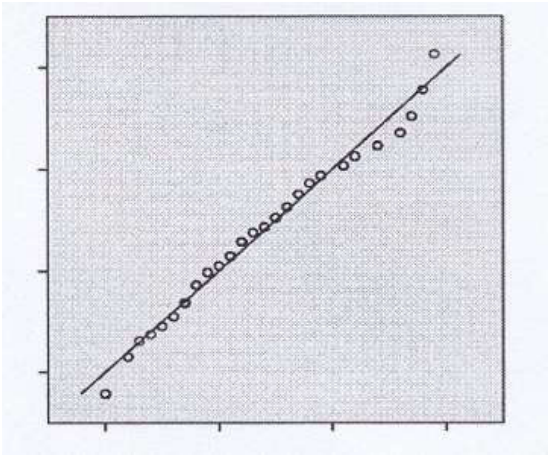

Fig. 2. Normality of accounting learning data using Q-O, diagram

According to the locations of the points around the line, it can be seen that, their dispersion and deviations from each other is not so much and they follow a logical and normal trend.

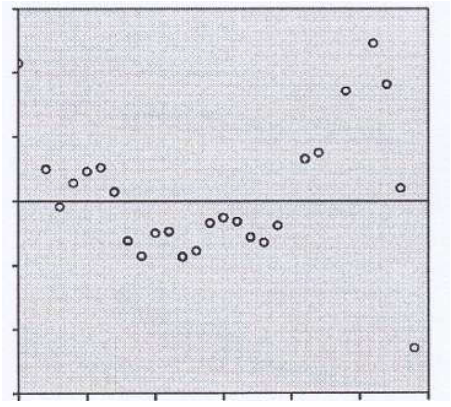

Fig. 3. Q-O, diagram O,—Q diagram of learning accounting

According to the deviation from normal diagram, where the y axis is exhibited based on the normal curve from -3 to +3 of standard deviation, the points indicate the relative observance from normal curve. Therefore, based on the O,-O. diagram for normality of the data, this assumption is confirmed.
The following table shows Levene's statistic that examines homogeneity of the variances in the groups.

Table 2. Levene's test for homogeneity of variances

Significance	Levene's test
0.77	0.41

According to significance level of Levene's test that is equal to 0.77 and is higher than 0.055, thus, the null hypothesis indicating the equality of variances is confirmed and another pre-assumption of the normality of the data is confirmed.

Table 3. Results of multivariate analysis of covariance on the difference of pre-test and post-test scores of test and control groups

The test	Value	F	Degree Of freedom	Freedom degree of error	Significance level
Hetlinger effect	2.41	57.26	2	38	0.001
Pillay effect	0.73	57.26	2	38	0.001
Wilk's lambda	0.396	57.26	2	38	0.001
Largest root	2.41	57.26	2	38	0.001

The results of the above table show that, there is significant difference between two groups in terms practical learning, learning formulas, and understanding the concepts. Here, the obtained from all four tests are higher than the critical F and the significance is also lower than 0.10.Therefore, the differences between groups are statistically significant.

Table 4. Results of the one—way analysis of covariance, comparing the average of practical learning with controlling pre-test

Source of variation	Sum of squares	Degree of freedom	Mean square	F	Significance level	Chi eta	Statistical power
Pre-test	62.62	1	188.62	9.08	0.006	0.25	0.828
Group	449.8	1	449.8	21.65	0.000	0.44	0.994
Error	560.83	34	20.77				

Results of the above table show that, there is significant difference in terms of practical learning. Results suggest that, they Obtained F (21.65) is higher than the critical value of the table, thus, with controlling the effect of pre-test, there is significant difference. In other words, the independent variable resulted in a difference in the scores of test and control groups. This means that, presenting advance organizer goodly created the difference.

Table 5. Results of one-way analysis of covariance, comparing the mean of post-test in learning formulas in the control and test groups with the control of pre-test

Source of variation	Total square	Degrees of freedom	Mean square	F	Significance level	Square	Statistical power
Pre-test	195.27	1	195.27	11.08	0.000	0.23	0.84
Group	373.6	1	373.6	18.14	0.100	0.39	0.91
Error	557.23	34					

The results of above table show that, with the control of pre—test; there is a significant difference between the two groups in terms of learning formulas. Since the obtained F (18.14) is larger than the table's critical value, thus, between the post—test scores of two groups, by elimination of the auxiliary variable of pre- test, there is a significant difference at α 0.10 level. In other words, the independent variable caused a difference in the scores of post-test at both groups in terms of learning formulas.

Table 6. Results of one-way analysis of covariance, comparing the mean of understanding the concepts with the control of pre-test

Source of variation	Sum of square	Degrees of freedom	Mean square	F	Significance level	Chi eta	Statistical power
Pre-test	188.62	1	188.62	09.08	0.006	0.25	0.828
Group	449.8	1	449.8	21.65	0.000	0.44	0.994
Error	560.83	34	20.77				

The results of above table show that, with the control of pre-test, there is a significant difference between the two groups in terms understanding concepts. Since the obtained F (21.65) is larger than the table's critical value, thus, between the post-test scores of two groups, by elimination of the auxiliary variable of pre- test, there is a significant difference atα 0.10level. In other words, the independent variable caused a

difference in the scores of post-test at both groups in terms of learning formulas.

DISCUSSION AND CONCLUSION

First result of this study suggests that, teaching with the use of advance organizers is effective on practical learning of accounting. These findings are in agreement with the results of Kang (1997); Di Vesta and Di Cintio (1997), Van den Broek et al., (2001), Kaakinen et al., (2002), and Afrooz et al., (2006) [1, 11, 12, 13, 14]. To illustrate this hypothesis it can be said that, by using advance organizers in accounting classroom, the students got familiar with the function of accounting and a practical example for each section. One can say that this approach influenced the practical learning in two ways. First, facing with problem and an example of practical situation is certainly a useful guide in learning the same content in a practical form since, one of the important factors in this field is observational learning and modeling. Second, since the learners use other facilities like work example in the classroom, then the classroom is a much more enjoyable and this leads to more involvement in the topic.

The second result of the study is that, teaching with the use of advance organizers is effective on the understanding of accounting concepts. These results are in agreement with the results of Gage and Berliner (1984), Gagne (1985), Shell (1986) and Yelon and Weinstein (1977) [18, 19, 20]. To explain this result it can be said that, since the advance organizer provide a mental framework for the learner so that, the following information could establish in it, the more these advance organizer advance organizer are clearly and stable, the more learning is deeper and according to the theory, the processing levels analyze the information and its components more deeply and leads to better understanding. Therefore, as Ausubel called his proposed teaching method dramatic teaching so that, teacher via exhibiting and explaining the content, teaches the structure and internal relationships or knowledge set, this leads to an in-depth understanding [4].

The third result of the study is that, teaching with the use of advance organizers is effective on the learning of the formulas. In support of this hypothesis we can mention the work of Kang (1997) in which, there was a significant difference between groups of learners with and without receiving advance organizer [13]. Mc. Crown et al., (2005) while investigating the effect of question-type advance organizer found that, they have positive effect on the extent of remembrance. They also found that, the time spent to study the sections which were relevant to advance organizer had been lesser than the time spent for irrelevant sections.

LIMITATIONS OF THIS STUDY ARE:

1. Using an innovative method based on the theoretical background and without the standard educational package in the field of accounting.
2. Measuring and comparing the score based on teacher-made instruments to assess dependent variable and its difference for post-test.
3. Using groups' average in intergroup plans to examine the answers of participants ignores the ones who independent variable was not effective on them.
4. The best time to conduct a research in schools is the middle of the school year and leaving it up to the third quarter faced us with a shortage of time.
5. Conducting research just in one city and on a particular gender lowered its generalization capability.

SUGGESTIONS FOR FUTURE RESEARCHES ARE:

A) Applied suggestions

1. In this model, teacher should not consider educational materials separately, but consider them as elements which form an image of the phenomena from the surrounding world by putting together.
2. Teachers ask students to express the content with their own language.

B) Research suggestions:

1. It is recommended to use the variety of types advance organizer to investigate their effects.
2. Conducting to implement this method on the on the other educational levels, especially at the primary and middle schools.
3. Considering the gender factor as moderator and intelligence as a control variable.
4. Considering the educational level of the teacher as it has a predictor role in relation with mastery on teaching techniques or using modern teaching techniques.

REFERENCES

1. Afrooz, Gholam A., Kalantari, F., & Nosrati, F. (2006). Investigating theeffect of advance organizer on students' learning. Journal of psychology, 7(2), 29-40.

2. Zwaan, R. A., & Singer, M. (2003). Text comprehension. Exchange, 1, 111-118.
3. Froebel Ennis, L. (2007). Study Techniques. Translated by Ali Solhjoo, University Center, Tehran.
4. Ausubel, D. P. 1960. The use of advance organizers in the learning and retention of meaningful verbal material. *Journal of Educational Psychology*, 51(5), 267-272.
5. Gage, N. L., & Berliner, D. C. (1988). Educational Psychology (4th ed.). Houghton Mifflin, Boston, MA.
6. Joyce, B., Weil, M., and Calhoun, E. (2008). Models of Teaching. (8th Edition), Pearson/Allyn and Bacon Publishers, Pennsylvania State University.
7. Seif, A. A. (2007). Assessing the process and the product of learning: old and newmethods. Doran publications, Tehran.
8. Kadivar, P. (2002). Introduction to educational psychology. Samt Publications, Tehran.
9. Seif, A. A. (2012). Modern educational psychology: the psychology of learning andteaching (sixth edition). Doran publications, Tehran.
10. Shaabani Varki, B., & MehrMohammadi, M., (2007). Positions ofteaching approaches: learning schools of behaviorism, cognitivism, and humanism ineducational system. Journal of Human sciences, 7(1), 31-42.
11. Di Vesta, F. J. and Di Cintio, M. J. (1997). Interactive effects of working memory span and text context on reading comprehension and retrieval. Learning and Individual Differences, 9(3), *215-231.*
12. Van den Broek, P., Tzeng, y., Risden, K., Trabasso, T., and Bache, P. (2001). In ferential questioning: Effects on comprehension of narrative texts as a function of grade andtiming. Journal of educational Psychology, 93, 521-529.
13. Kang. S. H., (1997). The effects of using and advance organizer on student learning in acomputer simulation environment. Journal of educational Technology system, 25, 57-65.
14. Kaakinen, J. K., Hyoenae, J., and keenan, J. M. (2002). Perspective effects on online textprocessing. Discourse processes, 33, 159-173.
15. Cohen, L., & Manion L. A Guide to Teaching Practice. Routledge, London, (1984).
16. Delavare, A. (2005). Theoretical and practical principles of research in the humanitiesand social sciences (second edition). Roshd publications, Tehran.
17. Human, H. A.(2011). Understanding scientific method in the behavioralsciences. Samt Publications, Tehran.
18. Gagne, R.M. (1985). The Conditions of Learning. Revised Ed, Holt Rinehort and Winston, New York.
19. Shell, A. (1986). Learning Psychology. 8th Ed., Texas University Press, Austin.
20. Yelon, S. L. and Weinstein A. (1977). Teachers world – Psychology in the classroom. Mc Graw Hill Book, New York.

CITATION OF THIS ARTICLE

Abolghasem Yaa qubi, Hosein M, Nasrin T K .The Effect of Presenting Advance Organizer On The Extent Of Learning Accounting Concepts For Second Grade High School Students. Bull. Env. Pharmacol. Life Sci., Vol 4 [8] July 2015: 83-89