DISCOVERY LEARNING APPROACH IN IMPROVING ARABIC ABILITY OF PRE-SERVICE TEACHERS IN RELIGIOUS TRAINING CENTRE OF MAKASSAR

Masrariah Amin
Balai Diklat Keagamaan Makassar
masrariahamin@gmail.com

ABSTRACT

Discovery Learning can be defined as the learning that takes place when the student is not presented with subject matter in the final form, rather he/she is required to find out the concepts by him/her self. This research aims to describe and analyze discovery learning method to strategically improve the comprehension and reasoning ability of Arabic pre-service teachers, which can motivate and enhance their creativity in order to enrich their insight about Arabic teaching as well, especially those who are in training centre. This research was undertaken in two classes of Makassar Religious Training Centre during June-August 2016. The design of this research is experiment with discovery learning approach with randomized pretest-posttest control group design. It was done randomly when to choosing the participants to be experiment and control group. Based on hypothesis testing, discovery learning has positive effects on the pre-service teachers' Arabic ability in training centre to understand and analyze Arabic. Therefore, based on two-variance analysis; control and experiment group, there is difference on teachers' comprehension and reasoning ability in learning Arabic between experiment and control group by using discovery learning and conventional method.

Keywords: Discovery Learning, comprehension, reasoning, experiment group, control group

ABSTRAK

Discovery Learning dapat didefinisikan sebagai pembelajaran yang terjadi ketika siswa tidak disajikan dengan materi pelajaran dalam bentuk final, namun mereka diminta untuk menemukan konsep mereka sendiri. Penelitian ini bertujuan untuk mendeskripsikan dan menganalisa metode discovery learning untuk secara strategis meningkatkan kemampuan pemahaman dan penalaran guru bahasa Arab, yang dapat memotivasi dan meningkatkan kreativitas mereka untuk memperkaya wawasan mereka tentang pengajaran bahasa Arab, terutama mereka yang sedang dalam pelatihan. Penelitian ini dilakukan di dua kelas Balai Diklat Keagamaan Makassar selama bulan Juni-Agustus 2016. Rancangan penelitian ini adalah eksperimen dengan pendekatan Discovery Learning dengan rancangan kelompok kontrol pretest-posttest secara acak. Pemilihan acak dilakukan ketika memilih peserta untuk menjadi kelompok eksperimen dan kontrol. Berdasarkan pengujian hipotesis, discovery learning memiliki efek positif pada kemampuan bahasa Inggris guru peserta pelatihan di Balai Diklat untuk memahami dan menganalisa bahasa Arab. Oleh karena itu, berdasarkan dua varian analisis, kelompok kontrol dan eksperimen, ada perbedaan kemampuan pemahaman dan penalaran guru dalam belajar bahasa Arab antara

kelompok eksperimen dan kelompok kontrol dengan menggunakan pembelajaran penemuan dan metode konvensional.
Kata kunci: Discovery Learning, perbandingan, grup eksperimen, grup control.

INTRODUCTION

In order to improve the quality of education, many efforts have been made by the government in Indonesia. One of the efforts is curriculum change. From 1980 to 2016, Indonesia had at least four times experiences of curriculum changes.

If it is based on the linguistic view that "language is neither difficult nor easy, each language has its own level of difficulty and ease, and hence the difficulty is not on the material contents, but on the system, strategy, model and approach in teaching and learning process.

Azhar Arsyad' statement (2003); *'al-thariqatu ahammu min al-maddah'* (strategy and method is more important than the material) seems to be relevant as it may be that those who teach Arabic have not yet applied effective strategies and methodologies. With effective strategy, approach, methodology and teaching technique, it can reduce negative view of Arabic, slowly but surely the negative view can be removed, and it can improve the image of Arabic learning in the future, especially in education environment.

Is that correct? Therefore, it is important to understand well and properly about the characteristics of certain method. Simply put, the Arabic learning method can be classified into two types: traditional / classical method and modern method. One of our focuses on this research is the 2013 Curriculum Learning Model; Discovery Learning Model.

Discovery is done through mental processes, such as observation, classification, measurement, prediction, determination and inference. The process is called cognitive process whereas discovery itself is the mental process of assimilation of concepts and principles in the mind (Robert B. Sund in Malik, 2001: 219).

According to Bruner, "discovery Learning can be defined as the subject matter in the final form, but rather is required to organize it himself" (Lefancois in Emetembun, 1986: 103) . Hence, Bruner uses a method called Discovery Learning in which the students organize materials that are accompanied by a final form (Dalyono, 1996: 41).

In line with government provisions on Learning Methods and Models in the 2013 Curriculum and 2016 Revision, the teaching methods are such as Inquiry, Problem Based Learning (PBL), Problem Solving, Discovery Learning (Learning Model) of 2014 Revision. Discovery learning method is to understand concepts, meanings, and relationships, through an intuitive process to finally come to a conclusion.

Similarly, Government Provisions, in this case is the Ministry of Education and Culture of 2016 revision, Education Curriculum 2013 of 2016 revision, and Government Provisions on Revision of Learning Assessment in 2016 is strongly related to the process of Learning and Classroom Management, one of which is the discovery learning method.

By implementing discovery learning method, the participants are encouraged by their curiosity to explore and learn on their own. Understanding of a concept is acquired by participants through the process. This method focuses more on the process rather than the final product. Learning has the same principles as inquiry and problem solving. There is no principal difference in these three terms, the discovery learning emphasizes on the discovery of previous unknown concepts or principles. The difference with discovery is that on its problems design; the problems given to participant are created by the teacher. While the inquiry itself is not the result of teacher's creation, so participants must use all their thoughts and skills to find the findings in the problem through the process of research.

The use of discovery learning method aims to change the condition of passive learning become more active and creative, to make the class atmosphere more student-oriented, and to change the students' expository mode in which they find information themselves. In the learning process, Bruner puts the priority of the students' active participation and understand the distinctive ability among students. To support the learning process, the environment needs to facilitate the participants' curiosity at the exploration stage. This environment is called the discovery learning environment in which the participants can explore, discover new unknowns or notions similar to those already known (Slameto, 2003: 11). Such environments aim to enable the participants in the learning process to proceed well and be more creative. To facilitate the process, a good and creative learning should be based on participatory material manipulation in accordance with the level of participants' cognitive development. The manipulation of teaching materials might facilitate the participants to think according to their development level.

According to Bruner, a person's cognitive development encounters through three pre-determined stages which depends on the environment, namely enactive, iconic, and symbolic stages.

- Enactive stages in which a person performs activities in an effort to understand the surrounding environment. It means how to understand the children's world using motor skills through biting, touching, holding, and so forth.
- Iconic stage in which one understands the objects or the world through images and verbal visualization. That is, in understanding the world around the child, they learn through the form of parables and comparison.

- Symbolic stage in which a person has been able to have abstract ideas that are strongly influenced by his ability in language and logical thinking. The more mature a person in his thinking process, the more dominant the symbol system. Simply put, the development theory in enactive, iconic and symbolic phases is all about how the children explain something through action (he shifts forward or backward on the toy board to adjust his weight to the weight of his playmate) which is called enactive phase. Then, in the iconic phase, it describes the balance on the picture or chart and finally he uses the language to explain the principle of this symbolic phase equilibrium (Syaodih, 85: 2001).

In the implementation of discovery learning method, the teacher acts as a guide who provides opportunity to participants to actively learn as it is known that teachers must be able to guide and facilitate the participants as the pre-determined objectives (Sardiman, 2005: 145). This condition is expected to lead the class to be more student-oriented.

Therefore, it is important to understand well and correctly about the characteristics of a learning method and model. Simply put, the methods or models of Arabic learning can be classified into two types: traditional or classical and Modern one. The method / learning model of 2013 Curriculum is including; Inquiry, Problem Based Learning (PBL), Problem Solving, Discovery Learning. The focus of our research is discovery learning method. By applying discovery learning method, participants are encouraged by curiosity to explore and learn on their own. In this kind of learning method, learning process much more matters than the product.

This learning method also emphasizes on the concept of discovery, not on the final product. Ibn Khaldun says, "It is a profession that requires knowledge, skills and precision because it is the same as skills training that requires tips, strategies and diligence, to be proficient and professional." The application of learning methods will not work effectively and efficiently as the learning medium if its application is not based on decent knowledge. How to design the right and effective strategy of Arabic learning to achieve the pre-determined objectives? It depends on how to choose and apply effective approaches, methods, techniques and strategies in Arabic classroom.

The purpose of this research is to describe and analyze discovery learning method / model which is related to the appropriate and effective strategy to improve pre-service teachers' Arabic comprehension ability. Furthermore, this learning method can enhance their motivation and creativity to expand their Arabic knowledge as well as to enlarge their insights, especially for the participants of Arabic teaching training for MA level.

METHOD

a. Research design

This study was conducted at the training centre of Arabic language teachers for MA level which consists of two classes. The research is designed for experiment purpose which employs Randomized Pretest-Posttest Control Group Design that was randomly taken involving two groups: the experimental group and the control group. For more details, the study design is illustrated in the following table:

Group	Sampling technique	Pre Test	Treatment	Post Test
Eksperiment	A	O	X	O
Control	A	O		O

Research Design

Description

　　　A = Random sampling

　　　O = Pre Test - Post Test

　　　X = Treatment under Discovery Learning Method

b. Population and sample

　　　This research was conducted at the training centre of Arabic Language Teacher MA in Religious Training Center of Makassar. This technique is used, because each class of the entire population has the same opportunity to be selected as a sample (Arikunto, 1998: 120), then from the selected class is drawn to determine experiment and control class.

　　　To anticipate the missing sample during the research, the minimum sample size based on Gay (Ruseffendi, 1998: 92) was taken; for experiment research, at least 30 sample.

c. Research instruments and its development

To obtain the data, the researcher developed two instruments, such as:

- Arabic Comprehension and Reasoning Test.

Arabic Comprehension and Reasoning Test used in this research is to obtain quantitative data in the form of learning result test score.

- Questionnaire

This questionnaire is given in order to find out how participants respond to the training process when they learned under discovery learning method. This instrument is only given to experiment group only. In the discovery learning method, the teaching materials are not presented in the final form. Participants are required to carry out various activities of collecting information, comparing,

categorizing, analyzing, integrating, reorganizing materials and making conclusions (Syaodih 107: 2001). It enables the participants to find meaning for themselves, and enables them to embrace concepts in the language they understand (Dalyono 1996: 42).

Accordingly, the teachers should be able to create independent atmosphere when they implement discovery learning method. Bruner points out that learning process will work properly and creatively if the teachers allow participant to discover a concept, theory, rule, or understanding through the examples they encounters in their life (Budiningsih, 2005: 41). At the end, this method will guide the participants to be problem solver, scientist, historian, or Arabic experts (Soemanto, 1998: 135). Finally the participants will end up mastering the theory, applying it, and finding it beneficial for them. The main characteristic of discovery learning is reducing the scaffolding after the introduction of material.

However, this does not mean that the teachers will stop to provide guidance after the problem is presented to the participants. The guidance is only reduced since the participants are given opportunity to be responsible for their learning (Lefancois in Emetembun, 1986: 104)

RESULT

The result of normality test in experiment and control group can be outlined in the following table:

	X2 Count	Df	X2 table	Conclusion
Experiment Group				
مهارات الا ستماع و مهارات الكلام	2,65	3	7,81	Normal
و مهارت الكتابة و مهارات القواعد	3.09	4	9.49	Normal
Total	**4.72**	**4**	**9.49**	**Normal**
Control Group				
مهارات الا ستماع و مهارات الكلام	3.71	3	7.81	Normal
و مهارت الكتابة و مهارات القواعد	7.09	3	7.81	Normal
Total	**3.27**	**3**	**7.81**	**Normal**

The table above shows the normality test results of Arabic comprehension and reasoning test scores, and overall the data distribution of both groups is entirely normal at the level of trust a = 0.05.

a. Conducting homogeneity test of variance from Arabic reasoning and comprehension test between experiment group and control group. Homogeneity Test Result of experiment group and control group is at level a = 0,05 which can be seen in following table:

Aspect	F count	Df	F.Table	Conclusion
مهارات الا ستماع و مهارات الكلام	1,1010	(30/30)	1,7840	Homogeneous
و مهارت الكتابة و مهارات القواعد	1.1928	(30/30)	1,7840	Homogeneous
Total	**1.0343**	**(30/30)**	**1,7840**	**Homogeneous**

The table above shows that the variance of the experimental group and the control group which are compared based on Arabic reasoning and comprehension ability is homogeneous at a = 0.05, since $F_{count} < F_{table}$. Based on the result, it can be said that the participant's homogeneity test score for each aspect and overall comes from the same distribution.

b. Conducting two-way variance analysis to see the direct and main effect of two different treatments given to improve participants' ability. Based on statistical calculation, at 5% significance level (a = 0,05), if $F_{count} > F_{table}$, then there is an effect of two different treatment given and if at a = 0,05 $F_{count} < F_{tabel}$, then there is no effect of two different treatment which is tested through two-way Variance Analysis conducted.

- Analysis of two-way variance for the result score of Arabic comprehension test of the training participants. The variance analysis test results performed at 5% significance level (a = 0.05) can be seen in the following table:

Variation source	Degree square	Degree of freedom	Square average	F_{count}	F_{table}
Learning method	100.3472	1	100.3472	177677	3.9863
Participants' category	301.0000	2	150.000	26.6479	3.1359
Interaction	10.7778	2	5.3889	0.9542	3.1359
Residue	372.7500	66	5.6477		
Total	**784.8750**	**71**			

The table above shows that there is an effect of learning method in improving participants' Arabic comprehension ability at a = 0.05, because F_{count}> F_{table}. In addition, there is also the effect of the participants' ability in improving their Arabic comprehension at a = 0.05, because F_{count} <F_{table}.

- Analysis of two-way variance for the result score of Arabic reasoning test of the training participants. The variance analysis test results performed at 5% significance level (a = 0.05) can be seen in the following table:

Variation source	Degrees squares	Degree of freedom	Average squares	F_{count}	F_{table}
Learning method	34.7222	1	34.7222	7.4485	3.9863
Participants' category	316.6944	2	158.3472	33.9683	3.1359
Interaction	4.1944	2	2.0972	0.4499	3.1359
Residue	307.6667	66	4.6616		
Total	**663.2778**	**71**			

The above table indicates that there is effect of learning method on the improvement of Arabic comprehension and reasoning ability of participants at a = 0.05, because F_{count}> F_{table}. In addition, there is also effect of participants' ability category on the improvement of participants' Arabic reasoning ability at a = 0.05, because F_{count}> F_{table}. However, there is no effect of interaction between learning approach and ability category on the improvement of Arabic reasoning ability under discovery learning method at a = 0,05, because F_{count} <F_{table}.

- Analysis of two-way variance for the result score of Arabic comprehension and reasoning test of the training participants under discovery learning method. The variance analysis test results performed at 5% significance level (a = 0.05).

This happens as a result of the discovery learning model which must be resolved through a process of sharing. Through the discussion, participants can develop their ideas and thoughts that fit their cognitive development stage. Participants are not fixed with one procedure which unconsciously must be accepted as an absolute truth because through this learning model, the participants are fostered to choose the most important element and correct procedure (Dodson and Hollander in Setyabudhi, 2003: 3). Training participants are encouraged to do various manipulations. This is in line with Killen (1998: 109) who argues that the discovery learning model can foster participants to be active in learning.

Before discussing the results of hypothesis testing by using a two-way variance analysis, the beginning of the discussion will review the results of Arabic comprehension and reasoning ability مهارات و الكتابة مهارت و الكلام مهارات و ستماع الا مهارات

القواعد in both groups. From the previous calculation description, it is known that the training participants who are taught using the discovery learning model have a higher average score in all aspects of both comprehension and reasoning, as well as for the overall score than those who are in the conventional learning class. This suggests discovery learning model can make the participants have better comprehension and reasoning ability in learning Arabic than those who did sit in conventional class.

No	Hypothesis	Fcount	Ftable	description
1.	There is a significant increase on the participants' comprehension and reasoning ability مهارات الا ستماع و مهارات الكلام و مهارت الكتابة و مهارات القواعد after learning through discovery learning model compared with those who did not.	37.7329	3.9863	H0 is rejected
2.	There is significant increase on participants' Arabic comprehension ability مهارات الا ستماع و مهارات الكلام و مهارت الكتابة و مهارات القواعد between who are categorized as having high ability compared to those who are in the middle and low.	26.6479	3.1359	H0 is rejected
3.	There is significant increase on participants' Arabic comprehension ability between who are categorized as having high, middle, and low ability	33.9683	3.1359	H0 is rejected
4.	There is significant increase on participants' Arabic comprehension and reasoning ability مهارات الا ستماع و مهارات الكلام و مهارت الكتابة و مهارات القواعد between who are	90.6232	3.1359	H0 is rejected

	categorized as having high, middle, and low ability level.			
5.	There is significant increase on participants' Arabic comprehension ability مهارات الا ستماع و مهارات الكلام و مهارت الكتابة و مهارات القواعد between those who are taught under discovery learning and those who are in conventional class	0.9542	3.1359	H0 is accepted
6.	There is significant increase on participants' Arabic reasoning ability مهارات الا ستماع و مهارات الكلام و مهارت الكتابة و مهارات القواعد between those who interact in the training centre and who are in the conventional class.	0.4499	3.1359	H0 is accepted
7.	There is significant increase on participants' Arabic comprehension and reasoning ability مهارات الا ستماع و مهارات الكلام و مهارت الكتابة و مهارات القواعد between those who participate in training centre and those who are in conventional class.	0.1180	3.1359	H0 is accepted

This phenomenon occurs as a result of the assigning tasks/themes and the discovery as well as the Arabic learning through the process of sharing. By discussion in training centre, the participants can put forward his ideas and thoughts. They do not solely apply one fix procedure that unconsciously must be accepted as an absolute truth.

In the Discovery Learning method, the teaching materials are not presented in the final form. Participants are required to carry out various activities of collecting information, comparing, categorizing, analyzing, integrating, reorganizing materials and making conclusions (Syaodih, 107: 2001). It enables the participants to find

meaning for themselves, and enables them to embrace concepts in the language they understand (Dalyono 1996: 42).

From the findings, analysis of two-way variance was used to see the effect of two treatments given to the participants. Two treatments referred in this research are learning by using discovery learning method and the conventional one. From the analysis of two-way variance conducted, it was found that there was difference result of Arabic comprehension and reasoning test between participants who are taught under discovery learning and those who are in conventional method.

From the summary of the hypothesis test in Table 6 above, the hypothesis stated that discovery learning method has positive effect on the improvement of Arabic comprehension and reasoning ability is accepted. Ho's rejection on the differences of Arabic comprehension and reasoning ability between high, middle, and low ability level participants indicates the overall ability of participants in comprehending and reasoning something in Arabic. This is in line with Galton's (Ruseffendi, 1991) who points out that differences in intelligence, cognitive ability, order, height, weight, etc. will be in normal distribution in form of curve. Thus from a group of training participants, there are a number of talented participants who are great or smart, medium and low. So the problems that arise in Arabic Language Learning usually occur in less-skilled participants who tend not to be able to learn as fast and as good as medium-skilled training participants, excluding high-ability students.

Therefore, the discovery learning method can facilitate the training participants to participate in certain activities effectively and efficiently, so as to increase the encouragement of the training participants to learn Arabic, which in turn can develop their comprehension and reasoning ability in learning Arabic.

This suggests that discovery learning method is able to facilitate the participants to have better Arabic comprehension and reasoning ability than those who are in conventional class.

DISCUSSION

Based on the facts and observations results, the application of Discovery Learning in learning has advantages and disadvantages. The advantages of discovery learning are: Helping participants to improve and enhance their cognitive skills and processes; Having knowledge gained through this method which is very personal and powerful because it strengthens understanding, memory and transfer process; Encouraging participants because the growing sense of investigation and success during the activities; Developing the participants' ability quickly and at their own pace; Leading participants to their own learning activities by involving their own reason and motivation; Helping participants to strengthen their self-concept, as they gain trust in cooperating with others; Focusing on participants and teachers to

share ideas actively with others. Even the teachers can act as a participant, and as a researcher in the discussion situation; Helping participants to eliminate skepticism (doubt) because it leads to a final product and certain truth; Helping and developing memories and transfers to the new learning situation; Encouraging participants to think and work on their own initiative; Encouraging participants to think intuitively and formulate their own hypotheses; Providing intrinsic decisions; Raising active learning process; Enabling participants to use various types of learning resources; and Developing individual talents and abilities;

The drawbacks of discovery learning are: *First,* the method is appropriate for those who are ready enough to learn. For participants who are less intelligent will have difficulty to think or reveal the relationship between the concepts, written or oral, so that in turn it will lead to frustration. *Second,* this method is inefficient to teach a large number of participants, as it takes a long time to help them find other theories or problem solving. Third, the benefits of this method will not be gained if the teachers and students are getting used to their conventional way of teaching and learning. *Forth,* teaching discovery is better suited to develop understanding, while developing aspects of concepts, skills and emotions as a whole obtain less attention. *Fifth, i*n some disciplines, for example, science, it might have not adequate facility to measure the ideas put forward by the participants. And *Sixth,* it will not provide enough space to think since the materials are already manipulated by the teachers.

CONCLUSION

The improvement of Arabic comprehension and reasoning ability on listening (مهارات الإستماع), ability on speaking (مهارات الكلام), ability on writing (مهارات الكتابة), and ability on grammar (مهارات القواعد) can be seen considerably in discovery learning method classroom than conventional learning one. The result is higher in experiment class than control group. Testing hypotheses through two-way variance analysis resulted that there was significant difference on the improvement of comprehension and reasoning ability in learning Arabic between those who are taught by discovery learning than in control group with conventional method.

REFERENCES

Arsyad, Azhar. (2003). *Bahasa Arab dan Metode Pengajarannya*. Yogyakarta.

Chaerun Anwar, Forser, Jenny. (2007). *Model of Problem Based Learning: Step to Classroom Activities*. Manuscript on going revised. P4TK IPA Bandung.

Dahlan, J.A. (2004). *Meningkatkan Kemampuan Penalaran dan Pemahaman Bahasa Arab Siswa.*

Hannafin, M.J., Hall, C., Land, S., & Hill, J. (1994). *Learning in Open-ended Environments: Assumptions, Methods, and Implications*. Educational Technology.

Kementerian Pendidikan dan Kebudayaan. (2014). *Model Pembelajaran Penemuan (Discovery Learning) Revisi* tahun 2014.

Kementerian Pendidikan dan Kebudayaan Revisi 2016. (2016). *Kurikulum Pendidikan 2013 Revisi* tahun 2016.

Kementerian Pendidikan dan Kebudayaan Dirjen Pendidikan Dasar dan Menengah. (2016). *Penilaian Pembelajaran Revisi* tahun 2016.