

## *Determination of the Elementary Teacher Candidates' Achievement Level of Based Chemistry Concepts*

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### SUMMARY

#### INTRODUCTION

Especially intangible thinking skills must be won in order to effectively science teaching to elementary teachers. However, misconceptions regarding the basic concepts as they teach the teachers is extremely important for the carry away of students. Because incorrect or incomplete information's' of teacher may have to be transferred to the students in the classroom. Therefore, subject area knowledges' of teachers in the teaching process are very important. Each elementary classroom teachers in grades 3 and 4 are obliged to handle the Science lessons. Therefore, they should have adequate basic area knowledge of science courses. For this reason, it is expected to be increasing the number of studies towards knowledge of the basic concepts of teacher candidates in the literature. Hence, the purpose of this research is to determine the level of success relating to basic chemistry concepts classroom teaching degree program students' located in the different grade levels.

To achieve this purpose is to answer the following sub-problems:

- 1) What is the basic chemistry concepts success level of first, second, third and fourth grade classroom teaching degree program students?
- 2) Is there a significant difference between classroom teaching degree program students' who are available in different grade levels, achievement levels of basic chemistry concepts?

#### METHOD

This research is designed to survey model. Sample of the study consists of 396 students who were studying in elementary teaching degree first (N=89), second (N=107), third (N=104) and fourth grade (N=96) levels. As data collection tool the achievement test relating basic chemistry concepts was used developed by Demircioğlu, Demircioğlu and Ayas (2004). Achievement test was consisting of 25 questions. The tests' KR-20 reliability coefficient was calculated as 0.84. Data were analyzed using SPSS 21.0 statistical software package. One-way ANOVA test was used to analyze the data. Addition to this, in order to make a multiple comparison was used Scheffe test. Results was tested the level of  $p < .05$ .

#### FINDINGS

According to the findings, classroom teaching degree program students who were studying in different grade levels, indicating that there was a statistically significant difference between the basic chemistry concepts and achievement levels,  $F(3, 392) = 60.485$ ,  $p < .05$ . Considering the average scores, levels of knowledge related to basic chemistry concepts, classroom teaching first and second grade students were found to be very close. There have been found to be a statistically significant difference between the achievement test scores of third graders; first, second and fourth grade students in favor of third grade students. Scores of fourth graders; it was determined that there was a significant difference in favor of fourth-grade students score between the first and second grade students.

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## **DISCUSSION AND RECOMMENDATIONS**

At the end of the research while average achievement test scores are very close to that of the first and second grade students, third graders were found to be quite high. However, the average scores of fourth grade students were found to be lower than the third grade students. But it was found to be higher in the first and second grade students' scores. The results of this research, even serious mistakes regarding the meaning of concepts they have researched not enough about the concept of teacher candidates was perceived. It was determined that third grade students more successful than first, second and fourth graders about investigating basic chemistry concepts. This result was observed during the third year in fall semester classroom teaching degree programs science and technology instruction 1 course, considered to be related basic chemistry concepts learned in the lessons.

The decline in average scores of fourth grade students indicates that the knowledges learned in third grade were not permanent. The concepts learned in third grade said to be learned through memorization therefore cannot be remembered a year later. In this sense, while teaching courses it is emerging that importance of will provide selecting effective and permanent methods. In this context of learning through the invention, research and investigation based science teaching, prediction-observation-explanation strategy, laboratory activities, transformational learning, doing-experiencing learning, cooperative learning and so on, student-centered teaching methods and techniques can use to be provision of effective and permanent science education. The importance of elementary education is very big in students' academic life. The basis of the concepts they encounter during the academic life of students are largely disposed of in elementary school. Therefore, great importance should be given to the classroom teacher education. Providing accurate and in-dept understanding teaching methods emerging as a necessity to better cultivating classroom teachers in education faculties of universities.