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**INTERNATIONAL BLACK SEA UNIVERSITY
FACULTY of EDUCATION and HUMANITIES
PhD PROGRAM in EDUCATIONAL SCIENCE**

**Teaching Gifted and Talented Children by Applying
Enrichment and Acceleration Programs
(Teaching Math and Science in Primary Schools in Iraq)**

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**Extended Abstract of Doctoral Dissertation in
Education Sciences**

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INTRODUCTION

The term “gifted and talented,” when used in respect to students, children or the youth, means students, children or youth who give evidence of high performance capability in areas such as intellectual, creative, artistic, or leadership capacity, or in specific academic fields, and who need services or activities not ordinarily provided by the school in order to fully develop such capabilities (No Child Left Behind Act, P.L. 107-110 [Title IX, Part A, Definition 22], (2002).

Gifted children are most often identified in elementary school and receive extra services including more advanced curriculum, additional resources, better teachers, and more challenging learning environments than their not-gifted peers. Critics of gifted programs purport that students who do not receive this label and are therefore not provided the additional learning supports are now at a disadvantage (Oakes, 1985; Smith-Maddox & Wheelock, 1995). Yet, proponents of gifted programs argue that additional services are needed for these “higher ability” students in order to help to reach their academic potential (Fiedler & Lange, 1993; Johnsen & VanTassel-Baska, 2006).

The purpose of this study was to design effective selection methods for gifted children with minimum expenditure and provide them with acceleration and enrichment programs according to their needs, their interest and their level in Kurdistan region in Iraq. In addition, most of the instruments for measuring their IQ and their creativity level were new and more reliable in terms of selecting gifted children. Overall, this research may create awareness, attention and interest towards gifted children and their education.

The educational programs which are designed and carried out in any society serve as important tools to develop children mentally and socially. Gifted and talented children also should get benefit from these educational programs and should be taken into consideration.

The problems of the current research is lack of knowledge of gifted and talented students and their education among teachers and As a result of this, there is no relevant and suitable treatment system for gifted children at private primary schools in Erbil, Iraq.

The goals of the doctoral dissertation were:

- To find an effective methods to select gifted children,
- To design suitable educational models, such as acceleration and enrichment programs to meet gifted children’s` needs,
- To compare the efficiency of these programs.

Research Questions of the study

This research aimed to address four questions that emerged from some previous studies and literature review of practical and theoretical approaches relevant to our topic. These research questions were designed to investigate our topic deeply.

- **RQ1.** What are the needs of primary school teachers in terms of improving their knowledge regarding the gifted students and gifted education programs in Kurdistan region of Iraq?
- **RQ2.** Are there significant differences between acceleration and enrichment gifted education programs regarding applying these programs in science and math lesson?
- **RQ3.** How gifted students can be identified?
- **RQ4.** What is the role of teachers and parents in the selection process of gifted children?

Hypothesis of the thesis

Enrichment educational programs for gifted and talented children are more effective and suitable compared to acceleration programs and it helps gifted children to enhance their creativity and intelligence level through enriched activities. Enrichment programs are better choice for all gifted children but acceleration programs are preferred for just highly gifted children.

Methods of the research

To find out answers for the questions listed above, the following research methods were applied:

- review and analysis of existing literature on the topic
- questionnaires
- experiment
- interview
- statistical analysis of obtained data through questionnaires and experiment
- observation of gifted school

Quantitative Paradigm:

- a pre-test in science and math lessons (at the beginning of the experiment)
- a while-test in math and science lessons (in the middle of the experiment)

- a post-test in math and science lessons (after completion the experiment)
- IQ test (before and after the experiment as pre and post tests)
- Creativity test (before and after the experiment as pre and post tests)

Qualitative Paradigm:

- Teachers nomination forms,
- Parents nomination forms,
- Satisfaction Level Survey of gifted children after the program
- Observation of the students` performance in the lessons.

Significance of the study

This study will be helpful for teachers and school administration to have more knowledge about gifted children and their education. By providing teachers and administrative staff with seminars, educational programs and workshops at schools their knowledge and awareness of gifted children and their education will be increased.

Gifted education needs differentiated and enriched instruction and teaching methods, enriched materials and activities. These educational models can be an example for the other schools and teachers to increase the quality of education. The parents of gifted children will have more accurate knowledge and understanding about their children`s` characters and their education. We make contribution to the development and future of this country by raising a gifted person as a qualified citizen. We help gifted children to select their professions by providing many different courses. Students may become more aware of their talents and skills and they can learn in which field they are interested and will be more successful.

Although, there are some studies and projects on gifted education in Kurdistan region and Iraq, there is still not clear awareness and picture about gifted and talented education. Especially among administrative staff and teachers, creating positive attitude and awareness towards gifted education, programs and gifted children is the first step to meet gifted students` needs and provide them with suitable programs according to their talents and skills. Thus, this study might create a positive climate for increasing the importance of gifted student education.

Unfortunately, we have to admit that, most of the public schools are far from identifying their gifted students and providing them with differentiated programs. Lack of financial supports, knowledge and professional staff are main obstacles in gifted education. We tried to design an effective selection process with minimum expenditure and programs for gifted children and their

education. Especially, TONI 4 intelligence test used in this study is a nonverbal intelligence tests and easy to apply. Duration of the test is shorter than many other intelligence tests and it also eliminates language and communication problems between test takers and test appliers.

Novelty of the study

The main objective of this study was to pave first steps for gifted education in this region. Few researches have been done on gifted education but they have focused only one dimension of gifted education such as selection methods, acceleration and enrichment programs, teachers' attitude, knowledge of gifted children or teaching gifted children by applying different methods. But in this study, many different aspects of gifted children education were included. Selection of the students by using intelligence tests, creativity tests and the other nominations, designing programs, and teaching children can be an example for this.

Besides, few comparisons of the efficiency of accelerated and enrichment programs have been carried out in general, while in Iraqi content none was carried out.

Although, the population of this region is not many, there are many gifted and talented student waiting to be recognized and identified. From my perspective, this study is more than a thesis, and it is an applicable and continues education program and opportunity for most of the gifted students. To identify and reach not all but most of the gifted children, we should try to make an awareness of gifted education in the society. But this type of study needs well designed selection models and curriculum, school provision and the most importantly government support. The continuum of these programs mostly depends on financial support. Because the selection materials such as IQ test, some achievement tests, creativity tests are costly and need professional staff.

From many different perspectives, the findings of this study are beneficial and significant. It really gives some evidence about some studies related to gifted education in Kurdistan region in Iraq and provides selection models, and education programs for schools.

Theoretical value of the thesis

The theoretical value of the dissertation deals with critical analysis of existing enrichment and acceleration programs, identifying their advantages and disadvantages and ways to overcome them.

Although many studies have been done about enrichment and acceleration programs, few studies have been conducted to compare these programs. This study analyzed these two main educational programs: enrichment and acceleration for gifted and talented students. Enrichment

is a differentiation of curriculum which is based on enriching the school programs with the help of various activities interesting materials, games or new learning activities. Acceleration is the process of providing students with more and advanced content in any subject. It is generally done by helping students to move ahead by studying more topics.

The model for the enrichment program, taking into consideration the peculiarities of Iraqi students, was developed according to which tuition in the experimental group was held.

For acceleration program, I have selected extra topics to study. By applying these new enrichment and acceleration programs on gifted students in summer program called “Fun Summer Program” I aimed to measure the efficiency of these programs and find out which one is more suitable for them.

The theoretical bases for new model of the enrichment program designed by me are:

- the definition of gifted children and gifted education (Sternberg and Davidson, 1986; Eyre, 1997; Renzulli, 1986; Sternberg & Zhang, 1995)
- some characteristics of gifted children (Clark, 2002; Davis & Rimm, 2004; Gagné, 2004c; Renzulli, 2002; Sternberg & Davidson, 2005; Tannenbaum, 1983)
- enrichment and acceleration models (Renzulli, 1977; Davis and Rimm, 2004)
- selection models of gifted children from various countries (Shane N. Phillipson, 2009; Peyser, 2005; Heller, 2005)
- instruction methods in gifted education (Park (2001; Sheffield, 1999, 2003)

Practical value of the thesis

With the help of some materials from Prufrock and critical thinking company, critical thinking lessons, problem solving activities and games the researcher designed a new model of the enrichment program for gifted children.

There are many case studies about gifted children and their education in many countries, but this study will be the first and significant in identifying gifted children and developing suitable educational models for them in Erbil, Iraq.

This study may increase public awareness of the gifted children and their education. This study will also be beneficial to teachers and administrative staff in dealing with gifted children.

The practical use of some intelligence and creativity tests, nominations forms and other identification techniques, used in this study, will start a variety of new chances for teachers and make contribution to gifted education.

This study, hopefully, will encourage and motivate teachers and policy makers to implement various identification methods, and educational programs at schools in Erbil, Iraq.

Organization of the study

This study includes three main chapters. The **first chapter** presents some definitions of gifted education, literature and theoretical approaches of selection methods, and various educational methods of gifted education.

The **second chapter** presents some examples of selection methods and educational models from different countries. It also presents investigation of math and science lessons at primary level for gifted children. It also includes researchers` selection model derived from various models to identify gifted children for this study. The **third chapter** gives description of research methods used in this study, findings and analysis of the data, interpretation of the data and suggestions for future studies. It also presents researcher`s selection methods for identifying gifted children participated in study.

The dissertation includes introduction, three chapters, conclusion and appendices. There are 27 tables and 8 figures.

CHAPTER 1: LITERATURE REVIEW

This chapter gives definitions of terms in gifted education such as giftedness, gifted child, intelligence test and creativity test. Ford (1996) points out that academic achievement and intelligence level are placed in the center of definition of giftedness and they play major role to identify gifted children. For most of the researchers, children`s intelligence level determines their giftedness. Because of considerable debate and confusion, most experts in gifted education face difficulty to give universal and accepted definition of giftedness.

Pentagon theory proposed that, mainly five important criteria are used to define giftedness and it is called pentagonal theory of giftedness (Sternberg & Zhang, 1995). These criterions are the excellence, the rarity, the productivity, the demonstrability, and the value criterion.

This chapter also focuses on common characteristics of gifted children and their teachers, and selection methods of gifted children. Clark (2002) put gifted children under different categories including:

Cognitive characteristic, such as advanced comprehension, different interest and high curiosity, high level of language development and verbal ability; **affective (feeling) characteristics**, such as being aware of his existence, differences from the others and, sense of humor, idealism and perfectionism; **physical characteristic**, discrepancy between physical and intellectual development, and low tolerance; **intuitive characteristics**, such as being curious and open to new experiences; and **societal characteristics**, such as strongly motivated by self-

actualization needs, being interested in social problems and their solutions, leadership, and involvement with the meta-needs of society (i.e., justice, truth, beauty).

This chapter also outlines attitudes of parents and teachers towards gifted education and gifted children.

CHAPTER 2: SELECTION OF GIFTED CHILDREN, ENRICHMENT AND ACCELERATION PROGRAMS

The main concern of this chapter is the importance of selection methods of gifted children and practical usage of some selection methods and models in some countries. How can we identify gifted children is the most controversial and continuous topics for the gifted and talented education programs (VanTassel-Baska, 2000). Many experts have argued that, selection process should be included multiple methods in order to get more accurate results (Louis, Lewis, & Feiring, 1991).

In this chapter, we also focus on the importance of new approaches, instruction and selection methods in gifted education. Especially for gifted students, to increase their interest, enjoyment, participation and task commitment. Teachers should follow various instructional methods to meet their needs. Especially, technology integrated instructional methods can be effective tools to achieve this. VanTassel-Baska (2000, 2003) suggested six guidelines for successful instructional methods. These guidelines include:

(1) Gifted students should receive curriculum opportunities that permit optimum levels of learning. (2) Because their learning needs differ from those of typical learners, curriculum must be adapted (or designed) to accommodate these special needs. (3) Their curriculum experiences should include cognitive, affective, social, and aesthetic areas. (4) They need both accelerated and enriched learning experiences. (5) For maximum effect, curriculum experiences should be carefully planned and implemented. (6) Curriculum planning is a continuous process, with evaluation a central tool for future planning and curriculum revision. Stanley's Talent Search model (Swiatek& Lupkowski-Shoplik, 2005), Renzulli's (e.g., Renzulli & Reis, 2003) Schoolwide Enrichment model, Betts's (1985) Autonomous Learner model includes various instruction methods to meet gifted students need. Besides, there are various instruction methods which are very efficient and helpful to meet the needs of gifted children and motivate the lessons.

CHAPTER 3: METHODOLOGY AND ANALYSIS OF THE RESEARCH DATA: APPLICATION OF ENRICHMENT AND ACCELERATION METHODS

This chapter presents selection process of gifted children, some information about subjects and findings and results of the study.

In this study, qualitative and quantitative methods were used to collect data. Intelligence test, creativity test and teachers` and parents` nomination forms were used to select gifted students; assessment results of math and science lessons were used to compare acceleration and enrichment models and surveys were used to get feedback about students` satisfaction from the programs as quantitative part of data collection. Interviews with teachers, and observation of students during the lessons were qualitative aspects of data collection.

In the first stage, the researcher has focused on selecting gifted and talented students. We have visited 5 private schools in Erbil, Iraq, and we have interviewed the teachers of the third grade students. We gave them seminars about characteristics of gifted children and their education. Parents and teachers are important factor in the selection process. We have provided teachers and parents with nomination forms. According to the nomination form results obtained from parents and teachers, recommended students had intelligence and creativity tests. According to the test results, teachers and parents nomination forms, nine gifted students were selected and put into two groups for experimental study. Five students were placed in the enrichment group and four students were placed in the acceleration group. Parents, students and teachers were informed that the program would start after third grade in summer holiday.

In the second stage, the summer acceleration and enrichment programs for gifted student were designed. This program was called summer program to compare enrichment and acceleration programs. For this, math and science curriculum of fourth grade was scanned, and some topics in math and science lessons were selected to teach. To make five-week Fun Summer Program more enjoyable critical thinking activities were also added.

I had an interview with the parents of gifted children and they were informed about the program. The permission was taken from parents to allow their children to participate in summer programs. Three days in a week, Saturday, Sunday and Wednesday, they had 5 lessons, three different subjects in a day.

Especially for acceleration group, some activities were organized to keep student`s motivation high. Playing educational and intelligence games, having picnic and field trips were

some activities for acceleration group. During the lessons, students had pre- test, while- tests and posttests to assess their learning.

Table1. Weekly Summer School Program for Acceleration and Enrichment Group

SATURDAY	SUNDAY	WEDNESDAY
Critical Thinking	Science	Math
Math	Science	Science
Math	Math	Critical Thinking
Science	Critical Thinking	Critical Thinking

In the third stage, after completing the course, the gifted students in both groups retook intelligence test, creativity test, and the final test in all subjects as post-tests.

A questionnaire was also given to all gifted students to get feedback about fun summer programs and the level of their satisfaction level about acceleration and enrichment groups.

By considering students level and their age, just 5 items were included in this scale. Overall; our aim was to get students general feedback about the programs. For next studies with the same gifted children, this questionnaire gives us some ideas to design programs. For example, most of the students seemed they really liked fun summer programs and spending time with the other gifted children. For next education year, new programs might be designed and provided to these gifted children.

Finding and analyzes of the pre –while –post tests results

After selecting gifted students and designing acceleration and enrichment programs for gifted children, we selected courses for five weeks. During the courses, to measure the efficiency of the programs, students had three different tests as pre-test, post-test and while- tests and following finding and results were obtained.

Table 2. Math tests results (Enrichment group)

Students ` Name	Pre-test	While- Test	Post-test	Total increment
1 Student	85	85	90	+5
2 Student	88	90	95	+7
3 Student	83	80	90	+7
4 Student	90	83	98	+8
Student	75	73	90	+15

5				
Mean	84.2	82.2	92.6	
Median	85	83	90	
Standard deviation	5.8	6.3	3.7	

The findings and test results of enrichment group in math lesson are the following:

- ✓ The difference between pretests and post tests for all students are five or more than five and all the students in this group demonstrated significant growth.
- ✓ The difference between pretests and while tests varied. Two students have increased their scores and three of them obtained lower scores than pre test scores.
- ✓ Two highly gifted students in this group also show significant progress with the total increment of 7.
- ✓ One student in this group has shown very significant progress with increment of 15 points.
- ✓ The standard deviation is low; it indicates that the group is more homogenous. But the subject number in the groups is few. Because of this, standard deviation results may not give us significant results. Moreover, these children are gifted children and their score are very close to each other.
- ✓ The mean differences between pre-tests and post- test are also significant with 8.4 point. It indicates that instruction methods and teaching strategies in enrichment group motivate students and enhance their learning.

Table 3. Math tests results (Acceleration group)

Students Name	Pre-test	While-test	Post-test	Total increment
t 1	90	90	92	+3
t 2	95	95	95	0
t 3	84	85	87	+3
t 4	89	90	87	-2
Mean	89.5	90	90.25	

Median	89.5	90	89.5	
Standard deviation	4.5	4.08	3.9	

The findings and test results of acceleration group in math lesson are the following:

- ✓ Some students in this group have shown insignificant growth.
- ✓ Two of them did not show any improvement.
- ✓ During math classes, highly gifted students, Student 1 and students 3 have demonstrated significant progress with three points.
- ✓ There is an increment between pretests and while test.

The instruction methods in the acceleration group in math lessons were not as effective as in the enrichment group. The differences between the methods used in the acceleration and enrichment groups have affected students' achievement. The instruction methods in the enrichment group were more student-centered, more challenging and more motivating.

They had to study faster to cover the topics of the program. But highly gifted students were successful even in the acceleration programs because of their higher intelligence level.

Table 4. Comparison of math tests results in both groups

Group	Observed Mean(sd)		t Test		
	Pre-test	Post-test	T	P	D f
Enrichment	84 (5.8)	92 (3.7)	-4.88	0.008	4
Acceleration	89.5 (4.5)	90 (3.9)	-0.67	0.54	3

In order to see the effects of acceleration and enrichment gifted educational models on students' performance, we compared test results with the help of t test.

For enrichment group, mean measured in the pretest was 84.2 (SD 5.8) and posttest was 92.6 (SD 3.7). For acceleration group, mean measured in the pretest was 89.5 (SD 4.5) and posttest was 90 (SD 3.9). P score is less than 0.05 and it also proves that, enrichment models really had positive effects on students' performance in enrichment group and there is really significant difference between pre-test and post-test.

In acceleration group, the mean difference between pretest and posttest is just 0.5. The p score with 0.54 indicates that there is not significant effect on students` learning performance. But in the acceleration group, two highly gifted students demonstrate significant progress and it proves our hypothesis. Acceleration programs are more suitable for highly gifted children.

Table 5. Science tests results (Enrichment group)

Students` Name	Pre-test	While-test	Post-test	Total increment
Student 1	82	85	90	+7
Student 2	85	85	100	+15
Student 3	83	85	90	+7
Student 4	93	85	99	+6
Student 5	85	75	87	+2
Mean	86.2	83	92.8	
Median	85	85	90	
Standard deviation	4.08	4.47	6.22	

Findings and analyses of Science lesson in enrichment group are the following:

- ✓ Four students in this group have shown significant improvement, there are more than five point differences between pre-test results and post-test results.
- ✓ Only one student has shown stable or insignificant growth with two points.
- ✓ During science classes, highly gifted students have demonstrated significant progress with more than 5 points as well.
- ✓ There is not much difference between pre-test and while-test results. Two students increased their scores, one student remained the same, and two students got lower scores compared to pre-test.

Table 6. Science tests results (Acceleration group)

Students` Name	Pre-test	While-test	Post-test	Total increment
Student 1	90	90	99	+9
Student 2	92	90	87	_5
Student 3	92	95	97	+5
Student 4	93	95	94	+1

Mean	91.75	92.5	94.25	
Median	92	92.5	95.5	
Standard deviation	1.25	2.88	5.25	

Findings and analyses of Science lessons in acceleration group are the following:

- ✓ Three students in this group have shown stable growth with increment of nine, five and one.
- ✓ One of them did not show any improvement.
- ✓ During science classes, highly gifted students have shown significant process with more than 5 points as well.
- ✓ In the acceleration group the science lessons also were not as effective as in the enrichment group. For the science lesson in acceleration group, students had to cover more topics compared to enrichment group. Because of this they had to go fast and they could not study some chapters deeply. Most of the time, teachers had to follow teacher focused instruction methods and it created motivation problems.

Table 7. Comparison of Science tests results in both groups

Group	Observed Mean(sd)		t Test		
	Pre-test	Post-test	T	P	D f
Enrichment	86 (4.3)	93.2 (5.8)	-3.59	0.02	4
Acceleration	91. (1.2)	92.5 (2.8)	-0.67	0.54	3

To determine the effects of enrichment and acceleration educational methods on gifted students` performance in science lesson test was used as measurement instrument.

For enrichment group, mean measured in the pre-test was 86.2 (SD 4.3) and post-test was 92.8 (SD 5.8). Mean difference between pre-test and post-test in enrichment is significant with 6.4 point. P score also is less than 0.05 and it shows that students in enrichment group showed higher performance than in acceleration group and these findings and results support our hypothesis that enrichment programs are more suitable and effective for most of gifted students.

For acceleration group, mean score in the pre-test was 91.75 (SD 1.1) and post-test was 94.25(SD 5.25). The mean difference between pretest and posttest is significant with just 1.5 increments. The p score (0.54) is grader than 0. 05 and it shows that there is not significant progress between pre-test and post-test results.

Intelligence test results

Table 8. Comparison of intelligence test scores of gifted children in both groups

Group	Observed Mean(sd)		t Test		
	Pre-test	Post-test	T	P	f
Enrichment	129.5 (7.8)	140.8 (6.6)	-2.2	0.069	6
Acceleration	129 (5.6)	130.2 (9.6)	-0.39	0.72	3

Toni 4 intelligence test is used two times. The first time, it was measured before the enrichment program as a pre-test, and the second one was applied and measured after completion of the enrichment program. The results support our hypothesis: all gifted students demonstrated higher intelligence scores after the enrichment program.

All the gifted students in the enrichment group have demonstrated significant growth. The mean score differences between pre-test and post-test of enrichment group is 11. 3. And p score of enrichment group is significantly less than score of acceleration group and very close to 0.05. And it supported our **hypothesis** that enrichment teaching methods especially with student based instructions are very efficient to help students' cognitive development. It has positive effects on their intelligence and creativity. As many expert in gifted education, we claim that, acceleration programs are more suitable for highly gifted children. For acceleration group the mean difference between pre-test and post-test is just 1.2. The p score is 0.72 and this is more than 0.05. There is not significant change or progress between two tests.

Creativity test results

Table 9. Comparison of creativity test results of gifted children in both groups

Group	Observed Mean(sd)		t Test		
	Pre-test	Post-test	T	P	Df
Enrichment	113.6 (12)	118.4 (15)	-2.27	0.084	4

Acceleration	111 (7.9)	115 (11.6)	-0.39	0.33	3
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Torrance creativity was used two times in this study. The first time, it was used and measured before the enrichment and acceleration programs as a pre-test, and the second one was applied and measured after completion of the gifted programs.

For the enrichment group, mean measured in the pre-test was 113.6 (SD 12) and post-test was 118.4 (SD 15). Mean difference between pre-test and post-test in enrichment is significant with 4.8 point. P score of enrichment group is significantly less than P score of acceleration group and it is very close to 0.05. These results supported our hypothesis that students in enrichment group were more successful than students in the acceleration group. Acceleration method is suitable for just a small portion of gifted children called highly gifted.

For the acceleration group, mean score in the pre-test was 111 (SD 7.9) and post-test was 115 (11.6). The mean difference between pretest and posttest is significant with just 4 increments. The p score is 0.33 and it is less than 0.05. This result shows that there is significant progress between the first and second test in the acceleration group also. Both groups were given critical thinking and problem solving exercises. Many experts believe that intelligence and creativity is not fixed but they can be improved. Birdi (2005) claimed that creativity and intelligence can be improved by having some training. The gifted students in both groups have shown significant improvement because of thinking skills and problem solving activities.

Students' satisfaction level

Table 10. Enrichment group student satisfaction level

Question/ Student	I enjoyed in this program.	I liked instruction methods.	I would like to attend the summer enrichment program again.	I liked critical thinking lessons.	I liked studying with new friends.	Average	St. deviation
1	5	4	5	4	4	4.4	0.54
2	5	4	5	4	5	4.6	0.54
3	4	5	4	5	4	4.4	0.54

4	4	5	5	5	4	4.6	0.54
5	5	5	3	5	5	4.6	0.89
Ave rage	4.6	4.6	4.4	4.6	4.4		
St. Deviation	0.54	0.54	0.89	0.5 4	0.54		

All the students in the enrichment group really liked the instruction methods and activities. Instruction, teaching methods, activities, and teachers' attitudes are the most distinguished differences from the regular classrooms.

Average score of all participants with 4.6 indicates that they all really liked and enjoyed Fun Summer Program. All the students with the average score of 4.6 liked instruction methods in the enrichment group. As it was mentioned earlier, teaching method was one of the clear differences between the enrichment and acceleration programs. Most of the students with the average score of 4.6 wanted to participate in other gifted programs. The participant rate and students' satisfaction might be important criteria for the future of these programs. The continuity of these programs is also very important and crucial for meeting gifted children's needs and their academic and social development.

All the students with the average score of 4.6 really liked critical thinking lessons. Almost for all gifted education programs, lessons for critical thinking and problem solving skills play crucial role to attract gifted students' attention and increase their participation in the programs. Even some students do not like the other lessons; they may want to participate just because of this lesson. They really help children to develop their critical thinking and problem solving skills which is really important for small children to learn how to take care of themselves in early ages.

It seemed that, all the students really enjoyed studying together. Most of the students may have great time with the other gifted students. In the classroom, a challenging atmosphere might be created. But, if the students really feel different from their peers and they just rely on their giftedness and talent, this might cause problem in the future. This feeling can diminish gifted children's intrinsic motivation and lead them to become isolated from other children. It also makes gifted children underestimate their friends' ability and skills. They may become more selfish and arrogant.

Table 11. Acceleration group Students satisfaction level

Question/ Student	I enjoyed participating this program.	I liked instruction methods.	I would like to attend the summer enrichment program again.	I liked critical thinking lessons.	I liked studying with new friends.	Average	St. deviation
1	3	3	3	5	4	3.6	0.89
2	3	3	4	5	5	4	1
3	4	4	3	5	4	4	0.7
4	3	3	4	5	5	4	1
Average	3.25	3.25	3.5	5	4.5		
St. deviation	0.5	0.5	0.57	0	0.57		

Compared to the enrichment group, the average score of the first question with 3.25 was lower than average score of the enrichment group.

Compared to the enrichment group, the average score of the second question with 3.25 was lower than average score of the enrichment group. This proves that instruction methods were not liked by all the students.

In the acceleration group, all students with the average score of 5 liked critical thinking skill lesson. As we mentioned, critical thinking is the core lesson for any gifted education programs.

With the average score of 4.5, all the students in the acceleration group also liked studying together as the enrichment group did. In many schools, just few students might be accelerated and these accelerated gifted students have to study in the regular classroom with normal children. Sometimes, gifted children should feel isolated and alone in higher grades. Existence of any other acceleration student in the same classroom may prevent these problems.

Compared to the enrichment group, students with the average score of 3.5 showed less interest and eagerness for the future programs. It is important to be noted that, according to many experts acceleration programs are more suitable for just highly gifted children and these findings support our hypothesis that students get more benefit from enrichment programs and they are

more suitable and effective for most of the gifted students. Acceleration programs generally are offered for highly gifted students.

Summary of findings and analyses

The aim of the current study was to compare two common gifted educational programs- enrichment and acceleration programs. Moreover, the study aimed to find the effects of these programs on gifted children`s creativity and intelligence. Both qualitative and quantitative research methods were used to obtain more reliable results.

In general, there were four main results of the experiments. They are:

1. students` academic performance in math and science lesson,
2. students` intelligence test results
3. their creativity test results and
4. Their satisfaction level.

Gifted students` performance in the acceleration and enrichment group were significantly different.

Gifted students in the enrichment programs were more successful compared to gifted students in the acceleration programs in math and science lessons. But two highly gifted students have shown significant progress in the acceleration group. The researcher hypothesized that enrichment programs are more suitable for most of gifted children. But highly gifted children are successful in both groups.

Gifted students` intelligence and creativity test scores are also different in two groups. In the enrichment groups, students have demonstrated significant growth in intelligence and creativity tests. But in acceleration group, except highly gifted children they could not increase their intelligence and creativity scores significantly. This finding supports our hypothesis. Enrichment programs are more suitable and help students to increase their intelligence and creativity level.

According to the satisfaction survey, all gifted students in both groups really enjoyed and liked Fun Summer Program. Especially critical thinking lesson which has been paid much attention and liked by all gifted students.

Limitations of the study

The findings and results of the study are significant and applicable for future special education programs and gifted education programs.

At preparation stage, to find subjects for our study was expected to be available. But unfortunately there is no gifted school for elementary school students in Kurdistan region in Iraq

Because of this, many students had to be scanned, and tested. Intelligence tests are not free tests. It costs money and you should have certificate and experience to apply. Same test materials should be purchased and some courses should be taken to learn how to apply intelligence and creativity tests.

Some limitations are related to identification and selection process.

a) Most of the students were not familiar with the intelligence tests and test items. Because of this, some of the students could get lower score.

b) The selection items, intelligence tests, creativity tests are really costly items because of this, just one or two type of intelligence tests could be applied.

c) The other concern is that, the students should not be selected according to standardized tests as other factors, such as their ability, talent and interest might be ignored.

As it was mentioned earlier, there is no gifted school in this region and no gifted education programs. While developing acceleration and enrichment programs, some problems occurred. Some educational materials, such as books, text books, activity books, and educational toys and activities had to be provided. It should be ordered through internet and it was time and money consuming. The researcher had to teach both groups because of the lack of experienced and knowledgeable teachers in gifted education. It was a tiring experience for me.

To most of the parents and school administrative staff, providing gifted education program in the other building can create some isolation problems for small children. To get used to new school building, classroom, and routines might take time and cause stress for primary school children.

Conclusions and Recommendations

Based on the analysis of literature and results of the experimental study, the conclusions and the recommendation of the dissertation are:

At primary school level, gifted education programs are important, necessary and valuable.

1. Teachers, students and parents who contributed to some extent to this study emphasized the importance of this education programs, especially for primary level. These kind of programs help primary school children prepare themselves for secondary schools by providing them with new challenging activities.

2. Although the number of the gifted and talented children is rare in the society, their attribution as a smart person to society cannot be underestimated, that is why gifted children should be identified in early ages. Some identification tools for gifted children are really expensive because of this government should support schools or some

institutions to purchase these materials. All intelligence tests cannot be applied and used because of language, cultural bias, considering these issues in the future, new tests and identification scales can be developed by universities or schools for this region.

3. Teachers' knowledge and experience regarding to gifted children and their education is not sufficient to recognize gifted students and meet their needs at schools. Providing seminars to teachers and encouraging them to attend some conferences to increase the knowledge about gifted children and education may be some strategies for the success of gifted education in the future. School administrative staff should feel responsible for providing these seminars and conferences and support teachers all the time.

4. The teachers should have considerable knowledge about gifted education programs and they should decide the suitable education model for gifted children.

5. Acceleration models can meet needs of only highly gifted children. Enrichment models are more suitable for gifted children.

6. Critical thinking and problem solving skills should be taught to gifted children from early ages. They are really motivated by these problem solving and critical thinking activities. These lessons really help them increase their intrinsic motivation and find a connection what they study in the class and how they can imply and use them in real life to solve problems.

7. Designing any program for gifted children needs careful consideration and efforts. Because of this, the teachers, and experts in this area should be educated and work enough. Primary school gifted education and curriculum should be different from regular programs and curriculums at schools. The topics and activities in gifted education program should be more challenging and authentic. If the aim of the curriculum is to meet the need of gifted students, in terms of their social and academic needs, revising present curriculum or redesigning a new curriculum is undeniable. According to the observations in the classroom environment and the data obtained from this study, the instruction methods and curriculum design should be based on student-focused instruction methods. Most of the teachers depend on teacher focused instruction methods which involve more drill practices and repetition. Somehow these methods might work for normal students but for gifted and highly gifted students, it is very boring and a waste of time. Teachers should follow other instruction methods to make students more active. They like skill based instruction methods such as, mental modeling, discovery learning and inquiry methods. Students are more active and they engage learning activities with

enjoyment. This type of curriculum and education program needs more effort, concentration and time.

The effective curriculum briefly should be:

- a) student focused,
- b) well structured,
- c) new learning promoted,
- d) challenging,
- e) focused on basic skills to prepare students for life
- f) unique in terms of depth, variation, and topics and scope
- g) based on real life problem solving skills
- h) technology integrated

Once an effective and skills based curriculum is designed, it really helps teachers in the lessons to reach the aim of curriculum and meet gifted students need.

8. The findings of this study also showed the importance of peer groups in gifted education. When gifted children study with their intellectual peers, they might be more happy and joyful, because of challenging atmosphere and sharing common things with their friends. Most of the gifted children's` parents are worried about the future of this study. Their children are selected. They are given five weeks education and after that what will happen to them. Will they study in regular classes or these programs will be continued. As we mentioned earlier these kind of programs should be continued and offered to gifted children.

9. Enrichment activities and experiences provided in the enrichment program was considered as strength of this program, because gifted or bright children may not have this kind of opportunities in regular classes.

10. In enrichment programs, the students had a change to use their learning and experience as an applicable and useful knowledge to deal with real life problems.

List of publications in which the main ideas and findings of the dissertation are reflected:

1-Baser, C. (2015). Classroom Teachers 'Knowledge Regarding Selection of Gifted Children and their Characteristics. *6th International Visible Conference on Educational Studies & Applied Linguistics*. (pp. 552-557). Erbil: Ishik University.

2. Baser,C.,& Kanar, N. (2015). Future Teachers` Attitude towards Gifted Students and their Education. *6th International Visible Conference on Educational Studies & Applied Linguistics*. (pp. 558-563). Erbil: Ishik University.

3. Baser,C. (2014). Material Development for Gifted Children in Second Language Teaching. In Mart, C. T. (Ed.), *5th International Visible Conference on Foreign Language and Applied Linguistics*. (pp. 434-439). Erbil: Ishik University.

4. Baser,C.,& Kanar, N. (2014). How can you "Gift" to Second Language Young Learners. *Procedia-Social and Behavioral Sciences*. ELSEVIER, 136(2014) ,pp. 246-249