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Assessment of Training Programs for Elementary Mathematics Teachers on Developed Curricula and Attitudes towards Teaching in Najran-Saudi Arabia

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Abstract
This study aimed at assessing the training programs for Mathematics teachers at elementary stage on developed Curricula and attitudes toward teaching at Najran educational administration in Saudi Arabia. To achieve this objective, two instruments were developed, one of them measures the opinions of Mathematics teachers about the training programs and the other one measures their attitudes toward teaching the developed Curricula, which were distributed to (72) male and female Mathematics teachers at elementary stage. The results showed that training programs for Mathematics teachers are highly efficient in covering the theoretical background of the project of Mathematics development, content, methods of teaching, activities and educational aids, evaluation, and quality of training. The results also showed Math teachers have positive attitudes towards teaching the developed Curricula, and further concluded that there are no statistically significant differences due to teacher's experience, while there are statistically significant differences attributed to gender in favor of female teachers.
Keywords: evaluation of training programs – developed Curricula - attitudes towards teaching – mathematics teachers – elementary stage.

1. Introduction

The development of Mathematics Curricula is part of the development of Mathematics and natural sciences curricula project in the Kingdom of Saudi Arabia, which is based on ten principles: Learner- centered learning, Multimedia- based excitement, Learning by multiple approaches, knowledge and communication skills, collaborative Learning, active learning, the development of thinking skills, Development of decision-making skills, Development of learner ability to provide planned initiatives, learner's relation with real-life contexts (Ministry of Education, 2006).

The teacher is one of the main pillars of the educational process; he plans lessons, design the learning environment, provides multiple sources, and varies teaching methods to help students learn well. (Ebeid 2010). As the biggest challenge for the teacher is the ability to cope with rapid changes in various fields, which change a lot of lifestyles, which shows the teacher's need to acquire new skills to pursue these changes(Bishop, Berryman , Wearmout., Peter, Clapham,2012). Therefore, in-service teacher training occupies a vital position in the priorities of educational policies, to encounter the challenges arising from the changes and cognitive, scientific, and technological developments (Goma, 2010).

The training significance prompted the Ministry of Education in Saudi Arabia to plan and implement programs for professional development for teachers in order to enable them to apply the new Curricula effectively as part of the project of Mathematics and natural sciences curricula development in the Kingdom of Saudi Arabia (Obeikan, 2011)

Through the practical field education at Najran city schools, the researchers held interviews with ten Mathematics teachers about the problems of teaching the new Curricula, teachers conveyed the difficulties faced in teaching some topics contained therein. One of the main reasons of these difficulties is to deficiencies in training on teaching the developed Curricula.

Most of the studies conducted in this area indicated that the teacher training programs have some strengths and some weaknesses, Nadarajan (2012) showed the impact of teacher training held in state of Alabama, that science and Mathematics teachers knew different methods of teaching during this training. Muhammad & Ahmad (2012) showed the importance of convenience between training programs for teachers of middle school and knowledge society. Alagez, Alloh& Alashqar (2010) showed the training programs need for planning, the results also revealed statistically significant differences in the training of secondary stage teachers in Gaza attributed to gender in favor of male; in related to years of service, there were statistically significant differences in favor of those from (6-10 years). Bakhsh (2009) showed there are several strengths in the training programs for special education teachers in Saudi Arabia, and there are some weaknesses, including poor of study training needs and no priority to the objectives of the training teachers. Hashim (2007) concluded that there is a great defect in education training programs for secondary school teachers in the Sudan. Sayar (2004) showed that the problems facing the training of physical education teachers in Bahrain, including the areas of planning,

content and educational competencies, and evaluation. Alansari (2004) showed that there is inadequacy in the training opportunities for teachers in Saudi Arabia, and that the pattern used in training is the lecture, and there was absence of teachers' participation in the design of training programs. Alkhatib (2002) concluded that the training programs do not meet the training needs of science teachers in the basic stage at Alkhalil Governorate and there were not statistically significant differences in the training needs due to gender and years of experience.

Teachers' success depends on their attitudes towards teaching because it affects not only their performance but also their students emotionally, socially, and mentally. Thus, it is a must to identify teachers' attitudes towards teaching to determine the positive and negative aspects in these attitudes (Al-Rashed, 2003). So, Kousa (2011), Lee (2004) proved the existence of positive significant correlation between Mathematics teachers' performance and attitudes towards the teaching.

Most studies that focused on the measurement of the attitudes towards Mathematics teaching revealed that Mathematics teachers have positive attitudes towards Mathematics teaching, Aly and Abdul Hakim (2013) showed that Mathematics teachers have positive attitudes towards Mathematics teaching; there are statistically significant differences due to gender in the dimension of teacher prestige in favor of female Mathematics teachers, While there is no impact of the experience in teachers attitudes. Yildirim (2012) showed positive attitudes among teachers towards Mathematics teaching, and impact of gender in the attitudes toward teaching in favor of female teachers. Bu, Mumba, Henson &Wright (2011) showed improvement in Mathematics teachers attitudes towards Mathematics teaching as a result of the use of Mathematical modeling with open source technology. Kandemir and Gür (2009) revealed four influential factors in Mathematics Teachers' motivation: students, teaching, and the attitudes towards Mathematics and towards Mathematics teaching, and their beliefs. Muhammad (2000) showed there is no impact for Experience in attitudes toward teaching, while there is an impact for gender in favor of female teachers.

Consequently, the importance of in - service teacher training programs is clearly seen. In addition to the importance of evaluating these programs to determine strengths to be strengthened and weaknesses to be improved, despite this importance there is no study aimed to assess Mathematics teachers training programs on developed Curricula from their point of view and attitudes towards teaching. So, there is a need to assess the training programs for Mathematics teachers at elementary stage on developed Curricula and attitudes toward teaching at educational administration of Najran in Saudi Arabia.

2. Methodology

2.1. Population and sample

The population of the study consisted of all the Mathematics teachers at the elementary stage at educational administration of Najran in Saudi Arabia during the academic year 1434-1435H (2013-2014), trained on the developed Curricula. The sample of the study was 72 Mathematics teachers (36 males and 36 females).

2.2. Instruments

For the purpose of this study, two instruments were prepared: a questionnaire for elementary school Mathematics teachers about the status of their training on developed Curricula, the second tool is a scale of the attitudes of elementary school Mathematics teachers towards the teaching of the Mathematics developed Curricula.

The final version of the questionnaire consists of (82) items distributed into six domains: the theoretical background of the development project, the content of the Mathematics developed Curricula at the elementary stage, the methods of teaching the new content, the activities and educational aids, the evaluation in the new Curricula, the quality of training. Therefore, Five-Point Likert Scale was used for each item, and in order to ensure the reliability of the questionnaire, alpha coefficient was calculated which resulted in a high reliability coefficient (0.97).

The final version of attitudes scale consists of (40) items distributed into five domains: the nature of Mathematics, the importance of Mathematics, enjoyment by Mathematics teaching, professional development for Mathematics teachers, and the prestige of Mathematics teacher. Therefore, Five-Point Likert Scale was used for each item, and in order to ensure the reliability of the scale, alpha coefficient was calculated which resulted in a high reliability coefficient (0.89).

In order to analyse the results of the study, the responses were classified into five levels: very small (1 – less than 1.8), small (1.8 to less than 2.6), average (2.6 to less than 3.4), large (3.4 to less than 4.2), and very large (4.2-5).

3. Results

3.1. Results related to the first question:

"What's the reality of training programs for Mathematics teachers at elementary stage on developed Curricula at educational administration of Najran? to answer this question, means and standard deviations of the responses of teachers were calculated as shown in table (1).

Table (1) means and standard deviations of the responses of teachers about the reality of their training

Domain	N	Mean	S.D	Status
Theoretical Background	72	3.47	0.62	large
Content	72	3.79	0.74	large
Methods of Teaching	72	3.68	0.73	large
Activities and Educational Aids	72	3.41	0.86	large
Evaluation	72	3.49	0.82	large
Quality of Training	72	3.81	0.78	large

Table (1) shows the means of responses of the teachers on the six domains which ranged between (3.41 -3.81) wherever, the domain of the quality of training comes in the first rank (M=3.81), whereas the domain of the Activities and educational aids comes in the last rank (M=3.41).

3.2. Results related to the second question:

" What's the attitudes of elementary school Mathematics teachers towards teaching the developed Curricula? To answer this question, means and standard deviations of the responses of teachers were calculated as shown in table (2).

Table (2) means and standard deviations of the responses of teachers on attitudes scale

Domain	N	Mean	S.D	Status
Mathematics nature	72	3.62	0.53	large
Important of Mathematics	72	3.90	0.64	large
Enjoyment by teaching Mathematics	72	3.79	0.69	large
Professional development	72	3.94	0.63	large
Teacher's prestige	72	3.87	0.70	large
attitudes	72	3.83	0.56	large

Table (2) shows the means of responses of the teachers on the five domains and the total of the scale, which ranged between (3.62 -3.94) wherever, the domain of the professional development comes in the first rank (M=3.94), whereas the domain of the nature of Mathematics comes in the last rank (M=3.62).

3.3. Results related to the third question:

" Are there any significant differences of attitudes among Mathematics teachers due to gender? To answer this question, "T- test" was used, table (3) demonstrates the results.

Table (3) Results of T-Test according to gender in relation to attitudes

Domain	gender	N	Mean	S.D	t	Sig. (2-tailed)
Mathematics nature	male	36	3.42	0.45	-3.51	0.01
	female	36	3.83	0.53		
Important of Mathematics	male	36	3.65	0.62	-3.56	0.01
	female	36	4.15	0.56		
Enjoyment by teaching Mathematics	male	36	3.54	0.62	-3.19	0.01
	female	36	4.04	0.67		
Professional development	male	36	3.64	0.54	-4.55	0.01
	female	36	4.24	0.57		
Teacher's prestige	male	36	3.57	0.65	-3.91	0.01
	female	36	4.17	0.63		
attitudes	male	36	3.57	0.47	-4.35	0.01
	female	36	4.09	0.53		

Table (3) showed that there are statistically significant differences ($\alpha = 0.01$) between the responses means of teachers about their attitudes towards teaching developed Curricula due to gender in favor of female teachers.

3.4. Results related to the fourth question:

" Are there any significant differences of attitudes among Mathematics teachers due to experience? To answer this question, "T- test" was used, table (4) illustrates the results.

Table (4) Results of T-Test according to experience in relation to attitudes

Domain	gender	N	Mean	S.D	t	Sig. (2-tailed)
Mathematics nature	less than 5	36	3.57	0.50	-0.88	0.38
	5 or more	36	3.68	0.56		
Important of Mathematics	less than 5	36	3.85	0.61	-0.73	0.46
	5 or more	36	3.96	0.67		
Enjoyment by teaching Mathematics	less than 5	36	3.74	0.61	-0.63	0.52
	5 or more	36	3.84	0.77		
Professional development	less than 5	36	3.82	0.65	-1.59	0.11
	5 or more	36	4.06	0.60		
Teacher' prestige	less than 5	36	3.76	0.73	-1.42	0.16
	5 or more	36	3.99	0.67		
attitudes	less than 5	36	3.75	0.53	-1.19	0.23
	5 or more	36	3.91	0.59		

Table (4) showed that there are no statistically significant differences (α = 0.05) between the responses means of teachers about their attitudes towards teaching developed Curricula due to experience.

3.5. Results related to the fifth question: "*Are there any significant differences of* the reality of the training programs *among* Mathematics *teachers due to* gender? To answer this question, "T- test" was used as shown in Table (5).

Table (5) Results of T-Test according to gender in relation to the reality of the training

Domain	Gender	N	Mean	S.D	t	Sig. (2-tailed)
Theoretical Background	Male	36	3.20	0.60	-4.06	0.01
	Female	36	3.74	0.53		
Content	Male	36	3.47	0.70	-4.04	0.01
	Female	36	4.11	0.64		
Methods of Teaching	Male	36	3.32	0.60	-4.73	0.01
	Female	36	4.04	0.68		
Activities and Educational Aids	Male	36	3.03	0.76	-4.08	0.01
	Female	36	3.78	0.78		
Evaluation	Male	36	3.11	0.71	-4.38	0.01
	Female	36	3.87	0.76		
Quality of Training	Male	36	3.37	0.70	-5.64	0.01
	Female	36	4.24	0.60		

Table (5) showed that there are statistically significant differences (α = 0.01) between the responses means of teachers about the reality of their training on developed Curricula due to gender in favor of female teachers.

3.6. Results related to the sixth question:" *Are there any significant differences of* the reality of their training programs *among Mathematics teachers due to* experience? To answer this question, "T-test" was used. Table (6) demonstrate the results.

. Table (6) T-Test results according to experience in relation to the reality of the training

Domain	experience	N	Mean	S.D	t	Sig. (2-tailed)
Theoretical Background	less than 5	36	3.43	0.47	-0.58	0.56
	5 or more	36	3.51	0.75		
Content	less than 5	36	3.68	0.59	-1.27	0.20
	5 or more	36	3.90	0.86		
Methods of Teaching	less than 5	36	3.56	0.71	-1.34	0.18
	5 or more	36	3.79	0.75		
Activities and Educational Aids	less than 5	36	3.36	0.83	-0.51	0.61
	5 or more	36	3.46	0.89		
Evaluation	less than 5	36	3.43	0.75	-0.63	0.52
	5 or more	36	3.55	0.90		
Quality of Training	less than 5	36	3.79	0.66	-0.18	0.85
	5 or more	36	3.83	0.89		

Table (6) showed that there are no statistically significant differences (α = 0.05) between the responses means of teachers about their reality of training programs on developed Curricula due to experience.

4. Discussion:

The main purpose of the study is to assess the training programs for Mathematics teachers at elementary stage on developed Curricula and attitudes toward teaching at educational administration of Najran in Saudi Arabia, and the results showed that these training programs had high quality in terms of the coverage of the theoretical background for developed Mathematics Curricula project, the content, methods of teaching , activities and educational aids , evaluation , and the elements of the training quality and this may be a reason to support positive attitudes among teachers towards teaching the developed Curricula, which demonstrated by the results of the study.

The results also showed that Mathematics teachers have positive attitudes towards teaching the new Curricula, and further concluded that there are no statistically significant differences due to the experience in the responses of teachers on the study tools, while there are statistically significant differences in their responses to those tools attributed to gender in favor of female teachers.

This lack of impact of the experience in the attitudes toward teaching the new Curricula may be due to that most Mathematics teachers agreed with the nature of Mathematics and its importance in the educational process and life in general, regardless of years of experience. There is agreement among Mathematics teachers on the need of professional development for teachers and especially with regard to the developed Curricula, which in turn supports Mathematics teacher prestige in the community and increases the enjoyment of teaching. This result is consistent with Aly and Abdul Hakim (2013), and Muhammad (2000).

This lack of impact of the experience in the teachers' responses about the reality of their training may be due to that the training programs that met the needs of Mathematics teachers, regardless of their experience. This result is consistent with the results of Al Khatib (2002), while differ from Alagez, Alloh& Alashqar (2010) and this may be due to the difference in the training environment where the present study was applied in. As the present study was applied in the Saudi environment, while the other study was applied in Palestine.

The impact of gender in attitudes in favor of female teachers towards teaching may be because working as a mathematics teacher is an opportunity for women to go out to the Saudi society, as it is a source of income and an opportunity to enhance the social status. This result agrees with Aly and Abdul Hakim (2013) in relation to the dimension of the teacher prestige, Yildirim (2012), and Muhammad (2000).

The impact of gender in assessing the training programs in favor of female teachers may be because the female teachers gave greater attention to the training program than the male teachers to strengthen their teaching to prove themselves and improve their image in the Saudi society. This result differs from the results of Alagez, Alloh& Alashqar (2010), Al-Khatib (2002) this may be due to the difference in the training environment where the present study was applied in. As the present study was applied in the Saudi environment, while the other study was applied in Palestine.

5. Recommendations

In light of the results, the present study recommends the responsible of training at the educational administration in Najran to generalize the developed curricula training for all elementary school Mathematics teachers with an emphasis on activities and educational aids, and to highlight the nature of Mathematics.

6. Proposals

A similar study on the intermediate and secondary Mathematics teachers' training programs, and a study to identify the training needs of Mathematics teachers of different stages.

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