

*

212

36

$0.05 > \alpha$

National Council of Teachers of Mathematics

(NCTM)

.(2003)

.(NCTM, 2000)

1987

(Williams, 2007)

Contextual

teaching method

.(1987)

*

2007/12/11

.2008/2/8

(Sand t, 2007)

123 18 224 2006
"

" " Van Hiele "
.Gutierrez and Fortuny)

.(2006

" "
(2007) Pickreign

40

(Steven and Wenner, 1996)

(2005) Tuft

34

Pedagogical content

knowledge (PCK)

.(Reitano, 2004)

(2001) Marnich

(NCTM, 2000)

(Tell, 2001)

) :

.(

NCTM

1988 (Cramer and Lesh,)

.1 48

%20

.2

%20

%42

:

(Ministry of education, undated)

:

-

-

)

-

"2/

" "1/

.(2006

:

-

.(

)

:

-

-

-

:

:

-

:

:

(1)

%			
7.55	16		
92.45	196		
17.45	37		
57.55	122		
25.00	53		
10.38	22		
78.77	167		
6.13	13		
4.72	10		

2007/2006

89 909 2007/2006
820
212

(1)

9

%33

:

%66

%34

.%100

%67

:

36

3

:

-

.34/22/21/20/19/18/17/16/15/14/13/10/

/26/25/23/8/6/5/4/2/1 :

-

.35/33/30/29/28

/32/31/27/24/12/11/9/7 :

-

2007/2006

.36

(KR20)

-

(SPSS)

.(2)

(2)

(one way ANOVA)

" "

()

(scheffe)

0.81	13		1
0.79	14		2
0.79	9		3
0.87	36		

()

(2)

.0.81 0.79

:

:

:

(1)

(3)

)

.(

(3)

	%					
	30.5	1.666	3.96	13 - 0	13	
	40	2.160	5.61	14 - 0	14	
	42	1.688	3.79	9 - 0	9	
	37	4.012	13.35	36 - 0	36	

(4)

()

	()					
0.494	0.586-	210	1.58	3.69		
			1.67	3.98		
0.076	1.783-	210	1.92	4.69		
			2.16	5.68		
0.689	0.400-	210	1.85	3.63		
			1.67	3.80		
0.159	1.412-	210	4.22	12.00		
			3.98	13.46		

(3)

%37

13.35

()

1/

3.79

2/

%42

5.61

%40

3.96

.%30.5

")
(Cramer and Lesh, (Tuft, 2005) (2003
"2/ 1988)

(Sandt, 2007) (Pickreign, 2007) (Marnich, (Sand t, 2007) (Steven and Wenner, 1996)
2001)

" :

" :

() :
: .1

"2/

() (Marnich, 2001) (Cramer and Lesh, 1988)

Independent Samples T test

(4)

(4)

$0.05 > \alpha$

(5)

1.78	4.54		
1.64	3.86		
1.56	3.77		
1.57	5.51		
2.29	5.51		
2.20	5.88		
1.83	4.08		
1.73	3.70		
1.47	3.77		
4.00	14.13		
4.14	13.09		
3.69	13.43		

(6)

	" "					
0.063	2.808	7.662	2	15.324		
		2.729	209	570.374		
			211	585.698		
0.558	0.584	2.737	2	5.474		
		4.684	209	979.031		
			211	984.505		
0.495	0.705	2.016	2	4.031		
		2.858	209	597.417		
			211	601.448		
0.379	0.975	15.702	2	31.403		
		16.102	209	3365.351		
			211	3396.755		

(7)

1.72	5.31		
1.60	3.80		
1.46	3.15		
1.26	4.60		
1.56	7.36		
2.10	5.39		
1.98	5.53		
2.83	5.40		
1.84	5.50		
1.53	3.52		
1.95	4.00		
1.31	4.20		
3.47	18.18		
3.64	12.72		
3.56	12.69		
4.63	14.20		

.2

(6) (5) (one way ANOVA)

(5)

(6) ()

> α

0.05

(8)

	" "					
*0.000	7.470	18.988	3	56.965		
		2.542	208	528.733		
			211	585.698		
*0.001	5.789	25.289	3	75.867		
		4.368	208	908.638		
			211	984.505		
*0.000	10.434	26.224	3	78.671		
		2.513	208	522.777		
			211	601.448		
*0.000	14.628	197.261	3	591.783		
		13.485	208	2804.971		
			211	3396.755		

.05 > α

*

(9)

scheffe

0.718	*2.16	*1.51	-		
0.792	0.655	-	-		
1.446	-	-	-		
-	-	-	-		
1.96	1.825	*1.96	-		
0.005	0.143	-	-		
0.138	-	-	-		
-	-	-	-		
1.300	1.500	*1.97	-		
0.679	0.479	-	-		
0.200	-	-	-		
-	-	-	-		
*3.98	*5.48	*5.45	-		
1.47	0.0322	-	-		
1.50	-	-	-		
-	-	-	-		

.05 > α

*

(7)

(ANOVA)

(8)

(7)

()

(8)

$0.05 > \alpha$

(9)

scheffe

(9)

()

Education Reform for knowledge economy (ERfKE) the national education for all plan.

National Council of Teachers of Mathematics (NCTM). 2003. *Principles and standards for school mathematics*. Reston, VA: Author.

Pickreign, J. 2007. Rectangles and Rhambi: How well do Preservice teachers know them? IUMPST: *The Journal*, (1). Available at: www.k-12prep.math.ttu.edu. 2006

Reitano, D. 2004. *From preservice to inservice teaching: A study of conceptual change and knowledge in action*, Doctoral thesis, Griffith University. 2003

Sand T. S. 2007. Pre-service geometry education in South Africa: a typical case? IUMPST: *The Journal*, (1). available at: www.k-12prep.math.ttu.edu. 1987

Stevens, C. and Wenner, G. 1996. Elementary preservice Teachers' Knowledge and Beliefs Regarding Science and Mathematics. *School Science and Mathematics*, 96 (1): 2-8. 19 2006

Tell, C. 2001. Appreciating good teaching: A conversation with Lee Shulman, *Educational Leadership*, 58 (5): 6-11.

Tuft, E. A. 2005. What is Mathematics? Stability and change in prospective teachers' conceptions of and attitudes toward mathematics and teaching mathematics, *DAI-A67/02*, Michigan State University.

Williams, D. 2007. The What, Why, and How of Contextual Teaching in a Mathematics Classroom. *Mathematics Teacher*, 100 (8), 572-575. from Academic Search Premier Database.

Cramer, K. and Lesh, R. 1988. Rational number knowledge of preservice elementary education teachers. In M. Behr (ad.). *Proceedings of the 10th annual Meeting of the North American chapter of the international group for psychology of Mathematics education*, 425-431.

Marnich, D. B. 2001. *How the knowledge base of pre-service teachers affects the diagnosis and remediation of student errors when adding fractions with unlike denominators*, unpublished Doctoral thesis.

Ministry of education and United Nations Educational Scientific and Cultural organization.(undated).

The Extent of Students Teachers Acquisition at Jordan University for Some Mathematical Concepts in Geometry, Algebra and Arithmetic

*Ibrahim A. Al-Shar'a and Haidar I. Zaza**

ABSTRACT

This study aimed at identifying the extent of students teachers Acquisition of Mathematical concepts in Geometry, Algebra, and Arithmetic. To achieve the purpose of the study, a test of 36 items was developed and administrated at 212 students teachers were selected randomly stratified sample. The findings revealed that the students teachers acquisition of mathematical concepts in general is moderate whereas low in Geometry. The findings also indicated that there were statistically significant differences at $\alpha < 0.05$ in the extent of students teachers acquisition of mathematical concepts attributed to sex and university level. The study recommended increasing the math courses in general and Geometry courses in particular and revisiting the preparation teachers plan.

Keywords: Acquisition, Mathematical concepts, Geometry, Algebra, Arithmetic, Students Teachers, Jordan University.

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