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Attitudes of teachers towards use of General Graphic Aids in Teaching of mathematics: The influence of teaching experience of secondary school teachers of Narsipatnam mandal of Visakhapatnam districts

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Abstract: Teaching aids in mathematics improve the efficiency of the students in terms of quality as well as the objectivity up to the course. Graphic aids develop the capability of students for successful participation in the classroom. This study aimed at exploring the teacher's attitudes towards quality of general graphic aids in mathematics. It was carried out with 100 prospective teachers from Narsipatnam Mandal of Visakhapatnam. They believed they gained necessary knowledge and attitudes to develop the teaching aids.

Key Words: Mathematics, graphic aids, quality

Introduction: Mathematics is the most difficult subject by both teachers and students by the way it was presented and handled. The teaching of mathematics depends on the way it is presented. Learning process, use of teaching aids helped teachers and reduced their teaching time and increases the teaching experience. Findings from a number of research studies have shown that strategic use of technological tools can stand by both the learning of mathematical procedures and skills as well as the development of advanced mathematical competence, such as reasoning, problem solving, and justifying (Gadanidis & Geiger, 2010; Nelson, Christopher, & Mims, 2009; Pierce & Stacey, 2010; Roschelle, Shechtman, Tatar, Hegedus, Hopkins, Empson, Knudsen & Gallagher, 2010). Future mathematics teachers need to be ingenious in practices of technology (Powers & Blubaugh, 2005). Preparing tomorrow's mathematics teachers to use technology is one of the most important topics facing teacher education programs today (Kaput, 1992, p. 515; Waits & Demana, 2000).

Objective of the study: To know the attitudes of teachers towards the use of Teaching Aids in teaching of mathematics with respect to their Teaching Experience.

Hypothesis: There will be no significant difference among the teacher's attitudes towards the use of Teaching Aids in teaching of mathematics with respect to their Teaching Experience.

Results and Discussion: Table 1 observed that the ANOVA results of teachers basing on their teaching experience with respect to General Graphic Aids, between groups and within groups, the df values are 2 and 77 respectively and sum of squares are 43.01 and 1593.99 and mean squares are 21.51 and 20.70 respectively. The F- value is found to be 1.04 and p value is 0.36 which is not significant. This shows that there is no significant difference among the teachers basing on their teaching experience with respect to General Graphic Aides towards Use of Teaching Aids in Teaching of Mathematics in secondary schools. Hence, the null hypothesis is accepted.

Table 1: Analysis of Variance (ANOVA) - Attitudes of teachers basing on their teaching experience with respect to General Graphic Aides towards Use of Teaching Aids in Teaching of Mathematics in secondary' schools of Narsipatnam Mandal of Visakhapatnam District

Area	Teaching Experience	N	Mean	Groups	Sum of Squares	df	Mean Square	F-value	p-value
General Graphic Aids	Below 10	38	43.17	Between Groups	43.01	2	21.51	1.04 NS	0.36
	10 to 20	54	42.68	Within Groups	1593.99	77	20.7		
	Above 20	18	44.56	Total	1637	79			

Graph-1: mean comparison between below 10 , 10 to 20 and above 20 years teaching experienced teachers attitude with respect to General Graphic Aids

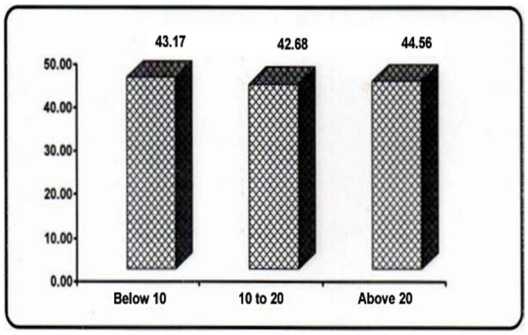

Table 2: Analysis of Variance (ANOVA) - Attitudes of teachers basing on their teaching experience with respect to Charts towards Use of Teaching Aids in Teaching of Mathematics in secondary schools of Narsipatnam Mandal of Visakhapatnam District

Area	Teaching Experience	N	Mean	Groups	Sum of Squares	df	Mean Square	F-value	p-value
Charts	Below 10	38	43.79	Between Groups	90.54	2	45.27	2.85*	0.05
	10 to 20	54	41.87	Within Groups	1265.41	77	16.43		
	Above 20	18	44.22	Total	1355.95	79			

Table 2 observed that the ANOVA results of teachers basing on their teaching experience with respect to Charts, between groups and within groups, the df values are 2 and 77 respectively and sum of squares are 90.54 and 1265.41 and mean squares are 45.27 and 16.43 respectively. The F-value is found to be 2.85 and the p value is 0.05, which is significant at 0.5 level. This shows that there is a significant difference among the teachers basing on their teaching experience with respect to Charts towards Use of Teaching Aids in Teaching of Mathematics in secondary schools of Narsipatnam Mandal of

Visakhapatnam District. Hence, the null hypothesis is rejected.

Graph-2: mean comparison between below 10, 10 to 20 and above 20 years teaching experienced teachers attitude with respect to Charts

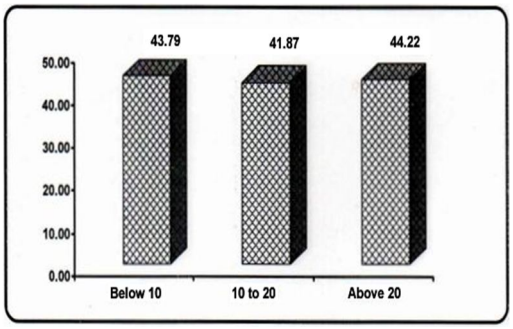

Table 3: Analysis of Variance (ANOVA) - Attitudes of teachers basing on their teaching experience with respect to Diagrams towards Use of Teaching Aids in Teaching of Mathematics in secondary schools of Narsipatnam Mandal of Visakhapatnam District

Area	Teaching Experience	N	Mean	Groups	Sum of Squares	df	Mean Square	F-value	p-value
Diagrams	Below 10	38	44.79	Between Groups	156.06	2	78.03	5.32*	0.01
	10 to 20	54	41.76	Within Groups	1129.33	77	14.67		
	Above 20	18	44.17	Total	1285.39	79			

Table 3 observed that the ANOVA results of teachers basing on their teaching experience with respect to Diagrams, between groups and within groups, the df values are 2 and 77 respectively and sum of squares are 156.06 and 1129.33 and mean squares are 78.03 and 14.67 respectively. The F-value is found to be 5.32 and the p value is 0.01, which is significant at 0.5 level. This shows that there is a significant difference among the teachers basing on their teaching experience with respect to Diagrams towards Use of Teaching Aids in Teaching of Mathematics in secondary schools of Narsipatnam Mandal of Visakhapatnam District. Hence, the null hypothesis is rejected.

Table 4 observed that the ANOVA results of teachers basing on their teaching experience with respect to Pictures and Photographs, between groups and within groups, the df values are 2 and 77 respectively and sum of squares are 123.08 and 1247.12 and mean squares are 61.54 and 16.20 respectively. The F-value is found to be 3.80 and the p value is 0.03, which is significant at 0.5 levels. This shows that there is a significant difference among the teachers basing on their teaching experience with respect to

Pictures and Photographs towards Use of Teaching Aids in Teaching of Mathematics in secondary schools of Narsipatnam Mandal of Visakhapatnam District. Hence, the null hypothesis is rejected

Table 4: Analysis of Variance (ANOVA) - Attitudes of teachers basing on their teaching experience with respect to Pictures and Photographs towards Use of Teaching Aids in Teaching of Mathematics in secondary' schools of Narsipatnam Mandal of Visakhapatnam District

Area	Teaching Experience	N	Mean	Groups	Sum of Squares	df	Mean Square	F-value	p-value
Pictures and Photographs	Below 10	38	45.08	Between Groups	123.08	2	61.54	3.80*	0.03
	10 to 20	54	42.37	Within Groups	1247.12	77	16.2		
	Above 20	18	44.44	Total	1370.2	79			

Conclusion:

The study reveals that there exists a positive attitude of teachers towards use of teaching aids. Teachers are always encourages these visual aids in their classrooms along with their instructions. Teachers having above 20 years teaching experience show the higher attitude towards the graphic aids.

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