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Awareness on Utilization of Community Resources in Teaching Chemistry at Secondary School Level

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Abstract

The main objective of the study was to find out whether there is any significant relationship between utilization of community resources in teaching chemistry and students' achievement. The investigator has adopted the survey method. The population of the present study includes all the high and higher secondary school chemistry handling teachers of Thoothukudi district. Four tools were developed by the investigators were used to study the variables. Percentage analysis, t-test, and correlation analysis were used for analysis of data. The major findings were that, the secondary level chemistry teachers have moderate level of awareness on availability of community resources, there is significant difference between Tamil and English medium school secondary level chemistry teachers in their utilization of health resources, there is significant relationship between utilization of chemical resources.

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Introduction

Science is an accumulated and systematized learning in general usage restricted to natural phenomenon. The progress of science is marked by not only an accumulation of fact, but also the emergence of scientific method and of the scientific attitude. Chemistry is an important branch of science. Chemistry is, useful in understanding the changes taking place in the constituents of the environment and the resulting advantages. The study in chemistry in modern times has been greatly facilitated because of effective inter-linking of numerous facts and principles established from it.

Rationale of the Study

The Kothari commission (1964-1966) states, “If science is poorly taught and badly learnt, it is little more than burdening the mind with dead information and it could degenerate even into new superstitions”. The latest slogan in education in all the progressive countries is “let us study the community, use the community, serve the community and involve the community in the educational process”. Community resources and experiences can enrich science instruction. Indeed, there are many who feel that there is an unacceptable gap now between the chemistry that is taught in many students and the chemistry that is being pursed, whether it is academic, industrial or environmental. Imagination and creativity in using community resources can help students connect school chemistry with applications in the community, as well as helping students better learn to basic concepts.

Statement of the Problem

Awareness on Utilization of Community Resources in teaching Chemistry at Secondary School level.

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Objectives of the Study

1. To find out the level of utilization of community resources in teaching chemistry by the secondary level chemistry teachers.
2. To find out whether there is any significant difference between Tamil and English medium school secondary level chemistry teachers in their Utilization of health resources, energy resources, chemical resources, human resources, environmental resources, scientific attitude and community resources in teaching chemistry by the secondary level chemistry teachers.
3. To find out whether there is any significant relationship between utilization of health resources, energy resources, chemical resources, human resources, environmental resources, scientific attitude and community resources by the secondary level chemistry teachers in teaching chemistry and achievement of their standard X students in chemistry.

Hypotheses of the Study

1. The level of utilization of community resources in teaching chemistry by the secondary level chemistry teachers is moderate.
2. There is no significant difference between Tamil and English medium school secondary level chemistry teachers in their Utilization of health resources, energy resources, chemical resources, human resources, environmental resources, scientific attitude and community resources in teaching chemistry by the secondary level chemistry teachers.
3. There is no significant relationship between utilization of health resources, energy resources, chemical resources, human resources, environmental resources, scientific

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attitude and community resources by the secondary level chemistry teachers in teaching chemistry and achievement of their standard X students in chemistry.

Methodology of the Study

The investigator has adopted the survey method for the present study. The population of the study consists of all secondary school chemistry teachers in Thoothukudi district. The sample consists of 200 secondary level chemistry teachers. Multistage random sampling technique was used. A checklist and a questionnaire were used to find the awareness on availability and utilization of community resources respectively. The investigators constructed and validated the tools. Percentage analysis, t-test and Pearson correlation coefficient were used for the present study.

Analysis of the Data

Table 1

Level of Utilization of Community Resources of the Secondary Level Chemistry Teachers

Community Resources and its Dimensions	Low		Moderate		High	
	No.	%	No.	%	No.	%
Health Resources	32	16.0	144	72.0	24	12.0
Energy Resources	40	20.0	134	67.0	26	13.0
Chemical Resources	44	22.0	126	63.0	30	15.0

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Environmental Resources	45	22.5	120	60.0	35	17.5
Human Resources	48	24.0	132	66.0	20	10.0
Scientific Attitude	44	22.0	136	68.0	20	10.0
Community Resources	38	19.0	135	67.5	27	13.5

It is inferred from the above table that 72.0 %, 67.0%, 63.0%, 60.0 %, 66.0%, 68.0% and 67.5% of secondary level chemistry teachers have moderate level of utilization of health resources, energy resources, chemical resources, environmental resources, human resources, scientific attitude and community resources respectively.

Table 2

Difference between Tamil and English Medium School Secondary Level Chemistry Teachers in Utilization of Community Resources and Its Dimensions

Community Resources and its Dimensions	Medium of Instruction	Mean	SD	N	Calculated 't' value	Table Value at 5% level	Remark
Health Resources	Tamil	11.07	2.74	132	2.35	1.96	S
	English	11.96	2.42	68			
Energy Resources	Tamil	14.44	3.42	132	0.80	1.96	NS

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	English	14.84	3.28	68			
Chemical Resources	Tamil	28.39	6.09	132	1.60	1.96	NS
	English	29.76	5.60	68			
Environmental Resources	Tamil	11.61	2.82	132	1.62	1.96	NS
	English	12.25	2.57	68			
Human Resources	Tamil	15.09	3.53	132	1.16	1.96	NS
	English	15.69	3.43	68			
Scientific Attitude	Tamil	10.39	2.49	132	0.20	1.96	NS
	English	10.32	2.32	68			
Community Resources	Tamil	90.98	15.69	132	1.71	1.96	NS
	English	94.82	14.73	68			

Since the calculated 't' value is greater than the table value at 5% level of significance, there is significant difference between Tamil and English medium school secondary level chemistry teachers in their utilization of health resources. Hence, the null hypothesis is rejected. But, there is no significant difference between Tamil and English medium secondary level chemistry teachers in their utilization of chemical resources, energy resources, human resources, environmental resources, scientific resources and community resources. Hence, the null hypothesis is accepted.

Table 3

Relationship between Awareness On Utilization Of Community Resources Of The Secondary Level Chemistry Teachers And Achievement Of Their Standard X Students In Chemistry

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Availability of Community Resources	N	Calculated value of '**r**'	Table value of 'r'	Remarks at 5% level
Health Resources		0.088		NS
Energy Resources		0.075		NS
Chemical Resources		0.169		S
Human Resources	200	0.009	0.138	NS
Environmental Resources		0.015		NS
Scientific Attitude		-0.009		NS
Community resources		0.101		NS

It is inferred from the above table that there is significant relationship between utilization of chemical of the secondary level chemistry teachers in teaching chemistry and achievement of their standard X students in chemistry. But there is no significant relationship between utilization of health resources, energy resources, chemical resources, human resources, environmental resources, scientific attitude and community resources of the secondary level chemistry teachers in teaching chemistry and achievement of their standard X students in chemistry.

Findings of the Study

1. The level of utilization of health resources, energy resources, chemical resources, environmental resources, human resources, scientific attitude and community resources is moderate.

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2. There is significant difference between Tamil and English medium school secondary level chemistry teachers in their utilization of health resources. Hence, the null hypothesis is rejected. But, there is no significant difference between Tamil and English medium secondary level chemistry teachers in their utilization of chemical resources, energy resources, human resources, environmental resources, scientific resources and community resources. Hence, the null hypothesis is accepted.
3. There is significant relationship between utilization of chemical of the secondary level chemistry teachers in teaching chemistry and achievement of their standard X students in chemistry. But there is no significant relationship between utilization of health resources, energy resources, chemical resources, human resources, environmental resources, scientific attitude and community resources of the secondary level chemistry teachers in teaching chemistry and achievement of their standard X students in chemistry.

Conclusion

From this study it is clearly understood that, teachers should use community resources regularly in the classroom. So, chemistry teachers should develop their knowledge and adopt techniques of utilization of community resources to enhance the student's achievement.

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