



A Study On The Professional Problems Faced By Post Graduate Teachers In Physics

* R. Daphine ** Dr. P. Sivakumar

* Lecturer, The American College, Madurai

** Professor of Education, DDE, Alagappa University

ABSTRACT

The present study provides a data base which identifies prominent problems of physics teachers working in private and public schools. Regarding the overall perception on the professional problems, it is identified as higher among the teachers in Government schools than in private schools since their problems in class teaching and practical classes are very high compared to their counterparts. The important discriminant in Important Class Room Problems (ICRP) among the teachers in private and public schools is student's participation and involvement. It is due to the infrastructural facilities. The important discriminant career problem among the group of teachers is recognition and workload which are identified as higher in private schools than in Government schools. The career problems are highly viewed by the teachers in private schools. The opinion on syllabus of physics, encouragement of the management, facilities at the schools are significantly reducing the professional problems among the teachers. Hence, the study concludes that the Government should see the ways and means to reduce the professional problems among the physics teachers. Then only the teachers can perform in a better way. It not only enriches the quality of students but also the teachers.

Key word : ICRP, Physics teachers, Professional problems, Quality of education

Introduction

The professional problems among the teachers may arise because of the content of the subject, working hours, working environment, inter-personal relationship, future scope, better compensation and others. Teaching of Physics is a difficult task since it requires more knowledge and exposure on the experiments at one side. Physics teachers in India have been involved in a reform regarding the way Physics is taught, and have begun to integrate inquiry-type experiments into their Physics laboratory. The experiments range from a totally 'open-ended' investigation, to a 'partial inquiry'. The teachers' perception on their work content & the work environment includes from the class room facilities to inter-personal relationship. It may have its own influence on their perception on professional problems. If these problems are not properly assessed and eliminated, the quality of education may be affected. It may affect the social wealth of our nation in near future. Hence, it is essential to identify the important professional problems faced by the Physics teachers and its antecedents in order to rectify these problems in future. Thus the present study has made an attempt on these aspects.

Objectives of the Study

The objectives of the present study are:

- To examine the level of professional problems among the teachers
- To evaluate the association between the profile of

teachers and their professional problems

- To analyze the impact of components of professional problem on their overall professional problem
- To identify the important discriminant professional problems among the teachers in Private and Government Schools
- To identify the suitable suggestions to reduce the professional problems among them.

Collection of Data

Tools

A pre-tested interview schedule has been used to collect the relevant data from the sample. The interview schedule has been divided into three important parts. The first part covers the profile of the teachers whereas the second part includes the various antecedents of professional problems among the teachers. The third part of the schedule consists of the various components of the professional problems.

Statistical Tools

The collected data have been processed with the appropriate statistical techniques such as

- Factor analysis
- One-way analysis of variance
- t-test
- Two group discriminant analysis, and
- Multiple regression analysis

Sample

The sample has been taken based on the variables such as i) Place of the School ii) Experience of Teachers iii) Number of Hours Spent for theory and Practicals (Table - 1).

Table 1: Place of the School, Experience of Teachers, Number of Hours Spent for theory and Practicals

Sl.No.	Variable	Sub variable	Private Schools	Government Schools	Total
1.	Place of school	Urban	59	4	100
		Rural	17	30	
2.	Experience of teachers in years	Less than 5	32	2	100
		5-10	16	5	
		11-15	8	10	
		16-20	7	14	
		Above 20	3	3	
		Less than 5	6	10	
3.	Number of hours spent at classroom per week	5.00-6.00	5	12	100
		6.01-7.00	7	7	
		7.01-8.00	23	4	
		Above 8.00	25	1	
		Less than 5	4	4	
4.	Number of hours spent for practical	5.00-6.00	10	3	100
		6.01-7.00	14	13	
		7.01-8.00	18	10	
		Above 8.00	20	4	
		Less than 5	4	4	

ANALYSIS AND FINDINGS

Monthly Salary of Teachers

The analysis reveals that the private school teachers' salary depends upon their management's attitude and is very less as compared to their counterparts

Encouragement Provided by the Management

The management may encourage the teachers in so many ways for the enrichment of their schools and teachers. The higher encouragement may reduce the job stress among the teachers. Hence, they may perceive the professional problems at a lesser rate. The analysis reveals the importance of the conduct seminars and organize academic meet indiscriminating the two groups of teachers which are higher among the private school teachers than among the teachers in Government Schools. The higher mean difference is identified in the case of conduct seminars and organize science exhibition its mean difference are 1.25 and 1.20 respectively (Table - 2).

Table 2: Mean Difference and Discriminate Power of Encouragement factors among two Groups of Teachers

Sl. No.	Encouragement factors	Mean score of teachers		Mean Difference	t-statistics	Wilks Lambda
		Private School	Government School			
1	Conduct seminars	3.40	2.14	1.25	4.14	0.10
2	Attend conference	3.11	3.38	0.27	0.86	0.10
3	Attend science exhibition	3.04	3.68	0.64	2.03	0.23
4	Paper presentation	2.86	3.68	0.91	2.33	0.31
5	Research activities	2.95	3.20	0.25	0.54	0.45
6	Organise science exhibition	3.65	2.45	1.20	3.45	0.24
7	Organise academic meet	3.50	2.33	1.17	3.40	0.13

Inter Personal Relationship

The inter personal relation represents the relationship with their co-teachers, head of the institutions, management and other staff and students maintained by the teachers. Since, the inter-personal relationship is the prerequisite for their perception on professional problems it is included as one of the variables in the present study. The variables are identified as six (Table - 3).

Table - 3: Relationship with Teachers

Sl.No.	Aspects	Mean Score among teachers		t' statistics
		Private Schools	Government Schools	
1.	With students	3.68	2.71	2.56
2.	With colleagues	2.80	3.24	1.14
3.	With the Head of the institution	3.34	2.65	2.17
4.	With the non teaching staff	3.04	2.45	1.24
5.	With the sub-staff	3.11	2.50	2.04
6.	With the management	3.00	3.44	0.85

Teachers' Perception on Various Facilities at School

The lesser perceived infrastructural facilities among the private school teachers are parking, rest room, and teacher's room since their mean scores are 2.4544, 2.8661 and 2.9968. In the case of Government School teachers, these are class room size, library, apparatus in Laboratory, equipment in laboratory, space, room size, ventilation, since their mean scores are 2.5144, 2.6168 and 2.5668 respectively

Professional Problems

The professional problems may arise at the classroom, laboratory and in general. Since the professional problems may have its own impact on the performance of the teachers as well as their teaching methodologies it leads to job stress among the teachers and finally affect their health. Hence, it is essential to analyze the important problems faced by teachers, degree of influence, and the place of occurrence. In the present study, the professional problems among the teachers are studied at three different dimensions. First, the problems at theory classes, secondly at the practical classes and finally, the carrier problem.

Professional Problems in Theory Classes

The highly perceived problem at the theory classes among the teachers in private schools are related to submission of home-works, aims of the students and motivation to learn since their respective mean scores are 3.1447, 3.1443 and 3.1445. Among the teachers in Government schools these are related to listening skills of the students, students participation and involvement in learning since their respective mean scores are 3.9844, 3.9243 and 3.8646. The teachers at Government schools relatively perceive the problems in theory classes at a higher rate than the teachers in private schools. Regarding the perception on problems in theory classes, the significant difference among the two groups of teachers has been noticed. The factor analysis identified five important class room problems namely participation, knowledge, involvement, sincerity and material possession. The narrated five ICRP explain the included 21 problems to the extent of 69.88 per cent. The most important problem is 'participation' since its eigen value is 3.8548. It consists of six problems in it. This 'participation' explains all 21 problems to the extent of 18.45 per cent. The second and third important ICRP are knowledge and Involvement since its Eigen values are 2.6511 and 2.3742 respectively. These two factors include four problems. The percent of variation explained by these two important problems are 15.17 and 14.09 per cent respectively.

The next important class room problems identified by the factor analysis is related to 'involvement' since its Eigen value is 2.0944. The per cent of variation explained by it is 12.11 per cent. The last ICRP is 'material' possession problem since its Eigen value and the per cent of variation explained by it is 10.06 per cent. The factor analysis identified five important problems for further analysis (Table - 4).

Table 4: Important class room Problems (ICRP) among the teachers

Sl. No.	Important Class room Problems (ICRP)	Number of Variables in	Eigen value	Per cent of Variation explained	Cumulative per cent of Variation explained
1.	Participation	6	3.8548	18.45	18.45
2.	Knowledge	4	2.6511	15.17	33.62
3.	Involvement	4	2.3742	14.09	47.71
4.	Sincerity	4	2.0944	12.11	59.82
5.	Material possession	3	1.3968	10.06	69.88

KMO Measure of sampling adequacy: 0.7442 Bartlett's test of sphericity
Chi-square value: 81.08

Important Practical Classes Problems (IPCP)

The highly perceived problems among the teachers in private schools are availability of attenders, co-operation of sub-staffs and students responsiveness since their respective mean scores are 3.2345, 2.9968 and 2.9917. Among the teachers in Government schools, these are infrastructure, office response on the fulfillment of requirements and availability of attenders since their respective mean scores are 3.9909, 3.9226 and 3.9108 (Table - 5).

Table- 5: Important Practical classes' problems (IPCP)

Sl.No.	IPCP	Number of variables in	Eigen value	Per cent of Variation explained	Cumulative per cent of variation explained
1.	Students	5	3.4516	20.68	20.68
2.	Sub-staffs	3	2.8969	17.33	38.01
3.	Infrastructure	4	2.6241	15.49	53.50
4.	Superior	4	2.3302	14.17	67.67
KMO measure of sampling adequacy: 0.7917			Barlett's test of sphericity: Chi-square value:91.09		

Career Problems among the Teachers

The highly perceived career problem among the teachers in private schools is frequency of practical, assignment of other works apart from teaching and heavy work load since its mean scores are 3.9904, 3.9897 and 3.9193 respectively. Among the teachers in Government schools, these are no scope for promotion, poor fringe benefits and timing of the classes and practical session since its mean scores are 3.8214, 3.1335 and 3.1413 respectively.

ICP among the Teachers in Private and Government Schools

The Important career problems identified by the factor analysis are related to recognition, promotion, finance, workload and frequency of work. The perception on the above said ICPs may be differing among the different teacher. The significant mean difference among the two group of teachers have been noticed in the case of problems related recognition, finance, workload and frequency of work since their respective 't' values are significant at 5 % level (Table - 6).

Table-6: Mean Difference and Discriminant Power of ICP among the Private and Government School Teachers

Sl.No	ICP	Mean score among teachers in		Mean Difference	t-statistics	Wilks Lambda
		Private School	Government School			
1.	Recognition	3.9143	3.0745	0.8398	2.9168*	0.1082
2.	Promotion	3.7489	3.2935	0.4554	1.5617	0.3667
3.	Finance	3.6493	2.7824	0.8669	2.8045*	0.1568
4.	Work load	3.7592	3.0255	0.7337	2.4617*	0.1673
5.	Frequency of work	3.8612	2.9566	0.9046	2.4541*	0.2442

Association between the Profile of the Teachers and Their Professional Problems

The professional problems are studied by the problems related to class rooms, practical classes and also their career. The score of the above said problems are noted by ICRP, IPCP and ICP. The association between the profile of the teachers and their problem perception on ICRP, IPCP and ICP has been studied with the help of one way analysis

of variance. The included profile variables are age, marital status educational qualification, total teaching experience, experience in present school, hours spent in class room, hours spent in Practicals, monthly salary and type of school. The results are given in Table - 7.

Table - 7: Association between profile of the teachers and their professional problems

	Profile variables	F-statistics		
		ICRP	IPCP	ICP
1.	Age	2.7385*	2.0644	1.8457
2.	Marital status	2.3385	2.7645	2.1149
3.	Educational Qualification	2.8968*	3.1447*	2.7343*
4.	Total Teaching Experience	2.1082	2.5345*	2.6165*
5.	Experience in present school	2.4496*	2.1408	3.5262*
6.	Hours spent in classroom	2.7082*	2.6341*	2.8028*
7.	Hours spent for Practicals	2.5081*	2.8033*	2.6568*
8.	Monthly salary	2.4084*	2.7143*	2.6568*
9.	Type of school	3.1455*	2.8185*	3.2334*

(*significant at 5 % level)

The significantly associating profile variables with the ICRP are age, educational qualification, experience in present school, hours spent in class room, hours spent in Practicals, monthly salary and type of school since their respective 'F' statistics are significant at give per cent level. Regarding the IPCP, these profile variables are educational qualification, hours present in class room and Practicals, monthly salary and type of school. In the case of ICP, these profile variables are educational qualification, total teaching experience, experience in present school, hours spent in class room and Practicals, monthly salary and type of school.

Conclusion

The present study concludes that the overall professional problem among the teachers in Government schools is higher than among the teachers in private schools. The professional problems faced by the teachers consist of problems related to the teaching in class room, teaching at practical sessions and career problems. The career problems are highly viewed by the teachers in private schools. The opinion on syllabus of physics, encouragement of the management, facilities at the schools are significantly reducing the professional problems among the teachers. Hence, the study concludes that the Government should see the ways and means to reduce the professional problems among the physics teachers. Then only the teachers can perform in a better way. It only can enrich the quality of students but also the teachers.

REFERENCES

Feedman (1997). Attitude towards science and achievement in science knowledge. Journal of Research in Science Teaching, 34(4), 343-357 | Fraser, B., Me Robbie, C.J. & Gridding, G.J. (1999). Development and validation of science syllabus at the high school education. Science Education, 66(4), 581-591 | Lederman, N.G., Gess-Newsome, J. & Latz, M.S. (1994). The nature and development of pre-service science teachers' conceptions of subject matter and pedagogy. Journal of Research in Science Teaching, 31, 129-146 | Lunetta, V.N. & Hofstein, A. (2004). The role of the laboratory in science teaching: neglected aspects. Review of Educational Research, 52(2), 201-217 | Mellado, V. (1998). The problems encountered by the science teachers in private and public school. Science Education, 82, 197-214 | Morrison, J.A., & Lederman, N.G. (2003). Science teachers, Diagnosis and understanding of students' pre-conception. Science Education, 87, 849-867 | Southerland, S.A., & Gess-Newsome, J. (1999). Pre service teachers views of inclusive science teaching as shaped by the images of teaching, learning and Knowledge. Science Education, 83, 131-150 | Van Driel, J.H., Verloop, N. & De Vos, W. (1998). Developing science teachers' pedagogical content knowledge. Journal of Research in Science Teaching, 35(6), 673-695 | Wal Bereg, H. J. (1997). Dimensions of scientific interest in teaching of Chemistry and Physics among school teachers. Science Educator, 51(6), 111-116 | Yung, B.H.W. (2001). Views of teaching the science subjects and the problems in it. Journal of Research in Science Teaching, 5(1), 76-86