

**TEACHER'S PERSPECTIVE ON THEIR OWN
PROFESSIONAL ACTIVITY:
ITS IMPLICATIONS ON TEACHING**

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1. Introduction - The context of the study

The purpose of this paper is to present part of a country-level study conducted by a group of researchers at the University of Aveiro, aimed at identifying problems involved in the science teaching and learning process in the middle (5th and 6th grades) and secondary (7th to 12th grades) schools in Portugal. Although the study was limited to the problem of teaching and learning Physics and Chemistry, it is believed that the methodology and some of the findings are sufficiently general to be of interest and application in other areas.

The study presented is part of a larger project entitled "Teaching of Physics and Chemistry: analysis of the present situation vis-à-vis new challenges. Some proposals", subsidized by the National Scientific Research Organization (INIC) in Portugal.

The project has been developed since 1987 and its main underlying assumptions were:

- i) an obvious need for improving science education, particularly that of Physics and Chemistry;
- ii) a growing concern among educational policy makers over the present situation, though there is a lack of factual studies indicating problem areas;
- iii) a need to pursue a systematic and in-depth study to characterize Physics and Chemistry teaching in middle and secondary schools. Only after the study can proposals for change be presented.

Taking these assumptions into account, five main aims were set for the project:

- i) to identify the principal features of the situation of Physics and Chemistry teaching in schools;
- ii) to analyse these features in the light of recent proposals emerging out of research in science education. New aims for science education as well as new approaches to teaching are proposed here;
- iii) to present concrete proposals to bridge the gap between what exists and what should exist;
- iv) to stimulate the discussion over the points stated above among those most connected with education, namely the teachers;
- v) to create a data and document base on the topic for free public access.

2. Method

For an adequate appreciation of Physics and Chemistry teaching, the views of those intimately involved in the process of teaching and learning, namely the teachers and the students, had to be gathered. This was done through two surveys, one to Physics and Chemistry teachers and another to students.

The data for the study concerning teachers' views were obtained through a questionnaire aimed to investigate:

- i) teachers' beliefs concerning the relevance of the aims on Physics and Chemistry teaching stated by the researchers (described in Cachapuz et al, 1989);
- ii) teachers' perceptions of the effectiveness in enabling students to achieve those aims;
- iii) reasons which could interfere in the achievement of those aims. Four fundamental groups of reasons were established:
 - . **pedagogical reasons** - reasons related to:
 - a) teaching strategies;
 - b) teachers' perceptions about students' interests on curriculum topics, students' motivation and ability to learn;
 - c) aspects concerning curriculum materials (e.g. textbooks);
 - . **physical reasons** - reasons related to the existence, quality and conditions of access to laboratories and equipment;

- . **institutional reasons** - reasons related to the actual organization of the educational system in schools and general policy;

- . **social reasons** - reasons related to:
 - a) the teachers' social and economic status;
 - b) the distance between the teachers' home and their schools.

Given the nature of the survey of the teachers, in particular, the population chosen (large number of teachers from all over the country and the conditions which, in many cases do not give them much time for extra-school activities) some criteria were followed in the design of the questionnaire, namely:

- a) to be as short as possible;
- b) to be of easy response and return;
- c) to contain questions which would allow for statistical computer treatment.

The questionnaire was submitted for validation to a group of nine teachers (university and secondary school teachers) with a large pedagogical experience and recognized scientific competence.

The final version of the questionnaire (with 48 items) was mailed to all Physics and Chemistry teachers of middle and secondary schools in Portugal, which had been previously contacted. A great effort was put on the administration of the questionnaire in order to increase the percentage of the respondents and guarantee the representation of all regions of the country. On the whole 1954 questionnaires

were mailed and 725 received (37% of the corresponding total population). A sample of 521 was used in the main study.

3. Teachers' views on their professional activity

The main aims of this particular study, whose context was already described, were to investigate:

- i) to what extent do teachers praise their own profession;
- ii) which reasons (if any) would take them to leave the teaching profession;
- iii) what are the implications of teachers' attitudes towards the teaching profession on the achievement of the aims for Physics and Chemistry teaching considered relevant by them.

4. Results and conclusions

The results presented in this section were obtained through the answers given to the questions relevant to the aspects concerning teachers' attitudes towards the teaching profession and its implication on teaching.

The analysis of the results was made in terms of teachers' sex, professional life and the perception of their effectiveness in helping students to achieve the aims which they think are more relevant for Physics and Chemistry education.

The results depicted in Figure 1, show that nearly half of the teachers (46,4%, 412 women, 97 men) either would change profession if given the possibility or were

uncertain about it. This last situation represents, per se, a negative attitude towards the teaching profession.

As can be seen in the same figure, it is in the male population that the wish or uncertainty about leaving the teaching profession is more pronounced. This may still reflect the thinking that teaching is a female profession.

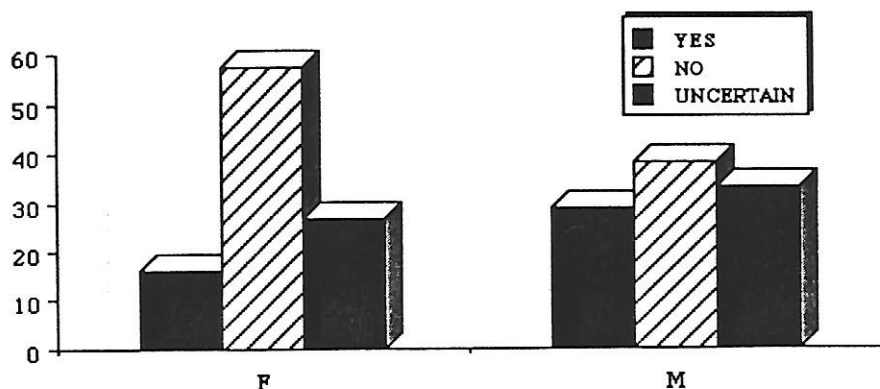


Fig. 1 - Teachers' attitude towards leaving teaching vs sex

The results also suggest that the attitude towards changing profession tends to change positively throughout professional life (Fig. 2). Possible reasons for this situation can not be depicted through the instrument used. Nevertheless one can think that the running of the profession can give a sense of self-confidence, promoting an improvement on teachers' teaching skills that allow for more satisfaction feelings towards their own professional activity.

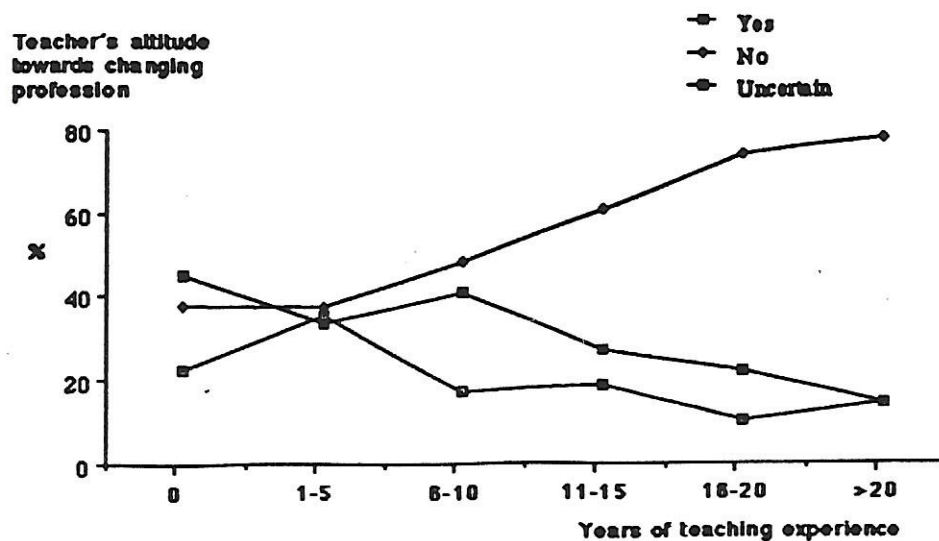


Fig. 2 - Teachers' attitude towards leaving teaching vs years of teaching experience

The data relative to the reasons which would make teachers leave their profession, were obtained through the answers to a question where several reasons related to pedagogical and sociological aspects were presented. Examples of the former are: feeling lack of professional competence, bad working conditions, desliking Physics and/or Chemistry, difficulty to get control over the students, finding the teaching profession routinish. Examples of the latter are: feeling that the salaries are inadequate to the demanding effort and that the profession has a low status.

The analysis of the data (Fig. 3) revealed that pedagogical reasons have more impact on teachers' decision about leaving profession than sociological ones.

Similar findings were described by Webb and Ashton (1987). They found that the degree of teacher dissatisfaction with their profession was directly related to the inadequacy of the working environment .

Reinforcing earlier results, the analysis in terms of sex shows that social reasons are more relevant to the male than to the female population.

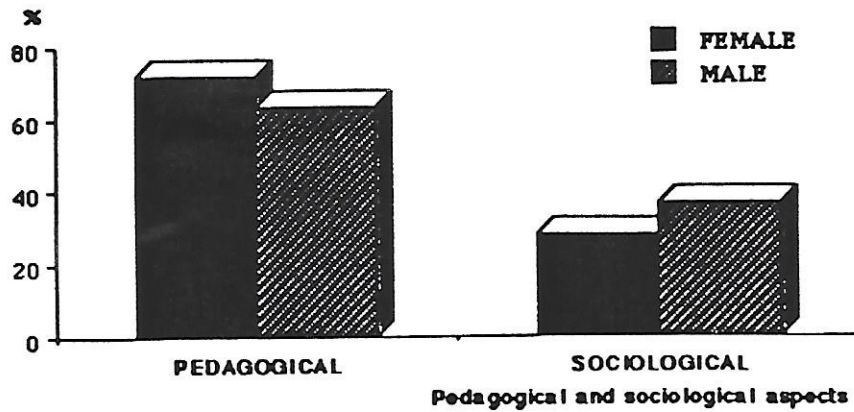


Fig. 3 - Teachers who would leave teaching by pedagogical or sociological reasons

An interesting finding emerged when the impact of teacher's thinking concerning the subject of this study on their professional practice was analysed. The results do not reveal any significant difference on the teachers' perception of the effectiveness of their teaching between those who would leave or were uncertain about leaving the teaching profession and those who would not leave it. Findings from other study, conducted in the context of the same project, aiming at identifying reasons which can unable teachers to achieve the aims they think are relevant for teaching, show that from the teachers who do not have tried to achieve those aims, 45.8% indicate reasons related to the inadequacy of conditions in schools followed by 19.2% who feel lack of competence for trying that achievement.

The study also indicates that the areas in which the teachers feel more difficulties in their professional activities are related to socio-pedagogical aspects followed by aspects related to learning evaluation.

This study provides insight into the way teachers praise their professional activity. The reasons presented by them for leaving the teaching profession, focussing in pedagogical aspects more intensively than sociological ones call for a deep reflexion by educators on the programmes of initial and in-service training.

References

- Cachapuz, A., Malaquias, I., Martins I., Marília F. Thomaz and Nilza, Vasconcelos, (1989) , "Objectivos do Ensino da Física/Química nos Ensinos Básicos e Secundários". Boletim da Sociedade Portuguesa de Química, 39, 11 - 15.
- Webb, R. B., and Ashton, P. T. (1987), "Teacher motivation and the Conditions of Teaching". In Stephen Walker and Len Barton (eds.) "Changing Policies, Changing Teachers - New directions for Schooling?". Open University Press. Milton Keynes, Philadelphia.