



A Professional Development Policy for Novice Science Teachers in the Omani Ministry of Education: The Stakeholders' Perspective

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Abstract

This paper presents research findings regarding the policy framework and the thinking of stakeholders in the Ministry of Education in relation to the professional development of novice science teachers (NSTs). The professional development of NSTs is highlighted, together with the emerging sub-themes, illustrated with evidence from qualitative data derived from open questions, official or electronic documents and interviews with Ministry policymakers and implementers.

This analysis investigates the Ministry's policy of developing NSTs and emerging issues that relate to this policy, such as the concept of novice teachers at the Ministry and their roles, the levels of professional development offered to this group of teachers and the factors that led the Ministry to offer professional development for NSTs. This paper answers the research question of why the Ministry considered it necessary to create a new policy for the professional development of NSTs, and with what specific objectives and anticipated outcomes.

Keywords: Stakeholders, Novice Science Teachers, Ministry of Education.

1. Introduction

Providing professional development (PD) for novice teachers is crucial (Flores, 2004), and studies indicate that effective PD contributes to improvements in professional practice and teacher retention (Timperley et al., 2008; Flores and Day, 2006). A number of studies have also confirmed that PD activities for novice teachers should be conducted in the context of their practice and relevant to their learning needs (Mitchell and Cubey, 2003; Holland, 2005; Yuen, 2012).

Novice teachers account for more than 27% of all teachers in Oman. Statistics issued by the Ministry of Education (MoE) indicate that it has hired thousands of teachers annually since 2012 to provide all governorates with qualified teachers (MoE, 2015b). Science teachers make up the largest percentage of teachers in Oman; MoE statistics indicate that there are 5,517 science teachers throughout the governorates, representing 9.85% of the total number of teachers (MoE, 2016a). The MoE seeks to provide newly appointed teachers with the knowledge and skills necessary to play an effective role in the learning process. Therefore, it has established training centres in all 11 governorates to provide educational support to all teachers, including novice science teachers (NSTs). These centres aim to assist newly recruited teachers to address the difficulties and educational issues they face at the start of their appointment through in-service educational training programmes (MoE, 2010b).

Despite the importance of these training programmes, their benefits for novice teachers have been under-investigated (MoE, 2014b), a research gap filled by this paper. It will also investigate the urgent need for this type of training, as the MoE is hiring new teachers in remote areas to achieve the Omanisation policy, which requires the MoE to develop training programmes and training centres in the governorates. This paper also has significance beyond Oman because insights into what makes for effective in-service teacher training are of interest and valuable in all countries.

2. Study methodology

This study integrated quantitative and qualitative methods by applying multiple variables and sampling methods when selecting stakeholders. Using mixed methods helps us to understand the phenomenon of NSTs' PD from stakeholders' perspectives when analysing related policies and documents. Therefore, two main paradigms are applied: one based on scientific terms and another based on the interpretive approach (Robson and McCartan, 2016; Briggs, Morrison and Coleman, 2012; Thomas, 2013). This study is heavily weighted towards the latter, which uses interviews and document analysis, because the research questions focus on obtaining detailed descriptions of the phenomena under investigation, particularly the expectations and insights of stakeholders regarding the PD of NSTs.

As Hammersley (2002, pp. 168–176) indicates, using three methods of data collection will help in checking the accuracy of data obtained from QUAN and QUAL interviews and document analysis. Denzin and Lincoln (2011, p. 14) describe the benefits of using triangulation in a mixed-method approach, as “the bias inherent in any particular data source, investigators, and a particular method



will be cancelled out when used in conjunction with other data sources, investigators, and methods". They also suggest that results on social phenomena are closer to reality when triangulation is used. Therefore, data were collected by analysing the policy and annual training plans of the MoE, followed by a questionnaire and qualitative interviews. As Hammersley (2002) points out, the data from qualitative interviews will support quantitative results. These are the general principles in the design of a research paradigm.

The data were collected in three stages, including document analysis, interviews with policymakers and a questionnaire and follow-up interviews with NSTs. The questionnaire was distributed by governorate coordinators to 302 schools, including 468 Omani NSTs; 399 responded, of which 389 were female.

Six governorates were chosen for recruiting interview participants (Muscat, South of AL-Batinah, AL-Dhahirah, Dhofar, Musandam and South of AL-Sharkiya). In each, an interview was conducted with six specific participant groups (the general manager of the governorate, the training officer in the governorate, the educational supervisor in science subjects, the senior teacher in science subjects and NSTs). Overall, there were 73 interviewees, including 44 NSTs and 29 officials.

3. Data analysis

The analysis of the questionnaires was presented in a spreadsheet using SPSS. Since the data from the demographic questions were analysed using descriptive and summary statistics, frequency statistics were calculated for the variables (e.g. gender, region, place of graduation, years of experience, place of teaching and cycle of teaching).

An independent sample t-test was used to compare females and males who hold the same perceptions regarding PD. An analysis of variance (ANOVA) was used to determine whether any significant differences exist in the perceptions of NSTs based on teaching experience, the cycle of teaching and number of training courses attended over three years.

I read the responses to the open-ended questions thoroughly while considering and generating potential meaning units. The developed categories had titles and interview quotes. I then examined the connection between categories by comparing and contrasting them both within and across data (Corbin and Strauss, 1990). To ensure inter-coding reliability, I asked colleagues to code some open-ended questions; I sent them separately the transcript of each question and then compared the results to determine if they reached the same or different codes (Miles and Huberman, 1994).

For the interviews, I applied early analysis to reduce the problem of information being overlooked by selecting significant elements for further investigation. As Parlett and Hamilton (1976, cited in Burden, 2008) state, the researcher is supposed to use a broad-angle lens to gather data and then sift, sort, review and reflect on them to find significant features of the phenomenon.

The first step implemented was to review the data and write analytical memos while conducting the interviews. This helped me to highlight the salient features by identifying the frequencies of words and patterns of ideas related to the PD. Therefore, an exhaustive reading of the data helped me to note interesting patterns and identify surprising or unexpected features such as inconsistencies and contradictions among stakeholder responses. Writing memos helped me to clarify meaning units and to note ideas (Punch, 2013).

The second step was to create codes driven responsively from the data. I was looking for a word or abbreviation sufficient to allow us to see at a glance what it means. I had started to develop codes earlier. Therefore, I went through the data set more than once to guarantee the consistency, refinement, modification and exhaustiveness of codes. I may have created some inessential or superfluous codes, or I may have initially developed codes that needed to be broken down further (Strauss, 1987).

The third step was to create domain codes, clusters or categories, which required identifying items that could be assigned to more than one category. I searched for and incorporated terms that fitted the semantic relationship, which helped me to discover the relationship between the domains and ensure the richness of data. The identified domains or categories were formulated to answer the research questions (Strauss, 1987).

4. Results and discussion

4.1 NST: Concept and role

There is no explicit definition of NSTs in the MoE's documents, in the MoE's annual training plans for teachers, training documents and the PD of teachers, nor in the document relating to the appointment

of teachers or on the MoE's website. The lack of a clear definition could lead to confusion and a lack of shared stakeholder understanding.

The governorate's annual plan for the training of teachers does not mention any term relating to novice teachers, and does not include any PD programs for NSTs. Meanwhile, the school manual as a unit of PD shows that training within the school achieves several aims, one of which is "preparing the new teachers and providing them with the basic skills without having to wait to enroll them in the training programs prepared by the governorate or Ministry" (MoE, 2016, p. 4).

All interviewed MoE policymakers and implementers in the governorates agreed that the term they used for this category of teachers is "new teachers". They pointed out that the new teacher is meant to be appointed with a full contract in September of each year. One of the policymakers explained that the concept of the new teacher refers to the teacher who joined the Ministry in the current year, regardless of their previous years of teaching before they were recruited (SCF).

4.2 Levels of NST PD in the MoE

The data obtained from interviews indicate that there are three levels of PD for NSTs in the MoE: central, governorate and school levels. Each level has its own different ways of providing PD for NSTs.

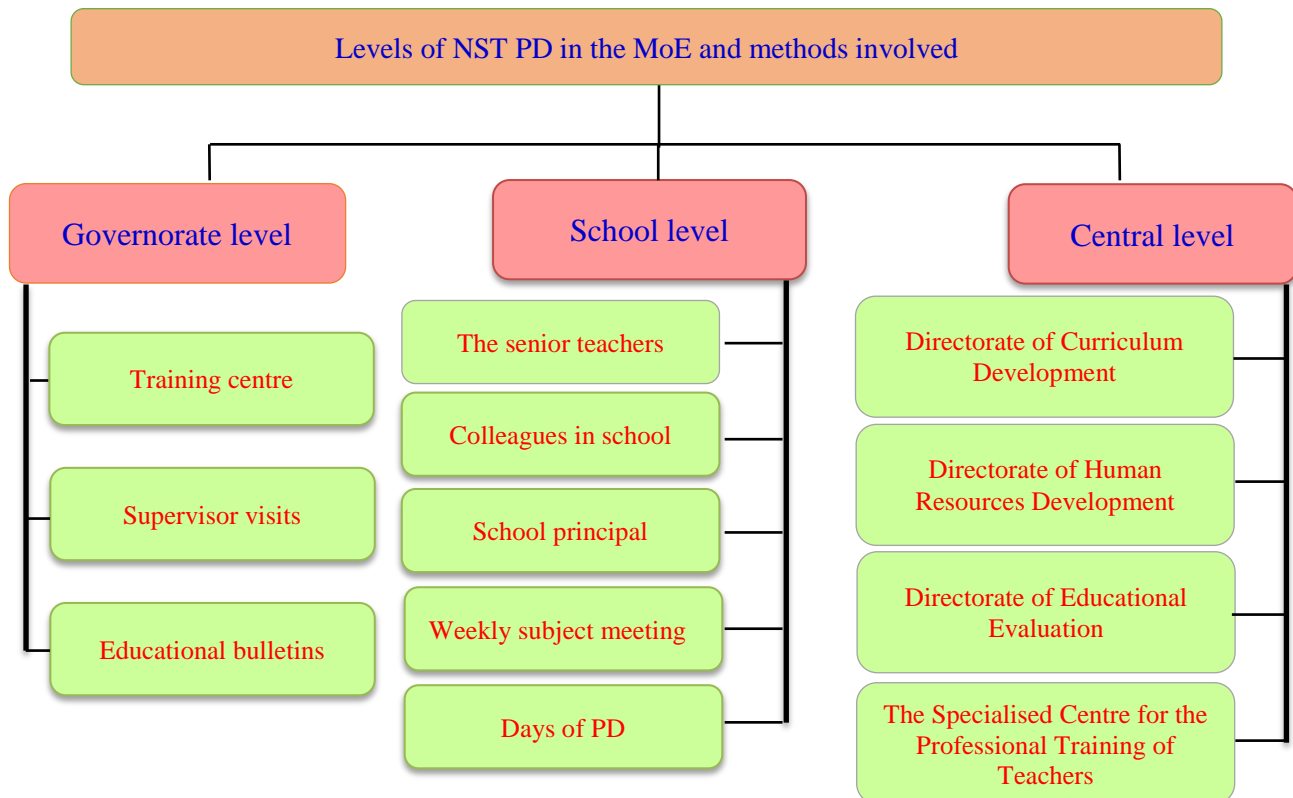


Figure 1. Levels of NST PD in the MoE

4.3 Factors that led the MoE to NST PD

Policymakers and implementers stated that several factors, both internal and external, led the MoE to adopt PD for NSTs to achieve specific goals and reach expected results. The following quote sheds light on these reasons:

"We are fully aware that teacher training institutions are not at the same level as their rehabilitation programs, some educational institutions concerned with teacher preparation follow the traditional methods of teaching, which may be different from what is applied in schools. The other side is that there are many new educational developments of which the teacher should be aware. The fourth aspect is to inform the new teacher about the educational developments in the Omani education system, whether in the educational evaluation, education techniques or non-descriptive activities.

These are all aspects that are required to enable the novice teacher to stand on solid ground before facing the student” (MuGA).

4.3.1 Internal factors

These are factors related to the MoE’s policies aimed at achieving specific objectives. The MoE began 2017/2018 by applying the Cambridge Science and Mathematics Series as a new curriculum; the application was gradual and began with grades 1–4. This change, according to policymakers, included content, teaching methods and assessment tools, and therefore required training and supporting science and mathematics teachers. However, it is noteworthy that the related PD was not limited to NSTs, and included all science and mathematics teachers in Oman.

The other factor mentioned by policymakers and implementers was the student, as today’s student has changed in terms of knowledge management and behaviour, and learning has become student-centred. Therefore, novice teachers should be provided with mechanisms and teaching methods appropriate for this orientation. Three policymakers also pointed out that the low achievement of students in Trends in International Mathematics and Science Study (TIMSS) has led the MoE to reconsider PD programs, including providing an introduction to NSTs, to improve its focus on enabling the teacher to formulate and develop questions that are appropriate to all levels of students. Thus, these two factors represent new developments introduced by the MoE in seeking to enable NSTs through PD programs.

4.3.2 External factors

Most policy implementers in the educational governorates indicated that there is a gap between the institutions where NSTs qualify and what is required of them in the classroom situation. One reason given for this gap was poor coordination between the MoE, concerned with the employment of teachers, and the Ministry of Higher Education, which oversees the rehabilitation and preparation of teachers.

They also emphasised that this gap was a result of poor teacher preparation in key components such as teaching methods and application of assessment tools in some teacher preparation institutions inside and outside Oman, which has led governorates and MoE centres to provide PD programs for NSTs to bridge this gap. While a number of policy implementers launched this process to “rehabilitate the teacher”, MoE policymakers did not mention this factor as a reason for policy adoption. However, policy implementers in the educational governorates have focused on this factor, possibly due to their proximity to the teachers’ needs and the teaching skills required in the classroom.

Another reason given by policymakers and implementers for the MoE’s adoption of PD is the loss by NSTs of much of the skills and knowledge gained in their preparatory institutions because of the lengthy period between graduation and their gaining employment, which sometimes takes years.

5. Conclusion

The MoE applies a top-down system to planning and implementing professional development programs for all teachers, including NSTs. With this increasing interest by the Ministry in improving professional development opportunities for NSTs, there is no correlation between the professional development programs offered to a teacher at the three levels or in other words there is no clear framework for what is offered to the NSTs from professional development programs by MoE during the first years of employment.

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