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Does the Cascade Model Work for Teacher Training? Analysis of Teachers' Experiences

Mpho M. Dichaba and Matseliso L. Mokhele*

School of Education, University of South Africa (Unisa), P. O. Box 392 Pretoria, 0003 South Africa
**E-mail: mokheml@unisa.ac.za*

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ABSTRACT Throughout the world, education systems are changing, thus offering opportunities for serious and promising educational reforms. One of the key elements in most of these reforms is the continuing professional development of teachers. The real challenge facing most schools is no longer how to improve, but how to sustain the improvements these schools have made. Also, reform requires that teachers learn new roles and ways of teaching that translate into long-term developmental processes which require them to focus on changing their own practices. To meet all of these demands, the professional development of teachers is recognised as vital to enhancing the quality of teaching and learning in schools. Using a quantitative approach, the researchers explore the experiences of teachers on cascade model. They concluded that, although this model has come to be accepted as the way of disseminating information in most in-service training programmes, it appears to have failed to significantly improve the performance of educators.

INTRODUCTION

Throughout the world, education systems are changing, thus offering opportunities for serious and promising educational reforms. One of the key elements in most of these reforms is the continuing professional development of teachers. Professional development is described by Fletcher and Zuber-Skerritt (2007) as a significant issue in all workplaces as far as dealing effectively with the complexity of modern society is concerned. The pressures on schools to improve their standards of achievement are unlikely to recede in the next few years (Harris and Muijs 2003). However, the real challenge facing most schools is no longer how to improve, but how to sustain the improvements these schools have made (Harris and Muijs 2003). Johnson and Donaldson (2007) contend that the emphasis on standards and accountability has placed extraordinary demands on schools to improve their instructional outcomes. Also, reform requires that teachers learn new roles and ways of teaching that translate into long-term developmental processes which require them to focus on changing their own practices. Similarly, since the demise of apartheid, South Africa's most urgent and difficult project is to reconstruct all spheres of public life in order to establish social conditions that will make a flourishing and peaceful democracy a real possibility. A viable education system that is staffed by committed, competent and confident teachers is a primary condition for accomplishing this goal (Pendlebury 1998).

To meet all of these demands, the professional development of teachers is now recognised as vital to enhancing the quality of teaching and learning in schools. As Gary Sykes (1996:465) argues about the American education system, continuing professional development is, for many countries, the most serious unsolved problem in education. Like all other professionals, teachers need to stay informed about new knowledge and technologies. Professional development is therefore a costly part of what governments, professions, companies and individuals must do to efficiently respond to contingencies and build platforms for sustainable growth in reaction to continuous change. This paper therefore aims at exploring teachers' experiences of cascade, cascade being one of the models of professional development.

Address for correspondence:
Mpho M. Dichaba
E-mail: dichamm@unisa.ac.za

Literature Review:
Concept of Cascade Model

In this model, a first generation of teachers is trained or educated on a particular topic, aspect of teaching or subject matter and, once proficient, these teachers become the educators of the second generation (Griffin 1999). Ono and Ferreira (2010) argue that the cascade or multi-

plier approach is often used to transmit knowledge or information from upper to lower groups of teachers. This entails training the trainer to ensure that knowledge is transferred from experts and specialists to the teachers themselves. According to More (2004), the cascade model consists of the following steps:

- Development of training material – the design of materials such as guides. This training material is designed to provide systematic direction of the training process.
- Training at different levels – the unfolding of the actual training by facilitators.
- Follow-up training – training that is meant to close the gaps left by the initial training; this type of training is used for consolidation purposes.

In many developing countries, the cascade approach is popular because it reaches a great many participants in a short period of time (Leu 2004). The advantages of this training model are that it allows training to take place in stages so that progress can be monitored. Also, as more teachers receive training, information can be disseminated quickly and to an even larger number of teachers. In theory, cascade training is cost-effective because those who have been trained can then train others, thus minimising the financial outlay involved (Ono and Ferreira 2010). In addition to this, Hayes (2000) claims that the cascade model of teacher training and development seems to be preferred by the national Department of Education because it is cost-effective and uses existing teaching staff as co-trainers.

In his example, Prescott (2000) describes the School-Attuned Project. In this project, a small number of teachers were taught, through case studies, how to identify and diagnose eight areas of brain functioning. In his conclusion, Prescott contends that these teachers, in turn, taught their colleagues to complete the same assessment. This project had a very positive effect on the teachers, the learners and learners' families. In South Africa, this model was initially used as an advocacy strategy by the Department of Education to provide Continuous Professional Training and Development to teachers, with a view to enabling them to implement the new national curriculum (Engelbrecht et al. 2007). The other example cited by Jita et al. (2008) is the MSSI project. In this case, one of the approaches to training and development was to have university experts first train the curriculum implementers who then presented this information, in turn, to "cluster leaders". These "cluster leaders" then trained the teachers at school level. In other words, the knowledge cascaded down from a few experts at an upper level, all the way down to a large community of school teachers.

However, the cascade model has been widely criticised as an inadequate model for delivering effective training (Khulisa 1999; HSRC 2000). Firstly, when the intended message is transmitted to the next level, the chances of crucial information being misinterpreted are high (Fiske and Ladd 2004). Also, the cascade approach failed to prepare either officials or school-based teachers for the complexity involved in implementing the new national curriculum. Ono and Ferreira (2010) documented how teachers frequently complained that even the district trainers themselves did not always understand the curriculum. The result was the "watering down and/or misinterpretation of crucial information" (Fiske and Ladd 2004:162). Robinson (2002) and Graven (2002) also discuss the dissatisfaction with the cascade model, which was used to introduce teachers to the new curriculum in South Africa. Robinson (2002) argues that this model offers training, but little or no follow-up support structures for teachers who have to deal with the long-term implementation of the new reforms. This concern coincides with the uneasy realisation that a serious challenge facing South African education in general is the lack of any successful translation of new curriculum reforms into classroom practice. This is despite the wide use of professional development to help teachers understand the new reforms (Rogan and Grayson 2003).

RESEARCH METHODOLOGY

A quantitative research approach was used to collect information for this research study. A survey questionnaire was used to collect data on 103 ABET teachers from five Area Project Offices in the Ngaka Modiri Molema District and to determine factors that impede or facilitate the effectiveness of the cascade model of training. North West Province is one of South Africa's nine provinces and, as its name suggests, is situated on the north-western side of the country. Although there are four districts in

the North West Province, the research study was conducted in the Ngaka Modiri Molema District (formerly known as Central region). The basis for selecting Ngaka Modiri Molema was its composition of both the rural and urban participants; such participants represent the makeup of the North West Province.

Ngaka Modiri Molema District has five Area Project Offices (APO): Kgetlheng, Lichtenburg, Mafikeng, Zeerust and Rekopantswe. Each APO has a specialist (previously called a co-coordinator). There are 78 ABET centres in the Ngaka Modiri Molema District. The centres were randomly selected on the basis of their names (irrespective of the districts they fall under). Twenty-five centres were chosen from the 78 ABET centres in the Ngaka Modiri Molema District.

The list of ABET teachers was requested from the Area Project Offices (APOs) in the Ngaka Modiri Molema District. ABET teachers were then randomly selected on the basis of the list provided. The population of ABET teachers in Ngaka Modiri Molema District is 327, of which 103 teachers were sampled for the purposes of this study (Table 1).

Table 1: Number of participating teachers

District	*Number of teachers*
Mafikeng	21
Zeerust	16
Litchtenburg	20
Rekopantswe	27
Khetlheng	19
Total number of teachers	103

It is within these five regions that the researchers examined the in-service training programmes offered to ABET teachers, the cascade model of training and the effectiveness of such training on ABET. The questions developed for the ABET teachers were aimed at gathering information on the specific knowledge, skills and attitudes that they acquired from in-service training programmes.

RESULTS AND DISCUSSION

This study was a part of a larger study that was aimed at exploring teachers' experiences of the cascade training model. For this paper the researchers focused on a few issues in order to explore these experiences in more detail:

- Trainers' content knowledge
- Presentation of content
- Effectiveness of information transmission
- Confidence in transmitting the information
- Ability to use new skills

Trainers' Content Knowledge

One thing the researchers wanted to know was whether the trainers who were to train the ABET teachers had a knowledge of the subject content themselves. Available research suggest that content must be covered during professional development activities. What attracts teachers to professional development is the belief that professional development will expand their knowledge and skills, contribute to their growth, and improve their teaching (Gusky 2002). Content was one of the issues that was covered in the training mentioned and many of the participants indicated that the trainers were fully equipped as far as subject content was concerned. As shown in Table 2, the highest percentage of the participants (49%) strongly agreed that the trainers knew the subject content, and 43% (which is the second highest) said that they agreed that the trainers knew the subject content.

Presentation of Subject Content

It was obviously important to find out if the trainers had the skills needed to present the subject content to the trainees.

Table 2: Results in percentages

	Number in percentages (%)					
	Strongly agreed	*Agreed*	*Undecided*	*Disagree*	*Strongly disagree*	*Total*
Trainers' content knowledge	49	43	1	4	3	100
Presentation of subject content	31	54	1	8	6	100
Effectiveness of information transmission	55	24	4	9	8	100
Confidence in transmitting the information	7	29	4	23	37	100
Ability to use new skills	5	37	3	32	23	100

The emerging trend here is that the majority of respondents agreed that the in-service trainers had the skills needed to present the content. Of the 103 respondents, a considerable number of respondents (54%) plus 31% (strongly agree) believed that the in-service trainers had the skills needed to present the content in a way that encouraged learning. This supports the view that the possession of appropriate and relevant knowledge and skills on the part of the trainers can promote effective training and the effective transfer of learning.

Effectiveness of Information Transmission

As said previously, the cascade model has been widely criticised as an inadequate model for delivering effective training (HSRC 2000) because, when the content is transmitted to the next level of learners, the chances of crucial information being misinterpreted (Fiske and Ladd 2004) are high. In this study, the researchers wanted to explore the effectiveness of information transmission in the cascade training model.

In principle the cascade model appears to be a practical and a user-friendly approach to in-service training for large-scale programmes; more often than not, the intended results are usually attained. However, Table 2 shows that the majority of the respondents (55%) agree that the cascade model results in the misinterpretation of crucial information. 24% of respondents also claim that much of the information is simply lost.

Confidence in Transmitting the Information

The cascade model is often used to transmit the knowledge or information from the upper to the lower group of teachers: this entails training the trainer to ensure that knowledge is transferred from experts and specialists to the teachers (Ono and Ferreira 2010). However, the issue here is also whether the trained (in this case the ABET teachers) will have acquired the skills and knowledge needed to train the next generation. The researchers therefore asked the teachers if they would be able to confidently transmit the knowledge to their fellow colleagues when they got back to their respective centres.

In terms of information transmission, the researchers were interested in finding out whether the trainees actually transfer what they have learnt from the in-service training to their workplace. Table 2 shows that the majority of the respondents (37%) strongly agreed that they would not be able to pass on the information and 23% also agreed that they would not be able to transmit the information while only 29 strongly agreed that they would be completely confident about imparting the information to their fellow colleagues. This response supports the view that the cascade model is an ineffective model for training teachers. Training is only successful when participants learn – and learning happens when participants can remember what they were taught and put their new skills and abilities into practice in the workplace.

Ability to Use New Skills

As discussed earlier, in the cascade model, the first generation of the teachers is trained or educated on a particular topic, aspect of teaching or subject matter and, once proficient, these teachers hand on this knowledge to the second generation of teachers (Griffin 1999). However, the issue is also whether trainees can use their skills to train their fellow colleagues. We therefore asked the participants if they feel comfortable about using the skills acquired from the workshop training.

Well-trained trainees are not hesitant to use new skills that they learnt from the in-service training when they get to their centres. However, 32 % of the participants indicated that they strongly agreed that they did not feel comfortable to use the new skills acquired from the training when they get to their centres. 23% also agreed that indeed they did not feel comfortable at all. This depicts the cascade model of training as ineffective model.

DISCUSSION

The cascade model is widely used to maximize throughput of trainee educators in a cost-effective manner (Gilpin 1997:185; McDevitt 1998:428; Hayes 2000:137-138; Bax 2002:165). In essence, the cascade model of training means that training messages "flow down" from experts and specialists, through several tiers of personnel, and eventually reach educators (Maheshwari and Raina 1998:92). Cascade training offers a logical approach to disseminating information through the ranks of employ-

ees in a relatively short period of time (Jacobs et al. 2001:498). The cascade model of training could promote genuine development if trainers and managers made sure that project training and development strategies are context sensitive, collaborative and reflexive (Hayes 2000).

This study shows that, even though the presenters had a knowledge of the content, as well the skills needed to present this subject content, many of the respondents stated that they would find it difficult to share this information with their fellow colleagues in the ABET centres. This leads us to conclude that the major problem may be that of the process of disseminating information to the next generation of teachers. In agreement with our findings, many researchers (for example, Chisholm 2000:4; Janse van Rensburg 2001; Mhoney 2000:45) state that the cascading of information results in the dilution and misinterpretation of crucial information. Indeed, less and less is understood as one goes down the "cascade". The cascade model is still the dominant model used in South Africa (Chisholm et al. 2000; Frame 2003:17; Janse and Middlewood 2003:52; Graham-Jolly 2003:105). Not surprisingly, therefore, the cascade model of training is the dominant training model used by the Department of Education in the North West Province (Frame 2003:17; Chisholm 2004:45).

CONCLUSION

In this paper, it is concluded that, although this model of training has come to be accepted as the way of disseminating information in most in-service training programmes, it appears to have failed to significantly improve the performance of educators. It is therefore a challenge for programme implementers to explore what would work best for teachers

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