PROPOSING A CONTINUOUS PROFESSIONAL DEVELOPMENT MODEL TO SUPPORT AND ENHANCE PROFESSIONAL LEARNING OF TEACHERS IN SPECIAL SCHOOLS IN SOUTH AFRICA

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A collaborative continuous professional (CPD) model was implemented and evaluated in six special schools in Gauteng, South Africa in order to support teachers in their professional capacity. The study which reports on a two year study aimed to establish the value of the CPD programme on teachers' learning, students' outcomes and whole school change. The focus during the study was to adapt learner activities and teacher support materials for the Learn Not to Burn (LNTB) fire safety programme for students with special needs. A qualitative, multi-phased case study was employed to understand teachers' views of the collaborative continuous professional development programme, which culminated in the development of Dynamic Collaborative Networking model. This study relied on current CPD models in order to develop this model which was suitable for special education. This research serves as an example of where valuable internal and external networks were formed for the benefit of all involved with the study.

Education authorities worldwide strive to enhance teachers' professional capacity and practices through the provision of quality continuous professional development (CPD) activities (Brouwer, 2011; Ertesvåg, 2011; Herbert & Rainford 2014; Nehring & Fitzsimons 2011). According to the UNESCO report (2014:4) …all governments should invest in education as an accelerator of inclusive development. This Report's evidence shows that education provides sustainability to progress against development goals… Educate communities, and you transform societies and grow economies. It also emphasises the necessity of offering appropriate professional support to teachers who are essential in promoting quality of learning in schools.

In planning effective in-service development it is important to note that recent reviews of continuous professional development (CPD) for teachers indicate that traditional continuous professional development methods are mostly ineffective in bringing about the required change in the teaching practices of teachers (Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009; Williams, 2010). In order to bring about change in teachers' practice and knowledge it is important to design more innovative ways of effectively raising teachers' competence.

Despite the issue of teacher quality and the teaching force's lack of capacity for effective inclusion, South Africa has adopted the approach of inclusive education and devised policies that guide the process of inclusion of students with special educational needs (Walton, Nel, Hugo & Muller, 2009). The inclusion approach is based on the following belief: All children and young people of the world, with their individual strengths and weaknesses, with their hopes and expectations, have a right to education (Lindqvist, 1994 quoted in UNESCO, 2005:13). In the implementation strategy of inclusive education in South Africa the intention of the Department of Education has been to involve special schools as resource centres in supporting full service and mainstream schools (Department of Education, 2010). Although the strategy of inclusion is promoted, the lack of suitably qualified special education teachers could result in the exclusion of students with special educational needs (Ladbrook, 2009). Continuous professional development (CPD) is therefore vital to assist and equip teachers with the necessary knowledge and skills to support

students in special schools. Moreover, Kempen (2013) states that the absence of appropriate CPD programmes for special education teachers has an impact on teachers' self-worth and motivation and that a lack of knowledge on special educational matters could lead to uncertainty.

This article is based on a formal study done by Kempen (2013). In that study she designed, developed and implemented a collaborative continuous professional development model and determined the impact of this model on the professional capacity of special education teachers in South Africa. The purpose of this article is to propose a continuous professional development model based on the implementation of Learn Not to Burn (LNTB), a fire safety programme for special schools.

In essence the model endeavoured to establish how collaborative professional development could overcome the weaknesses of traditional professional development models by enhancing the knowledge, skills and attitudes of teachers in South African special schools (Kempen, 2013). Burn related accidents are of high relevance to the South African community as statistics reflect high percentages of burn related incidents in South Africa (Mortality and causes of death in South Africa, 2014:48). Using the Learn Not to Burn fire safety content to develop teachers' pedagogical capacity in special schools was found to be of extreme value since there was no fire related training taking place in South Africa at the onset of the study.

Professional development of teachers in south africa

The South African education system is plagued by a shortage in teachers and unsatisfactory achievement of students' academic performance reflected in poor results in national and international comparative assessments (Department of Education 2013). One such standardised test is the Progress in International Reading Literacy Study (PIRLS) which is conducted every five years. South African students achieved the lowest score of all the 45 participating education systems (Howie, Venter, Van Staden, Zimmerman, Long, Du Toit, Scherman & Archer, 2008). South Africa finished last and there was no change in the overall achievement of students in 2011 compared to 2006 (Howie, Venter, Van Staden, Tshele, Dowse & Zimmerman 2012). Moreover, the Annual National Assessment (ANA) in special schools in South Africa during 2013, furthermore, reflected poor Language and Mathematics performance by Grade 3 and Grade students (Department of Basic Education, 2013).

Many initiatives, which include legislation and policies in South Africa, have been developed to enhance the quality of teaching and learning in South Africa, such as the teacher appraisal (1998) which was followed by Whole-School Evaluation policy in 2001 intended to monitor the schooling system. These policies led to a lot of resistance and were replaced by the Integrated Quality Management System (IQMS) (Education Labour Relations Council, 2003). The Department of Education also launched the Quality Teaching and Learning Campaign (QLTC) in 2008 to improve the quality of education through monitoring underperformance throughout the school system. However, Benjamin (2013:1) believes that this initiative with its vision of schooling in 2025, has not had the desired effects. The Integrated Strategic Planning Framework for Teacher Education and Development in South Africa 2011-2025 outlines a 15-year roll-out plan to improve and expand teacher education and development opportunities as an attempt to enhance the quality of teaching and learning in schools, including that of special schools (Department of Education, 2011).

Gorman (2011) in particular states that the proficiency and expertise of teachers who teach students with special needs are vital for the learning experiences of such children. This implies that high quality teacher education and development programmes are required for teachers in special schools to ensure optimum learning experiences for students in special schools (Gorman, 2011).

Conceptual framework of the study

For the purpose of this study continuous professional development (CPD) models and their capacity for supporting and enhancing the professional learning of teachers in special schools are briefly outlined. The discussion largely rests with Kennedy's (2005) comparative examination of a range of CPD models focusing on the perceived purpose of each model, highlighting the strengths and weaknesses of each of the models studied. Although Kennedy (2005) identifies nine CPD models, this study gives preference to those models that had a direct influence on designing the proposed professional development model.

According to Kennedy, (2005, p.237) *the training model* is the most commonly used method of CPD and is delivered to the teacher by the expert with the agenda determined by the deliverer, and the participant placed in a passive role. A major concern is that this model does not acknowledge the vital role of teachers' experiences and

understandings about students in the development of their work. Kennedy's *school-based model* refers to training that takes place within the context of the school. It is mainly managed by the school staff and is focused on addressing the specific needs of the school (Gettly, 2002). The *school-focused model* of Kennedy (2005) which is according to Engelbrecht, Ankiewicz. & De Swardt (2007) an extension of the school-based model, occurs off-site and aims to upgrade teachers' classroom skills and teaching strategies by providing them with subject knowledge, theory and methodology. It involves education authorities, which is a strength of the model, but has limited success in building the capacity of teachers. His cascade model involves individual teachers in training sessions and then requires them to disseminate the information to their colleagues in schools. Kennedy (2005) states that there are factors in the cascade model that could negatively impact the quality of the training provided. These include trainers' lack of understanding to manage the training process, the quality of trainers and their knowledge of the training content as well as facilitators' lack of understanding of the various teaching contexts and the application of the training material. Moreover, Engelbrecht, et al., (2006,p.3) views this approach as a top down approach which could easily lead to misinterpretation of critical information. In the a*ction learning model* learning is described as a process of observe, reflect, plan and act where participants resolve and take action in practical problems and where they learn through questioning and reflection when doing so (Marquardt & Waddill 2004:186). It allows teachers to collaborate and ask critical questions about their classroom practices and therefore aims to enhance the performance of teachers (Garret 2011). Moreover, Revans (2011) and Dadds (2014) are of the opinion that teachers learn best from colleagues in the same position which in effect then has a multiplying effect on their learning.

The *standard-based model* is based on establishing a hub or demonstration school that is responsible for providing professional learning within a network of four to five schools. It is based on the principle of utilising collective enterprise for the common good and ultimately aims to integrate theory within a real life context (Loughland, 2012:55). It makes provision for the demonstration school to provide space and time for reflection, discussion and debate about pedagogy which can bring about curriculum innovations (Robinson, 2004). This model encourages collaboration as opposed to professional isolation and provides performance benchmarks which promote continuous improvement (Loughland, 2012). Networking with teacher training institutions and education departments in ensuring the credibility of the learning is of vital importance in this model (Loughland, 2012).

The last model that informed the study was Kennedy's *community of practice model.* According to Wenger, (2000) the concept 'communities of practice' is a requirement for an individual's learning and is also at the centre to ensure meaningful learning of individuals. It is based on Wenger's social theory of learning (1999) which postulates that learning occurs as a result of the individuals' interaction with others in organisations. Moreover, the community of practice focuses on the social structures that enable individuals to learn which develop when individuals are involved in 'a process of collective learning in a shared domain of human endeavor' (Wenger 2007, p. 1). According to Kennedy, (2005) a community of practice is a condition for learning to occur.

Background to the study

Learn Not to Burn (LNTB) was a mainstream burn prevention programme which was recognised by the Gauteng Early Childhood Development Institute as a valuable programme to be adapted and implemented in special schools. This Institute approached the main school in the study with the purpose of evaluating the suitability of its content for students with special educational needs and also to function as a model school for modeling good practice with regards to this fire safety programme. This study therefore started with LNTB a pilot programme which was adapted and implemented at a special school in Gauteng.

The various stakeholders which were involved throughout the study included Emergency Services of Johannesburg, the former Department of Further Teacher Training at the University of South Africa, the Gauteng Department of Education, and staff members from six special schools in Gauteng. The pilot study evolved in two stages:

Stage 1: During this stage the professional staff, therapists and teachers were divided into five learning circles. Each of the five learning circles was coordinated by a Head of Department and consisted of one teacher from each of the five phases offered at the school. Throughout the ten month period these learning circles (met twice per month to share ideas, plan and prepare the content of the programme and develop resources. During these meetings both student and teacher support materials were developed to address the diverse needs of students. Teachers also had to change and adapt the mainstream curriculum to make it accessible for students with special educational needs.

Stage 2: This stage took eight months and involved six special schools in the Gauteng Province that accommodated students with special educational needs. Adult learning theories consider the experiences and expectations of participants and also require that learning should be relevant and applicable to their particular contexts (Herberta &

Rainford, 2014) and therefore the adult learning model proposed by Kolb and Frey (1975) was employed during this stage of the research. It focused on active collaborative participation of the teachers and followed a cyclic process in which the four basic elements of Kolb and Frey's (1975) model were employed. Kolb and Frey's (1975) model (Steps 1 to 3) was extended to include two more elements namely evaluation and provision of feedback by experts (Step 4). Step 1 and Step 4 took place at the model school and Step 2 and Step 3 took place at the participants' schools. The four basic elements were factored into the proposed professional development model in this study. The four steps involved the following:
Step 1: Expert teachers from the model school provided an introduction to the training topic, that is, a LNTB fire safety message and conducted a demonstration lesson for participants. In *Step 2* abstract concepts were formed through a process of reflection and discussion. Thereafter activities and support materials for teaching the lesson were developed through collaborative planning and preparation. In *Step 3* teachers had to apply the skills and knowledge that they acquired from the model school in their own classrooms at their individual schools. Teachers were also encouraged to evaluate and reflect on their own teaching practices and to redirect their teaching if necessary. In *Step 4,* which is viewed as the evaluation and feedback stage, participating schools had to demonstrate how they approached the teaching of the LNTB programme at their particular schools. They also had to provide evidence of how they designed the lesson as well as present examples of their students' work. Teachers had the opportunity to report on the successes and challenges that they experienced in teaching the programme. The questions of participants were addressed by the expert teachers from the model schools who provided feedback and advice for improvement. After Step 4, the next cycle of the programme started with the introduction of the next fire safety topic.

Research design
In order to develop a collaborative continuous professional development programme a qualitative, case study approach was used to understand teachers' perceptions of professional development. The case study was based on social constructivism that postulates that knowledge is constructed when people engage socially in dialogue and certain events and their learning is improved when their views of knowledge are challenged and transformed in their interactions with others (Creswell, 2013). Purposive sampling was used to identify the six special education schools in Gauteng, South Africa. These schools which were situated in larger town areas and in townships served students with severe intellectual barriers to learning. Information rich cases were selected to ensure the richest data about the training that occurred. The participants in the study comprised the deputy principals responsible for curriculum at their schools, the Heads of Department of the Foundation Phase and all teachers teaching students with a severe intellectual disability between the mental age ranges of 2 – 7 years.

The following data collection sources were used in the study: Semi-structured focus group interviews, in-depth semi-structured individual interviews, qualitative questionnaires to gain insight into the feelings and opinions of the larger group, observations and other types of data such as artefacts of student activities, photographs, DVD recordings and audio recordings.

The study adopted an interpretive perspective in analysing the qualitative data in order to have a complete understanding of how participants related, collaborated and interacted with each other in a specific situation (Nieuwenhuis, 2011). All interviews were transcribed verbatim and coded as soon as the interviews were conducted. Once the data were coded and summarised, relationships among the categories and patterns were determined. For the purpose of this study a software tool, Hyperresearch, designed by ResearchWare for qualitative data analysis, was used.
Permission for conducting the study was obtained from the Gauteng Department of Education, the District Director, principals of the participating schools and individual participants. Member checking was done by giving participants the transcribed interviews to verify that the data was a true reflection of their opinions and views during the interviews.

Findings
The analysis of the raw data was based on Guskey's (2002) five critical levels of evaluation namely, participant reaction, participant learning, participant use of new knowledge and skills, student learning outcomes and organisational support and change. However, these five levels were adapted and re-categorised into three main categories namely, professional learning (participants reaction and learning), student outcomes and whole school improvement.

Although a few participants were initially negative about their participation in the professional development programme, all turned around and they were positive. The commitment generated by the extended period of professional development led to a feeling of ownership, a sense of direction and purpose followed by excitement and accountability. School D appropriately described the feelings of joy and excitement experienced during the LNTB staff training. A great deal of self-reflection occurred, which influenced participants' confidence and feelings of competence. The high levels of energy and motivation presented by all six schools was testimony to the success of the collaborative staff development programme that was implemented over a two year period.
The learning circles provided opportunities for open dialogue where teachers never criticised each other: It was the sharing and expansion of ideas which was an incredible achievement. The diversity of the teams and the sharing of knowledge and expertise within the schools and across the network of schools were indicated as being of great value. Teachers perceived the support they received from their colleagues in the small circles as a valuable support structure. It is described as bringing closeness between the group members.

Participants reported that they found the small groups invaluable in providing them with a testing ground for ideas before the implementation of the lessons. Social networks provided shared experiences which enhanced teachers' perceptions of their collective capacity and their confidence. A teacher remarked: Everybody just went out and let their minds go to come up with the most wonderful activities and it was very creative. School B reported: We learned a lot from the programme… It was wonderful and amazing [that] we were able to learn from the other schools from the presentation that they brought. Moreover, a participant acknowledged the professional growth in one of her colleagues: It was an incredible improvement and that person's whole self-esteem and image turned around.

Throughout the project high levels of planning and preparation was evident. Teachers have commented on the importance of planning and preparation in ensuring that teaching materials are prepared in advance for the teaching of lessons in the classroom. Schools reported that students responded positively to the planned lessons of LNTB. Teachers also expressed high level engagement from students during LNTB activities regardless of their disabilities; the students were made part of the lesson and that's why they enjoyed it. Teachers focused on planning differentiated activities which took considered students' specialised needs. The high quality of the work produced by the students from the participating schools provided evidence of the fact that the teachers created opportunities for all students to participate in the LNTB lessons. Table 1 highlights the professional development in the main categories of professional learning and student attainment, while Table 2 shows the impact of professional development on whole school development.

Table 1. Professional development and student attainment

Main Categories	Key Themes	Sub-Themes
Professional learning	**Participants' reaction**	Building of confidence and competence Self-efficacy and sense of purpose Ownership and commitment Motivation Excitement Accountability
	Social and emotional fevelopment	Enjoyment Setting a challenge Open communication Sharing and caring Engaging in professional dialogue
	Intellectual development	Lateral thinking skills in problem solving Creativity Critically thinking skills Reflection Intellectual stimulation Knowledge and skills building Professional dialogue
	Participants' application of	Improved instructional practices

	gained skills and knowledge	Application of a variety of teaching strategies & methods Greater experimentation, innovation and creativity Greater levels of planning, goal setting & differentiation Teaching practice suited to the students needs Integration of theory & practice
Student attainment	**Achievement of learning outcomes**	Optimal student engagement Improved student attainment

Table 2. Professional development: Whole school development

Main Categories	Key Themes	Sub-Themes
Whole school improvement	**Organisational change and support**	Value individual and collective contributions Fostering and nurturing of tacit skills and knowledge Fostering and nurturing of positive attitudes Shared Vision Supportive School Culture and climate Building school wide capacity Harnessing of skills, knowledge and expertise within schools
	Development of leadership and management skills	Clear and functional communication Resource development and allocation Administrative and planning skills Coordination of activities Fostering of constructive professional relationships Acknowledge effort and good practice Influence encourage and support Set example and model the goals Monitoring and evaluation of processes

A staff member at school F remarked that (LNTB) was just one of those programmes that got the buy in from everyone. That's why it was so successful. LNTB turned the whole feeling of the school. This view was confirmed by a teacher from school C: It (LNTB staff development programme) changed the school. The school is a different place now, but it also changed my life. At the onset of the project it was evident that the management of most of the schools had the desire to build school wide capacity. Adey (2004:6) states that deep-seated changes in pedagogical practice cannot be brought about without addressing both the individuals' fundamental attitudes to teaching and learning as well as the whole school's commitment to change. To ensure a change in the whole school requires the involvement of all staff members. This fact is supported by the school coordinator at School D The whole school participated …even the teacher in the toy library.

Although the staff development was mainly aimed at enhancing teachers' professional capacity, school leaders reported significant development in their leadership roles across the six schools. Some of the areas of leadership development that occurred were:

- *Planning and coordination: At all levels (the learning circle, school and larger network) coordinators had to ensure that all staff members adhered to the timeframes and activities as had been set out in all the management plans.*
- *Provision of direction and establishing clear communication: Clear direction was also identified as an important factor in leading and managing people during professional development activities.*
- *Modeling of organisational goals: The school leaders realised the importance of modeling good practice and to set a vision with clear organisational goals. One of the participants from the demonstration school commented: You have to inspire them (teachers from other schools)… That was the main focus to get them wanting to do this and to go back to the schools and to do it with enthusiasm.*
- *Provision of support: It was expected from school leaders to display interest in the activities that took place in the classroom and to provide curriculum and resource support. I craved some support. They (leaders) need to take the*

lead in your subject area, making sure they get around to your department. They have to show interest and need to support you.

- *Monitoring and evaluation of processes: The management at the school played an important role as part of the monitoring and evaluation processes. The participants indicated that when the managers conducted class visits they knew what to be looking for. They wanted to see what was being done and everybody was held accountable for the successful implementation of the LNTB programme.*
- *Acknowledging areas of good practice: It was evident that the teachers felt that leaders should lead by example. The principal also had to set an example and demonstrated the importance and value of staff development (Moolenaar, Daly & Sleege 2010).*
- *Allocation of resources: Participants viewed the distribution of resources as a main responsibility of the school managers and remarked that they needed to provide the resources. Leaders at School C indicated that the staff expected them to provide the resources and that they had to prioritise the allocation of resources.*
- *Distributed leadership: Although staff members expected school managers to fulfil the leadership roles in the learning circles, it was observed that the leadership roles were assumed by various members of the group, depending on the type of leadership required in that specific situation. This distribution of leadership led to the empowerment of the teachers within the group and these teachers were instrumental in taking ownership and driving the learning process. The importance of distributed leadership was summed up by one of the participants: It is also a fantastic example of a case study for collaboration and the champions that could take a level of ownership and drive the process… it was not always the same person driving the entire process… I think that benefitted the programme. As Roland Barth (2001:449) sums up These teachers become owners and investors in the school, rather than mere tenants - they become professionals. The findings of this study show that most of the participants perceived the training as positive and valuable in bringing about change, which not only referred to personal and professional gain, but also organisational growth. Although all participating schools indicated that they learnt much during the training, there were differences between the levels of practice and collaboration that took place. The findings show a close relationship between the success of professional learning and management and organisational context, climate and culture.*

Some schools faced difficulties in building meaningful relationships with their colleagues due to school conditions that were not conducive to professional learning. The weak interpersonal relationships between staff members at the school led to low levels of motivation and weakened practice. The staff development that took place was most successful in the schools where the interpersonal professional relationships were rated good. Schools with high levels of implementation were those schools who reported sound interpersonal relationships at all school levels.

High success levels of staff development were evident in schools where school management, in particular the senior management, understood the value of staff development in enhancing the quality of teaching and learning at the school. In schools where the staff development was more successful school leaders played a central role. Where there was an absence of directive leadership, the collaboration that took place was uncoordinated and the teachers did not take full advantage of the support provided by collaborative forums at the respective schools. Some of the teachers in these schools reported feelings of isolation. There was evidence of directive leadership and support where schools displayed high levels of commitment and motivation which in the end led to higher levels of learning. Feedback from the school leaders was reported to be another success factor in building motivation and commitment of the teachers. Positive encouragement and displaying interest in what was happening in the classroom enhanced teachers' efficacy and provided them with a sense of worth.

A dynamic collaborative network professional development model

According to Herberta and Rainford (2014:250) models can be used to guide investigations or in the case of model construction can be the result of the collection and interpretation of empirical data during the research process. In this study the proposed model for professional development was based on the findings of the study. On presenting the final stages of this study it was necessary to propose a name for the model that it will be referred to in future research literature. After careful consideration the name Dynamic Collaborative Networking Model (DCN model) was chosen. The DCN model for professional staff development has in its centre, a dynamic hub of expertise, that is regarded as the driving force for the actions that took place during the professional development. The word dynamic was chosen to describe the actions within the staff development model as these actions are forces which stimulate change or forces that produce movement (Hawker 2006:213). The dynamic hub of expertise was the most important

design feature of the model as it was this part which would drive the model to ensure that sustained, positive learning could be experienced by the teachers forming part of the CPD programme.

In table 4 the criteria of current CPD models are compared with those of the DCN model designed in this study. The symbols in the table below were used to indicate where the DCN model had embraced, overcame or had not been able to overcome the specific criteria of the earlier models. Table 3 explains the keys that are used in this comparison.

Table 3: Key used to compare the DCN and earlier CPD models

	The strengths that are embraced by the DCN model
	The weaknesses that are overcome by the DCN model
	The weaknesses that are not overcome by the DCN model

Table 4: The comparison between the DCN and earlier CPD models

Model	Focus of Model	Strengths	Weaknesses
Training Model	Focuses on standardisation and quality assurance.	It is valuable in introducing new knowledge.	It denies teachers the opportunity to play a pro-active role. Teachers are placed in a passive role. Newly acquired knowledge and skills are not practically applied. It does not address the needs of teachers. Teachers lack motivation to attend workshops Sharing of information is de-contextualised.
Deficit Model	Based on performance management. Attempts at raising standards.	It focuses on efficiency, effectiveness and accountability.	Training is forced down on the individual. It ignores personal needs of the teacher.
Cascade Model	Cascading or disseminating information to colleagues	It reaches out to a large group of teachers (training big numbers of teachers).	It is a top down approach. It leaves room for misinterpretation of critical information. Facilitators lack knowledge and understanding to manage the training process. Varied levels of the facilitators impact on the quality of the training. Facilitators lack understanding of various teaching contexts. Facilitators' understanding of the training material and training may be limited. It is time consuming.
Model	**Focus of Model**	**Strengths**	**Weaknesses**
School-based Model	Training that takes place within the context of the school. Focuses on addressing practical problems. Includes classroom assistance.	It addresses the specific needs of schools. Training is context specific, teacher-specific and practical.	It lacks the involvement from education authorities.
School-focused model	Off-site training. Aims at upgrading teachers' classroom skills and teaching strategies. Provide teachers with subject knowledge, theory and methodology.	It involves education authorities.	It has limited success in building the capacity teachers.

Action learning Model	Reformed-based learning aimed at improving teachers' performance. Involves active learning based on reflection, planning and taking action. Learning takes place through collaboration.	It integrates theory and practice. Devolution of leadership leads to commitment. Action learning has a multiplying effect throughout the group.	It is difficult to maintain commitment; to develop effective leadership; And to extend participation from small teams of key staff members to whole-school engagement. It is a challenge to build the capacity of the school.

Model	Focus of Model	Strengths	Weaknesses
Demonstration school model	Demonstration school takes responsibility for providing professional learning in a network of four to five schools. Has at its core the collective enterprise for common good.	Integrates theory and knowledge in a real life context. Concentrates in one building where effective teaching is demonstrated. Visiting participating schools observe good practice throughout the entire school. Provides the opportunity for professional dialogue between colleagues from the various schools. Sets definite standards. Reduces isolation. Provides performance benchmarks.	It requires consistent and persistent hard work in order to sustain interest and successful outcomes. It brings about increased demands on the resources of the demonstration school. Professional practitioners (teachers) may become victims of the pursuit of improved quality.
Community of practice	Learning is seen as result of interaction with people. The collective skills & knowledge of expert staff members is used to shape that of other staff members. Through social interaction between staff members, new knowledge is constructed.	It increases the pool of resources (skills, knowledge, and expertise). It focuses on the holistic development of teachers It provides support and guidance	The learning can be positive and proactive or passive.

In comparing DCN model to other professional development models, it was found that the DCN model overcame most of the weaknesses as presented by the models studied, whilst embracing all the strengths of these models. There were, however, challenges posed by the newly proposed model. The implementation of the model could place strain on the resources of the demonstration school, not only the physical resources but also the human resources. The impact of this weakness could be reduced if staff members at the demonstration school saw value in being part of the learning networks. Furthermore if all role-players were made aware of the challenges posed by the model, it could limit the possible strain on the resources of the demonstration school and this challenge could be overcome with careful consideration and planning from all involved.

Secondly the concept of a hub of expertise used in this model required that the people operating within the *hub* require an advanced basis of skills and knowledge to meet the specific purpose of the planned staff development. The implication of this was that for every new topic that was introduced, it was necessary that a *new hub of expertise* had to be formed or built, depending on the expertise required for the professional development. If the expertise was available at school level, the expertise had to be utilised but in the absence of the necessary expertise schools could call on external experts to supplement the shortage.

Thirdly this type of training required commitment from all involved, yet school improvement should not be seen as a quick fix but rather as a highly integrated activity that requires deep seated change to take place within, the individuals bringing about organisational transformation. Caldwell (2008) points out that in order to bring about the transformation of schools and the activities within the schools rely on the alignment of four kinds of capital; social, intellectual (refers to the level of knowledge and skills of those who work in or for the school), financial (referring to

resources) and spiritual (refers to values, beliefs and attitudes of the school and its community. In this regard Dadds (2014) confirms the complex relationship between knowing and acting, while new and better practices can often not be predicted.

The proposed collaborative professional development model sought to build on established pockets of expertise and good practice nested in special education and recognises the importance of the active application of gained skills and knowledge in the specific context of the special education classroom. The collaborative staff development model embraced the following principles:

- It is student centered. The collaboration that takes place is employed to bring change in teachers' attitudes and classroom practice for the benefit of students with special educational needs.
- It builds on collaborative learning (Katz & Earl 2010) in established communities of practice and uses small groups (Learning Circles) to enhance the learning processes
- Meaningful internal and external networks are established, capitalising on relationships with outside organisations (Revans as cited in Willis 2011;Woolcock, 2000)
- Learning occurs through collaborative problem-solving (Pedder & Opfer, 2011).
- Pockets of expertise within schools are utilised. The networking activities provide the opportunity for harnessing the expertise, skills and knowledge of teachers within the system (Kaagan, 2004).
- Rich opportunities for context specific learning are provided (Timperley, Wilson, Barrar & Fung, 2007) in integrating theory and practice (Timperley, 2008).
- Professional learning activities to meaningful content and *purposeful activity* are connected (Penny 2003:8).
- The strong role of leaders is emphasised (Moolenaar et al. 2010; Muijs, West & Ainscow,

Figure 1 depicts a diagrammatic representation of the collaborative staff development model.

Figure 1:The proposed model of professional development

The proposed professional development model as shown in Figure1 includes the following six components: A represents the student who is in the centre of the model; B refers to the concept of a demonstration school; C represents schools participating in the professional development; D represents the parent community; E indicates the involvement of external organisations (Emergency Service, Early Childhood Development Institute University of South Africa, Local community, Fire Safety Dog and Handler); F highlights the importance that leadership plays in the model. The leadership in the four corners (F) of the figure reflects the important role of leadership in the professional learning programme. Leadership provided the cohesion necessary to keep the activities in the model synchronised.

The design features of the proposed CPD model are depicted in Figure 2.

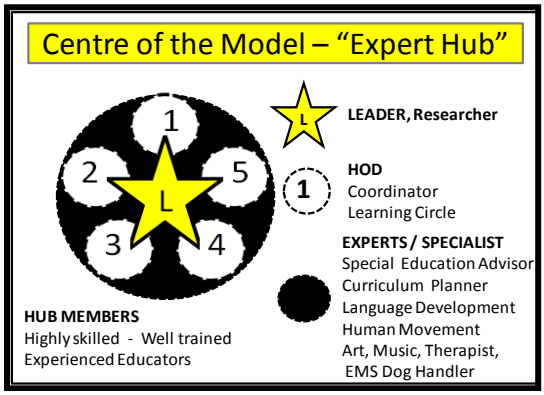

Figure 2: The dynamic hub of expertise

The *dynamic hub* is made up of people with extensive knowledge. The dynamic hub was extended to the whole school, leading to the school becoming a *dynamic hub of excellence*. The different learning circles were coordinated by a Head of Department and were made up of a teacher from each phase who adapted the LNTB message to be suitable for the students in their particular school. They then planned the LNTB activities and presented these activities to other teachers in the course of the LNTB research training. The learning circle team members as well as the rest of the staff moved dynamically across these boundaries and shared their knowledge and ideas. This implies that the framework itself was not static and should rather be viewed as fluid (Nel. Kempen & Ruscheinski, 2011).

The concept of a demonstration school operating in a network with six other schools was used (standard-based model). The concept of the development of a hub of expertise (demonstration school) forms the centre of the professional development model. The hub of expertise represents the involvement of internal experts such as curriculum specialists, music specialist teachers, art specialist teachers and/or therapists. External experts could also form part of the hub of expertise and such experts could involve the Department of Education, universities and businesses.

Figure 3 shows how the participating schools were linked to the hub of expertise (demonstration school) and each of the participating schools in return became a hub of expertise in its own right and formed a network with other organisations (schools). All lines used in the diagrams are broken lines indicating that they are permeable, allowing the free flow of information.

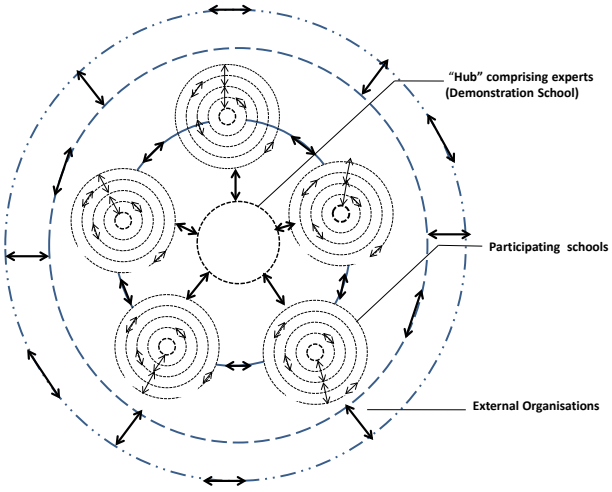

Figure 3. The hub of expertise (demonstration school) employed to train other school

Conclusion

The findings of the study reflected the success of the LNTB staff development that took place over a two year period in six special schools in Gauteng. In South Africa special education forms part of the national education system and

displays unique context-specific characteristics and requirements in meeting the needs of students with special educational needs.

This study served as an example of where valuable internal and external networks were based on collaborative learning were formed in order to enhance the pedagogical capacity of teachers with the ultimate aim of improving student outcomes. Connecting professional learning activities to meaningful content and purposeful activity has been identified as one of the critical success factors of learning that took place during the LNTB staff development programme. The collective nature of the learning provided rich sources of knowledge and skills to draw from. The hub comprised experts who had a good knowledge of special education and the LNTB programme.

The professional development that took place brought about positive change in the professional capacity of teachers, student outcomes and in the organisations. It led to higher levels of motivation and commitment, increased levels of innovation and creativity, higher levels of confidence and efficiency (despite initial insecurities) and ultimately led to improved classroom practices. The outcomes of the collaborative professional development programme on the school as a whole included positive change in professional relationships and restructuring of resources within schools

This research proved to be successful in building social capital through the means of collaborative learning and networking. Through networking teachers and schools acted collectively in sharing and creating knowledge with the ultimate aim of enhancing both individual and school performance. However, the long term impact of the staff development that took place was not assessed during this research and follow-up studies are recommended to establish the long term effect of the CPD on the teachers' performance, student attainment and the school as a whole. Furthermore, since this study was restricted to special schools this study should be extended to a wider range of educational institutions such as mainstream schools and tertiary institutions. Much still has to be learnt about professional development in different contexts, and especially about useful methods of professional learning to be found in developing countries.

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