

A Customized Innovative Cluster System Framework for Teacher Development

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ABSTRACT Evidence is emerging that many of the historically disadvantaged cluster systems in South Africa are struggling to implement innovative networks for teacher development. The difficulty has been attributed to several factors, such as efficacy-related continuous professional growth of teachers as essential for teacher development, the overall lack of implementation of effective cluster systems, and the quality of leadership that fails to influence the processes. This paper reports on empirical research that investigated the possibility of implementing innovative cluster systems in school districts for the purpose of improving the capacity for partnering among teachers as resources, assets and partners in teaching. Data was collected through qualitative approach, by means of interviews in two districts of Gauteng province. The findings confirmed that there were no formal structures or any framework for dealing with the implementation of cluster systems. It is recommended that in order to fill the gap, clusters need to implement a customized innovative cluster system framework.

INTRODUCTION

The root causes of ineffective and unsatisfactory teacher development can be traced back to faulty assumptions or the absence of appropriate research (Miller 2014; Steyn 2015). Linked to this is the absence of innovative networks that are dependent on the quality of teachers and their lack of continuous professional growth, an essential part of improvement in the quality of teaching. Research has revealed that cluster systems, innovative networks for teacher development, aim to improve quality of teaching, capacity for new active learning, partnering among members of clusters and collective initiatives for teachers as resources, assets and partners in teaching (Aipinge 2007; Chikoko 2007). Furthermore, research indicates that there are no efforts, or very few, on the leadership of clusters to introduce innovative networks (Ndlalane 2006). In addition, few frameworks exist to enable the effective implementation of the cluster system as a frame of reference for innovative networks. Hence, quality leadership could assist in this envisaged framework and thus support, inspire and influence teachers to actively participate fully in cluster framework.

School cluster systems are groupings of schools within the same geographic location aimed at improving the quality of teaching and

the relevance of education (Chikoko 2007). In other countries such as Uganda, the United Kingdom, Australia and Zimbabwe, cluster systems are known as school networks (Lieberman and Grolnick 2008). For this purpose, Bloome (2014) infers that school networks as groupings of schools within the same geographic location support teaching, mutual assistance and innovative networks in a colloquium through which teachers who belong to a particular group exchange knowledge, skills and connections to inspire and support one another. This is a type of community of practice through which active participation and engagements in the process defined as a flexible group of professionals, informally bounded by common interests, interact through interdependent tasks, guided by a common purpose, thereby embodying a store of common knowledge to establish a changed culture as a collective (Davenport 2001; Wenger 2007).

This paper acknowledges that clusters are not new in the global context. The practice of using clusters in education globally has been noted with benefits in many settings, both rural and urban, in both economically disadvantaged and economically affluent contexts. Chikoko (2007) mentions that the benefits include, (1) the *sharing of facilities* such as textbooks, laboratories and training venues, (2) *economical* staffing, allowing schools to gain access to extra re-

sources, (3) clusters are *pedagogic* in teacher development and the promotion of curriculum development, and (4) they are a better framework for teacher inspection and increased community participation as new *episteme*, new managerialism.

In this paper, and aligned for further research, the researchers respond to the need to further explore previous studies regarding the implementation of the cluster system, an innovative network for teacher development. Steyn (2015) has recommended an effective implementation of professional development over a period of time and in other contexts and settings in South Africa. Furthermore, Mphahlele (2014) has identified, based on a generated different reality of a suggested framework, a need to examine and test hypotheses that a flexible, innovative cluster system may inspire, promote and support teacher development and growth leading to quality teaching. These studies have motivated the researchers to further pursue literature and theories underpinning the study of a teacher development framework for South African schools.

The Cluster System: An Innovative Network for Teacher Development

The literature indicates that there are never-ending cyclical success factors for the effective implementation of cluster systems. These success factors for the effective implementation of cluster systems leading to a new framework for teacher development are reviewed below. Teacher development, aiming to improve the quality of teaching, is premised on teachers as major resources and key assets in collaborating to generate, build and construct a customized framework that is flexible enough for teacher development. In the quest for improving the implementation of cluster systems, its relationships with innovative networks and development are illustrated in Figure 1.

Figure 1 shows a new episteme that provides a theoretical framework for managing the implementation of cluster systems. The circles represent relationships, unity and infinity without a beginning or end, are interrelated and highly interactive. The researchers call this a race without a finish because teacher development is a never-ending process. The circles also represent learning circle models, collaborative knowledge aimed for building, sharing and reflecting

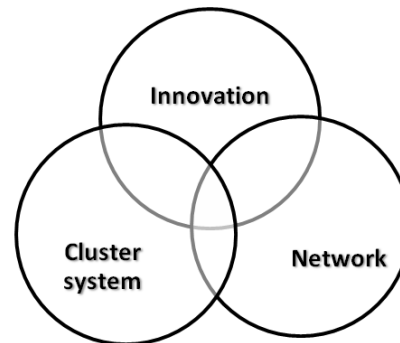


Fig. 1. Cluster system: An innovative network for teacher development

Source: Author

through open dialogue and in-depth reflection amongst members of clusters. For this purpose, it needs to be seen how cluster systems with innovations influence teacher professionalism by making use of a customized framework from existing models.

Theories of clustering (USAID 2004), cooperative learning (Wenger 1998; Johnson and Johnson 1992), and social constructivist learning (Steyn 2015) are underpinning the current study. The focus on these theories is to develop collegial efforts, resulting in a striving for mutual benefits, so that community collaboration responds to pressing issues through approaching innovative networks as a new paradigm for establishing microeconomic communities, using teachers as major resources and key assets in partnering and working together to generate ideas and turn ideas into the realities of clusters in context.

Cluster Systems in Context

As stated above, Chikoko (2007) defines cluster systems as the grouping of schools within the same geographical location aiming to improve the quality of teaching. Teacher partnering is an initiative to foster community and teacher development initiatives based on skills, resources and assets that already exist in the schools (Cole 2010). Each cluster normally consists of between five and seven schools, while one school in each group is selected to serve as the cluster center. The cluster center is central and is as accessible by its satellite schools. The center has adequate facilities and is ideally sit-

uated as a development hub where other social and commercial services are available. Cluster centers, in practice, set good examples for leadership, management and good teaching practices with a vision to extend beyond compliance to standardization of practices within the geographic location of the schools. Thus, the purpose of the school cluster systems is teacher development, because clusters support the teachers' capacity to teach effectively in the new, active learning-based curriculum centered on the following principles:

- ♦ Programs that are cost-effective in terms of collegiality of school engagement,
- ♦ A heterogeneous grouping that is maintained, and
- ♦ High expectations for all participants maintained across participating schools.

Cluster systems need to be clearly presented and explained to build awareness and a clear understanding of their requirements, representations, processes and potential. This can be done through information campaigns, workshops and media releases. People working in the education system, the teaching staff, cluster committees, subject facilitators, regional education office staff and the community are the most important target audience. It follows that cluster systems at schools could serve as a means for teacher development based on the following objectives:

- ♦ To share resources such as facilities, equipment, materials and specialized teachers;
- ♦ To encourage the self-reliance and self-sufficiency of schools by helping them develop productive activities leading to the provision of teaching materials and teacher incentives and the improvement of teachers' living conditions; and
- ♦ To foster community financial support and mobilize other locally available resources and innovative networks amongst members.

Innovative Networks for Teacher Development

Neethling (2010) in his "beyondness creativity phases" applies Vygotsky's concept of instructional scaffolding of the zone of proximal development for innovation. The zone of proximal development allows an expansion of knowledge, since there is a relationship between creativity and knowledge development. Where creativity stimulates knowledge acquisition, new

knowledge permits new and creative thinking and so innovative networks are created. To become a "beyonder", Neethling (2010) indicates that moving out of negativity (the zone for ordinary creativity) scaffolding is added gradually and incrementally, leading to the zone beyond creativity. Subsequently, in the positive learned habit, the cycles are broken and the process towards the beyond creativity zone are developed. This demonstrates how this negativity may become a creativity breakthrough for innovative networks and development.

Neethling (2010), further argues that everything begins with a trigger. Every change in life starts with an incident that sets things going. He contends that the triggered event leads to a change in thinking, thus, thinking becomes different to what it once was and individuals will start to believe that things they would never previously have attempted are now possible. Out of the new thinking, different feelings develop; however, feelings have to lead to behavior change to be effective. Whereas, Dennison and Kirk (1990) describe teachers as being depressed by the changes in curriculum and thus as having developed negative attitudes towards teaching, Neethling (2010) posits that it is only the power of one's thinking that can take one from negativity to creativity. Negativity is an unnatural state and no one has to be stuck in there, and it is possible to look beyond negative aspects that may cause teaching and learning to fail or stagnate.

The findings confirm that clusters may serve as an innovative network for teacher development, the teachers' attitudes may break free from the zone to promote collegiality, collaboration, reflection, sharing and to learn new integrated experiences through formal reflections. It can be hypothesized that professional growth may lead to increased experience and lifelong learning. Teachers may work and perform to create teamwork and relationships to interact freely in clusters and they may look beyond compliance in an objective manner, out of the zone, beyond the zone, for quality teaching through reflective activity that enables them to draw upon new experiences.

Models for the Implementation of Cluster Systems

It has become increasingly clear that different cloud applications benefit from different pro-

gramming models. The premise of this section was that there was a need to identify ideal models for the implementation of cluster systems to customize, adapt and recommend the total customized package of such systems. The model of the learning process (Fig. 2) requires reflective activity that enables teachers to draw upon previous experience to understand and evaluate the present in order to shape future action and formulate new knowledge.

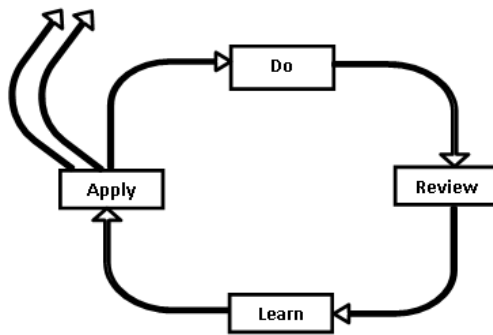


Fig. 2. Four elements in a learning process
Source: Author

The researchers point out that the four elements depicted in the figure indicate an active process, wherein the learner relates new experiences to existing meaning, and may accommodate and assimilate new ideas that are innovative in nature. The cycle highlights teacher activity in cluster systems in learning (Do), which means to act or carry out the plan, the need for reflection and evaluation (Review), the extraction of meaning from the review (Learn), and the planned use of learning in future action (Apply). The model describes the process either for a teacher on their own, which is actively making sense of a learning occasion, or for a group of teachers involved together. Whatever the overall time scale, time is required for individuals to reflect, make meaning, and move forward. Dennison and Kirk (1990) mention that classroom practice is still able to assess a way that promotes qualities such as collaborative and thoughtful approaches to learning by staying close to teachers' experiences and remaining supportive of one another. Teachers' conceptions and approaches influence those of the learners. From the definition of learning, it follows that effective learning is promoted through active reflection and collaboration for learning.

Learning, as a reflective activity, enables cluster members to draw on their experience, understand, and evaluate current practices to shape future cluster activities, formulate ideas and gain new knowledge.

In the light of the above, Van der Westhuizen (2002:309) argues that continuous evaluation and implementation require a cyclical process, where an end becomes a new beginning. For this purpose, he supports the PDSA cycle devised by Deming, which suggests the following four steps:

Step One: This comprises a **Plan** or process to study and analyze. For example, discussions at clusters about how a subject such as Economics is taught or how to ascertain how learners may learn Economics better. What improvements may be made to teaching Economics? What data is available to evaluate cluster activities? What additional data will be needed to assess the improvements and how will the data be used? It is thus imperative to seek the input of all role players for evaluation.

Step Two: Do It. The plan should be carried out, preferably on a small scale, to gradually and incrementally improve as part of the cluster activities.

Step Three: Study or check the data on the effect of innovative networks. Did the innovation take place or work well? What needs to be improved in order to motivate members?

Step Four: Act on what the small-scale process shows. The innovation can be instituted on a permanent basis, discarded or referred back to Step One by modifying the innovation and gathering new data on its effectiveness as adjustments are made.

Context

The current study focused primarily on the views of Soshanguve Secondary School district officials (subject facilitators), HoDs and teachers about organizing the cluster meetings (because of major obstacles in implementing cluster systems). A secondary focus was on reporting the findings from the literature reviewed and the empirical study. The research design and methodology, including the data collection methods, population size and sampling procedure, guided the processes as well as the analysis and interpretation of the data and the presentation of the results.

METHODOLOGY

The purpose of this section is to describe the methodology employed in the case study regarding the cluster system as an innovative network for teacher development. Following the suggestions of scholars such as McMillan and Schumacher (2010), Creswell (2009), De Vos (2002) and Mouton (2001) regarding methodology, the plan was exploratory and descriptive, based on the in-depth knowledge of teachers, district facilitators and heads of departments at schools. As interpretive researchers, the researchers of this study created an interpretive environment using Guba's model of the trustworthiness of naturalist enquiries (Guba 1990; Krefling 1990). The purpose was to produce detailed descriptions of the teachers' knowledge, skills and attitudes towards the use of cluster systems, develop possible explanations of these phenomena, and evaluate them to gain a deep and comprehensive understanding of the phenomena being studied. This choice was intended to contribute to the collection and analysis of scientific knowledge about the teachers' ability to practice critical reflection in clusters (epistemic knowledge).

A study of the said secondary teachers in the Gauteng Province of South Africa was the phenomenon or the case that was explored. This approach decided upon for the study was a phenomenological one, having as its aim an understanding and interpretation of the meaning that teachers give to their everyday cluster meeting interactions. This being the case, the researchers visited the teachers at school in their natural setting and used interpretative enquiry through semi-structured interviews as a method of data collection. The nature of the research questions was better understood via this approach as well (De Vos et al. 2005). This approach assisted the researchers in understanding and exploring what teachers were doing in cluster systems, how they were doing it and most importantly, whether or not cluster systems were used for innovative networking for teacher development.

The researchers visited the participants in their schools and offices (natural settings), the findings and discussions pursued critical and analytical descriptions using words rather than numbers, emphasis was placed on the meaning, attitudes, levels of knowledge, skills and perceptions of the participants, data was analyzed

with an open mind rather than trying to answer the researchers' own assumptions about the participants in relation to study-grounded theory (Murray and Lawrence 2000). For these purposes, in terms of the qualitative nature of the plan, specific measures were introduced to ensure trustworthiness (credibility, transferability, dependability and conformity) as required in a qualitative approach (Merriam 1998).

The qualitative approach was the best approach regarding the existing practices and reality (ontic nature) where teachers were given an opportunity to express their opinions freely. The semi-structured interview allowed the researchers to investigate comprehensively, and map out in detail, a social world (ontological assumptions) for a scientific purpose (epistemological assumptions) (Denscombe 1998). Mapping was used to plot what was happening in cluster systems in terms of whether or not such systems were used as innovative networks for teacher development.

To ensure that reliability and validity, including trustworthiness, of the interviews was maintained throughout the study, an audit trail was created. Raw data was recorded on tape. Data was transcribed from audio to print with the use of a Dictaphone, a typing expert was utilized in the transcription, and data was synthesized. With an independent decoder (a PhD graduate and expert in qualitative studies) the researchers reached consensus on categories and specified themes. The researchers then processed notes including the methodological ones relating to credibility, dependability and conformability.

Sampling included nine (9) EMS teachers (three from high performing schools, three from average performing schools and three from low performing schools), three Heads of Departments (HODs), (one from each school level), and three district officials (subject facilitators) of different subjects from the said schools. They were credible in that they were, 1) implementers of the cluster system, 2) hands-on in the supervision of the implementation of cluster systems, and 3) monitoring and supporting the implementation of clusters, respectively. This allowed the research findings to be analyzed in accordance with the experiences of teachers from the given schools, which was valuable when analyzing the data. To protect their identity and anonymity, the participants were listed alphabetically as follows: T.A-I, HoD.H-J, and SF.K-M.

FINDINGS

Three aspects among the six selected from the study were, *clusters in context, innovative networks for teacher development, and models for implementing cluster systems.*

Cluster Systems in Context

The purpose of this category was to determine the perceptions of teachers (T), HoDs and subject facilitators (SF) on cluster systems in context. An analysis of the interviews indicated that most teachers and HoDs believed that cluster systems exist where schools come together to share information, bring about uniformity on the learners' portfolios and set common question papers. Other teachers and HoDs also indicated that such a system exists where a group of teachers from different schools teaching the same subjects meet their subject facilitators to discuss the content of the syllabus and set common question papers. Subject facilitators indicated that this kind of system exists where a group of teachers teaching the same subject meet to share ideas about the content of the subjects. One HoD agreed that the cluster system could be a place where teachers could learn from one another if they discussed the content of the subject at the meetings.

For example, the respondents commented as follows (unedited verbatim responses). T.B stated that, *cluster systems are a place where we could share and discuss the content of the subject. But we moderate learner's portfolios.*

T.D noted that, *cluster system is a place where we discuss learner's portfolios and set common question papers.*

T.A stated that it is *a place where we gather as subject teachers to share information, moderate learner's portfolios and we set common question papers.*

HoD.H remarked that, *clusters systems mean a place where management of portfolios is done.*

HoD.I stated that *cluster is a place where teachers teaching same subject gather together to share information and moderate portfolios and set common question papers.*

SF.K indicated that *cluster systems are where teachers of different schools of a particular district come together to share information of their subjects.*

SF.L stated *that clusters system is where a group of teachers teaching same subject meet to share ideas about the content of the subjects.*

Both teachers and HoDs mentioned only that the purpose of meeting in clusters is for the moderation of learners' portfolios and the setting of question papers. Interviews with subject facilitators indicate contradictions. They mentioned that cluster systems are places where teachers share information. Consequently, the responses given by the interviewees do not link cluster systems with innovative networks for teacher development but regard them as places where teachers moderate portfolios for compliance. Although the latter is an act in accordance with regulations, it may be regarded as the lowest order of the various ways in which respondents are operating in their schools, showing no innovation. It may be deduced that proper definitions, including clarification and delineation of the cluster system concept, were missing or were only partially understood. Issues that were missing in the definition included concepts related to elements of innovation, collaboration and reflection and the implication is that the district officials probably did not communicate by sharing with the teachers in the meetings what the cluster meetings were for, so that they could not use the meetings as innovative networks for teacher development.

Contrary to the above, teachers and HoDs described the purpose of cluster systems only as being to coordinate, moderate learners' portfolios and set common question papers. It was thus evident that the majority of the respondents, except one subject facilitator, did not understand the main purpose of cluster systems. The exception, (SF.K), mentioned that the purpose of cluster systems is for teacher development, which implies that the purpose contains an element of innovation.

Innovative Networks for Teacher Development

Analysis of the interviews indicated that teachers, heads of the department as well as subject facilitators believed that clusters in this district served as a network among role players for schools. The data reported is that which is most useful for the study because the respondents were reporting on the same issues. The following are some of the respondents' comments (unedited verbatim responses):

T.F asserted that *yes they do serve as a network.*

T.E added that *yes they are networks.*

T.B noted that *yes clusters serve as a network for the district in that the teachers and subject facilitators get to know one another and exchange contact numbers.*

T.C stated that *yes they serve as a network because the district can monitor the progress of teachers and check if teachers are marking the portfolios of learners.*

T.D answered that *yes they do because district can give us information more easily at cluster meetings and monitor the progress of teachers concerning the syllabus...*

HoD.H responded that *yes they serve as network because we can set common exams and teachers can moderate the learner's portfolios at clusters and subject facilitators can supervise and monitor the progress of teachers.*

HoD.I remarked that *yes they are networks.*

SF.K indicated that *clusters serve as a network among role players.*

All respondents agreed that clusters do serve as networks for role players. One question that arises is the following is, do clusters serve as a network to support, promote and inspire teacher development or do they serve as a network for social gains? As stated in the remarks of the respondents, clusters build good relationships in which participants gravitate towards comradeship. It may be inferred that clusters do serve as networks for role players only for social gains such as making friends but not to support, inspire, and promote teacher development leading to quality teaching, because teachers are merely complying with the instructions given by their superiors. HoDs responded that clusters served as a network for teachers because the latter could moderate the learners' portfolios and set common exams at cluster meetings. One subject facilitator mentioned that clusters do serve as a network for the district because at cluster meetings teachers could check their progress concerning the syllabus. Consequently, cluster meetings serve as pace setters for teachers.

Models/Structures for Implementing Cluster Systems

The purpose of this category was to determine the respondents' perception of models of

cluster systems in their district. How is the cluster system structured in the district, what works well in the structure and how can the structure improve?

Analysis of the interviews reveals that all respondents shared the same information about clusters. They indicated that each cluster consisted of ten schools per geographical area, grouped by subject facilitators. Each cluster was led by a cluster leader elected by the subject facilitator. Members consisted of all teachers and HoDs teaching the same subject and respondents felt that the structure could be improved when principals were involved. The following are the respondents' comments (unedited verbatim responses):

T.A pointed out that *clusters consist of ten schools that are geographical situated grouped by subject facilitators. Members consist of cluster leader elected by subject facilitator.*

T.D asserted that *each cluster consists of ten schools that are geographically placed grouped by subject facilitators. Chairperson is the cluster leader who is elected at the district office. Members of cluster are all teachers teaching same subjects.*

HoD.H said that *chairperson is a cluster leader who is elected by district officials. Each cluster consists of ten schools.*

SF.K indicated that *each cluster system consists of ten schools that are geographically situated grouped by subject facilitators. Each cluster is led by cluster leader who is elected by the district officials.*

SF.L added that *clusters consist of ten schools. Each cluster has a cluster leader who is elected by us. Members consist of all teachers teaching same subject however, the involvement of principals could add value to the system.*

It was found that in this district geography was of particular concern in determining how frequently cluster in-service events could take place. It may be inferred that cluster systems in this district were conveniently situated. The cluster leader was elected by the cluster members, and held office for a fixed period. They added that the advantage of electing a cluster leader was that the members of a cluster system could select an individual whom they considered to be appropriate, and could terminate his/her appointment if their performance was unsatisfactory. However, cluster leaders in this district were selected by subject facilitators and it could be

inferred that if members were not satisfied with her/him, it would be difficult to terminate their appointment. The leadership by principals and district officials is a factor that could influence the program vigor and the success of school cluster systems. They may do this by creating a climate or culture in which the range of shared values is high and commitment to these values translates into innovation and effective use of scarce resources.

Following from the above responses, it is evident that respondents or cluster members did not make an effort to research and based the selection of the structure of their cluster system on faulty assumptions. This is because clusters were chaired by persons who do not have management skills and who had not received training for management and research. However, what works well is the consistency amongst members of cluster systems, because moderation of portfolios as well as setting of question papers is done equally among members of cluster systems.

A Customized Innovative Cluster System Framework for Teacher Development

On the basis of the findings from the literature review and the empirical study, a need arose based on multi-models of quality teaching and related theories to customize an innovative cluster system. The final framework (Fig. 4) now has three continuous success factors that are complimentary, integrated and interactive processes, aligned through interpretive processes.

The Cluster System as an Innovative Network

Research has indicated that innovation is available to everyone (Neethling 2010; Ebershon 2011). In addition, the core of innovation is to perceive a phenomenon with a fresh mind. For this purpose, this study posits that the core issue in terms of networks among the members of clusters is to share, engage and debate in the quest for real innovations in rapidly changing contexts. For this to happen, the understanding and attitudes of looking towards a future destination, notwithstanding the mistakes as well as serious obstacles, need to be seen anew as learning experiences. The theory of social constructivism underpins these assertions, and cluster systems may be looked at in a different way, in

this instance, beyond the situation prevailing in the district.

Discontented with the *status quo*, the members of the cluster system need to learn to break the barrier to stretch or explore stages of innovation so that there is a willingness to take risks, have synergized care in the form of networks and have courage, as the worst risk is riskless living. In this section of the study, some features of innovative networking for teachers were inferred and are described below:

- ♦ Reflective practice in which teachers reflect on what is working and what is not. As lifelong learners, they reflect on their learning for professional development as opportunities to be better in the classroom and in education communities at large.
- ♦ In their innovative approaches, they network and adopt an unconventional approach to handling challenges and develop strong connections with other teachers and communities. They need to be creative in their thinking to enable them to offer their learners motivation, interest and stimulation. As lifelong learners, they need to keep abreast of changes occurring in their field and determine how best to apply these changes in their instruction. This creative partnership works well when all are motivated and engaged willingly amongst themselves.
- ♦ The school cluster system is a collaborative effort where sharing is necessary and vital for true innovation at meetings when teachers are working together. The success of the partnership is that they learn and share with others and that in their professionalism none of them is "smarter" than any of the others. As innovative teachers, they ask questions constantly on how to adapt to new ideas.

Overall, while clusters are innovative networks, the mere presence of such a system may not be enough. To translate clusters into successful practice, the cluster system should start with changing the attitudes of members, from cluster leaders to those operating within the clusters, as well as communities at large. For this to happen, the current situation needs to be evaluated in terms of established practices, the actual practices reviewed and compared, and the necessary action taken to close the prevailing gaps to make improvements within the practices themselves. It would be prudent to start with changing those in higher tiers of the clusters since commitment starts from the top.

Evaluate, Plan, Do and Act Cycle (EPDA Cycle)

It can be inferred that for the overall implementation of the cluster system, a successful strategy needs commitment, training and development that would include the process that is now called the Evaluate, Plan, Do and Act (EPDA) cycle. At the heart of the EPDA cycle is a cluster system that should be innovative for implementation purposes to promote teacher development plans as catalysts to direct roles in teacher development. Members of a cluster should participate in making a cluster system successful, and be trained and developed in the basics of the implementation of such a system. They should be trained and capable of:

- ♦ Evaluating the cluster system processes in context and conceptualizing the objectives related to clusters (Evaluate). To evaluate the processes, it is essential that credible members of the cluster should be identified since they belong to a particular field of study. This is because these members need to be networking socially regarding their specific field. The objective is for all to effectively contribute to the goals of the system. The outcome of this evaluation is to bring together different points of view, experiences and knowledge and skills to develop joint solutions to shared problems of common interest.
- ♦ Planning together to translate the set evaluation objectives into action, that is determining the way to achieve such objectives and cluster vision is essential (Plan). This requires quality leadership that would direct, guide and influence member teams to identify priorities related to the timelines of the schedules. It is probable, based on this section, that the Department of Education may communicate this and translate ideas into policy, ensuring that all cluster members pull in the same direction towards clearly and contextually defined goals. To this end, leadership planning processes imply assessing cluster goals and creating realistic, detailed plans of action for meeting the goals and creating road maps for the outlined tasks and orientation of all role players. Although the plan implies an eventual or idealized view of the change of culture, the plan

itself is, in essence, for role players to start from where they are, not from where they wish to be in the future. For this purpose, quality leadership that is committed to the plan is required to communicate it, influence role players to focus on it and align various tasks and related orientations to act on it.

- ♦ The plan should be carried out according to the set goals, preferably on a small scale, and incrementally improved as part of the action (Do). The leadership should influence and create the improvement implementation processes that include the tasks of role players as well as resources required to action the plan.
- ♦ Cluster members then refine the changes based on what was learnt above, in other words they act on what the small-scale processes dictate or show (Act). The innovation may be instituted or refined back to the evaluation processes of the clusters by the innovative networks, as well as gather new data for effectiveness where adjustments are made. There may be a need to request corrective actions, stemming from the differences between the action and the planned results. Teachers need to analyze the differences to determine their root causes and then determine where to apply changes that will include the improvement of the cluster system. Data collection is essentially intended to measure cluster activities and related processes of the implementation and subsequent improvements. The overall plan includes the implementation of the cluster system and practicing teams on an ongoing basis to ultimately develop an understanding of the cluster system in context with a view to teacher development.

This EPDA cycle of planning and implementation is developmental in nature and the process of creating the plan and ensuring that it is effectively operational should be repeated several times for continuous improvement. The implementation can be repeated only when the cluster system framework is understood. Using EPDA cycles enables members to test the changes before the cluster implementation and gives the role players a chance to check if the proposed system will work. It involves testing of new ideas for change on a small scale, meant to

try out new ways of improving the implementation of the cluster system. In sum, the EPDA cycle forms part of the improvement guide, which provides a framework for developing, testing and implementing changes leading to the improvement of the cluster system. As a consequence, quality leadership responsible for these developments is essential.

The Three Quality Leadership Tasks

Research has revealed that quality leadership influences the processes and collects evidence from members involved in operational activities with a view to improving the existing culture to meet their expectations or requirements based on the analysis conducted (Steyn 2015; Oakland 2000). This leadership involves commitment, constant communication in identifying the needs of members, and meeting these needs for ongoing culture changes (the three C's). This is because there is ongoing discontent among members of the cluster system in the *status quo* who need to learn to break the barriers to stretch or explore stages of innovation. Oakland (2000) is an advocate of such culture changes, which are informed by a number of components that emanate from the leaders' commitment and constant communication, including behaviors based on member interactions, norms and values resulting from the members influenced by the leader, dominant value systems of clusters and the climate, which implies the level of satisfaction among cluster members.

In this study, a cluster leader is a master teacher who conducts meetings in a specific subject, helps teachers upgrade teacher competences and is a leader who guides in the subject field. This leader assists district facilitators and principals in team improvisation of teaching materials and programs as well as meeting schedules to make information available for members of clusters. This master teacher and leader is elected by the members themselves, based on the efficacies related to effective instruction and new ways of dealing with fresh challenges. Such a leader gets others meaningfully involved in the design of cluster programs and is familiar with the latest literature in the specialized content area.

A cluster leader is a role model who is empowered to coordinate and chair the cluster meetings at the district level. In addition, such a lead-

er is responsible for coordinating cluster resources and teacher development activities. Notwithstanding his/her status in his/her school, it is expected of such a leader to be an innovative driving force in terms of growth and continuous improvement of the cluster system. This leader encourages innovative networks among the members and allows for the creation of an environment conducive to innovative thinking, which implies generating new, worthwhile and useful ideas for the purpose of effective and innovative cluster practices. Lastly, the cluster leader should have a capacity for mediation, as well as for relationships, and should understand the differences among the members of a cluster.

CONCLUSION

This section of the study draws conclusions based on the research questions posed, findings from the empirical investigation as well the theories underpinning the research. Members of the district cluster system lacked understanding, both conceptually and in practice, about the cluster system and its implications for teacher development. Therefore, it is essential that the cluster system practices move away from compliance to innovation to create collaborative networks leading to development.

The absence of leadership (the principals) in clusters thwarted their implementation. Consequently, there has been disjointedness in terms of coordination, interactive relations as well as mutual assistance from members themselves. Hence, the cluster meetings and their objectives were lacking or non-existent and their principles were not communicated to members of clusters.

It is clear from the empirical study that there were no formal structures or frameworks for dealing with cluster implementation; in fact, there were few or no functional clusters at all in the district. This thwarted the teachers in their sharing of ideas, experiences and resources, both human and non-human, and resulted in the lack of or absence of ongoing teacher development. Consequently, the researcher proposes a framework for teacher development that propagates innovative networks for teacher development.

Research has revealed that the cluster system has the potential to influence teacher development and continuously improved quality teaching. However, in this study it has become

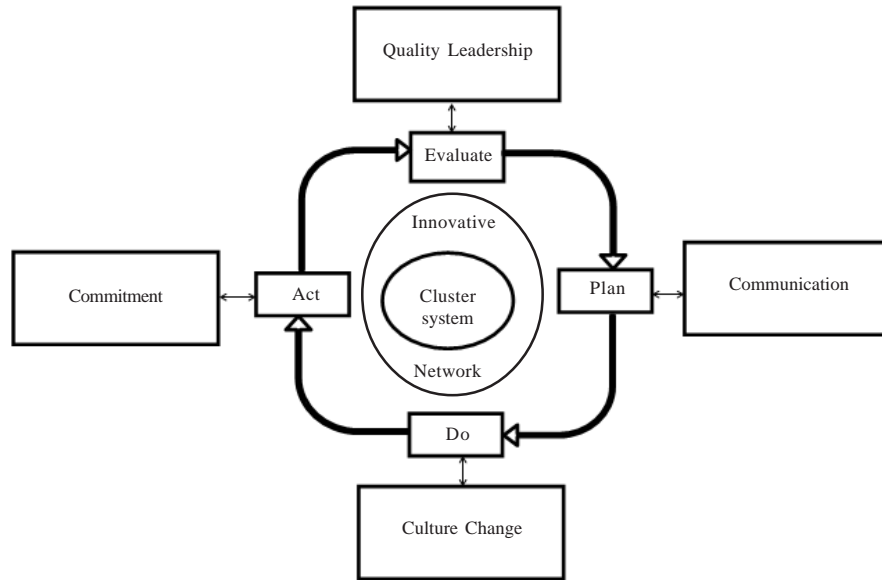


Fig. 3. Teacher development framework
 Source: Author

evident that there were no efforts from the leadership, members of the cluster and school support-based team to introduce innovative networks for quality teaching. In addition, there was no framework or structure to enable the effective implementation of the cluster system as a frame of reference. The proposed framework has been established to represent a combination of innovative teacher networks for development. The EPDA cyclical process for constant review, which is at the heart of the cluster system for the purpose of continuous evaluation, allows flexibility to accommodate differences in contexts, and emphasizes the role of quality leadership tasks to influence and guide the processes. This flexible framework to accommodate the different realities and needs of cluster systems is a new generation of ways to deal with cluster systems. The generated different realities of a suggested framework need to be examined and tested as a hypothesis for future studies, namely that a flexible cluster system that is innovative may inspire, promote and support teacher development.

The framework (Fig. 3) suggests connections, and their strengths are intended to show the deep understanding of clusters for innovative networks to promote engagement for further argument and debate. The framework would probably make a contribution to knowledge in

developing inductive theory clearly aligned to a problem statement, which may be a jigsaw puzzle only fully appreciated when the pieces are present and fitted together. To this end, this piece of work endeavors to create a new understanding of emerging issues in clusters.

It does not necessarily follow that this framework represents a quick fix or a simplistic recipe for success in education, which will remain complex and beset with problems because of its very nature. What the framework can do, however, is give teacher education informed findings to think about when designing frameworks that will prepare teachers to adapt to changing policy, teaching and learning contexts so that they can achieve success in their practice. This framework advocates that cluster systems can serve as an innovative network to support, promote and inspire teacher development, leading to quality of teaching and promoting effective learning.

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