S. MG Mahlomaholo

ACADEMIC NETWORK AND SUSTAINABLE LEARNING ENVIRONMENTS

The article focuses on one academic network involving 12 supervisors of participatory action research and their 30 postgraduate students at the University of the Free State in South Africa as they create sustainable learning environments (SuLE) in 30 schools in South Africa. These 12 academics work in collaboration with colleagues from one other African and two European universities. Their students individually and collaboratively create learning communities in their own respective research settings involving learners, teachers, parents and all instances of civil society working together to formulate practical strategies to enhance an aspect of schooling at a time. Face-to-face interactions do take place among researchers and participants who become co-researchers in the process. However Information and Communication Technologies are used extensively to facilitate the activity of the network. It is in these contexts that issues of hierarchies in terms of power emerge, knowledge forms and so on. The question the author responds to in this paper using Manuel Castell's notion of 'space of flow' therefore is; how does this network function? That is; how is the network mind distributed and memory stored? How is power distributed and how can the effectiveness of this network be evaluated?

Keywords: *Academic network, participatory action research, sustainable learning environments, learning communities, information and communication technologies, space of flow.*

С. Маломахоло

НАУЧНАЯ СЕТЬ И УСТОЙЧИВЫЕ СРЕДЫ ОБУЧЕНИЯ

Статья концентрируется на описании научной сети, включающей 12 научных руководителей и 30 их аспирантов из университета Свободного государства (ЮАР), которые проводят экспериментальные исследования по созданию устойчивых сред обучения в 30 южноафриканских школах. 12 из них сотрудничают с коллегами из одного африканского и

двух европейских университетов. Участники проекта не просто осуществляют полевую работу, но и превращают объекты своих исследований в особые сообщества, включающие преподавателей, учеников, родителей и различных представителей гражданского общества, побуждая всех этих акторов сообща работать над практическими стратегиями по повышению качества школьного образования. Между исследователями и другими участниками, которые фактически тоже превращаются в соисследователей, осуществляются взаимодействия лицом к лицу, однако наиболее активно используются информационно-коммуникационные технологии. Именно посредством этой разновидности коммуникации происходит распределение власти, формируются новые иерархические структуры, генерируется знание. Опираясь на категорию «пространство потоков», предложенную М. Кастельсом, автор дает ответы на вопросы, как в этой сети транслируется знание и поддерживается память; как распределяются властные ресурсы и как может быть оценена эффективность данной сети.

Ключевые слова: *Академическая сеть, исследование совместного действия, устойчивые среды обучения, обучающиеся сообщества, информационно-коммуникационные технологии, пространство потоков.*

Background

The challenges to schooling and education in South Africa to date have been many and some of them unmanageable (Anti-Racism Network 2010: 39; Apartheid Archives Project 2009: 23; Mahlomaholo 2010: 290—300). These challenges range from social structural issues, to individual learner and teacher problems. For example; the levels of poverty among communities from which the majority of the learners come is unbearable, the high unemployment rates among the youth and parent-communities is appalling (Mahlomaholo, 2010: 299—301), the food security and health requirements of an ailing population are astronomical (African National Congress — ANC 2009: 24), schools that do not have requisite resources including media for teaching and learning are rife (Bereng 2007: 78—89), teachers who have to be re-skilled and supported to discharge their duties effectively and learners who disregard their learning responsibilities still constitute a heavy burden on the taxpaying South Africa (African National Congress — ANC, 2009: 12; Anti-Racism Network 2010: 27; Apartheid Archives Project 2009: 27; Bereng 2007: 99—120; Mahlomaholo 2010: 287—300). The list of such challenges is infinite. Many strategies including increased funding for education as well as the democratising educational legislative and policy directives have been tried to remedy and resolve these apartheid legacy problems without much success (African National Congress — ANC 2009, 24; Mahlomaholo 2010: 28). Seemingly the situation is as described above because the dominant discourses that used schools and education for social control and social engineering, capitalising on the creation of particular forms of social communication hence practices, have not fully receded into the background in spite of the 18 years of

democracy in the country (Anti-Racism Network 2010: 29; Apartheid Archives Project 2009: 12; Bereng, 2007: 200). As South Africans we developed identities of particular shape in tandem with these discourses of inequity, social injustice, marginalisation, desperation and helplessness. We canonised all these into our repertoires of meaning construction to the extent that we still struggle to learn to be free in spite of the removal of all constraints and the implementation of a positive support from all angles (Anti-Racism Network, 2010: 24; Apartheid Archives Project 2009: 6; Bereng 2007: 123–145).

In response to the challenges referred to above, we created an academic network aimed at formulating strategies and frameworks through which schools, in collaboration with other instances of civil society like universities and parent communities, could contribute towards the full personal development of each learner as well as the social and economic development of the society as a whole. Our starting point, as evidenced from the international and local research as well as social movements, was that if we can get schooling right, then society could indirectly be able to cut the vicious cycle of unemployment, poverty, poor health and so on through its cadre of graduates and informed citizenry (African National Congress — ANC 2009: 16). The abovementioned idea meant that our network was going to adopt research which emphasised practical outcomes as its *modus operandi*. This also implied that our research was going to go beyond the individual researcher or individual learner or individual teacher, or individual parent, or individual member of civil society, but that all of us together were going to be involved in a collaborative network (Basov & Nenko 2012: 17) aiming at creating sustainable learning environments at schools.

Our decision to establish an academic research network to respond to these issues was caused by the fact that other individualised approaches to getting schooling right had not derived much success (Bereng 2007: 243; Development Bank of South Africa — DBSA 2008: 40). It had become apparent that to improve each learner and each teacher's performance required more than merely intervening at the intra-psychic or even at the individual levels. Even Bronfenbrenner's (Addison 1992: 68–76; Berk 2000: 38–43) ecosystemic approach which recognised that the individual's performance was authored at expanded levels of interaction with the family, the neighbourhood, the social class and the social structural levels had not gone far enough because the strategies informed by his theory were implemented but still, not much success had been achieved either. Our view was that the focus in Bronfenbrenner (Addison 1992: 17–26; Berk 2000: 78–85) was still on the individual, even though in expanded contexts. The theory had thus not sufficiently tapped into the power and the value of the networks within which the learner on the one hand, and the intervener, on the other, function. Our assumption was that if we could expand our bases as researchers, teachers, parents and other members of civil society in different countries of the world then we could be better able to support the learner-in-context even more. We assumed that such an approach would be effective because we would be bringing the richness of our local and international networks into our interaction with, for example, each learner and each teacher's social and international context. In this way it would not just be the case of the limited one-researcher-to-one learner/teacher/school or one researcher to broadened-by-many individual learners/parent/schools interaction; rather it would be

the interaction of broadened -by-many researchers/teachers/parents to broadened-by-many individual teachers / schools / learner's interactions (Rizzuto & LeDoux 2009: 177) are emphatic on this point that;

> Information and the resources attained within the network can increase individual performance by enhancing resources already possessed by the individual or by obtaining access to resources that are lacking... social networks determine the amount of social capital one can enjoy, influence personal decision making and reinforce one's sense of self... information is inherent in social networks and allows individuals to take advantage of knowledge and skills possessed by others.

The quotation above shows that knowledge, information and skills sharing are the pillars of networks in the same way that they are of sustainable learning environments. Both networks and sustainable learning environments are made possible by more than one individual sharing knowledge, information and skills constituting them (Basov 2012; Basov & Nenko 2012; Mahlomaholo & Netshandama 2012). This and many other similarities between the two are the ones that convinced us that to create sustainable learning environments, academic network(s) would be the most powerful medium and platform to use. In order to argue this point more clearly I firstly define what sustainable learning environments are so that it would be possible to evaluate the achievement of the academic network in practice. Then I discuss how this academic network came together and how it became a space of flows using the actor network theory. I describe how actors grew and developed therein. The main focus is on demonstrating how this network functions.

Sustainable learning environment

The academic network whose functions we focus on in this paper has as its ultimate objective the creation of sustainable learning environments (SuLE) in schools. The concept "learning environment" comes from a history of contestation around whether it was nature or nurture that determines our identities, performance and all as humans (De Corte 2000; De Corte, Verschaffel, Entwistle & Van Mirriënboer 2003; Fraser 2002). Our understanding of this concept favours nurture in this debate in that we agree that it depends on how one's environment is organised, arranged and structured that one assumes a particular identity and performance among others. Even De Corte (2000) and Fraser (2002) seem to argue that education is necessary and possible because we are not born with particular innate and inherited identities. Who we are and how we perform is dependent on how we come to create ourselves in relation to the environment. It is this view which Piaget's genetic epistemology advances, that is; the value and importance of the environment even in the cultivation of seemingly innate intra-psychic moments like cognition. Piaget argues that through our senses of perceptions we interiorise the material world, the objects into images which are further processed into schema of images and are finally abstracted as ideas and concepts which constitute the material that builds our thinking and our cognition (Driscoll 2005). So when we talk about learning environments, we recognise that any learner can achieve beyond

anybody's wildest expectation, only if his/her environment can be organised such that it supports and makes possible such performance (De Corte 2000; De Corte et. al., 2003; Fraser 2002).

On the other hand, the concept of learning environment in this study is linked to the idea of sustainability which originates from the sustainable development movement (Dasgupta 2007; Heal 2009; Le Kama 2001; Endress, Roumasset & Zhou 2005). This movement emphasises that for the continued existence of the human species and the world as we know it today to happen, there has to be respect for the environment which includes both (Endress, et. al. 2005). We can use the produce/ products etc. from the environment, but our usage should be such that it is not wasteful but actually makes it possible for that which we use to still be there for posterity (Dasgupta 2007; Heal 2009; Le Kama 2001). In the environment there are other human beings who assist us to be who we are. Our interaction for them, just like the whole environment, should be respectful. We should interact with them in ways that advance equity, social justice, freedom, peace and hope because it is when these are observed that the human species will continue to exist for a very long time to come (Dasgupta 2007; Heal 2009; Le Kama 2001; Endress, Roumasset & Zhou 2005). Without strife, injustice, oppression and inequity all humans tend to trust, respect and support one another.

Sustainable learning environments which we aspire for in this paper, given our history of apartheid, is where all learners, all teachers, all members of the parent-community and the whole civil society are afforded equal opportunities to live, to work, to learn and to be innovative among others, away from oppression and marginalisation but in freedom, peace and harmony with one another. For learners in schools, we recognise the significant role of the teachers who have to mediate the new knowledge they have to acquire meaningfully (Mahlomaholo 2010). Teachers have to provide that pastoral care so that the learners are emotionally comfortable to learn and to explore as required (De Corte 2000; De Corte et. al., 2003; Fraser 2002). The teachers have to be knowledgeable in their subject content and beyond such that they can provide their charges with as many alternatives from which to choose and to learn as possible (De Corte 2000; De Corte, et. al. 2003; Fraser, 2002). Teachers have to be fair and be able to scaffold their learners to higher levels of learning and understanding. However for such learning to take place it has to be supported by informed, supportive and engaged parents and community who will ensure that what learners learn at school is further reinforced and validated at home and in the community (Mahlomaholo 2010). A sustainable learning environment implies that there are equal and ample opportunities for learners to learn in freedom and to intensify their self-awareness (Mahlomaholo 2010).

The team

The task of creating sustainable learning environments in schools seemed to be very daunting to us as individual academics within the Faculty of Education at the University of the Free State in South Africa. We are one of only two teacher education institutions in the Free State province which are subsidised from the tax payers' money.

We have a great responsibility to educate teachers who are to bring about significant changes in education, which has remained paralysed from the impact of apartheid as described earlier in this paper. We were however, very fortunate because there were at least 12 of us who agreed that we could learn from the community we served, and that our teaching and curriculum could only benefit if we got engaged in community issues and shared our research expertise with them to solve many of the educational problems we referred to earlier. We were also fortunate because of the advent of information and communication technologies (ICT) which were available and used by almost everybody in the province and beyond. As academics we thus consciously constituted ourselves into a research team with a clear focus on the creation of sustainable learning environments as described earlier.

Once we had the team going we were able to recruit thirty mature PhD (18) and MEd (12) students whom we jointly supervised in a cohort approach. Four of these students come from the Potchefstroom area, seven from Bloemfontein, seven from Manyatseng, seven from Thabo Mofutsanyane and five from Durban. Within this cohort there are very senior officials from the Department of Basic Education. There are for example; (i) Chief Directors of Curriculum, (ii) Chief Education Specialists, (iii) School Management and Governance Developers, (iv) Principals of School and (v) Practising Teachers. Each of these students was encouraged to conduct participatory action research on a real life problem s/he identified in conjunction with people who worked with her/him on daily basis at her/his place of employment. All the people who have a stake in the problem being investigated were to be invited to serve as participants in the respective projects. For example students work on topics such as the following;

- A framework for managing human resources in secondary schools for improved educational performance,
- Implementation strategy for a Quality Learning and Teaching Campaign: a framework towards a sustainable learning environment and
- Transformational learning of physical science through service learning for sustainable learning.

Teachers at the respective schools together with our relevant research students constituted the local school team. Then parents of learners at the respective school were also invited. The local; municipality council, social workers' department, police service department, faith-based organisations, non-governmental organisations, community based organisations as well as the business communities were all represented per local school team. Communication among these members is conducted through ICT in between meetings as all members have access either to a computer and/or cell phones. The first meeting in the respective teams was mainly an information session where the participants were divided into smaller focus groups of about five to ten people formulating the purpose of the study based on their experiences of the problems in their respective schools. All members based on their respective individual research took turns to reflect on the problems and to give feedback. The second meeting focused on conducting a strengths, weaknesses, opportunities and threats (SWOT) analysis. This led to the identification of five most important priorities which each school team could meaningfully and successfully pursue towards the

creation of sustainable learning environments at the respective school. The action plan was then designed by the participants with the research students chairing and managing the proceedings but allowing all participants to own the process. In all meetings we make sure that all participants irrespective of their level of literacy feel comfortable and can communicate their ideas through whatever means they find convenient. Some dramatise their ideas, others drew sketches of them on computer software, while others present pictures in collages and so on in order to express their ideas. We also make sure that the language used by all is accessible and no unnecessary jargon is used. Each priority was linked to five activities and each to a respective person and/or team to ensure that it did take place. Time-frames and resources were identified and allocated by the respective school's team. Each month, a school team meets to reflect on progress, to plan and to adjust activities so as to ensure that the priorities are achieved and thereby sustainable learning environments are created. Each month all researchers also meet together with the supervisors. Each team member communicates with other team members and supervisors and vice versa in between meetings on the e-list where they share experiences, pictures, audio materials, references etc.

Joint international funding proposals, which require closer working together for days on the internet and e-mail by all researchers and supervisors, are the order of the day. Furthermore, all supervisors and students participate at conferences both nationally and internationally of which they are more or less permanent members. The research is presented orally and through power-point techniques. The participants also publish in the relevant journals and conference proceedings. There is consistent and mutually beneficiating circulation of information and knowledge at the local and international levels through e-mails, blogs, twitter, face book and other networks. Academics from other institutions visit our institutions and schools and we also visit them and their schools. Schools benefit from these flows of knowledge and ways of teaching and learning from a wider international stage. We all grow as we support one another.

The academic network

The make up of the team which I have described above concurs with what Manuel Castells refers to as the *network* because of the three bipolar axes of functionality, meaning and form which organise it (Castells 2002; 2004; 2007; Miller 2006; Van Der Wusten 2002). The team, or shall I say the network, at the levels of the 12 academics in the Faculty of Education of the University of the Free State, the sub-teams of participants at the 30 local schools which include respective postgraduate researchers convening them, the collaborating researchers from other universities, the conferences and the journals at which we participate and publish, consist of individuals or persons (Cabana, Mizraji, Pomi & Valle-Lisboa (2008). These individuals are at the same time actors in this larger international network, and participants in their own locally situated one (Heike 2009; Law & Hassad 1999; Latour 2004).

However the actors in this network are both human and non-human (Heike 2009; Law & Hassad 1999; Latour 2004). The non-human actors among others

include the aim of graduating and obtaining a PhD or a Master of Education qualification among the postgraduate students. This is a compelling actor which motivates and keeps the students focused on their respective research. The availability and access to the internet is another non-human actor which determines the rate at which information can be obtained and utilised towards the achievement of abovementioned qualifications. For the participating schools, non-human actors include resources and materials for learning and teaching as well as buildings and infrastructure for learners and teachers to use among others. The list of non-human actors is infinite as all human actors are supported and directed by at least one non-human actor.

What is important about the human actors in this network is how we came together into this large network. The subheading under which I define sustainable learning environments (SuLE) above has briefly indicated that all of us had a concern to improve performance and levels of learning at schools in South Africa in particular (López-Pastor, Castejón, Sicilia-Camacho, Navarro-Adelantado & Webb 2011; Muijs, West & Ainscow 2010). However because of constraints of capacity and resources we focused on only 30 of those. This, according to actor network theory (ANT), is referred to as *problematisation* (Heike 2009; Law & Hassad 1999; Latour, 2004). This concern to improve learning became the problem that required to be solved and towards which we all of us marshalled available resources (Muijs, West & Ainscow 2010). As the 12 academics we came from different areas of specialisation and we brought our participatory action research expertise among others to the table (Mayoux & Chambers 2006). This approach enabled us to create spaces at and around the 30 schools respectively where learners themselves, parents of these learners, the teachers of these learners, local municipality, and all the participants could come together to share their experiences and knowledges regarding the best possible ways to resolve the mentioned problem (Powers, et. al. 2011). We invited all these 'other' actors because we strongly believed that the local actors had and knew what the solutions were to the problems (Power, Miles, Peruzz, & Voerman 2011; Sutherland 2011). We only had to create conditions that were conducive for us all to explore those collectively (Power, et. al. 2011). We as academics created opportunities for the mentioned actors to be interested and to see their power and value in terms of resolving the problem. ANT, which assists us to analyse how our network functions, uses the concept of *interessement* to refer to such a situation where interest was generated among us all to own and to find meaning in our collaborative participation (Law & Hassad 1999; Latour 2004). We organise information sessions and strategic planning sessions where we all share and work together as equals towards a defined goal. Our participatory action approach enables us all to own the process of finding the solutions to the problems in a mutually beneficiating and reciprocal manner (Mayoux & Chambers 2006). Initially the newly recruited actors looked, and possibly felt, like strangers, but gradually, when they realised that the whole collaboration was about the success of their children in life and about their future as citizens in their democratic communities, they changed from being just participants who waited for the academics to show them the way. Now they are co-researchers who take responsibility and initiative to investigate and to bring more constructive ideas to the

network towards the success of its work. ANT describes this as *enrollment* and *mobilisation* (Law & Hassad 1999; Latour 2004). We are allies to one another. For example, the principals and all actors in the networked sub-teams value the presence and inputs of the community-based workers, which enable the teachers to be on time in class and to teach as expected. The teachers are aware that they are in the public eye all the time and that they have to account to the community-based workers and the whole network during our monthly reflection and monitoring meetings. This feeling of mutual respect and not wanting to let one another down goes through the whole network

What I refer to above applies mainly to the actors in the local school sub-teams which constitute part of the larger academic network. Unfortunately, due to financial constraints the actors in any one of the 30 local schools' sub-teams are not as yet able to meet and/or communicate directly with actors in the other local school sub-teams. Only the postgraduate students who convene and coordinate those sub-teams are able to meet and communicate with one another once every month where they present their work-in-progress on behalf of their respective sub-teams to the local network. Even in terms of the use of ICT we have not yet moved to a situation where, for example, a local teacher in Manyatseng can communicate directly to his/her peer in Potchefstroom. We hope to facilitate and achieve these higher levels of many-to-many actors' direct communication in due course. Even the postgraduate students are also not as yet able to communicate directly with academic colleagues and peers in St Petersburg (Russia), Sheffield (United Kingdom), Tumaini (Tanzania) and Aalborg (Denmark) where our network extends because they have not as yet met with them or attended a conference or submitted a paper for publication there. The privileged actors are the academics who are also supervisors because they have met with their peers in the mentioned places and have submitted research work for publication in books and journals.

The international actors also do participate in their own respective networks, but they come to enrich our SuLE network with the knowledge they have gathered from elsewhere (Rizzuto, LeDoux & Hatala 2009). For example, the Tumaini connection brings with it understandings in terms of improvising towards quality learning environments in rural and poor socio-economic backgrounds which we share with them as fellow Africans. The Sheffield connection brings understandings that relate to issues of post-coloniality which we value in South Africa because of our apartheid past. Our education has markings of an emerging post-coloniality and post-apartheid discourse and we thus learn from their inputs as post-colonial Africans in the diaspora. Aalborg is very important in terms of project problem-based learning which gives us the vocabulary to talk about learner-centredness and some elements of participatory action research in SuLE to name a few. From the St Petersburg actors we get enriched in terms of cutting edge theorisation about the intellectual, social communication as a powerful medium for social transformation towards social inclusion as well as the functioning of academic networks in the knowledge era.

Given the international and national legs of the network of SuLE described above, one would expect that it would be organised in a hierarchy that would make one leg suffer and perhaps invisible. We have however learnt to balance the competing

demands of our work. SuLE is gradually being positioned internationally in terms of publications in many established journals and books (Rizzuto, et. al. 2009). The network is participating in international competitive activities including presentation at cutting edge conferences and being part of large conglomerates of researchers bidding for international funding like the European Union and so on. At the same time we remain locally relevant and responsive to local needs as discussed earlier. What gives us the urge locally is our attempt to operationalise Yosso's (2005) community cultural wealth. We value the knowledges which local communities have (Mayoux, & Chambers, 2006). Our search for local solutions is informed by the understanding that the local actors are experts in and on their local issues (Mayoux, & Chambers, 2006). We enlist their navigational capital (Yosso 2005) which has enabled them to survive the many odds to date. We capitalise on their rich knowledge of the local which has lasting and sustainable value. We work in tandem with their aspirations (Yosso 2005), we value their familial and social capitals (Yosso 2005) and we valorise their linguistic capitals (Yosso 2005) at the same time. There is no way that an outsider, who does not even know the language and the networks of families that nurture and hold the children together for an example, can come up with solutions to enhance learning of children whose identities are constructed in those cultural contexts.

We are able to balance the international and the local because our network is "the space of flows ..." which "links up distant locales around shared functions and meanings on the basis of electronic circuits and fast transportation corridors, while isolating and subduing the logic of experience embodied in the space of places" (Castells 2007: 29). Actors are still in their spaces. They retain their individuality. They inhabit distinct and diverse geo-political spaces which our network does not violate but creates the possibility of bringing all these actors, their experiences, fears, aspirations and knowledges together in an instant — as though time and space did not matter or exist (Castells 2004; 2007). The space of flows which we inhabit, and which goes through our network, is a powerful medium for creating sustainable learning environments because it is able to connect huge numbers of people through the hybrid of the electronic media (ICT) and physical presence. Physical spaces that divide actors are constantly being remodelled through communication which occurs within and among nodes of academic work as described above (Staeheli, 2006; Trong, Ngoc & Geun 2010). This space of flows which we call the SuLE network is highly decentralised and yet efficiently coordinated through off and online connectivity. It is about individuation and communalism in the process of participatory action knowledge creation (Basov 2012; Sjödin 2004).

The space of flows which we call the SuLE network is about communication, and most importantly it is the space for growth because knowledge is socially created (Kerlogue, 2008; Sjödin 2004). This social creation of knowledge occurs at the level of the individual (intra) and the collective (inter) actors in their respective sub-teams where individual participants interact as actors in the respective 30 schools (Malcolm, & Zukas 2009). It also occurs in the Faculty of Education where the 12 academics individually and collectively interact with their 30 postgraduate students and in the international arena where the local academics interact with their peers from other

countries. Basov (2012) refers to the three processes through which this knowledge creation ritual occurs as; co-evolution of knowledge, communication and emotional energy. He argues that new ideas occur because of the systematic combination and recombination of various meanings intra-psychically within an individual knower or *cogniser*. However he emphasises that all the time these come from the social environment, be it at the local school sub-team level where the teachers reflect and interact with his/her peers or in the Faculty of Education where each individual postgraduate student reflects and interacts with his/her supervisors and peers and so on. But the new idea has to be communicated, validated and believed in for it to matter and to be considered by others as such (Alferoff & Knights 2009). A measure of social consensus has to occur for the idea to be regarded as knowledge, and all the time that idea emerges out of a particular social context from which it is related and authored. That new idea also impinges on the nervous systems of the individual cogniser (Basov 2012). It changes it forever once it is perceived through any or all of one's senses of perception.

Basov just like Piaget (Berk 2000) maintains that each cogniser's nervous system has structural autonomy which is inherited and innate, but which, through the processes of assimilation and adaptation to new ideas, changes form to the higher levels of sophistication. This growth and sophistication have occurred among us all in the SuLE network. Parents, community-based and non-governmental organisers, teachers, academics, postgraduate students, international peers and all actors in the SuLE academic network are no longer the same. Participants have become informed actors at local school level (Curry & Lillis 2010). They talk fluently about educational policies and what has to be done to improve learner performance, even though some of them were denied formal education during their youth. Some of them are now interested in doing research; actually they now are co-researchers as this is what they have been doing all along as they prepared for the SuLE meetings. Postgraduate students are more confident as their theses and dissertation develop and become manageable. As academics we also have grown in terms of our publication and supervision skills, to mention a few. However it has also been a reciprocal process where the cognisers have also influenced the environment. Basov talks about structural coupling when two or more actors come together and one learns from the other(s) and structural congruency when the environment (including actors) is influenced by the cogniser such that there is equilibration between the knowledge in his/her nervous system and the environment. All of us have had the opportunity and privilege to learn from one another in our different settings and we have reciprocally influenced our immediate and distant environments. These have been possible also because of the relationships of trust, care and emotional bonding within the network that have made these possible.

Limitations

The discussion above may have created the impression that all is well with the SuLE network; however there are still many challenges and limitations experienced. For example, it is still not easy to get the buy-in and support of all parents as they are

still very busy with their everyday job demands. Even those who see the value and importance of participating are not able to sustain the required level of participation in this network as they have to be at their work stations and be involved in the daily activities of their families and so on. There is some measure of resistance from some community members as well, who see the whole idea of a network as a waste of time. In their view once they have paid school fees, it is enough. The teachers and the schools have to teach, and their role as parents is merely to receive academic reports of their children at the end of the academic semester and year.

Furthermore, while many actors in the local school sub-teams are active in terms of ICT and face-to-face learning interactions, we still experience problems with regard to interschool networking which is at its initial stages. Even in terms of the use of ICT, as noted above, we have not yet moved to a situation where for example a local teacher in Manyatseng can communicate directly to his/her peer in Potchefstroom. Even the postgraduate students are also not, as yet, able to communicate directly with academic colleagues internationally. The privileged actors are the academics who are also supervisors because they meet with their peers internationally and publish their work there as well. The intended SuLE network is still emerging. The process of negotiating that all should participate seems to be very long and slow. Some times we experience setbacks due to personality clashes among participants. However since we are aware of these challenges we are in the process of formulating strategies to resolve them for the good of all.

Conclusion

The process of creating sustainable learning environments by our research network is not only about formulating strategies to teach learners in schools. In fact it has influenced many actors in this space of flows as they have also influenced their respective environments through effective structural coupling. The Faculty of Education, for now, is serving as the brain centre of the network with each local school sub-team led by our postgraduate student being the nodal point of growth and development. The aim is that in two years time, the network intelligence would be distributed among all the local schools' sub-teams and to individual actors and learners. All these actors should in future be able to take charge of their own learning and the facilitation thereof. They should also be able to communicate with all other actors locally, nationally and internationally to enrich and expand their individual knowledge and identities. They should be able to reflect intensively around how best to improve learning in our schools.

To arrive at the abovementioned suggestions, the paper started by providing the background regarding the education situation in South Africa which made it necessary for the SuLE academic network to be formulated in the first place. Issues of dysfunctionality in education are highlighted as the reason that made us come together to explore the academic network as a possible strategy to adopt as a response to the mentioned challenges. The resolution of these challenges thus becomes one of the areas in which the measurement for the success of the network can be evaluated. Another point at which this measurement can be conducted is by the amount of

knowledge which the actors participating in this network have accumulated, and how their identities were able to expand thereby.

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