



Is The Lack of a Centralised Research Data Repository (CRDR) Affecting The Collective Effectiveness of NGOs in The Education Sector?

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Abstract: The growth of Monitoring and Evaluation (M&E) and Evidence-Based Practices (EBPs) approaches globally has certainly been a positive addition to efforts towards good governance. These approaches have seen some growth, especially in the non-profit arena where value for money is needed to be seen by funders. The non-governmental organisation (NGO) sector in South Africa has not been the exception when it comes to this growth, especially in the education sector. However, the inability to tackle some of the major education crises such as the inequality gap in education suggests more has to be done by government and NGOs in the sector. The challenge identified in this paper is the absence of a centralised research data repository (CRDR) specifically for NGOs working in the education sector, which leads to duplication of efforts and limits the overall effectiveness of their work. The objective of this paper is, through analysis of the available literature, to ascertain to what extent the lack of a CRDR affects the overall effectiveness of NGOs in the educational sector. This is a conceptual study of the landscape of NGOs in the education sector and it involves reviewing the literature on the effectiveness of NGOs in addressing challenges faced in the sector. The study uses secondary data (scholastic literature) to achieve its objective. The findings confirm that the lack of access to evidence-based data in the NGO space has led to duplication of projects and undermines the reputation of the sector. This paper concludes that having a CRDR would enable NGOs to use evidence-based practices in their work. This paper also calls for a robust understanding of how collaboration and partnerships between academic institutions, government, funders and NGOs that could assist in building a more successful centralised CRDR and ultimately improve the collective effectiveness of NGOs.

Keywords: Data repository; Evidence-based; Education; effectiveness; Collaborations; NGOs

Introduction and Background

The growing significance of the effectiveness of education funding has led to the rise of governance and transparency concerns and fears of accountability and sustainability (UNESCO, 2017). These concerns have increased interest in strategies such as monitoring and evaluation (M&E) and evidence-based practices (EBPs).

NGOs in South Africa, especially those working in the education space; have not been the exception for this growth. One of the key objectives of M&E and EBPs in the education sector is to ensure that quality education is provided to all populations and at all levels (Volante, 2007).

The global drive to achieve the Sustainable Development Goals (SDGs) for education has highlighted fundamental notions such as expanded vision of basic education; access to equitable and quality education for all; lifelong learning for young people and adults and so on (UNESCO, 2017). All of these require effective and efficient evidence-based systems to be achieved (OECD, 2014).

In South Africa, the National Development Plan (NDP) offers a plan to reduce inequality and disparities among South African citizens by 2030 (NPC, 2012:9) it acknowledges in particular that education is the cornerstone of sustainable development and the key to realising the full range of constitutionally protected rights; as such the NDP gives priority to improving education performance (Volmink & Van der Elst, 2019:7), and its vision for education is, by 2030, to provide South Africans with access to the highest level of education and training,

leading to significantly better learning outcomes (The Presidency, 2012:11). The NDP further envisages a robust system for early childhood development, primary, secondary, tertiary and further education (DBE, 2015:30).

However, there are several stumbling blocks on the road to implementing equal and quality education globally and in South Africa in particular (Spaull, 2019). Although the government has steadily increased its expenditure on education, schooling expectations have also risen. For instance, access to education is no longer enough (Spaull, 2019).

Data from the 2017 school monitoring survey indicates that 59% of schools at the national level meet minimum physical infrastructure requirements (DBE, 2017:80) and that some essential facilities were not universally available: only 76% of schools had clean drinking water and 80% had adequate sanitation (DBE, 2017:81).

The survey also highlighted teacher absenteeism as a significant problem. In both primary and secondary schools and throughout provinces, the national average rate of teacher absence on an average day was 10% (DBE, 2017, 38). Furthermore, as pointed out by Van der Berg (2015:21) most educators in South Africa do not have the requisite subject knowledge or pedagogical expertise to teach the curriculum.

The Southern and East African Consortium for Monitoring Educational Quality (SAQMEQ) survey conducted in South African schools in 2007 found that 79% of Grade 6 mathematics teachers did not score 60% or higher on questions at the Grade 6 or 7 level (Venkat and Spaull, 2015:126).



Furthermore, most children gain only basic reading and writing skills, but do not improve cognitive skills. In the Progress International Reading Literacy (PIRLS) report in 2016, South Africa was the last among 50 countries to measure learners' comprehension during their fourth year of primary schooling (PIRLS, 2017).

The study revealed that "78% of South African pupils could not read for understanding" (DBE, 2017:82). A study conducted by Howie, Combrinck and Roux, 2017, cited in Mullis, Goh & Prendergast, 2017) showed that curriculum reforms over the past 20 years have also led to almost constant changes in the curriculum, which has affected teacher motivation. 2

Given the growing challenges and expectations of the education sector, it is difficult for the government to meet the fundamental requirement of providing access to all children through efficient educational administration, and even more so to deliver innovation and improvements in the quality of education.

Therefore, it is of importance that there is collaboration and partnership between government, donors/funders, academic institutions and NGOs. The enhanced role of NGOs entails complementing the formal system of education in the country and reaching out particularly to the restricted, underprivileged and disadvantaged sectors of society.

Thus, to play this role well, NGOs working in the education sector need to demonstrate their impact by using evidence of their practices that have contributed to effectively addressing the above-mentioned education crises in the country. To fully utilize EBPs, this paper strongly argues that, NGOs working in the education sector need to establish a centralised research data repository (CRDR) system. They will be able to draw best practices to design, implement and evaluate their interventions.

The CRDR would also assist in mitigating the problem of the duplication of interventions or projects in the NGO's sector, which if not deal with might undermine their effectiveness and costs the sector a lot of resources and time. Thus, the author argues that having a CRDR drawing data specifically from NGOs working in the education sector will enable those NGOs to easily utilize EBPs and demonstrate the effectiveness of their work.

This paper is motivated by the recent initiatives for collaboration in the education sector, one by the Department of Basic Education (DBE) the National Education Collaboration Trust (NECT) and the other by the National Association of Social Change Entities in Education (NASCEE).

The Education Collaboration Framework (ECF) and its implementing arm the NECT, were developed to strengthen the role of the NGO sector in supporting scaled-up and sustainable education improvements (NECT, 2018).

The NASCEE on the other hand is committed to empowering NGOs in education by improving their capacity, effectiveness,

and collaboration. In addition, NASCEE aims to be the voice of NPOs, build internal capacity and ensure quality practice and delivery in the education space (Volmink and Van der Elst, 2019:4). It is based on these two initiatives that this paper attempts to contribute to the debate and discussion on the idea of building a successful CRDR for NGOs working in the education sector.

Against this background, this paper aims to investigate to what extent the lack of a CRDR affects the effectiveness of NGOs in the education sector. This paper is therefore pre-arranged as follows: the subsequent segment of the paper reviews the literature providing an overview of research data repositories.

The following section then explains the research method. Next is a discussion surrounding the development role of NGOs and an overview of the education NGO landscape in South Africa, followed by a discussion around the value and benefits of CRDR for the NGO sector. Ultimately, the paper concludes by providing the main contributions and acknowledging the limitations of this research.

Literature Review

Recently in 2013, the Data Foundations and Terminology Working Group and Research Data Alliance (RDA) proposed a concept of a repository with the inclusion of research data in particular. The RDA was launched as a community-driven initiative in 2013 by the European Commission, the United States Government's National Science Foundation and the National Institute of Standards and Technology, and the Australian Government's Department of Innovation to build the social and technical infrastructure to enable open sharing and re-use of data.

The RDA (2019:1) defines a repository as "*searchable and query able interfacing entity that is able to store, manage, maintain and curate data/digital objects*". Similarly, a CRDR is an aggregation of stored data in some place such that it can be shared, updated, analysed and secured by every user in an organisation.

Hruby, et al. (2013:563) mentions that "*for any research data repository to be useful, the data must be reliable, accessible, ideally in a machine-readable format and have agreed-upon semantics for the data and metadata fields*".

Research data repositories have grown exponentially over the years and researchers have been educated about the benefits of depositing their data in data repositories. However, the author could not find literature that pertains to data repositories for NGOs working in the education sector in the search.

Therefore, the literature review conducted here relates the benefits and challenges associated with research data repositories in general.

Austin et al. (2015) cited in Banzi et al. (2019:2) emphasized the importance of CRDR from a clinical research view, and the



authors noted that “ *research data repositories have the potential to play an important role in the effective and safe sharing of clinical study data because they can provide a stable, long-term home for the data, improve the security and quality of archiving through active data curation, increase the discoverability of data through the application of metadata schemes, and facilitate the processes of request and transfer of data from generators to users, and tracking data utilisation*”.

Moreover, Helliwell & McMahon (2010:35) provide a summary of why research data repositories are important, the authors mentions that “*open and sharing of data enhances reproducibility, helps verify scientific conclusions, safeguards against errors and fraud, provides training materials for teaching and learning, permits meta- and comparative analyses, and provides future access for further research and re-analysis at a later date*”.

Gurstein (2011:5) also highlights that data research data repositories can extend these benefits beyond the scientific community (in this context NGOs sector) to the public as a whole by enabling ordinary people to access these materials (provided that the materials are research-based, not just usable (Helliwell & McMahon, 2010:35).

Uhlir, (2006) further noted that “*open data and their organisation and curation in research data repositories can generate multiple benefits*”. Hruby et al. (2013) mentioned that having a CRDR also improves the quantity and quality of publications in that specific field.

Moreover, the authors also reported their experiences in implementing and evaluating a CRDR for the urology department at Columbia University, in the United States of America (USA), and revealed that “*the implementation of the CRDR correlated with an improvement in both the quality and quantity of departmental publications on retrospective studies*” (Hruby et al., 2013:566).

The author’s findings confirms that “*these contributions from the CRDR directly led to an increase in quality and quantity of publications in the department*” (Hruby et al., 2013:566).

Furthermore, UK-based study was undertaken to measure the value and impact of research data repositories (Beagrie and Houghton, 2016 cited in OECD, 2017:16).

The outcomes from the study reveals that “*there is substantial and positive impacts, not only reducing the cost of conducting research, but also enabling more research to be done, to the benefit of researchers, research organisations, their funders, and society more widely*” (OECD, 2017:16).

According to the OECD (2017:16) the users of these data repositories come from various sectors and fields which involve government, non-profit and commercial sectors etc. (Beagrie and Houghton, 2016 cited in OECD, 2017:16).

Notwithstanding these benefits of having a CRDR, there are significant challenges in establishing such platforms (Gordon et al., 2015:3). Some of these key issues involve the following “cost involved in operating CRDR, data ownership risk, legality and privacy issues” (Gordon et al., 2015:3; Weerakkody et al. 2015; Dwivedi et al. 2015; Osman et al. 2014:56).

Another concern is that, despite occasional initiatives to encourage the use of CRDR, either by means of events such as workshops and conferences, not much is known about the predictors that influence users’ perceptions, willingness, ability and intention to use CRDR. CRDR is an emerging field and the acceptance and use of it has not received much attention in the extant literature (Dwivedi et al. 2015).

CRDRs have been proven to reduce the cost of researching by encouraging re-usability of evidence-based data to design interventions (OECD, 2017:15). However, the NGO Education sector, particularly in South Africa, has not had the benefit of a CRDR, leading NGOs in the education sector to duplicate efforts (Volmink and Van der Elst, 2019:8).

For these reasons, this present study is an attempt to understand the role CRDR could play to solve NGOs problems and improve their effectiveness. This study also emphasises that in order to design evidence-based interventions CRDR a would be helpful not only to NGOs but also their funders.

Methodology and Scope of the Study

The paper attempts to discuss whether the lack of a CRDR affects the overall effectiveness of NGOs in the education sector. The paper also discusses the practices that support centralised research data repositories.

It further acknowledges the existing initiatives to build data repositories in the education space across South Africa, and attempts to examine how collaboration between government, donors/funders, academic institutions and NGOs could assist in building an effective CRDR for NGOs in education.

Importantly, the discussions and analysis presented should be interpreted as an initial attempt to contribute to the effective formation of a CRDR for NGOs working in the education sector.

This paper presents a conceptual study of the landscape of the education NGO sector involving a literature review on the effectiveness of NGOs in addressing the challenges faced in the education sector.

The review is based on the latest DBE information, including education legislation, regulations and policies, from central-level education authorities at the national level.

The search for peer-reviewed articles and documents was conducted via online resources. These databases included *JET Education Service online resources, Africa Portal, Academic Search Complete, UNESCO Digital Library, HSRC online*



resources, JSTOR, Sage Journals, OECD online Library, and SANGONeT online resources.

Google Scholar was also employed to find open access articles. The subsequent search terms were used to locate articles specific to this study: *NGOs effectiveness, Centralised Research Data Repository, Evidence-based practices, NGOs partnerships etc.* Variations of these terms were used to ensure exhaustive search results.

Moreover, various NGO-related articles and books were consulted, and the researcher's knowledge and experience in the NGO environment also played a role. However, since the issues related to evidence-based interventions and data repository systems in the NGO sector are intricate, this paper focuses on fundamental knowledge about the actors involved in the evidence-flow.

In the context of this study, actors involved in these processes may be classified into policy-makers (e.g. governmental departments), non-profit organisations (NGOs, NPOs, etc.) researchers, (universities, research agencies, consultants, think tanks) and donors (funders). 5

The Developmental Role of NGOs

NGOs are described as *"private organizations that pursue activities to relieve suffering, promote the interests of the poor, protect the environment, provide basic social services, or undertake community development"* (World Bank, 1995:16).

NGOs play a major development role in developing nations (World Bank, 1995). As noted by Volmink and Van der Elst (2019:8) *"they advocate for policy change and are often the vehicle for community participation in policy and political processes"*. Where governments do not have the capacity for change, NGO's and the ability to innovate, are well-placed to test new solutions to ongoing social and economic problems.

Volmink and Van der Elst (2019:9) further point out that NGOs *"can also serve as a conduit for financial assistance from developed countries"*. Because of existence in most countries, both short and long-term political dialog and national approaches are needed to clarify NGOs' position and effectiveness.

Rose (2006:456) further argues that *"in many developing countries, governments are willing to tolerate NGOs but they are less keen to explicitly encourage NGOs engagement as this may be interpreted as governments forgoing their responsibility"*.

Consequently, NGOs are often misdefined and their activities are performed in a policy vacuum.

As indicated by Fielden and Larocque (2008), it is important to define the role that NGOs should be playing as a whole so that they can make a positive contribution to the national educational development agenda.

This might include providing specific guidelines on the type of actors that can function and guidance on how they should contribute to achieving the educational objectives of access, performance, equity and cost-effectiveness (Fielden and Larocque, 2008).

Brief Overview of the Education NGO Landscape in South Africa

An international report by Ulleberg (2009:344) indicates that *"NGOs have become the main service providers in countries in which the government is unable to play its traditional role. In the educational sector, several NGOs have gone beyond innovation and capacity building gap-closing initiatives. Indeed the South African education landscape is a case in point"*.

According to Lombard (2008:124) *"the success of NGOs actions in South Africa is also evident in schooling of underprivileged children; communities in remote locations; scheduled caste; scheduled tribe and other children that face social barriers in education"*.

Statistics South Africa (Stats SA) has shown that 127,000 Non-Profit Institutions (NPIs) also known as NGOs were registered in South Africa in 2014 (Stats SA, 2015). *"The sector is comprised of organisations of varying sizes and mandates that operate across multiple domains in both the formal and informal economy"* (Stats SA, 2015, cited in Volmink, and Van der Elst, 2019:6).

In addition, an estimated 50,000 NGOs are unregistered (Volmink, and Van der Elst, 2019). Education NGOs constitute approximately 6% of the sector, which translates into 7600 education NGOs in the sector (Stats SA, 2015, cited in Volmink, and Van der Elst, 2019:6).

NGOs in South Africa have often been at the forefront of promoting universal education as a basic human right. At the NGO leadership Summit organised by the NECT in 2016, the Minister of Basic Education (Angie Motshekga) affirmed the importance of NGOs to the common vision, observing that NGOs play a critical role in achieving the goals stipulated in the NDP (Motshekga, 2016).

The summit participants supported this view strongly. Volmink and Van der Elst (2019:5) also added their views that *"there is a national consensus that implementation of the education vision and priorities set out in the NDP require a strong and active NGO sector"*.



Education NGOs Challenges in South Africa

However, the work done by NGOs to achieve the position of equitable and quality education for all is limited by various factors.

To mention one, funding is a concern for many NGOs in South Africa. Undoubtedly, the effectiveness of NGOs especially in the education sector are increasingly being endangered by an enormous of factors, the massive one being of funding. In 2012, Davies (2012:1) pointed out that *“the country’s NGOs are experiencing funding problems, as donations, particularly from individual and private donors, have diminished substantially”*.

Because of reduced private and corporate donor funding, *“many NGOs have sought more funding from the government to keep afloat, ultimately creating increased competition among NGOs for government funds”* (Davies, 2012:1)

Another concern faced by NGOs working in the education sector involves the growing politics in the education system which intervenes in the performance of the NGOs in the education space. As reported by the Mail & Guardian, (2012:5) there is a lack of trust between the government, South African Democratic Teachers’ Union (SADTU) and NGOs.

For instance, The Mail & Guardian newspaper in 2012, reported how the SADTU, accused some of the NGOs in the education sector of pushing neoliberal agendas through their use of foreign funding.

The SADTU General Secretary, Mugwena Maluleke, further stated that NGOs are working with other political parties’, and declared that, *“they are driving an agenda that education is a national crisis and using education to destroy the confidence of the public and the government”* (Mail & Guardian, 2012:6).

In summary, a government critic to NGOs’ is also understood as a reaction to those NGOs who expose government’s shortcomings. To resolve such matters, it is of importance to establish strong partnerships between these actors, since they are all working towards a common goal. The CRDR should offer such an opportunity to bring these different actors together.

Lack of partnerships between NGOs working in the education sector is still lacking in South Africa. This consequently led to *“negative competition for resources then undermines the effectiveness and reputation of the sector”* (NASCEE, 2019:1).

Nevertheless, as pointed out by JET Education Services (2013:34) *“If the goals are larger than the individual organisations, this should clearly not be the case. Networking need not always take the form of distracting activities, but rather can be activity that shares best practices and puts mission and vision ahead of mere survival”*.

Volmink and Van der Elst (2019:15) also add that *“collaboration and the sharing of knowledge amongst NGOs are equally important when impact at the level of the system is sought”*.

An additional challenge identified through documents review in this paper is the absence of an effective CRDR for NGOs in the education sector, enabling NGOs to demonstrate their collective effectiveness. The lack of CRDR also implies that most NGOs do not share best practices and information about their interventions, which leads to replication of ineffective efforts in the sector.

For example, in 2013 JET Education services reviewed Teacher development initiatives implemented by NGOs in South Africa and found out that they have been characterized by challenges such as fragmentation, duplication of effort, waste of resources, lack of relevance, and poor quality (JET Education Services, 2013).

Duplication of efforts in the NGO sector is a major problem because it undermines the reputation of the sector and the effectiveness of NGO activities in the country; it also causes an inability to learn from experienced NGOs in the education sector (Naidoo, 2004).

Volmink and Van der Elst (2019:15), argues on this issue that, *“most NG interventions have very little or no systemic impact in the education sector, due to duplicated, uncoordinated interventions by NGOs”*.

The authors also mentioned that *“another reason for the lack of systemic impact is the lack of adoption by the system of successful practice, both in terms of policy and implementation, because of insufficient knowledge dissemination about innovative, cost-effective and successful projects”* (Volmink and Van der Elst, 2019:15).

Moreover, the absence of a CRDR makes it difficult to measure and compare different field activities carried out in different remote locations by NGOs. For instance, it becomes challenging to measure the efforts of NGOs that promote and advocate for quality and equitable education, particularly in rural areas.

Although there are some attempts in the part of the country to collaborate and share data (for instance, the EduCollaborate Portal in the Western Cape), some are provincial-based, and only functional on a provincial level. Therefore, to enhance the efficiency of the NGO sector in the education space, there is a need for an appropriate national platform that all education NGOs working in different parts of the country can utilise.

Furthermore, some of the greater challenges affecting the NGOs sector have to do with the shortage of using M&E and EBPs approach to demonstrate the impact.



NGOs in South Africa need to strengthen their approaches by using M&E and EBPs systems to demonstrate their impact and thus improve their chances of getting funds from individual and private donors and the government.

As noted earlier, using EBPs also improves the likelihood of achieving desired outcomes. Therefore, it is of paramount importance for NGOs in the education sector to collaborate with the government and promote the culture of EBPs to improve their collective effectiveness.

This could be achieved by establishing a CRDR of EBPs shared amongst all education NGOs who share a common goal for public good.

Understanding and Explaining NGO Effectiveness

In less developed nations such as the African countries, NGOs have proliferated in size and number. However, it is not clear whether NGOs' explosion and growing importance is balanced with a related development in their effectiveness (MacLean et al., 2015).

There is little support in literature in this regard, with academics like Walsh and Lenihan (2006) and Smillie (1999) refuting the effectiveness of NGOs, arguing that NGOs lack effectiveness in developing countries because they “typically have weak organizational structures coupled with the lack of well-organized civil society and a weak state infrastructure” (Walsh & Lenihan, 2006:412).

They further remark that “NGOs should adopt the organizational structure of for profit organizations in order to be effective, yet do so without subjecting their suggestion to field testing” (Walsh & Lenihan, 2006:213).

Moreover, it is difficult to assess the work of NGOs in general because they encompass so many different types of organisations varying in size and effectiveness. For example, institution like BRAC2, which runs a large proportion of community development programmes in Bangladesh, is a case in point (Smillie, 2009).

According to the Overseas Development Institute (ODI) (1996), “there is nothing new in suggesting that it is difficult to assess NGO effectiveness or that few NGOs have been able to demonstrate long-term impact” (cited in Madon, 2000:67).

Also, it seems natural that NGOs are diverse organisations guided by values. But as argued by Davies (1997:613) “they are hard to classify and group and therefore it is difficult to find agreed standards and elements of practice that can apply across all types”.

BRAC concentrates on community development through village development programmes that include agriculture, fisheries, cooperatives, rural crafts, adult literacy, health and family planning, vocational training for women and construction of community centres.

The work of NGOs in the developing world is known to be reaching approximately 250 million people in areas such as food safety, growth of the economy, human rights, gender, climate and agricultural development, among others (Kabir, 2000; Weiss & Gordenker, 1996:17, cited in Kang'ethe & Manomano, 2014).

Stuart, (2013:13) point out that “In South Africa, an innumerable number of NGOs are usually service driven and undertake services such advocacy, education development, gender empowerment, HIV and AIDS prevention and human rights”.

For instance, within the education sector, the role of NGOs in promoting equal and quality education is notifiable and inevitable, mainly because education is an enormous government mandate,(for example, the development of teachers alone poses a huge challenge).

As such, the government needs NGOs' support, and through aligning their work with the NDP, NGOs can help the government to achieve its goals. Volmink and Van der Elst, (2019:4) also noted that “this necessitates critical reflection on the effectiveness of the NGO sector and its contribution to improving education outcomes in support of the NDP”.

Because of their diversity and complexity, it is therefore important that these NGOs engage in partnerships and network initiatives to improve the sector's effectiveness and enhance the impact of their work.

This can be achieved effectively by having a CRDR in place for, enabling individual NGOs to share their work with the NGO community and contribute to the sector as a whole. The establishment of CRDR will also encourage a culture of sharing research-based information and improve the use of evidence to inform the designing of interventions in the education sector.

Evidence-Based Practices (EBP) to Demonstrate NGOs Effectiveness

According to Davies (1999:108) “evidence-based practice is an approach which helps people makes well informed decisions about policies, programmes and projects by putting the best available evidence at the heart of policy development and implementation”.

According to Niemi (2007:93) “the aim of research/evidence-based practice is promoting economic competitiveness and social cohesion by improving educational resources, structures, and practices”.

The use of evidence can further enable NGOs to assess, enhance and expand their programming and make a contribution to the broader knowledge base by integrating research into their work (Sayed, Kanjee & Nkomo, 2013).

To practice this could suggest that NGOs develop an internal research strategy that directs their work and for which they can



directly receive funding, including building expertise within their organisation and among their partners. As argued by Peirson et al. (2012:8) *“the leadership of NGOs must acknowledge the need for evidence-informed approaches and allocate the necessary resources e.g. finance, protected time and adequate expert staffing”*.

NGOs have been caught up in contentious debates around evidence in evaluation and impact assessment. The reason for this is that NGOs are being assessed on their capability in implementing projects. Financing organisations measure an NGO's capacity through its history and success stories (Ravallion, 2009).

Under these conditions, NGOs have no choice but to improve their performance by various means. They must show that they have not only experience in certain development issues, but also the capacity to execute larger projects correctly to achieve the desired targets. Thus, the establishment of a CRDR for the sector will support them with an opportunity to learn from each other and be able to be able to implement larger interventions across the sector.

In South Africa, government agencies, private philanthropies and academia trying to address the deficiencies in the education sector have reviewed the evidence emerging from the numerous policies and programmes implemented over the years in South Africa.

For example, the Zenex Foundation, a prominent education grant maker committed to evidence-based programming, commissioned evaluation organisations to conduct evaluations of education interventions in South Africa that the Foundation supports (Roberts & Schollar, 2011).

When it comes to education interventions, the development outcome most frequently used to measure progress is 'learner achievement' (Roberts & Schollar, 2011). This is traditionally measured through the indicators of *'test scores'* or *"pass rates"* (Hattie, 2009).

In South Africa, most learning assessments are designed and implemented by experienced evaluation and research organisations such as the Human Science Resource Council (HSRC), JET Education Services (JET) and Eric Scholar and Associates (ESA) (Bloch, 2009; Mouton et al. 2013; Sayed et al., 2013; Taylor & Vinjevold, 1999).

However, few evaluations are done looking at the impact of initiatives at the level of outcomes as real changes (behavioural, institutional, social-economic) in the recipient population.

Like in most parts of the developing world, most education evaluations in South Africa are non-experimental (Hattie, 2009).

Many studies popularly referred to as impact evaluations are actually case studies where beneficiary outcomes are observed only after the intervention (Roberts & Schollar, 2011). More

advanced evaluations have conducted baselines and are able to measure change before and after intervention, but these are relatively few (Bamberger, Rao & Woolcok, 2010).

This is therefore an issue for the interventions undertaken by the NGOs, because if they cannot demonstrate the impact of their work, it is difficult to convince potential donors on why they should be funded.

To deal with these issues around use of evidence and demonstrating impact, NGOs working in the education sector, will have to fully maximise the benefits of a CRDR, which will enable them to use evidence-based practices by sharing and accessing research-based data from the platform.

This will also enable NGOs participating in such a platform to effectively use the CRDR to compare, plan, re-evaluate (meta-analysis), and their work when designing interventions. In the same line the NGO sector as whole will be able to enhance their evaluation approaches that will allow them to demonstrate the impact of their work.

The next section discusses the advantages and principles of CRDR for the NGOs working on the education sector.

The Value and Benefits of CRDR for NGO Education Sector

There are numerous benefits, in adding together to the cost-effective benefits, which are promoted through CRDR. According to CODATA, (2015) these also take account of better research, enhanced educational opportunities, and improved governance.

Moreover, by sharing research data and other research materials, third parties (e.g donors/funders) can assess research knowledge based on CRDR. Simons and Richardson (2013:64) also point out that *"accurately generated and curated datasets can be reanalyzed to validate research findings or reused and repurposed to answer different research questions"*.

The authors argue that *"if datasets are easily accessible, new discoveries are facilitated and duplicate work can be reduced"* (Simons and Richardson, 2013:65). This section specifically examines the benefits and values of CRDR for the NGOs working on the education sector.

NGOs in the education sector nowadays are often distributed over an immense geographic region and handle a wide variety of projects. For each project, data needs can be very different. For example, as argued by Aldashev, Limardi & Verdier (2015:34) *"data requirements for a governance project will vary drastically from an education based project"*.

Depending on the nature of the intervention/project, both macro and micro specifications may exist.

Cross-cutting problems may often allow information from various projects and events to be consolidated. For this reason



CRDR can be of value and benefit to the NGO sector by permitting data from various projects and proceedings to be aggregated.

Moreover, as argued by Aldashev & Navarra, (2014) NGOs do not work for a long time with the same funder. As a funder changes, data and reporting demands may also change, even if the same procedure is continued but with another funder.

This also implies that the new funder might require recorded or evidenced-based data for comparisons, evaluation, planning and decision-making. Thus, with an absence of CRDR in the NGO sector, to provide such data might be difficult for other NGOs. The CRDR will also provide funders and donors with an opportunity to access different interventions undertaken within the education sector and assist them by making better-informed investments.

Furthermore, the CRDR will also enable individual NGOs to be more effective by allowing each NGO to learn from the experiences of others and by creating a body of knowledge that all stakeholders can draw on. demonstrated in Figure 1 below, the CRDR will assist to create value for the individual NGO to be more effective by adopting best practice in the NGO sector.

Additionally, the CRDR will enable the entire NGO sector to become more effective in dealing with education crisis by sharing knowledge, comparing, finding commonalities, and differences in research outcomes. The figure below shows a simple illustration of the areas in which a CRDR could assist NGOs.



Figure 1: Centralised Research Data Repository for NGOs

As depicted in the above figure, the CRDR could serve as an important mechanism to provide useful and credible data the individual NGOs require for intervention purposes in the education sector.

Additionally, the CRDR might improve assistance in strategic and sustainable decision-making and enhance the overall effectiveness of the entire NGO sector. With the availability of the CRDR, individual NGOs get a competitive advantage to attract more projects funds, skilled employees and suitable projects in the NGO sector.

Another issue to consider is that interventions based on research and evidence are expensive and, if funding is limited, the first cut for most NGOs is to the research budget, because the first goal for them is to ensure that projects are ongoing.

As such, having a CRDR in place will provide NGOs with an opportunity to utilise the platform to conduct evidence-based studies at that are cost-effective.

As mentioned in the review of the literature, CRDRs have been proven to be effective in reducing the cost of conducting research (OECD, 2017:15).

Thus, this will benefit the individual NGOs who have limited funds to conduct evidence-based projects in the education space by allowing them access to research-based data generated from the platform.

Moreover, availability of a CRDR for the education NGOs sector is important to encourage collaboration and partnerships amongst NGOs, and other stakeholders in the sector. Having a CRDR ensures greater levels of coordination among education interventions by NGOs, adopting successful practices in the sector, and making a commitment to learn from experience (BRIDGE, 2018).

More importantly, CRDR will close the gap between the work performed by most NGOs concentrated in big cities and those working in rural areas and measure their contribution in the NGO sector. The next section discusses the importance of collaboration for successful CRDR and improvement of NGO effectiveness.

Need for Collaborations to Enhance NGO Effectiveness

There is not a large body of literature on collaboration between NGOs, academic institutions, funders and government. This is peculiar since these four types of actors interact extensively (*see Figure 2 below*).

This may possibly be due to the fact that NGOs operate in a very competitive environment and feel compelled to protect their own intellectual property and funding sources. Thus, under these circumstances, there is a need to incentivise NGOs to share information in the interests of a bigger commitment to the public good.



According to Sullivan and Skelcher (2002:143), “collaboration gives practitioners and researchers room to permeate organisational and scholarly boundaries in order to spur inter-organisational, sectoral or intergovernmental partnership through vertical and horizontal engagement”.

The underlying assumptions of collaboration are that it requires shared interests, shared motivation and common goals, and that collaborative partners have the same vision in a given research project.

For NGOs to successfully drive the NDP priorities through their work, collaboration with other stakeholders is essential, and it is necessary to understand how these partnerships operate.

As argued by Kukundakwe (2013:25) “different factors motivate NGOs to form partnerships, among them the search for financial aid or resources and the shared need to address community needs”.

More importantly the collaboration between NGOs and other stakeholders can assist in building an effective CRDR for the sector. Moreover, it is also important that funders include resources supporting collaborative processes (e.g. sufficient time for the formalisation and development of a relationship, workshop and meeting resources, etc.), rather than simply putting CRDR in place.

This is also another way of getting these actors mentioned above to cooperate. Stevens et al. (2013:1072) concluded, based on a comparative study of nine joint NGO-university initiatives, that “funders (research councils, foundations and donors) should provide more funding for innovative and long-term collaborative research”.

There is also a need to incentivise individual NGOs to rigorously evaluate the impact of their programmes and publish and share their findings with the NGO community, even (especially) when they are negative.

Negative findings will warn stakeholders not to go down the same route. Therefore, supporting NGOs would include providing funds to promote the use of evidence and to assist NGOs in creating strategies to enhance the use of evidence in their interventions.

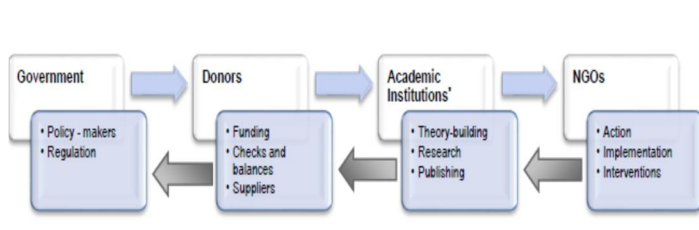


Figure 2: NGOs, Academic Institutions, Donors and Government Interface

As depicted in the above figure there are a lot of linkages and flow of evidence-data in the collaborations between the actors mentioned above (Volmink and Van der Elst, 2019:9; Sullivan and Skelcher, 2002:143; Stevens, Hayman, and Mdee, 2013:1072) which can effectively assist in the formation of a CRDR.

Although the CRDR might be a benefit to NGOs and the sector as whole, as highlighted earlier, partnerships is identified as a challenge between these actors (Volmink and Van der Elst, 2019:9).

It is often feared in the NGO community as a potential source of competition for limited funds. In this manner, most NGOs will become hesitant in contributing data to CRDR. This is a major cause of concern since NGOs already have several issues in collaborating and sharing data (Volmink and Van der Elst, 2019:9).

The paper proposes that the CRDR should become regulated and coordinated by a national institution to deal with the above mentioned. In this regard the DBE as a government department should be at the centre of regulating such a platform (see Figure 3 below).

Moreover, the DBE should adopt a policy document that will guide and coordinate the CRDR. According to Martin & Ballar (2010:112) a policy document in this context “is a paper that expresses a guiding framework for a CRDR regulating different aspects of the implementation or operation of the repository”.

The policy document should also highlight clear information in terms of data security issues, so that NGOs can share their data without any hesitation. In addition the CRDR should be proactive to adopt a standard license that will give assurance for NGOs to contribute to the CRDR without fear.

Lastly, for this CRDR to function more effectively, the DBE should adopt a policy-agenda that will direct these different actors to undertake and engage in interventions that are a priority in the education sector.

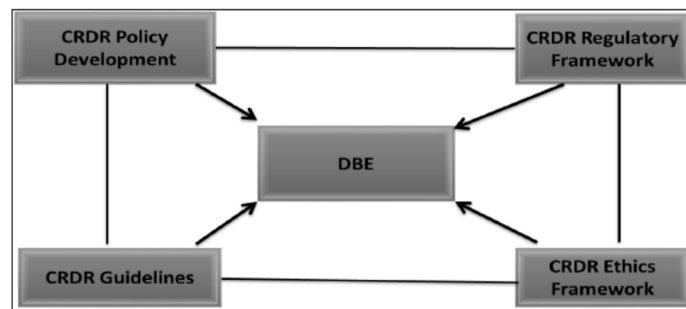


Figure 3: DBE's Position within the CRDR



In order for DBE to coordinate the CRDR more effectively, extensive consultations with relevant key stakeholders are essential when developing the CRDR policy. It is also important to recognize the characters that different actors would act and meet as many as possible of all the actors' necessities and requirements.

According to Martin & Ballard (2010:112) *“this is an important step towards ensuring wide-spread buy-in and adoption of the policy”*. Lastly, as stipulated by Martin & Ballard (2010:112) it is of paramount significance to adapt *“a clear stated policy facilitates ease of use by all the various stakeholders. The policy should address data management planning, the management of active data, and the selection of data for long term preservation and the accessibility of data through the use of the CRDR”* (Ballard, 2010:112).

Initiatives That Supports Collaboration and Sharing of Evidence-based Data

Few initiatives that might be useful in support of a national CRDR have been identified in this paper. Some of these initiatives are created and limited according to their scope of work and focus, others are provincial based (e.g. *EduCollaborate*), organisational based (*BRIDGE*) and institutional-based (*EMIS*).

Hence, this paper proposes a national CRDR that should be optimally utilised by all the NGOs in the education sector and other relevant actors.

These initiatives are briefly discussed below.

The EduCollaborate Portal in the Western Cape, which is an initiative by BRIDGE and the Western Cape Education Department, hosts data about NGO work done in support of schools in the Western Cape Province. The data on this platform supports collaboration and coordination with the province of Western Cape. *“It further helps to reduce duplication, and supports the sharing of resources and allows education stakeholders to all work together and with greater knowledge about the many innovations of the NGO sector in the Western Cape”* (wcedportal:2020).

Another initiative that encourages data-sharing and collaboration is the Data Driven Districts Dashboard (DDD) programme. The DDD programme works in partnership with the DBE to support improved learner outcomes through the increased quality, availability, analysis and use of education data (Mail & Guardian, 2019).

It does this by collecting school-level data from the South African School Administration and Management System (SA-SAMS), which the department has provided free of charge, and visualises this data on the DDD dashboard, a web-based reporting and analysis tool (Mail & Guardian, 2019).

The Dashboard is reported to save NGOs and education partners time by conducting M&E activities. It also allows them to guide their interventions into more impactful spaces and complement existing intervention methodologies (Mail & Guardian, 2019).

The Education Management Information System (EMIS) is a function and unit in the DBE responsible for developing and maintaining an integrated education information system for management of education. *“The EMIS collects data from various sectors within education such as Ordinary Schools, Adult Education and Training, Inclusive Education, Early Childhood Development and Further Education and Training institutions”* (DBE, 2010:21).

BRIDGE is a non-profit organisation based in the Gauteng province; its mandate is to drive collaboration and co-operation among stakeholders in education to increase their collective impact on the system.

In 2017, BRIDGE conducted an evaluation to determine their progress towards maximising resources and reducing the duplication of resources in NGO education space as part of their high-level outcomes.

The evaluation shows a number of interventions and projects BRIDGE have brought together as they share common goals in the NGO education sector. The evaluation found ample evidence showing that BRIDGE is filling a unique gap linking policy and practice, maximising resources and reducing duplication, and spreading effective practice in each of its focus areas.

This was done through BRIDGE activities such as convening and facilitating CoPs and other sharing events, participating in partnerships and creating links, compiling and synthesizing research and managing knowledge (BRIDGE, 2018).

Other mentioned initiatives such as NECT and NASCEE, were developed with an aim of strengthening the role of NGOs by encouraging collaborations and partnerships in the education sector.

There are also, committed to empowering education NGOs by improving their capacity, effectiveness, and collaboration in dealing with education matters (NECT, 2018; NASCEE, 2019). Based on these above discussed initiatives, some lessons can be drawn on how a successful national CRDR will be fully optimised by all NGOs and relevant stakeholders working in the education sector.

The aim is to extend this platform to all stakeholders working on promoting quality and equal education in the country.



Case Examples of Successful CRDRs

As mentioned earlier in section two of the paper, the author could not find literature that pertains to how CRDRs are improving the effectiveness of NGOs specifically in the education sector as well in general. However, a body of literature on how CRDR enhances the effectiveness other institutions such as universities, research councils and libraries has been identified in this paper (Banzi et al. 2019:2; Helliwell & McMahon 2010:36; Gurstein, 2011:6; Hruby, et al.,2013; OECD, 2017:16).

As such, the argument made by this paper is that the CRDR if design and implemented effectively can also be of value in improving the effectiveness of the entire education NGO sector. Some of the case examples of successful CRDRs in other sectors are briefly presented below.

A case example of a successful CRDR that earned recognition in genomic science, is the *Bermuda Principles* “that were adopted in human genetics in the framework of the Human Genome Project in 1996” (Kaye, Hawkins, Vries & Boddington, 2009:331). These principles require that “all human genomic sequence data generated by centers funded for large-scale human sequencing should be freely available and in the public domain to encourage research and development and to maximize the benefit to society” (Smith & Carrano, 1996:54).

“Over time the pre-publication of data comes off as common practice, i.e. gene sequences are made openly accessible prior to the description of them in a peer reviewed article” (Kaye, et al. 2009:331).

Another case example of a successful CRDR initiatives involves a large scientific projects, is research on a disease-causing strain of the *Escherichia coli* bacteria (Check Hayden, 2012:334). According to Check Hayden (2012:335) “the bacteria caused more than 4, 0004 people to fall ill in Germany in 2011. The publication of sequence data under a Creative Commons license enabled scientists all over the world to make research contributions to a rapid investigation of the bacterium through a CRDR platform”.

A further example of successful is the one on the Urology Department at Columbia University. Hruby et al., (2013:566) executed a surveying examination of the CRDR’s effect by comparing the research capacity of the department of urology during a pre-CRDR period (2005–8) and a post-CRDR period (2009–11), the analysis involved measurements about, user satisfaction and adoption, workflow efficiency, publication quantity; and publication quality.

The CRDR operation resulted in “the emergence of a new research model that transformed the research workflow and improved research efficiency of the department on multiple levels” (Hruby et al., 2013:566).

Henderson and Knott (2015:48) examined another CRDR at Virginia Commonwealth University libraries. The authors have found that CRDR has improved these libraries' effectiveness by engaging in collaboration of sharing, handling and publishing and reusing datasets (Henderson and Knott, 2015:48).

Moreover, the CRDR has proven to be successful at the UK universities. The two Universities (St Andrews and Glasgow) designed their own CRDR to deliver services to support the rapidly evolving needs of funders, institutional policy makers and management, and, importantly, the researchers.

The outcome from this initiative revealed that the CRDR had “substantial and positive impacts, not only reducing the cost of conducting research, but also enabling more research to be done, to the benefit of researchers, research organisations, their funders, and society more widely” (OECD, 2017:16).

Considerations for Building an Effective CRDR For The NGO Sector

From the review of the literature on attempts to build data repositories in South Africa, certain lessons can be learned. Thus, this paper also considers some of the factors likely to hinder such an initiative moving forward, such as the CRDR not being fully utilised.

The literature review found that even when a CRDR does exist, it is not always used. This might be because of NGOs' lack of time and lack of trust (concerns about data protection) (Hruby, et al., 2013).

However, this paper offers a solution to this, which involves (potential) users, a mix of practical exchange and face-to-face encounters in workshops and seminars to build trust.

Other important factors to consider are the issues of data maintenance and data security. The CRDR will only be of assistance if it is updated, ensures that user expectations are met and provides the most relevant information.

It is therefore suggested that the CRDR should be incorporated into existing structures (e.g. NASCEE) that already function to bring together various actors. On the issue of data security, as mentioned earlier the DBE as a proposed institution to coordinate this platform, should guarantee participating organisations ‘rights to data security.

Studies on the researcher’s perspective showing a broad variety of obstacles that affect scholars’ willingness to share their own data. The comprehensive studies by Kuipers & Van der



Hoeven, 2009 cited in Pampel, et al. (2013:3) shows that the willingness to share data is often strongly related to the need for strong data security. 16

Furthermore, it is also significant to reflect what system of distribution will best ensure that the optimum level of funding will be made available for CRDR (OECD, 2014:12). The CRDR should be developed and maintained through commitment and investment. *“It could be financed by stakeholders that understand the need for NGOs to be involved in research-based interventions and the benefits of such collaboration; these could include government, funders, and NGOs themselves”* (CoreTrustSeal, 2016:34).

Moreover, the CRDR should be user friendly and data entry should be easy and interesting so that NGOs would be interested in entering and actively participate in it. It is also significant to ensure that the design of the CRDR should be flexible enough to accommodate all the different kinds of projects undertaken by NGOs in the education sector (Austin, Brown & Fong, 2015).

Setting up a CRDR for the NGOs sector would also require developing specific skills, assessing requirements, and developing a CRDR that will address the collective expectations of all different stakeholders.

Findings of Study

The government and private sectors have sought to solve the problem of significant academic backlogs in South Africa through increased investment, creative models of education, focused school improvement programmes, ambitious educational policies and various programmes introduced by public and private sector institutions.

Despite the amount of funding, innovation and policies invested in education, many studies on evaluation of education projects, have shown once again that very few initiatives have had a significant impact on learning results in the South African education sector (Bloch, 2009; Taylor, Muller & Vinjevold, 2003; Hattie, 2009).

The primary objective of this paper was to ascertain to what extent the lack of a CRDR affects the overall effectiveness of NGOs in the educational sector.

The study found that the literature remains largely focused on the potential of CRDRs to bring about positive impacts in areas such as clinical research repositories (Banzi et al. 2019) and research-libraries repositories (Gordon et al. 2015).

However in other areas such the NGO sector, there is minimal literature for the efficacy of CRDRs, which then present an opportunity for this paper to contribute specifically on that field.

In spite of benefits that come with data repositories (Peer & Green, 2012; and Uhlir, 2006), this paper found that NGOs working in the education sector, particularly in South Africa, have not yet started to establish a national CRDR.

Moreover, through extensive review of NGO documents and literature, it was also found that NGOs have a tendency to replicate interventions that the government is already effectively doing (Volmink, and Van der Elst, 2019:16), leading to cost-inefficiency and ineffectiveness of the NGO sector.

Limitations of Study and Implications for Future Research

As stated earlier, the analysis and findings from this paper should be interpreted as an initial attempt to contribute to the effective formation of a CRDR for NGOs working in the education sector.

This paper acknowledges that there might be other attempts of building repositories in South Africa, which the study might not have touched on. The paper, therefore, calls for further research by interested parties, including policy-makers, NGO practitioner, consultants, funders and academics, into the methods and assessment criteria that can be used in designing a national CRDR for the NGO education sector.

Recommendations

This paper attempted to contribute to the evidence-based education research and policy in the NGOs sector in South Africa. A variety of assessments have been made with different methods, degrees of reliability and scientific rigor of education programs in South Africa (Mouton et al., 2014, Kanjee et al., 2013, Scholar & Roberts, 2008).

Nevertheless, this paper recommends that policy-makers, NGOs, donors and other relevant stakeholders in the education sector need empirical and systematic measures in order for the efficacy of various programmatic options available to them to be comparatively evaluated.

To improve their collective effectiveness, this paper recommends that NGOs working in the education sector, build their own CRDR to encourage sharing of evidence and knowledge.

This will promote a culture that encourages education NGOs to assess the importance of their work and include the application of evidence-based knowledge as an essential part of education sector interventions.

With the establishment of the existing initiatives in sharing and collaborating data, a solid foundation has started to be built for a strong and meaningful collaboration in order to build a successful CRDR.



Given the extent of coverage and research on what works and what does not, the CRDR could highlight gaps in information and thus issues that are not already being addressed. Moreover, a CRDR could also provide NGOs with an opportunity to assist with evidence-based policy-making by bringing what works in practice in the education sector to the attention of the government.

This paper also propose that NGOs working in the NGO sector should discover points of leverage which, if enhanced, possibly will revolve the whole (or important parts) of the education system around, instead of replicating what the government can and is doing effectively (Volmink, and Van der Elst, 2019:16), thus the envisioned CRDR should be able to presents opportunities and gaps where in the education sector where NGOs could intervene effectively.

Conclusion

During South Africa's 25 years of democracy, there has been considerable continuity in educational policy, increasing awareness of problems and the prioritising of education to tackle the system's inequalities. M&E and EBPs of major initiatives have also begun to play a role in important policy decisions to improve education.

This role has mainly been driven by NGOs with an emphasis to confront the educational problems from many angles, with a higher prospect of finding effective solutions. The vision presented in this paper is the development of a successful CRDR for NGOs working in the education sector, a platform driven by professionals with strong links to research-based knowledge.

The platform would preferably be a combination of a web-based exchange with support from the summit of NGOs, and discussions. The objective is to make the forum an effective tool that enhances the important role of NGOs and their use of evidence-based initiatives and encourages connections between research, action and policy in education.

Finally, this paper hopefully inspires NGOs in the education sector and other sectors to improve the quality of their evaluations and to use the best scientific methods available to systematically plan future programmes, make better-informed investments and improve their continuous efforts in the education sector.

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