Participatory Action Research for engaging schools and communities to enhance relevant learning: the use of 'farm' as a pedagogical resource in Tanzanian rural primary schools

Deltakende aksjonsforskning som strategi for å motivere grunnskoler og lokalsamfunn til å legge til rette for relevant læring: bruk av gården som pedagogisk ressurs i bygdeskoler i Tanzania

Philosophiae Doctor (PhD) Thesis

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°s (2016)

FOR REFERENCE ONLY

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NMBU

Thesis number 2016:54
ISSN 1894-6402
ISBN 978-82-575-1374-0

DATE: 14/12/2016

22/11/2016

Acknowledgement

It started as a dream but now I sense the doctoral work is now at an end. It has been a long journey venturing in to unusual dominion – characterized by both perspiration and enjoyment. Searching for a way out in my career has been important, and life experience is about to bring a new experience that it is almost impossible to silence individual's inner drives that propel him towards his/her destiny. Nevertheless, it could have been inconceivable to have something to celebrate for without the financial support from various institutions and generous educational rewarding encounters with people along the way. It is impossible to list all, but I am deeply grateful for their priceless and diverse inputs. I am convinced that all contributions to this work will endure as I share the knowledge and experience I gained. Let me mention a few who made this undertaking a success, especially through funding and logistical support, guidance, good conversations and encouragement.

First, I extend my sincere thanks to the Government of Norway for granting me a PhD scholarship through the Norwegian State Educational Loan Fund (Lånekassen) under the Quota program at the NMBU. The scholarship supported my living costs in Norway and travel expenses to Tanzania for my fieldwork. Big thanks to the EPINAV program for funding the research part of my study. I also thank the Department of Mathematical Sciences and Technology, Section for Learning and Teachers Education (SLL) at NMBU for providing me office accommodation, facilities, supervision and financial support during my PhD studies. On the same level, a big thanks to my employer SUA for granting me a study-leave during the whole period of my study. I also in particular thank the section leader at SLL for the financial support that enable me attend conferences where I was able to share my findings and learn.

Behind financial and logical supports, there are wonderful people whose guidance, good conversations and encouragement made my dream a reality. There are many who deserve my appreciations-thank you all. However, the following deserve a mention:

My supervisors Sigrid Gjøtterud and Erling Krogh. You deserve special thanks. Your continuous mentorship and encouragement during my PhD study. I appreciate your critical but constructive comments all the way from planning my inquiry, analysis and discussion and publication. You have inspired me to become confident, independent and critical in my academic endeavors. I have really benefited from your professional insights in my development as a researcher and facilitator of change. There has also been a great pleasure working with you in action research (Sigrid) and relational based experiential learning (Erling).Your openness and readiness to approach each of our encounters as a learning opportunity have been valuable for co-creation.

I would also like to thank all staff members at SLL, for their welcoming attitude and support whenever I consulted any for advice at different stages of my work. Special thanks for the Nyandira project leader (Catherine Msuya) and all co-researchers, Nyandira primary school pupils, the Nyandira School community, and other stakeholders for their willingness to venture together and engaging in the processes that provided space for critical reflection and the opportunity to working towards the desired change.

Thanks to the PhD group at SLL by Anne Kristine, Kirsti, Snorre Elisabeth and Vituce for all good conversations. It has been a wonderful experience to share PhD walk with you in both academic and social terms. A big thank you to Sigrid's and Erling's families and social networks; it has been a pleasure to have your moral support and time out. Your company kept me alert but relaxed when you supported my cultural learning trips in some parts of Norway.

To my good friends – Lars Olav Eik, Dismas Mwaseba, Zabron Nziku and action research network- CARN thank you for having been so interested, caring and patient - not to mention that you have continually reminded me that it can always be done.

My final acknowledgements (but not in order of importance) go to my family. I am deeply grateful to my late father, Hamada Lukola and mother, Khadija Ibrahim, for their care and upbringing. Mother thanks for understanding the importance of education. The little my family earned from farming went to paying of my basic education, which paved my way to higher education. My dear wife Zawadi has offered unconditional love and acceptance; she has endured my absence from the family during the time I have been in Norway. Zawadi has sacrificed a lot in taking care of our son Hafidh and our daughter Khadija, who was born in Tanzania a month before I started my PhD studies in Norway. Moreover, to my children Hafidh and Khadija: I am very proud of you. I understand that I owe you a lot in terms of love, care and upbringing. These I will always strive to provide.

Thank you all. Thank you very much.

Morogoro, May 2016
Athman Kyaruzi Ahmad.

Summary

This participatory action research study, founded on Nyerere's idea of education for self-reliance (ESR) and my lived experience with education and community development practices, aimed at developing solutions for enhanced relevant learning at primary education level. Specifically the study strived to facilitate local processes oriented towards larger integration of everyday experiences in learning, using farm as a pedagogical resource. In an attempt to achieve the above, I solidly mapped the school practice and contextual realities and negotiated the desired future of school and community development practices. This I did in collaboration with a research team, consisting of university based members, and actors from the field, such as teachers, parents, community development officers, administrators and local policy makers. This mapping informed the process of development and implementation of an action plan to realize the envisioned future in Tanzania rural settings. We used Nyandira primary school and community as a case. We approached the study from an interdisciplinary perspective embedded in cooperation, participation and democratic values.

The thesis includes three articles corresponding to the main project phases: planning, acting, observing and reflecting. The first article draws from the planning phase of the project and aims to identify theoretical approaches that can support sustainable revitalization of ESR in Tanzania. The article has two parts; the first part advances arguments for revitalization of ESR philosophy to guide primary education in rural areas as an effort to improve learning outcomes both cognitively and affectively. The second part outlines the first phase of the project processes and the significance of democratic and extensive initial consultation with the community.

The second article draws from both the planning and acting phases. Based on comprehensive preparation leading up to a two-day dialogue conference, facilitation and observation of the conference and reflections during and after the conference, we discuss the potential and function of dialogue conferences as a democratic platform for empowering local participants to take responsibility and ownership of change processes. The study reveals that dialogue conferences as a PAR method has immanent potential for uniting cooperative learning, research, and thus opening up opportunities for self-empowerment. However, throughout the processes, we realize that facilitating dialogue conferences requires familiarity with and sensitivity to the contextual and socio-cultural characteristics of the participants and their experiences.

The third article mostly draws from the phases of actions and evaluation. The article discusses the implementation of the collaboratively developed action plan. Central themes covered are the extent to which stakeholders honored commitments made during planning and the degree to which the stakeholders found proposed solutions appropriate in the actual implementation process. Reflecting on the overall project processes, the article highlights the successes recorded, challenges encountered and their mitigation. Overall, PAR well facilitated, can have an integrating function that prompts social connections and establishing of structures for meaningful engagement and bottom up generation of practical knowledge and interventions. In the process, self-empowerment among the participants become possible. We suggest that the use of farm as a pedagogical resource in Tanzanian rural contexts might be a promising strategy for strengthening school-community linkages. Strong links with immediate communities are likely to make schools more effective and relevant. Relevant primary education is an essential condition for development of sustainable livelihoods.

Unemployment and poverty are central social and economic problems facing Tanzania. Youth, the major part of Tanzanian population are more affected. The population growth rate is high, the rapid increase in population do not match with increase in available job opportunities. Unfortunately, current educational system put much emphasis on passing exams than providing opportunities for and supporting learners in their development of knowledge, skills and attitudes needed for life in the actual society. Thus transforming education system is important now. However, solid mapping of the practices, familiarity and sensitivity to contextual realities, strong leadership and quality facilitation as well as cooperation are key factor to address probable challenges.

Sammendrag

Den foreliggende studien baserer seg på deltakende aksjonsforskning. Studien er knyttet til Julius Nyerere's ide om utdannelse for selvhjulpenhet og egne erfaringer med utdannelse og med bygde- og samfunnsutvikling i Tanzania, spesielt erfaringer med å utarbeide løsninger for samfunnsrecevent utdannelse i grunnskolen. Denne studien dreier seg i hovedsak om tilrettelegging av lokale tiltak og prosesser som fremmer integrasjon av hverdagserfaringer i læring i grunnskolen, spesifikt gjennom læringsaktiviteter knyttet til landbruk.

I samarbeid med forskningsteamet, bestående av aktører fra lokalsamfunnet, forskere fra Sokoine University of Agriculture og Norges miljø- og biovitenskapelige universitet, kartla jeg undervisningspraksisen ved den utvalgte grunnskolen i landsbyen Nyandira i Uluguru-fjellene i Tanzania. Videre samtalte jeg med relevante lokale aktører, som lærere, foreldre, utdanningsrådgivere og lokale politikere, om ønskene deres for læringsmiljøet på skolen og for utvikling av lokalsamfunnet. På dette grunnlaget arrangerte forskningsteamet en dialogkonferanse, der de lokale aktørene utarbeidet en handlingsplan med tidsbestemte milepæler for gjennomføring av tiltak. Valget av deltakende aksjonsforskning som strategi for studien har resultert i en tverrfaglig tilnærming basert på demokratiske verdier uttrykt gjennom samarbeid, lokal deltakelse og medvirkning gjennom hele prosjektet.

Avhandlingen består av en kappe som utdyper valg av teori og metode i tre fagfellevurderte og publiserte artikler samt trekker tråder mellom artiklene og funnene i studien. Etter kappen følger de tre artiklene, som samsvarer med fasene i prosjektet. Den første artikkelen tar for seg valg av overordnede perspektiver og forberedelsene til studien. Den andre artikkelen fokuserer på prosessen fram til dialogkonferansen med utarbeidelse av handlingsplan, mens den tredje artikkelen tar for seg gjennomføringen av planlagte tiltak samt reflekterer over resultatet av aksjonsforskningsprosjektet.

Den første artikkelen drøfter teoretiske perspektiver som kan revitalisere og fornye utdannelse for selvhjulpenhet under de nåværende samfunnsforhold i Tanzania. Artikkelen er todelt. Første del utdyper argumenter for å fremme og utforme grunnskoleutdanningen for selvhjulpenhet i rurale områder som samtidig øker elevenes kunnskaps- og holdningsmessige læringsutbytte. Den andre delen tar for seg innledningen til det deltakende aksjonsforskningsprosjektet og betydningen av tett og intens samhandling med lokale aktører i starten av kartleggingsfasen.

Den andre artikkelen følger kartleggingsfasen fram til og med dialogkonferansen over to dager, som det Tanzanianske forskningsteamet under min ledelse både forberedte, tilrettela, observerte og reflekterte over. På dette grunnlaget drøfter vi potensial og grunnlag for å bruke dialogkonferanser som demokratisk plattform for å istandsette lokale aktører til å ta ansvar for og tilegne seg eierskap til endringsprosesser. Drøftingen av funnene tyder på at dialogkonferanse som metode i deltakende aksjonsforskning har potensial for å forene samarbeidslæring og forskning og således kan tjene som redskap for å at deltakerne både kan bygge opp egenstyrke og forent lokal styrke. Vi fant også ut at god tilretteleggelse av dialogkonferanser fordrer kjennskap til og følsomhet for den lokale kulturelle konteksten og deltakernes tilknytning til og posisjon i denne konteksten samt deres erfaringer.

Den tredje artikkelen tar for seg gjennomføringen av handlingsplanen, blant annet i hvilken grad ulike deltakere fulgte opp handlingstiltak de hadde forpliktet seg til å utføre og om deltakerne fant de foreslåtte løsningene gjennomførbare. Artikkelen drøfter utfordringer underveis i gjennomføringen, hvordan utfordringene ble håndtert og effekten av gjennomførte tiltak. I dette prosjektet fant vi at nøye plan- og tilrettelagt deltakende aksjonsforskning kan bygge ut og styrke sosiale forbindelser og lokale institusjoner i meningsfullt samarbeid om nedenfrastyrte intervensjoner knyttet til lokalt relevante kunnskaper og praksiser. Basert på erfaringene fra Nyandira og naboskoler i Uluguru-fjellene mener vi bruk av læringsaktiviteter i landbruk er en lovende strategi for å styrke samarbeid og forbindelser mellom grunnskole og lokalsamfunn i bygdesamfunn i Tanzania. Slike forbindelser kan sannsynligvis gjøre skolenes tilretteleggelse for læring mer effektiv og relevant, noe vi mener er en forutsetning for å utvikle bærekraftige livsvilkår i bygdesamfunnene.

Tanzania sliter med fattigdom og høy arbeidsløshet blant ungdom. Den raske befolkningsveksten motsvares ikke av like rask økning av antallet jobber. Selvsysselsetting blant ungdom er nødvendig for å unngå fattigdom og armod, men utdannelsessystemet fokuserer på eksamener som måler tilegnelse av teorikunnskap og er i liten grad rettet mot kunnskaper og ferdigheter som gjør ungdom i stand til å livnære seg i sine lokalsamfunn. Vår oppfatning er at grunnleggende kjennetegn ved deltakende aksjonsforskning, som kartlegging av, kjennskap til, følsomhet for og hensyntaken til lokale levekår og demokratiske beslutningsprosesser koblet med klokt lederskap, samt fokus på læring for livet er nøkkelforutsetninger for kunne håndtere de utfordringer Tanzania nå møter.

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PART 1: EXTENDED ABSTRACT

LIST OF ABBREVIATIONS AND ACRONYMS

AR	Action Research
EL	Experiential Learning
EPINAV	Enhancing Pro-poor Innovations in Natural Resources and Agricultural Value-chains
ESR	Education for Self-Reliance
ETP	Education and Training Policy
HBS	Household Budget Survey
LGA	Local Government Authority
LGRP	Local Government Reform Programme
NBS	National Bureau of Statistics
NMBU	Norwegian University of Life Sciences
NSGRP	National Strategy for Growth and Reduction of Poverty
ODA	Overseas Development Assistance
PAR	Participatory Action Research
PMO-RALG	Prime Minister's Office–Regional Administration and Local Government
SUA	Sokoine University of Agriculture
TDV	Tanzania Development Vision
UMADEP	Uluguru Mountains Development Project
URT	United Republic of Tanzania
WDC	Ward Development Council
WEC	Ward Education Coordinator

PART 1:
EXTENDED ABSTRACT

1 Introduction

Education is a powerful force for building sustainable communities. In order to build sustainable communities, education systems need to provide opportunities for and to support learners in their development of knowledge, skills and attitudes needed for life in the actual society. In my opinion, the teaching-learning approaches should encourage the learners to use gained knowledge to contribute in solving challenges facing their communities. For this to happen, contextual realities should inform the designing of curricula, and integration of teaching–learning practices in community development services seems to be essential. The Tanzanian education system builds on the heritage of Nyerere, but has faced major challenges the last 30 years. Since 1979, in different capacities, as a student, a community development officer, a teacher at secondary school and higher education, I gradually have developed an experience-based understanding of the system. My lived experience provides an understanding of the Tanzanian context based on a multidisciplinary perspective embedded in democratic values. This is the background, which I draw on when seeking to develop solutions for enhanced relevant learning for Tanzanian children.

This thesis contains six chapters as outlined in section 1.5. Starting with Chapter 1, I have organized the chapter in five sections. In section one, I briefly will summarize Tanzanian social development history under five subheadings. These subheadings are: ESR policy as a foundation of education for community development in Tanzania, Tanzanian socio-economic development initiatives in the post ESR period, a reflection on Tanzanian socio-economic development initiatives during the post ESR period, status and challenges of Tanzania contemporary education system and a reflection on my academic life history, my lived experience. This overview serves to substantiate my approach that seeks to revitalize Julius Nyerere's central ideas: Ujamaa and Education for Self-Reliance (ESR) in contemporary education. In section two, I will present my main concerns underlying the current study after reflecting on my lived experience then I will present justification of the study. In section three, I will present the purpose and research question for the study. In section four, I will provide an outline of the articles in the thesis and thereafter I will provide a general outline of the extended abstract in section five.

1.1 Tanzanian social development history

Soon after independence, the Tanzanian government took robust steps to contextualize and democratize education and community development processes. The policy makers considered community participation to be a crucial drive for development. In "Freedom and Socialism", Julius Nyerere, the first president of Tanzania, wrote:

> 'Development is the participation of people in a mutual learning experience involving themselves, their local resources, external change agents, and outside resources. People cannot be developed but they can only develop themselves by participating in activities, which affect their well-being. People are not being developed when they are herded like animals into new ventures' (Nyerere, 1968, p. xx).

This imply that efforts for engaging citizens to take part in planning and managing their own social and economic development received attention because the policy makers had foreseen

the difficulties for enhancing community development remotely. Thus, the policy makers strived to put in place a policy framework to guide socio-economic community development initiatives, hence the birth of Ujamaa and ESR policy.

1.1.1 ESR policy as a foundation of education for community development in Tanzania

Few years after independence, the Tanzanian government chose '*Ujamaa*', originally the Swahili concept for the traditional extended family, as a path to modern development initiatives. The introduction of ESR policy in 1967 founded efforts to link formal education with community development initiatives. The policy successfully guided the practices through the 1970s. I provide details on operationalization of the policy in *Article 1*. The wave of global political change that took place in the mid1980s fundamentally changed the political, economic and governance systems in third world countries, Tanzania included. The changes influenced the formulation and management of socio-economic development initiatives.

1.1.2 Tanzanian socio-economic development initiatives in the post ESR period

In the early 1990s, Tanzania made an ideological turn from state controlled to free market economy. From this ideological foundation, the policy makers have made considerable efforts to create conducive conditions for the private sector to contribute in enhancing economic and social development to meet national and international development goals.

In this endeavor, the government formulated the Tanzania Development Vision (TDV) 2025 to orchestrate initiatives toward realization of the goals (United Republic of Tanzania [URT], 1999). The vision visualizes high quality livelihoods and reduction of extreme poverty as the main aims. Further, as a mechanism to drive actions to attain vision's aims, the government formulated a National Strategy for Growth and Reduction of Poverty (NSGRP). NSGRP is the framework under which the government conceptualizes plans to develop and implement initiatives for improving citizens' standard of living and social welfare, and enhancing good governance and accountability. The implementation of NSGRP I activities lasted from 2005 to end of 2009, while NSGRP II started in 2010 and ended in beginning of 2016.

The implementation of the vision, which started in the early 2000s, goes hand in hand with amending and formulating new social and fiscal policies accompanied by institutional reforms. Proponents of free market economy stress that for effective market functioning, there should be, if any, a minimal role of state-organized and funded economic activity to allow the free market economy forces to operate. To this end, as I explain in *Article I*, the government formulated and implemented a number of reforms (URT, 2009). The political and economic climate resulting from the reforms, attracted large inflow of foreign aid. For example in 2004, Tanzania received around $1.75bn in net Overseas Development Assistance (ODA), equivalent to 40% of government expenditure: 80% of the development budget and 20% of the recurrent budget (URT, 2006). The aid inflow enabled the government to finance different social development programs and projects since the 2000s. The primary and secondary education and the agricultural sector development programs are examples. The public opinion is ambivalent about the outcomes of the reforms from socio-economic perspectives as presented below.

1.1.3 Reflection on Tanzanian socio-economic development initiatives during the post ESR period

The planning and implementing processes of the development programs, for example in education and agricultural sector, reveal a dependence relationship and detachment from contextual realities. Planning drew largely from external experiences, and the implementation of programs depended on external funding. This means, the central government[1] depended on external donors and local actors depended on central government for resources and guidelines to implement the programs. Besides, for the last two decades, the Tanzanian macro economy has been growing at 6 to 7% per annum (WB, 2014). However, in real terms the economic performance has not transformed the daily lives of the majority of the ordinary people in terms of access to quality services such as water, food, justice, education and healthcare.

Still, according to the 2011/12 Household Budget Survey (HBS), the percentage of the population characterized by basic needs poverty and food poverty is disturbingly high: 28% and 10% respectively. About 84% of the poor Tanzanians live in rural areas (URT, 2014). The HBS data set depicts a gnawing gap between the poor majority and the rich minority. The unemployment rate amongst young people aged 15–24 years is currently at 13.4% (URT, 2013). Note that 65% of the population is youth under 24 years of age. Generally, the quality of public social services related to education and community development has not improved over the last two decades. Because of the demographical distribution mentioned above, the need to improve the education system is crucial. My study seeks to contribute in efforts to meet this challenge.

1.1.4 The Tanzanian contemporary education system: status and challenges

Tanzanian contemporary education system is facing a myriad of challenges amidst the reforms described above (for details see *Article I & III*). Despite the government's desire and aspirations to use education as vehicle for fostering changes in the mind-set of the young generation toward hard work, patriotism, and self-reliance, in practice the opposite happens (URT, 1999). Many Tanzanians perceive education solely as a tool for personal development rather than a tool for societal and community development. In addition, inadequate resources, facilities and poor school infrastructures have affected the education provision practices at all levels. Overall, the education system has failed to develop innovative and creative human resources who can produce enough food in an increasingly unstable environment - among many other tasks that need development. There are many reasons for the failure as I explain in *Articles I& III*. Together with scarcity of educational resources, overemphasis on the importance of examination and persistence of traditional teaching methods are the main ones.

The main Tanzanian experience is that the traditional teaching techniques, such as lectures and direct instructions, have been rather ineffective (Ausubel, 1963; Biesta, 2006). On the other hand, more active and contextual learning process, as developed by Dewey (1929), Lave and Wenger (1991) amongst many, seems to enhance the learning outcomes. The current project, where I, in the spirit of Nyerere's ESR, adopted action research as an approach to develop an example of how primary education can be rooted in the agricultural enterprises of the community, mainly aims

[1] Note that I provide explanation of the concepts: central government and local government in section 2.1 of *Chapter 2*

at enhancing learning outcomes. The study builds on the assumption that pupils learn more deeply if they have the opportunity to engage in "authentic" learning situations - projects and activities that require them to employ subject knowledge to solve real-world problems (Brookhart, 2010; Smeds *et al*, 2015). The "learning by doing" teaching approaches set in familiar contexts, that I promote in this study, underscores the active role of a learner in construction of meaning in the learning process through problem solving, critical reflection and negotiation of the meaning with others. Drawing from my academic life history, I have experienced that learning in authentic learning environment has double advantages. First, this kind of learning seems to improve curriculum-learning outcomes. Second, it helps learners develop endurance, patience and self-confidence. These qualities are useful in dealing with everyday life challenges. As I have said above, Tanzanian contemporary education system is deficient of opportunities to use authentic learning environment in teaching. This situation is threatening socio-economic and political development of Tanzania communities.

1.1.5 Reflecting on my academic life history - my lived experience

Becoming who I am today is a result of a challenging journey. Through this journey, I have realized that as human beings, we have different inborn traits important for personal growth, but they are very hard to discover. Discovering and nurturing these traits is, in my opinion, a responsibility of the society. Teaching institutions are obliged to facilitate the discovery and development of abilities and motivation for personal development. To accomplish this task successfully, the planning of learning experiences should consider a multifaceted nature of learning and therefore provide multifaceted learning environments. As I indicate in my story below, my learning experience in agricultural colleges, that followed principles of an experiential learning approach, contributed highly in shaping my personality. I see my lived experience as valuable reflective material in the search of ways to design pedagogies that, apart from assisting learners develop cognitively, can assist them in developing real life skills and self-confidence that enables them to flourish in life.

Our history and culture precede and construct our self-understanding and self-consciousness (Malcom and Zukas, 2001). Similarly, Glesne & Peshkin (1992:104) argue that 'seen *as virtuous, subjectivity is something to capitalize on rather than to exorcise'*. Drawing from the scholars above, I conceptualized and approached this study. I also agree with Bohm (1988) that the whole world, society and nature, internally is related to our thinking processes through enfoldment in our consciousness. Bohm further emphasizes that, *'research should not separate matter and consciousness as meaning and value are as much integral aspects of the world as they are of us'* (Ibid.: 67). Reflecting on my lived experience helped me to gain a better understanding of research about education in a concrete society and how to approach this kind of research, thus strengthening the credibility of the study. The following is my current reconstruction of my personal life history:

Born in 1972 in a polygamous Islamic family of 38 children in Kagera, Tanzania, I am the first-born of father's fifth wife with seven children. I am married to Zawadi. We are blessed with two children.

I started primary school in 1979 and completed in 1985. I did not pass for secondary education at public schools. My father registered me in a folk college for carpentry. Three months later, my mother called me back to join a community day private secondary school, which I joined in 1986. My typical day routine was to wake up at 5.00 am, walk for 3 hours to school, attend lessons from 8.00 am up to 14.30

pm, walk back home at 18.00 pm, assist in cooking and go to bed at 10.00 pm. Our school started as a technical school; two years later authorities changed it to an agricultural school, where agricultural science replaced technical subjects. The school did not have sufficient number of teachers and adequate infrastructure. Agriculture, Biology and Chemistry were my favorite subjects. I passed Form IV exams with first class but downgraded to a third class because of failing mathematics. This disqualified me to join public high school as per regulations. Instead, I joined a certificate-training course in agriculture. Unlike in primary and secondary schools, teaching at college involved hands-on activities. It was hard but interesting. After completion in 1993, I joined the National Service for six month, as this was mandatory. A few days prior to completing the service, the government stopped new employment in the public sector. I had no other place to go other than going back home.

Back home, my former school headmaster offered me a teaching position. With no teaching background, I opted to follow a teaching style I experienced in college. The teaching style aimed at enhancing engaged learning processes by "learning by doing" and by reflecting on the prior experience. During my services, students did well in their national exams and inspectors were impressed. The majority of teachers at the school were Form VI leavers. Every year one or two left for university studies. With my background from the agriculture college, I did not have the qualifications required. I came to learn from a friend that possession of a diploma was an alternative way to join university education. Ahahaa! This was good news. However going for a diploma course meant: (a) quitting my job, (while I needed funds to pay for diploma education), b) two of my siblings who depended on me had to loose, c) acquiring admission in government colleges was difficult if you knew nobody in the system. I kept hoping and struggling for a way out.

Later I came to know that the father of one of my students was working with the Ministry of Education as a director of teachers training. I approached her for help. Although reluctant, she agreed to contact her father for help. It worked out as he asked for copies of my certificates. I sent him the papers in December 1997. Six months later, I received an admission letter to join Moduli teachers College, 982 km from Kagera. I only had enough money for bus fare and pocket money for some months. My mother (homemaker) was worried; I kept telling her that everything would be all right.

At the college, the principal gave me a grace period for paying tuition fee. For me, college life academically was good but economically challenging. Fortunately, I was politically active and campaigned for my friend for a top student leadership position. He then appointed me a self-reliance and production activities leader. The college had a 20 hectares farm and ten dairy cattle. I managed the farm well to the extent that the principal used a part of the farm income to clear my tuition fee bills. Miracle happened! Toward the end of the course, the academic officer informed us about the possibility 0f joining SUA-Morogoro, if we passed a mature entry exam.

After graduating, I needed to sit for the exam in April 2001, and then decided to go to Morogoro, instead of going back home. I looked for a job. It was difficult to get a teaching position because many schools in town do not teach agricultural science. Fortunately, I managed to get a job as a security guard and worked for one year during which I was able to sit for entry examination at SUA. I passed and joined studies in September 2001.To my surprise; I academically surpassed form six leavers in our class. After graduation, I worked for a non-government organization in community extension work at village level. In 2006, I got a scholarship for a master degree program at SUA in the Department of Agricultural Education and Extension. In 2008, the department recruited me as a tutorial assistant. In 2010, I met Erling Krogh at SUA and through our discussions; I became interested in his elaboration of the relational based experiential learning model. I noted something that matched my experience and interests on teaching through hands-on practices.

Back in Norway, Erling Krogh got a quota stipend for my PhD studies at NMBU, where I met Sigrid Gjøtterud and other colleagues who inspired me to follow an action research strategy to pursue the study.

Reflections on the status of Tanzanian contemporary education and my lived experience reveal that there are many constraints on educational changes. The most important ones are:

a) A hierarchical power structure that can result in teachers and head teachers experiencing little space or freedom to change, just to fulfill curriculum
b) The strong focus on abstract, standardized exams and few resources at local level
c) The lack of practice of using authentic learning environments in teaching and
d) The difficulties for pupils from low-income agricultural background to climb the educational ladder to universities.

Thus, there is a class division, mainly related to economy, hindering the major part of young population to get education. Both considering available knowledge about deficits in Tanzanian education system and my lived experience with this system, extended efforts to improve and transform the education system is of great importance. My story is an example showing that improvement and transformation is possible even though the constraints seem to be insurmountable. Of course, educational system changes are mostly preferable to be able to manage the challenges of all (a), (b), (c) and (d), but the carrying out of such institutional changes will probably last for decades in Tanzania. In addition, the governmental drive for such changes has been very low. The experience with the Tanzanian governmental and educational system combined with my own story and experience of mastery has been an incitement for my choice of the study approach: to collaborate with local actors in generating knowledge about how primary school education can become more relevant for the young generation and thus to contribute to the development of Tanzania.

1.2 My main concern and rationale for the study

In this subsection, I will present what really concerned me to conduct the study followed by the rational for the study.

1.2.1 My main concern

Despite failed attempts to improve the quality of education Tanzania and our experience on the potential of ESR philosophy for relevant learning, Tanzanian researchers have not made considerable efforts in rethinking how to revitalize ESR in contemporary education. However, outside Tanzania, for example in Kenya, researchers have argued favorably on the idea (Kadenyi & Kariuki, 2011). As I have pointed out, Tanzania is currently facing social challenges, which I believe our country can address by providing relevant education. The challenges include high unemployment levels among youths, increased food demand due to the population boom and low agricultural productivity due to low use of innovations and the impact of climate change. Furthermore, ill-functioning agricultural services (Kyaruzi *et al.*, 2010) and excessive rural-urban migration are other issues requiring immediate attention.

I argue that provision of relevant education firstly requires linking of teaching practices with local knowledge and realities. The second condition is that local actors engage themselves in improvement of local education and strengthen their relations and cooperation with different service providers including the government officials at different levels and university based-researchers. Both requirements seem to demand some facilitation. Unfortunately, the contemporary education system does not meet these conditions. In this study, we address the question of how to engage local actors in the process of integrating everyday experiences in primary school pedagogy. Now, I will present the rationale, purpose and research question of the study, as well as how each article contributes in addressing the research question. Lastly, I will provide the outline of the thesis.

1.2.2 Rationale for the study

I draw the rationale for this study from three key areas: the contextual realities, the strategic place of primary education in the entire education system in Tanzania and finally the need for linking educational efforts with community development initiatives.

1.2.2.1 Drawing from contextual realities

Currently, there are scanty efforts to integrate formal education with contextual realities in Tanzania. The contemporary education system has not provided services to enable local communities to deal with emerging challenges for community sustainability. Persistence of a traditional mode of teaching and weak links between schools and the immediate communities are two of the reasons for the failure. Integration of teaching, research and community development practices is a promising approach, but the Tanzanian school system and local communities separate these activities. On the other hand, lots of teachers, head teachers and local communities for many years have requested such changes of the school system, but the government has not been able or willing to finance or promote stable system changes. Therefore, I chose an active approach where I facilitate empowerment of local stakeholders combined with improvement of the learning milieu at a local school. One focus is to facilitate that local stakeholders and the communities vitalize themselves and each other. Another focus of the empowerment is to challenge regional authorities, the agents of power above local communities. Research approaches promoting co-learning, mobilizing and raising consciousness of local actors to take initiative for social change are uncommon in Tanzania. These are all qualities of an action research approach.

Although action research was not among the research strategies used in my university, and hardly in Tanzania at all when I started my study, I wanted to carry out this approach because it is in line with the ESR philosophy.

I saw the potential of action research to create an example to the effort of improving primary education, a crucial effort in order to win the battle against poverty, ignorance and diseases.

1.2.2.2 Focus on primary education

Primary education (education given in an institution for children aged 6-13 years) constitutes the bedrock upon which the entire education system rests. In Tanzania, primary education is

compulsory for all school age children. Data show that more than 50% of the primary school graduates return to the community and spend the rest of their lives there (URT, 2007). The changing workforce and the need for appropriate skills have changed what it means to provide every child with relevant education for a full and productive life. Stakeholders need to devote attention to investigate how primary education might better serve the needs of children and their communities. I address this issue in my study.

1.2.2.3 Re-emphasizing education for community development

Research focusing on education and rural development emphasizes that increased access to relevant and quality education for rural people contributes directly and positively to improved productivity, food security and livelihoods (Moock, 1981; Burchi and De Muro, 2007). I extend the arguments for contextualizing primary education in Tanzania in *Article 1*. Integrating agricultural experiences in teaching and learning practices aims at linking formal learning with community development endeavors. This is important both for sustaining and for developing social, economic and environmental systems.

Strengthening school-community interactions leads to clear educational outcomes in terms of relevant knowledge, skills, attitude, values and confidence and, in addition, closing of the achievement gap (Epstein, 1995, 1997; Cavaye, 2000; Lieberman and Hoody, 1998). Vibrant communities are dependent on youth who are well equipped to become active citizens. Schools benefit society as a whole by fostering appropriate values in pupils. Through strong school-community interactions and partnerships, schools can act as a community 'hub' and play an important role in community development without stepping outside their core educational role.

In addition, the partnerships could contribute in addressing deficits in the contemporary education system. For example, one way to achieve the above is by maximizing the use of limited resources by utilizing available local knowledge, experiences and resources. In this way, parents may take on an active role in developing a relevant curriculum, and create opportunities to collaboratively identify and address common problems. School-community cooperation seems to foster confidence and a spirit of voluntarism, ownership and accountability among local actors (Njunwa, 2000). In Tanzania, rural schools can act as centers for demonstrating agricultural technologies to local farmers, thus supplementing agricultural extension delivery system.

Integrating contextual realities in education for community development can contribute to a primary education accessed by the majority in Tanzania. I believe that quality primary education is a foundation for quality education, and that quality education is a foundation for sustainable communities.

1.3 Purpose and research question

As explained above, contextual realities at community level, research and lived experiences inform this study. The need to upgrade current primary education to take aboard culture, values and needs of local communities in Tanzania is clear. Following an action research strategy, conceived from experiential and social learning perspectives, the study strive to facilitate local processes oriented towards larger integration of everyday experiences in the use of farming activities as a pedagogical resource.

In the process, we sought to develop an understanding on how to engage local actors in the reflective process towards fostering cooperation between schools and communities for relevant learning. Knowledge developed from the study is an important input for policy makers and practitioners to design policies and related rural development programs.

The overarching research question for the thesis is:

How can local actors engage in local initiatives for enhancing relevant learning?

To address the overarching research question, I have aimed to:

- Map local contextual realities for identifying potential obstacles and opportunities for local actors' engagement in enhancing relevant learning in a local primary school as a point of departure.
- Determine a suitable collaborative and democratic platform for reflection on and analyzing identified contextual obstacles and opportunities in order to develop an action plan for change.
- Determine appropriateness, successes and challenges associated with implementation of the collaborative action plan towards engaging local actors in solving local problems.

I address how I pursue each of the specific aims in the three articles that constitute this thesis, which I outline hereunder.

1.4 Short outline of the articles in the thesis

The thesis includes three articles that correspond with the three project phases - planning, acting and evaluation. I elaborate content and findings in *Chapter 5*. In this chapter, I just present a short overview of each article. *Article I* draws from the planning phase of the project and aims to identify theoretical approaches that can support sustainable revitalization of ESR. The paper has two parts; the first part advances arguments for revitalization of ESR philosophy to guide primary education in rural areas as an effort to improve learning outcomes both cognitively and affectively. The second part outlines the first phase of the project processes and the significance of democratic and extensive initial consultation with the community. *Article II* draws from both the planning and acting phases. Based on comprehensive preparations before a two-day dialogue conference, facilitation and observation of the conference and reflections during and after the conference, we discuss the potential and function of dialogue conferences as a democratic platform for empowering local participants to take responsibility and ownership of change processes and *Article III* mostly draws from the phases of actions and evaluation. The article discusses the implementation of the collaboratively developed action plan.

1.5 General outline of the extended abstract

I have divided the thesis into two parts. Part I consists of the Extended Abstract, which includes six chapters. After the introductory chapter, in *Chapter 2*, I will present the context of the study and an historical account of educational reforms in Tanzania to position the proposed change in the contexts of socio-economic development practices. In *Chapter 3*, I will deal with methodological considerations. This includes action research in generally and the PAR approach in particular, the project design and research process.

Moreover, I explain the process for democratic grounding of the project in the community, my position as a co-researcher, the roles of each author of the three papers and struggles with the power structures throughout the project. I also provide a broad discussion of data collection and analysis methods before highlighting on limitations and challenges of the project. Thereafter, I present a theoretical framework including the experiential learning and school-community linkage perspectives in *Chapter 4*. In *Chapter 5*, I provide a summary of the three articles in the thesis before I discuss the thesis as a whole and implications to research, education and community development practices *in Chapter 6*. Part II consists of the three published articles included in the thesis.

2 The empirical context

In this chapter, I describe the context of this action research project. The study is located in Tanzania. After the description of socio-economic characteristics and governance systems in Tanzania, I give a brief outline of Tanzania and international cooperation for development. Then, I present the education and training system, governance and administration of education services. Thereafter, I describe the characteristics of the research area. Finally, I present a brief historical account on Tanzanian educational reforms and practices since independence, to ground the study.

2.1 Tanzania: location, socio-economic characteristics and governance systems

Located in East Africa and bordering eight countries, Tanzania is a low-income country. The major part of the population lives in rural areas and depends on agriculture. Poverty is still pervasive, especially in the rural areas. Statistics show that rural poverty account for 80% of the poor[2]. Tanzania is a unitary republic and sovereign state, governed as one unit in which the central government is supreme and any administrative divisions exercise only powers that the central government chooses to delegate (URT, 1977). Administratively, the country has 31 regions: 26 on the mainland and five on Zanzibar Islands. In a descending order, other subdivisions are districts, divisions, wards*shehia*, villages\streets and sub-villages\ hamlets (URT, 2012b).Tanzania has a two-tier system of government: Central Government and Local Governments. Districts forms Local Government Authorities[3] (LGAs) governed by a council composed of elected and non-elected councilors assisted by technical staff in various sectors at district level headed by Executive Director. LGAs have both political and economic purposes, politically to provide opportunities for democratic participation of citizens in matters that affect them directly and economically to provide basic services that affect people in their area of jurisdiction (URT, 2009).

LGAs are responsible for developing and overseeing the implementation of the District Development Plan, following national frameworks of participatory planning and budgeting. The plan incorporates ward development plans developed by Ward Development Councils (WDC) in the district. WDCs are comprised of ward councilor(s) and chairpersons of all village councils within the ward. Other members include government employees working at ward level, for example, Ward Education Coordinator (WEC), community development officers and invitees[4] from for instance NGOs and other civic groups involved in the promotion of development in the ward. At regional level, responsible officers scrutinize district plans from one region, then onward submission to Prime Minister's Office–Regional Administration and Local Government (PMO-RALG) for consolidation. PMO-RALG submits a national consolidated plan to the Ministry of Finance and Economic Affairs to formulate a national plan and budget. The responsible minister presents the national plan and budget to the parliament for discussion and approval for implementation (Mollel, 2010).

2 http://www.worldbank.org/en/country/tanzania/overview/accessed on 31st March 2015

3 Local Governments are either urban Authorities (city, municipal and town councils), or rural Authorities (district councils).The latter incorporate small towns (township Authorities) as well as village councils.

4 However, the invitees have no right to vote in the meetings.

2.2 Tanzania and international cooperation

Since independence, Tanzania has been an important player in the international cooperation spheres. Both her participation in international affairs and her low economic conditions for many years have attracted interests of international donor community to finance her social and economic development initiatives. As I explain in *Article III*, Norway has been one of the countries in long-standing development cooperation with Tanzania. Since the introduction of Norwegian dairy goats in 1988 (Mtenga & Kifaro, 1993), Mgeta has been a center for Norwegian dairy goats breed in Tanzania and a learning site for farmers and extension workers under the facilitation of Uluguru Mountains Development Project (UMADEP). Since then, Sokoine University of Agriculture (SUA) and Norwegian University of Life Sciences (NMBU) have implemented various programs in partnership. Enhancing Pro-poor Innovations in Natural resources and Agriculture Value chain-EPINAV[5] (2011-2016) is the current program (for details on see *Article III*). The program provided a framework for the design and evaluation this study.

Nyandira is the easiest accessible village in Mgeta as it is the center of the division. Nyandira has hosted national and international researchers researching on goat technologies, livelihoods and environmental conservation. Many experienced goat farmers live in Nyandira. The village hosts most of the facilities and services including a dairy goat-processing unit and a goat-learning center established by SUA and NMBU researchers. Because we wanted to involve farmers/parents in teaching, Nyandira was suitable because of its many experienced farmers, accessibility by car and existence of some infrastructures and therefore selected as a site to conduct this study.

2.3 Education and training system, governance and administration

I have organized this section in two parts, a section on the structure of education and training system another on governance and administration of education in Tanzania.

2.3.1 Education and training system - institutional set up

For details on the visions, practice, organization and management of the education system in Tanzania, I refer to Article III. Primary education is foundational universal and compulsory for all children at the age of 7 years (Figure 1). At different levels, students sit for national standardized examinations aiming at screening and quality assurance purposes. Primary school pupils sit for the exams at the end of Standard IV and VII[6]; secondary school students at the end of Form II and Form IV and upper secondary students at the end of Form VI.

The Standard VII, Form IV and VI national exams are exit exams. Candidates who fail to advance to next level after exit exams may opt, if they qualify, to attend vocational or technical training at mid-career level.

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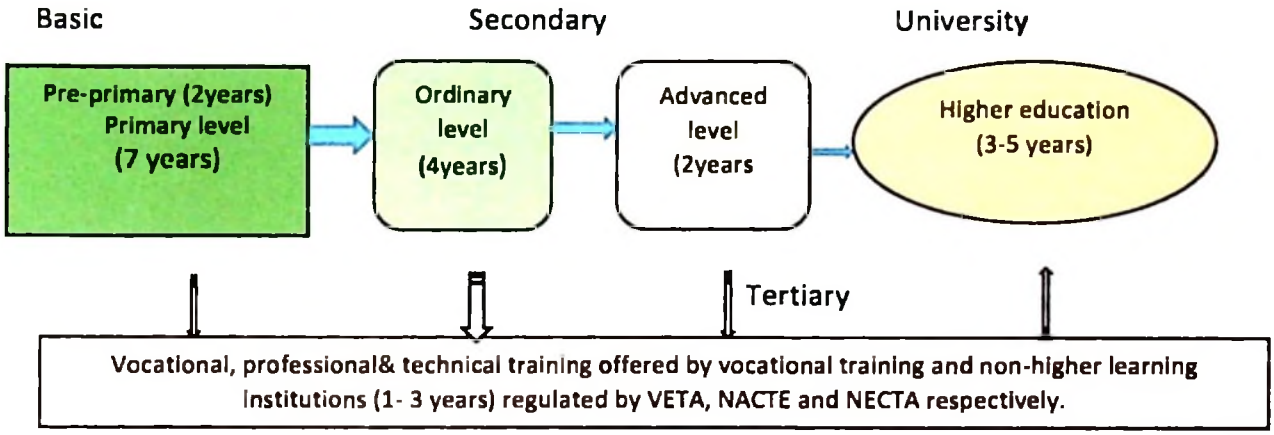
[5] Enhancing Pro-poor Innovations in Natural Resources and Agricultural Value-chains http://www.nmbu.no/en/about-nmbu/faculties/samvit/departments/noragric/institutional_coop/epinav

[6] In primary school, the grades are named Standard I to Standard VII, in secondary school, the grades are Form I to Form IV, then Form V and VI are upper secondary school.

The law requires candidates who fail to attain pass mark in Standard IV and Form II national examination to repeat the classes until s\he passes. I provide an overview of the education system in figure 1.



Key

Formal direct path

Non-formal Path

VETA: Vocational Education Training Authority (http://www.veta.go.tz)

NACTE: National Council for Technical Education (http://www.nacte.go.tz)

NECTA: National Examination Council of Tanzania (http://www.necta.go.tz)

Note: The widths of arrows depict the percentage of transition rate.

Figure 1: The Education and Training System in Tanzania

Even though there are informal arrangements, for example through taking Qualifying Test[7] or reseating as a private candidate, few manage to rejoin the formal system after failing exit exams. I am one of those who managed to rejoin after failing Standard VII exams. Considered together with high dropout level[8] up to 30% at primary education (BEST, 2008), almost half of the students at each level are 'kicked out' of the formal education system. A big group of students leaves out of formal education after primary education examination. Based on this fact and consequences of dropout, initiatives to provide appropriate and relevant education to prepare the country's future generations are required. First, it is necessary to meet the overall goal of education - *preparing learners for the world of work* (URT, 2014). Second, it is crucial to enhance the access to quality education to meet the fundamental human rights as well as to break the cycles of poverty in future generations.

[7] At lower secondary education for example: Qualifying Test aims to determine whether the prospective candidates have attained secondary education equivalent to Form II level and thus are in a position to sit for the Certificate of Secondary Education Examination (NECTA)

8 Dropping out refers to a student quitting school before he or she graduates from the level or system he/she is enrolled in (Russell, 2001)

2.3.2 Governance and administration of education in Tanzania

As I explain in *Article III*, in the context of decentralized provision of educational services, the LGAs take charge of supervising education delivery and coordinate the subordinate administrative units: the wards, villages and schools in their areas of jurisdiction. In every village, there is a primary school under the village government council.

As an instrument for the village government council, a school committee[9] oversees the day-to-day operations of the school among other tasks as stipulated in URT (2001). Nyandira primary school, where we conducted the current study, is one of the 11032 primary schools in Tanzania governed following the described framework above. It is located in Nyandira village, Nyandira ward, Mvomero rural district in Morogoro region.

2.4 Description of the research area

I have organized the description of the research area under four subsections: description of the community, social services in Nyandira village and the local primary school. At last, I describe the daily routine, learning, and teaching practices at the school.

2.4.1 Nyandira community

Nyandira village is located on the western slopes of the Uluguru Mountains between 1100 and 1750 meters above sea level. The climate is temperate, with temperatures ranging between 11 and 23°C. In July and August, frost conditions have occurred. The village is located about 40 km from the nearest city of Morogoro. The hilly terrain, high rainfall and poor road infrastructure makes transport to the village unreliable, especially during the rainy season when in many cases one would require a four-wheel drive vehicle. With a total population of 3,840 people in 757 households, the population of Nyandira village is 240 persons per square kilometer, i.e. densely populated (NBS, 2013). The population consists primarily of smallholder farmers with over 90% engaged in farming activities. Vegetable production and dairy goat keeping are the most important farming systems in the village. Land is fertile but scarce, and soil erosion is a threat for sustainability of the farming system in the village.

Facing rapid population growth and an increasing unstable environment, the community is in need of innovative and creative citizens who can produce enough food and solve upcoming challenges. Therefore, this study aims at development of pupils' problem solving capacities through integration of everyday experiences in the contemporary primary education in Tanzania.

2.4.2 Social services in Nyandira village

Nyandira is at the center of Mgeta division. Administratively, a division is the second level administrative unit below a district. There are few shops, and most of them are located around the central market run by the Tanzania Farmers Network. There are three tearooms, which are mainly busy during market days, two days per week, and two milling machines, one privately owned and

[9] A group of elected members responsible for supervising and advising on the management of the primary school, and to provide the school with community support. Members includes seven parent representatives elected by the local community, school head teacher and a representative of teachers at the school.

the other one owned by the Village government. Government officers operating at ward level provide the village with agricultural extension and community development services. TWAWOSE Savings and Credit Cooperative Society is a community based financial institution providing credit services to villagers.

The village also hosts the UMADEP-farmer-training center. UMADEP, under the Department of Agricultural Education and Extension of SUA has facilitated and initiated the formation of farmers' groups and association since 1993, trained farmers and introduced better farming practices in crop and dairy goat production. TWAWOSE, a cooperative association of dairy goat farmers, is one of the farmers groups formed by UMADEP. The cooperative association also is responsible for providing veterinary drugs. TWAWOSE's dairy goat milk processing plant has been an important resource for this study, utilized to demonstrate the usefulness of potential resources available in the community. As described in *Article III*, a science teacher utilized the resource to develop experiences of teaching science concepts to teachers, pupils and the community. In addition, TWAWOSE members, due to their long-lasting experience in goat production, have taught school pupils goat husbandry practices. TWAWOSE has been an inspirational group through demonstrating the importance of community members cooperating with teachers in contextualized teaching and learning.

Electricity has lately been available (since June 2014), but very few households can afford to pay installation and service charges. During the study, there was no electrical power in the village. Other available social service institutions include a dispensary, a primary school and a church. In addition, infrastructures for mobile and radio communication are available.

2.4.3 Nyandira primary school

Nyandira primary school is located at the peak of a hill nearby the village center. There are 742 pupils with only five teachers, five classrooms and a small room, 3m x 8m, used as the teachers' office and for storage of the few available books. There is no library at the school. Out of the five classrooms, four are in bad condition. Mostly they have no windows to protect pupils from cold conditions and there are desks to sit only half of the pupils (Figure 3).

Figure 3: Photographs showing state of Nyandira primary school in and outside of classrooms

Due to land scarcity in the village, the school also is located very close to residential houses. The fact that the school is not fenced makes an unconducive learning environment, and compromises school security. The learning climate is less promising, as I have explained above, and the school lacks necessary learning structures, facilities and adequate number of teachers. The school environment also is a point of concern, as the school is located on the hilly top with clay soil and during rainy seasons, the grounds are slippery. This is quite a problem keeping in mind that the majority of the pupils do not have shoes.

During dry seasons, the surroundings become dusty, making pupils look untidy. The area is chilly. However, most of the pupils lack proper attire, making it very hard for them to concentrate due to coldness.

2.4.4 Daily school routine

The school routine starts at 7.30 am Monday through Fridays. Pupils come on foot from different parts of the village. They have to arrive at school early in the morning for sanitary works, before the teaching starts. The morning class session starts at 8.00 am and end at 12.30 pm. Between 12.30 and 14.00 pm, it is time for lunch, pupils walk back home for lunch, because there are no provision of breakfast or mid-day meals for pupils at school, and pupils do not carry with them lunch packs. The afternoon session starts at 14.00 pm and ends at 16.00 pm. Many families cannot afford to provide lunch consistently through the year. In other cases, there is no one to prepare food at home, as parents are occupied with farm activities, or because of food shortage, especially during crop growing season. Mostly in the afternoon session, pupils are hungry and cannot effectively concentrate and follow classes. Usually, a quarter of the students do not turn up for the afternoon session. There is a demand for a school feeding program, yet most schools in Mgeta does not have such programs. The parents, who are responsible of facilitating the school to provide lunch, cannot afford to do so. Linking farming with teaching might be a possible solution for many schools to fulfill their obligation to provide lunch.

2.4.5 The teaching and learning practices

Teaching is predominantly an indoor activity. 'Chalk' and 'talk' is the common teaching strategy employed by teachers to take learners through the prescriptive and detailed national curriculum. Due to gross deficit of teachers at the school at any time of the school day, two classes continuously remain unattended. The exception is that teachers regularly attend Standard IV and VII. This is because pupils in these two standards sit for standardized national examinations. Performance in examination is the key measure of teachers' efficiency. Although agriculture is at the heart of the village life, the school uses neither agriculture and agricultural activities nor any other everyday practices as learning arenas. Preparing pupils to pass national exams seems to be the main preoccupation of teachers. From my observation, teachers seem to be demotivated due to heavy teaching loads. The minimum number of periods every teacher teaches at school is 42 per week. One period is equivalent to 40 minutes instruction time.

The situation at the school is not unique. Lots of rural primary schools in Tanzania experience a similar situation. Generating knowledge on how to engage local actors to manage and cope with contextual and structural limitations, for example through local participation in

transforming primary education towards higher degree of local relevance, generally is important for development of sustainable communities. In my opinion, when using Nyandira primary school community as a case, our action research project can show pathways for actions and management of bottlenecks that may be useful for other underprivileged areas.

2.5 Review of educational reforms in Tanzania

Various studies provide historical overview of educational reforms in Tanzania (Nyerere, 1967; Siwale and Sefu, 1977; Osaki, 2004; Mushi, 2012; Mtitu, 2014). In respect to this study, I present a brief review of educational reforms in Tanzania in *Article 1*. The reviews indicate that, in Tanzania, as in other African countries, the education system prior to colonization was relevant, appropriate, dialogic and inclusive. According to Shizha (2013), the former socialization of learners took African indigenous cultural contexts as their point of departure. Colonial rulers changed these practices and provided education based on different curricula, for Whites, Arabs and African children (Siwale & Sefu, 1977). However, colonial curricula also provided avenues for equipping African learners with basic and relevant skills, and for fostering attitude, that would help them survive in their communities.

After independence in 1961, the government took bold measures to address the inequalities in provision of education alongside with streamlining the curricula. Despite the good intensions, no significant changes in the goals and objectives of education were realized (URT, 1995; Osaki, 2002). The curricula remained theoretical and lacked emphasis on practical skills to prepare children to participate effectively in production activities in their communities (Mushi, 2012). To address the above shortfalls, in 1967, the government introduced ESR policy. In *Article 1*, I explain the origin and theoretical underpinnings, aims, operationalization processes, positive outcomes and challenges encountered in sustaining ESR policy in the Tanzanian education system. Consequently, in 1995, the government formulated Education and Training Policy to guide educational reforms during liberalized and privatization policies (URT, 1995). The policy aimed at improving education quality, access and equity. In order to improve efficiency, the government decentralized social services through Local Government Reform Programme[10] (LGRP) (URT, 2009).

This reform included primary education. Furthermore, the authorities legalized private services in provision of social services, including education. This move resulted in a tremendous increase in enrolment (Sita, 2007). Unfortunately, the increase did not match with growth in human and physical resources (Davidson, 2004). This greatly affected the pedagogy and school-community contacts (for details see *Article 1*). Over populated classes, ill- staffed and dilapidated school infrastructures, shortage of teaching facilities and the pressure to pass examinations are limitations that the teachers face. These limitations force teachers to use drilling teaching strategies and narrowing down learning objectives to memorization of abstract facts. Therefore, the designing and management of learning run in isolation from community everyday life experiences and needs.

As a result, learning outcomes have consistently been poor; graduates fail to apply what they learn in school in real life situations. This escalates the youth unemployment and youth rural–

[10]The LGRP set a comprehensive and ambitious agenda for local government reform. The LGRP covered four areas: political decentralization, financial decentralization, administrative decentralization and changed central-local relations.

urban migration among other social challenges (URT, 2007). Besides, the community expects youths to act as catalysts for rural transformation because of their innovativeness, energy level and population size. Youths are the future of food security and vibrant communities.

Youth disengagement in agricultural activities jeopardizes community sustainability. For sustainable rural communities in Tanzania, youths should be prepared for fruitful involvement in finding solutions for challenges that face their communities: unemployment, food insecurity and poverty. However, agriculture, the sector with great potential is not glamorous. It suffers from entrenched negative perception among youth and the public. I consider farm education[11] as one way of encouraging youth involvement in agriculture. In addition, by doing it through cycles of experiential learning, the pupils also learn tools for active problem solving and engagement.

2.6 Looking ahead

Both policies, ESR and the Education and Training Policy of 1995, theoretically seem to focus on work-oriented education as a strategy for improving the relevance of the education system for community development. While ESR emphasized rural-oriented vocational education, the ETP-1995 stressed urban–oriented science and technology education. Reflections on the efforts to implement the policies show that both policies registered achievements and challenges. Enhanced school community contacts and linkage of formal and informal education were the main achievements of the ESR policy. Whereas in the practices under ETP-1995, learning is in isolation and detached from community experiences thus jeopardizing relevance of formal learning. Reflections on experiences from implementation of both policies can develop a grounded understanding for transforming pedagogies for relevant learning an important undertaking.

Development of higher-order thinking skills both require learners participation in complex, meaningful projects and learning processes characterized by sustained engagement, collaboration, practical learning activities and time to reflect (Dewey,1929; Brookhart, 2010).
According to Brookhart (2010), we can define higher-order thinking in terms of (a) transfer, (b) critical thinking, and (c) problem solving. I perceive teaching strategies that encourage higher-order thinking to heighten student motivation to learn. Practical relevance, as focused in ESR, intertwined with theoretical reflections, as focused in ETP-1995, can be a simple formula, though difficult to implement due to scarcity of resources and the theoretical oriented school practices.

This understanding calls for transformation of pedagogical approaches from traditional narrow tasks approach that emphasizes memorization and application of simple knowledge to 'authentic pedagogy' for deep knowledge development and meaningful learning. In some cases, memorizing may be useful, but as Brookhart (2010) argues, largely this learning strategy does not contribute to insight because it does not increase the learner's autonomy. In addition, gaining knowledge about basic facts is a step towards understanding. However, knowing things for immediate recall is a relatively less important skill. That is why, as I see it, we need to transform the current pedagogical approaches.

In my opinion, the process of informing practice transformation must be participatory, inclusive and informed by contextual realities. More importantly, collaboration between traditional

[11] Farm education is about using farms as authentic real-life learning environment.

and nontraditional stakeholders is crucial in designing and providing relevant education. In my experience, ESR based teaching and learning practices is a starting point.

This study aims at providing insights for such transformation. In addition to scholarly aims, the ultimate purpose of the study is collaborative generation of practical knowledge both valid and vital to the wellbeing of individuals and communities– knowledge rooted in local understanding and experiences. The research team has chosen participatory action research as strategy to engage local stakeholders, facilitate collaboration between stakeholders and researchers around knowledge generation and to bring about social changes from below, thus heading for local empowerment.

In the following chapter, I will elaborate the foundation for the research strategy.

3 The Research strategy, project design and process

In this chapter, I will discuss methodological issues. First, I will present and elaborate the theoretical foundation for my action research approach before giving an account of the case study design and outline of the project. Then, I present the action research process where I explain how we (the team) democratically grounded the project in the community to gain an entry point. Further, I give a description of the position I took as a researcher and a discussion of the roles of each writer, before explaining the struggles with power structures that defined the project design and implementation. Lastly, I will present the methods used for collecting and analyzing data and discuss the limitations of the study.

3.1 Critical theory and action research

I place my research within a critical theory paradigm, pragmatism and transformative perspectives (Carr & Kemmis, 1986, Dewey, 1929, Taylor 2009). Critical theory challenges the assumption of a possible objective and value-free approach to social science and argues for recognition of the role of researcher's values, and beliefs. Within action research, critical theory also relates to liberation of the oppressed by challenging existing worldviews and mental models (Freire, 1970; Fals Borda, 1995). According to Carr and Kemmis (2009), critical reflections on own practices provide opportunities to foster new learning and transform both individuals and organizations towards new discourses and practices. For this case, participants through 'free spaces' created in formal and informal meetings and dialogue conferences, critically looked at their own practices. In the process, they developed a new understanding on how to establish and maintain relationships crucial for enhancing relevant education. In this way, the study strived to demonstrate how to engage local actors in the process of linking primary school learning with everyday life experiences.

Critical theory gives foundation for different action research branches, including participatory action research (Freire, 1970; Carr & Kemmis 1986; Fals Borda, 1995). As Stern (2014) argues, action research builds upon theories like constructivism, pragmatism and critical theory to substantiate its claim to generate relevant knowledge. Critical theory is a foundation both for action research and for certain social research methods, for example ethnography. However, action research focuses on changing practices rather than merely observing without influencing practices, as is the case with mainstream ethnography (Coghlan & Brannick, 2005). Action researchers see knowledge generation as an active process dependent on the social contexts and the relevance of the results as dependent on the social relations between participants. In this way action research can become a research strategy with defined steps of planning, acting and evaluating, as I have chosen in this project. In addition, action research has potential to be an inclusive, a cooperative process, and not something exclusive for scientists or experts (Cohen *et al.*, 2000, Kemmis, 2001). Experts contribute as humble partners with a range of actors including practitioners. This orientation forms the basis for the choice of action research as a strategy for this study.

Through sixty years of evolution, action research has grown to different branches. Some of these branches include participatory action research, critical or emancipatory action research, collaborative inquiry and action learning (Coghlan and Brannick, 2010).

Others include Critical Utopian Action Research (Nielsen & Nielsen, 2006) and Educational Action Research (Reason & Bradbury, 2008; Zeicher, 2001). Action research strategy is now common in a variety of disciplines such as education, health care, organizational administration studies and community development. I situated the study within the frame of educational action research, aiming at linking teaching practices with community development. Over all, as I explain in the three articles and in the following section, I followed the PAR strand.

3.2 Participatory Action Research (PAR)

As elaborated in all of the articles of this thesis, I place my research within the participatory research paradigm (PAR), because PAR considers and attempts to challenge existing power and organizational structures. I wanted both to challenge the dichotomy between the 'researcher and the researched' in Tanzanian research and the disassociation between theory and practices in teaching, research and community development. Based on community actions, equal participation, and shared ownership, PAR aims at transforming current practices and structures. Fals Borda (2001) and Kemmis and McTaggart (2005) argue that PAR extends the fundamentals of action research. Emerged in the postwar years, as is the action research strategy, PAR has evolved and has been adopted in education and other disciplines from the seventies (Freire, 1970; Bhana, 2002; Noffke & Somekh, 2009). Despite limitations, it has received attention in the emancipatory research discourse (Rahman, 2008, Mackenzie, 2012). Our research team's social-historical understanding of research, teaching and learning practices in Tanzania led to selection of PAR for this study (I provide details about the team in section 3.3.4) The members of the research team believe that participation is the key for facilitating democratic processes aiming at providing opportunities for empowerment and practice transformation. In the following subsection, I give an outline of methods and tools developed by participatory action researchers, some of which we have adopted in this study.

3.2.1 PAR: methods and tools

Years of development has produced a number of well-tested methods for cooperative action research (Fals Borda and Rahman 1991; Gustavsen, 1996, Nielsen, 2006). Search conferences, future workshops and dialogue conferences are some of them. The bottom line is that they all aim at incorporating democratic and inclusive values in the production of knowledge that contributes to collective actions and shared understanding. The methods provide free spaces or communicative spaces where participants can challenge their everyday conditions (Nielsen & Nielsen, 2006). Unlike dialogue conferences, search conferences and future workshops are futuristic in nature. That is, they are preoccupied with production of future visions, actions and scenarios ([utopianism] Jungk & Mullert, 1987). Dialogue conferences on the other hand, are founded on mediating discourse (democratic dialogues) and links the discourse of theory with practical discourse, a quality that brings it close to a democratic ideal (Lund, 2008).

For this study, as I have explained in Article *II*, I adopted dialogue conference as a PAR method for the following reasons:

1. Dialogue conference is close to the Tanzanian traditional ways of living, thus easy to introduce.

2. When the participants do not know action research and rarely interact professionally, a method for building trust and relationships, preceding planning for social change, is important.
3. Drawing from our contextual understanding of the harsh environment, we thought that starting with a critical look at participants' own situation in general might be quite depressing, so adopting utopianism might result in creating unrealistic plans hard to pursue with available time and resources for the project.

As stated earlier, we envisioned action research in general and PAR in particular as a suitable strategy for this project. We used dialogue conference as a method to bridge the gap between traditional ways of mutual problem solving and traditional research in Tanzanian communities. This is because PAR has roots in Tanzania (Swantz, 2008), and dialogue conferences rests on cooperative traditions, hence the approach is embedded in the culture and history of Tanzanian development discourses.

In an attempt to address the research problem, we followed Kemmis and McTaggart's (1988) spiral inquiry model embodied in plan-act and observe– reflection cycles (Figure 4).

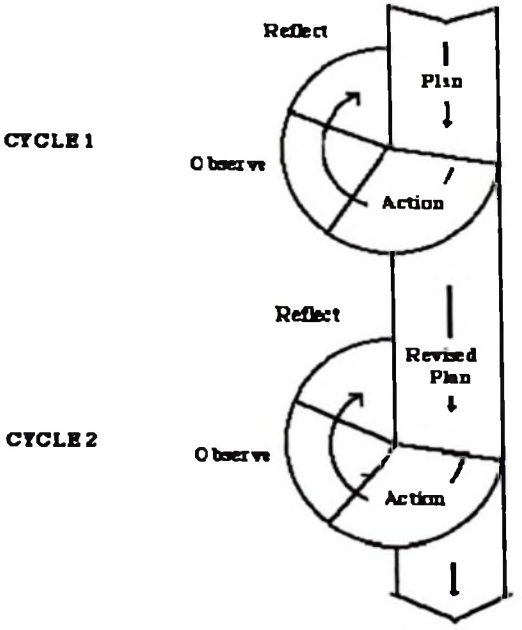


Figure 4: Action research cycle (Stringer et al., 2008)

3.3 The Nyandira project

My PhD research project is a three-year action research project, here referred to as the Nyandira project. The Nyandira project was part of a strategic intervention in the research-program EPINAV (for further explanation, see *Article I and Article III.*

The project followed a case study design and purposively selected the research site. For details on project design and aims, refer to *Article I.*

I describe the project-funding framework and structural conditions in *Article III*. The PhD part of the project aimed at mobilizing and creating opportunity for empowering local communities to participate in enhancing relevant learning at primary school level.

We planned the Nyandira project to start in June 2012. However, it started in June 2013. I explain the reasons for the delay under section 3.3.6 below. For the first phase, I mainly followed the initial plan as outlined in *Article I*. Informed by the contextual realities experienced at the ground, and discussions during the initial dialogue conference, participants modified the second phase of the project.

3.3.1 Project plan

We organized the project plan in two phases:

Phase 1: Grounding research ideas within the specific context:

- Reflecting on Tanzanian education practice based on literature review and research team members and other local actors personal experience.
- Community consultation through formal and informal meetings to reflect on primary education practice.
- Conducting a baseline survey for mapping out the primary education practice, familiarization with available assets and infrastructure in the community and with school schedules.
- Conducting a dialogue conference to reflect on the practice mapping results, identify key challenges, envision the future and find realistic solutions. Further, collaboratively, decide on the subsequent plan of activities.
- Collecting and analyzing data through all these steps.

Phase 2: Collaborating with the community to implement the action plan developed during phase one above

- Designing and implementing a training program for teachers to promote pupils experiential learning.
- Improving teaching and learning facilities and infrastructure.
- Activating parents and other community members to take part in assisting pupils learning.
- Reflecting on transformation at various levels influenced by the project processes.
- Collecting and analyzing data through all these steps.

3.3.2 The research process

Before I describe the research process, I would like to clarify a few points. This clarification is important for the reader to understand the rationale for the choice of steps and chronology of the steps in this study. The idea for the research project did not originate from community members. The point of departure was my lived experience preceding the choice of research approach.

As described in the introductory chapter, I had experienced the need for change in the education system the hard way and through different experiences developed a theoretical understanding. I had met the ideas of the farm as a pedagogical resource and experiential learning

during a certificate course in agricultural training. I also practiced to teach agricultural science in secondary school following this approach, though I did not have a theoretical understanding behind the practice at the time. Through this experience, I came to recognize a clear link between ESR and a teaching practice with which I was familiar.

During my PhD course work in Social Science Research, I developed an epistemological and ontological understanding that made me see the usefulness of the idea of contextualized primary education, and therefore I wanted to try it out. In keeping with principles of action research, I democratically shared and discussed the idea with the target community. However, due to the proposal process for the strategic intervention as funding program guidelines I had to make a plan prior to these discussions. The discussions with local stakeholders helped to modify the plan.

3.2.2.1 Democratic grounding, yet an induced idea: stretching the boundaries of PAR strategy

According to Selenger (1997), the first of the seven key components to the PAR process is that the problem addressed originates in the community itself and is defined, analyzed and solved by the community. In this case, it was not easy for the local actors to self-engage in problem identification. This is because of contradictory perceptions among the different groups in the community who are responsible for designing and implementing primary education programs. This might, among other factors, be due to lack of awareness on the part of local actors on their role and responsibilities in supporting schools to provide education in pursuit of established regulations. During the initial discussions with the stakeholders, we observed that a majority of the community members viewed teaching as an exclusive governmental responsibility. Many maintained that the central government design and formulate the curriculum, train, employ, monitor and evaluate professionals who implement the curriculum.

The position matches with Kamugisha and Matenge's view (2014) that although education is in theory decentralized, curriculum design and implementation processes in Tanzania are highly centralized and prescribed. On the other hand, teachers criticized community members, including parents, for not being cooperative. Such orientations on top of demands on daily work for earning a living might have deprived local actors' time and energy to initiate a change. Let alone the fact that there are only five teachers to more than 700 pupils at the school, there might not be time and energy to stop to think about possibilities for change.

My commitment to democracy, local participation, cooperation and social justice motivated me to challenge this state of affair by finding a proper way to 'induce' the initiation of ideas for change through democratic processes. I had to create communicative spaces for stakeholders to debate and negotiate ideas to achieve mutual understanding about the problem and reach a consensus on what actions to take (Kemmis, 2001). Despite the fact that the ideas of how to improve the education situation in the village came from the university-based members of the research team, we sought to continue the process in a democratic manner.

Schabort (2013) points out that, naturally, qualitative research often requires emotional engagement. Action research requires that all participants develop personal relationships.
I have experienced that in the process of engagement, I could not fully adhere to the ethical requirements of mainstream research, such as informed consent, confidentiality and on issues of concern to originate from the affected groups (I provide more details on this in subsection 3.3.9).

As I have said above, conditions at the ground did not allow local actors to initiate actions for changing the practices. My experience coincided with that of Bell and Nutt (2002) when they say that under such circumstances, the researcher's commitment for social change is pulled in diverse directions and the ethical stance is placed at a crossroad. In the end, as a researcher, I had various roles throughout the process as I further explain in section 3.3.3 below.

Although I did not step out of my role as researcher, the researcher's role took on different tasks. I assumed a role of critical friend (Nind, 2003). For example, together with practicing teachers, we reflected on the daily school teaching program, the teaching strategies used and the general classroom climate in respect to how the situation should be in theory and what was actually happening. We also reflected on the extent to which teachers' actions and conditions in the actual school situation provided opportunities for, or hindered, pupils in taking active part in knowledge generation. My role was to create spaces to discuss and share, with the teachers, the reasons why the present pedagogical practices might not be promoting active learning among pupils, and the need for its transformation.

Generally, I needed to be able to interact with people with different interests, worldviews and values, to build rapport and trust amongst the groups and 'fire up' the process. I thus needed to act as an agent for change and initiate the measures that would motivate the rest of participants to partake in analyzing their own situation and develop an action plan to contribute towards relevant learning. My experience from and knowledge about group dynamics, as an agricultural extension practitioner and educator, and extensive experience with rural community life, helped opening up the dialogue and critical reflections. Creating awareness among participants was vital in many ways: a) cooperation among themselves was important in order to tend to the multiple challenges facing rural schools and communities and b) linking schools and communities pedagogically is crucial for enhancing school outcomes (Epstein, 1995; Prew, 2009).

The values of learner and community–centeredness are vital for guiding curriculum contextualization. This means that contextualized learning enables learners to form connections between themselves, the socio-cultural contexts and school education. In this process, learners develop knowledge, skills and attitudes important for quality life. However, this is not possible if school activities are detached from the communities' everyday experiences. Effective learning beyond acquisition, require active application of knowledge, skills and processes in the context and culture in which learning takes place. Informed by the current practice, establishing relationships and creating spaces for empowering stakeholders is important for contextualization of learning. The process to support such endeavor should follow a strategy that supports relationship building, cooperative learning and orientation towards social change. According to Whyte (1991), PAR satisfies the above conditions. Thus, we adopted an experiential research approach in introducing experiential learning in the school.

3.2.2.2 The entry point

I started by reflecting on Tanzanian education practices since the independence. My PhD course work on action research methodology, social learning and experiential learning perspectives,

inspired me to carry out this reflection. I make reflections on my personal life experiences developed at different stages.

Firstly, as a student between 1979 and 2012, during my PhD program course work at NMBU, secondly, as a practicing teacher for eight years at secondary school level and thirdly as an agricultural extension worker for three years and finally as an educator of agricultural extension workers at university level. My aim was to search for opportunities and challenges for providing relevant primary education in rural Tanzania. One of the results of the reflection was that engagement of local actors in enhancing relevant primary education was of very low levels. On the other hand, the experience with ESR policy and my new theoretical understanding accrued from PhD course formed a basis for providing stakeholders with democratic spaces to analyze the situation and negotiate for the way forward informed by local understanding and realities.

Having the theoretical view, while taking into account Luke's (2005) cautions that it is important to be aware of politics and power structures that shape how people perceive their views and interests, I initiated contacts with local actors in the target community to extend dialogue. In this respect, we adopted a two-stage consultation process (Figure 5). The first stage was conducting informal meetings with the individual members of each group of participants for discussions about the school learning practices, challenges experienced, the extent to which the practice had met their expectations and what kind of opportunities they perceived as available to solve the challenges. The second stage was conducting a dialogue conference with all the groups except from the pupils, to reflect and plan what to do and how. This approach allowed inquiring into direct personal experiences rather than looking to 'experts' for answers. The research team did not presume that some groups had 'the answer', or even that there was 'a ready-made answer' to the various challenges in the community and the school system. I describe the process and outcomes of the first phase in *Article I.*

Prior to the initial dialogue conference, we conducted a practice mapping exercise to examine the school's everyday practices and experiences. Both the informal meetings and the practice mapping yielded information that we reflected upon during the first dialogue conference. On this platform, participants conceived and developed an action plan aimed at linking formal learning with community experiences for meaningful learning. The vision of the action plan was concretization of ESR, outdoor agricultural based learning and other relevant learning activities. I describe the processes of the dialogue conference, the action plan and experiences developed in *Article II.* For a period of almost ten months, in collaboration, the research team and other stakeholders embarked on implementing the action plan. The team slightly modified the plan during the implementing phase. I discuss the implementation, experiences and knowledge developed in *Article III.*

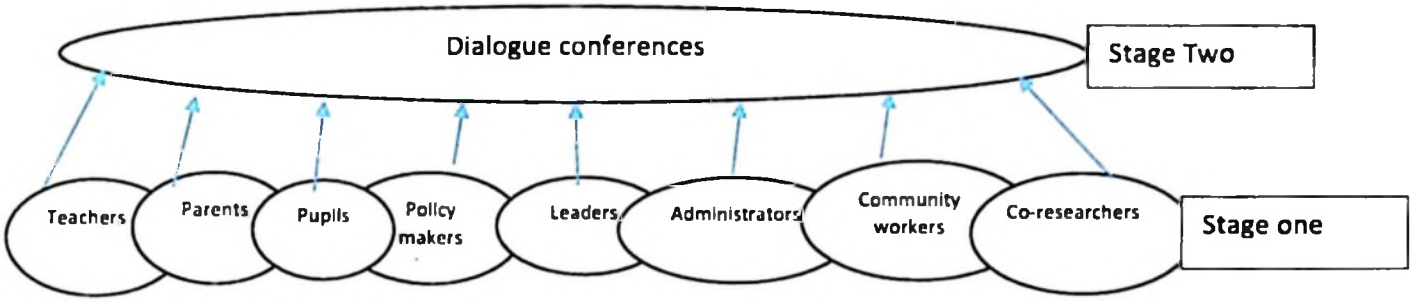


Figure 5: A schematic representation of a two-stage community consultation process, meetings with separate groups and persons in the first stage, bringing all the groups together in the second stage

As demonstrated above, I aimed at avoiding the hit and run approach usually employed by many researchers using conventional approaches, who assume that it is possible to come in with blue prints, develop an action plan and move on. I needed to engage in a democratic research process, within a community, which although it had a strong tradition for cooperation in solving common challenges, had no previous experience in collaborating in the formal education sector.

As I explain earlier, local actors perceive the sector to be highly structured and its management highly professional. Like Gjøtterud and Krogh (2012), I have learnt through this project that the more democratic a process, the more observant the leader needs to be in order to include all participants in all crucial processes and decisions. I therefore took the role of a research leader and decided to focus on the interests of preparing youth in school for life in the community. I actively engaged with different stakeholders in the community to explore possible ways to contextualize the primary education curriculum.

3.3.3 Position in relation to the research participants

Carr (2000) reminds us that very little research in the social or educational field is or can be value free. Therefore, researchers come into research tasks with individual worldviews and positions in relation to the subject, the participants and the research context that may influence their choice of processes and interpretation of outcomes (Foote and Bartell, 2011). It is essential for qualitative researchers both to be self-aware and to be aware of different research positions in order to undertake ethical research (Sultana, 2007). The binary language of insider/outsider has traversed many social science disciplines including education (Thomson and Gunter, 2011).

Viewing action research as a broad concept covering many research practices, Anderson and Herr (2005) propose a continuum of positions that range from (1) an insider studying her own practice to (6) an outsider working with insiders. Between these extremes, are other positions: (2) insiders in collaboration with other insiders; (3) insiders in collaboration with outsiders; (4) insider/outsider teams working in reciprocal collaboration; and (5) outsiders in collaboration with insiders. According to Hockey (1993), the insider researcher shares the social world of the research participants. Outsider researchers could be described as people who 'parachute' in to the setting for the purposes of conducting research and then vanish (Gerard, 1995). Although they might have good intensions, psychologically they may be a bit distant from the settings (Clingerman, 2007). In this case, my position changed over time. I assumed different positions at various stages of the research process. I thus applied the above scale to clarify my positions.

During implementation of the capacity building activities, I assumed the role of a trainer/teacher for the teachers and fellow core team members especially on action research and experience based teaching strategies.

I assumed the role of a facilitator when planning and facilitating meetings, official visits and other project events. When planning the research, gathering and analyzing data, and the management of the research project as a whole I took the role of a co-researcher and a team leader. In order to publicize the results of our activities to the rest of the world, through articles and progress reports, I assumed a role of a writer. The changing of position was a response to various complex demands and situations I was facing while attending different tasks as a team member (I describe the team in section 3.3.4 below).

The complexities sometimes compelled me to challenge certain principles inherent to the theory and methodology. For example fulfillment of ethical issues such as attainment of individual informed consent, confidentiality and the essence of the freedom to withdraw and anonymity. Maintaining anonymity contrasted the participants' wishes, because they committed to the process and wanted to be publicly known for their contributions.

Accordingly, I took on fourth position as described by Anderson and Herr (2005), that required an 'insider/outsider reciprocal collaboration', which I felt was the best approach to attain the project's goal. However, despite attempts at consistency, my position as explained above was 'fluid', shifting at various stages, from 'insiders in collaboration with outsiders' to 'reciprocal collaboration 'to 'outsiders in collaboration with insiders' and even 'outsiders working with insiders'. These shifts were a direct result of the responses to the interests of the various parties, the nature of a task and the particular kind of knowledge most useful to each party.

PAR is a form of qualitative inquiry that poses a collaborative, self-reflective process among research participants to develop knowledge. They are together acting in this critical research process to identify and illustrate their individual concerns, beliefs and values. The role of the researcher(s) as a facilitator(s) is an extremely important social and political position within the participant group, education and society. In this project, I acted as a co-researcher and collaborated with co-researchers to search for innovative ways to promote relevant learning thorough contextualized pedagogies. Thus, the nature and goals of the research project were practically orientated.

3.3.4 Research team composition, roles and responsibilities

The research team for the project draws members from three distinct groups. The first group is of researchers based at SUA, composed of members from agricultural extension and community development, teacher education and animal health and production sections. This group was the core team. The team met on regular basis at SUA and at Nyandira (study site). During the first year of the project, excluding training sessions, the team met at least once in every two month. For subsequent years, the team met at least once in every three months.

Initially a regular team meeting could last for four hours because we needed to prolong the discussions due to differences in methodological and philosophical perspectives among members. However, as time progressed and the more members interacted, the duration of the meetings with almost similar coverage dropped to an average of one hour. The core team planned data collection

instruments, data processing, data publications and preparing of project implementation reports. As PhD student in the team, I developed the teaching modules on experiential learning, and carried out these modules, teaching the teachers (and parents) in Nyandira.

The second group of researchers based at NMBU primarily consisted of my two supervisors, Sigrid Gjøtterud and Erling Krogh. Together with the first group, they constituted an extended team. The NMBU group too took part in a few meetings and discussions, at least once in a year, during the project life, and guided the process. Their participation was necessary since neither of the SUA researchers had experience as action researchers. Their contributions on discussions about action research as a research methodology helped to improve the understanding of action research strategy among SUA participants. This state of understanding reduced our inherent differences that mainly caused prolongation of the meetings and therefore reduced meeting duration. Lastly is the third group composed of teachers, parents and other actors at village, ward and district levels - administrators, policy makers and community development officer (also referred to as local actors).

The extended team mainly conducted the initial project processes, but during the dialogue conference, the entire team negotiated and agreed on action plan, and roles and responsibilities (see Article II). For example, on top of the above-mentioned tasks the university-based group took on a role of facilitating and guiding the projects processes. Teachers, parents and other community actors were responsible to implement actions at school. The education administrators and policy makers in the team ensured that project actions did not contradict existing policies and frameworks. In addition, they assisted in advancing changes that touched the existing policies and required attention of policy makers. Other administrators helped in mobilizing other community members to contribute in implementation of the action plan. During occasions like reflective meetings and during data presentation and discussions, the entire team worked together. In addition, the NMBU based-researchers visited the study site and participated in meetings and discussions with the other team members. Their participation was useful as they brought external perspectives into the discussions and thus, they contributed to overcome 'cultural blindness'.

In this document, I use the term participants and the team interchangeably to refer to the entire research team. I also use the term university based researchers to refer to SUA and NMBU groups.

3.3.5 The roles of each writer in the project and the research team

The supervisors and I adopted the interactive writing process in writing the articles for my PhD project (Dowse, 2015). This entailed the negotiation of not only each author's role, but also the different cultural and professional experiences, beliefs and theoretical positions that we held. After the entire team agreed on roles and responsibilities for the university based co-researchers, I teamed up with my two supervisors (Erling and Sigrid) for writing the articles.

The strategy was that, I took a major role in data collection, management and presenting data to the team during what we called writing circles, but also to the entire research team during evaluation meetings, as well as to other key stakeholders at EPINAV program level, and international fora, for example CARN (Collaborative Action Research Network) conferences. In these writing circles, I experienced an intimate social interaction, where conversations and feedback

took place in a relaxed and friendly mood. I experienced and lived the notion of *love and critique* in academic supervisory work (Gjøtterud, 2009).

In the circles, we conversed and agreed on what themes to write about and main arguments to put forward. Then, I took a role as a 'writer' whereas Erling and Sigrid switched roles between 'reviewer' and 'editor. I wrote the first draft of each article, and then mailed an electronic copy to both Erling and Sigrid. They worked on the draft, made suggestions for modification and passed the draft back to myself. In periods, when I stayed in Norway, when Erling had his sabbatical in Morogoro and when Sigrid and Erling came to Morogoro for short stays, we closely collaborated around the articles and this "coat". All three authors contributed substantially to the formulation of the project.

3.3.6 Struggling with the power structures

Avison *et al.* (2007) discuss four major sources of power in action research projects. First, authority as a source of power derived from formal/institutional structures. Second, the resource rights as a source of power derived from ownership or control over resources. Third, the influence as a source of power derived from social attributes for example trust. Fourth, politics as a source of power derived from the exercise of strategic processes. Throughout the conception and implementation of the project, I experienced the first three of sources of power as described below.

Authority and the resource rights: as mentioned earlier in *Chapter 2*, a university wide research program, EPINAV, externally sponsored and formulated based on quantitative paradigm funded the project. Administratively, the program leadership and the SUA management procedures guided the design and management of the program. The development of the project proposal required the applicants to follow a given 'proposal template'. It is important to note that none of the members in the program management team had a background in action research. What our team did during development of the proposal was to align the proposal with the given format. Luckily, the committee positively evaluated the proposal for funding.

When it came to the implementation phase, program leadership did distribute funds evenly along the project timeline (in years) regardless of the nature and intensity of specific project activities for the specific year. A formula for calculating yearly allocation was a function of the total project budget, divided by project life in years to get annual allocation for the project. The rule was to disburse funding for one year in two installments. This did not in any way match with action research. Within such formal structures, it is very difficult to deal with emergent situations or to respond to contextual changing realities.

Delays were thus jeopardizing the trust of the participants. Unfortunately, the budget for the project was small, making the final allocation for each disbursement significantly insufficient to cover for project activities in the first six months.

In order to deal with the challenge, we officially requested shortening the project life by one year (at least on papers) to lower the base factor for calculating annual allocation. This raised the allocations at least enough to carry out activities of the first phase of the project.

However, after fixing the allocation issues as explained above, there came another quandary, as the flow of funds did not happen as planned.

We had to wait for one year after the date of official start of the program before the program accountant deposited the first allocation. Even after allocations, it took three weeks on average from the day of handling in a fund request to the day of disbursement. The Program management team gave no official explanation for the delays. For me this was even more frustrating, as it affected my PhD educational plan in respect to activities and scholarship timings.

I wrote letters to the program leadership two times with no acknowledgement. I think this is because the accountability line is unidirectional, always downward. The only solution was to be patient, let it go and wait. Yet I had to stay focused (McNiff, 2002). Another point related to power structures is the principal investigator/project leader's qualifications. According to EPINAV program guidelines, a project proposal pass for review, if a proposed project leader is a senior SUA researcher. I relate this condition to the power of influence as seniority and not expertise of an individual in the team.

For our project to qualify, the team had to comply with the requirements. I asked my head of department, a senior lecturer, to be a principal investigator, although she had no experience in action research methodology. She agreed on the condition that I should attend all the duties and responsibilities, except privileges attached to the post.

Practically, she retained her formal authority over management of the project. This was another source of dilemma for me, especially when it came to making technical decisions. There were some disagreements regarding practical issues and action taking in the project. For example at the beginning, the project leader and other core team members regarded spending extensive time in the field dialoguing with community members or conducting reflection meetings as waste of time. Reflecting on this situation, I came to realize that this probably was because most of the early discussions in the team focused on content of the research project for conformity with the program requirements. The team spent very little time discussing the differences regarding inquiry paradigms. After that realization, I spent some time to discuss philosophical foundations underpinning action research in every meeting with the core team. Slowly as time passed by, team members started to understand and found some synergies with familiar inquiry paradigms. The disagreements slowly minimized and after publishing a paper[12] from the project data, the members to a larger degree unified on the research strategy. Gradually, we developed mutual confidence and understanding of the process.

Reflecting on the above struggles, I see three key issues that made me survive. These are: (1) being a good listener, (2) ability to learn from the context and reacting according to the demand, and (3) patience and having critical friends to share the frustrations with for encouragement.

The discussion above has shown that the power dimensions related to formal structures and organization, authority to decide over use of resources and development of authority through trust building in social interaction have been decisive for the accomplishment of this PAR project.

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[12] Msuya et al., *(2014)*. Revitalization of education for self-reliance in education for enhancing youth involvement in agriculture in Tanzania. *South African Journal of Agricultural Extension*, 42(2):103-114(http://www.ajol.info/index.php/sajae)

Both the university hierarchy and the rigid structure of the EPINAV program challenged the flexibility. This kind of flexibility is a prerequisite in order to be able to follow time schedules and to secure democracy, as requested in PAR projects. The situation becomes more complicated when, in addition, the responsible authority (in this case the EPINAV program management), hold back or do not distribute necessary resources to the project on time. This also is a serious threat both for implementation of such projects and for maintaining engagement and trust among stakeholders. Furthermore, the lack of understanding of what kind of processes and resources that are necessary to accomplish PAR projects among decision-makers, can threaten the projects. In this project, I used trust-building dialogues to overcome misunderstandings and secure distribution of necessary resources.

3.3.7 Extending the reflection on power issues beyond project boundaries

Unfortunately, the above-mentioned challenges related to power dimensions are not restricted to this project, but characterizes both my university and the Tanzanian society system in general. Although the political system in Tanzania is democratic, it is also anchored in traditional hierarchal systems with 'chiefs' with considerable and undisputable power. The traditional power structure intertwines the democracy so that those who get positions can become 'chiefs'. This is the case from the president of the country and downwards in the political and governmental system. This means that structural power and power over resources depends both on the actual 'chiefs' in the system, the degree of acceptance and affiliation with traditional hierarchical power systems or with democratic values in the actual institutions.

Revolution of the system is unlikely, but trust building through social interaction might be a way to reform the systems towards democratic values. In addition, it might build legitimate authority, for example in action research projects. By choosing a PAR project, I chose the trust-building alternative. In Tanzania, the power structures challenging successful implementation of such projects might seem to be insurmountable. Although I am conscious about the challenges, and I have observed that the pathway to empowerment through democracy and contextualized education is long and demanding, I still believe it is a possible pathway to build democracy and a better life and livelihood for the Tanzanian population.

3.3.8 Data collection methods and data analysis

I have organized this section in to main parts, data collection methods and data analysis procedure. In the first part, first, I outline the methods used and followed by description of each method starting with participant observation, audio-video recording, semi-structured interview and document reviews. The last part presents the data analysis procedure I employed.

3.3.8.1 Data collection methods

An effective data collection design for qualitative educational research includes as many different sources as possible (Erickson, 2012). Similarly, Herr and Anderson (2005) argue that it is possible to apply multiple methods for data collection in action research.

Many sources can give a broad and more complete picture of the situation, but too many sources or methods might not be efficient. In my experience, the use of multiple sources or methods

and data sometimes is very confusing and time demanding to analyze. The best option is to strive to include what is practically possible and that do not compromise the quality of the findings. In this research, the choice of data gathering techniques focused on specific contextual information at different stages. I discuss methods used in the different articles. In short, they included the following:

- Observation and researcher's journal or log
- Video\audio recordings and field notes from meetings and dialogue conferences
- Document analysis: policy documents, school curriculum, and minutes of meeting, project implementation reports, reflection notes and teaching plans
- Semi-structured interviews with teachers, pupils and community members during the practice mapping exercise.

3.3 8.2 Participant observation

According to Gobo (2011:17), participant observation allows the researcher to establish a direct relationship with the social actors by staying in their natural environment. The purpose is to observe and describe their social actions by interacting with them, participating in their everyday ceremonials and rituals, and learning their code (or at least parts of it) in order to understand the meaning of their actions. I used this method throughout the whole research process. For instance, during the first phase of the project I made extensive observations on teaching and learning practices in and out of classrooms. In addition, I observed the general school environment, infrastructures and general social life of the school. Also throughout implementation of the action plan, I made observations. I used a combination of observing and questioning as primary techniques where, insights gained from 'questioning' for example provided insights for 'observing ' and vice versa (Erickson, 2012). Observations informed the interviews and informal conversations, and new observations drew on earlier conversations.

Prolonged time spent in the field enabled such a recursive process, and it provided an opportunity to understand the contextual conditions in depth. I used my researcher's journal to record events and field notes obtained through observations.

To avoid observer bias, a potential weakness of participant observation, when participant consented, I audio-video recorded the events. In addition, I summarized and presented obtained data to the team for validation.

3.3.8.3 Audio-video recordings and field notes from conversations and discussions/meetings

Derry *et al* (2010) describe audio-video recording as a fruitful strategy for collecting rich data from detailed day-to-day events in the "real world" in qualitative educational research. Researchers can use recorded images and sound either as a resource for analysis or for the documentation and representation of those actions to other audiences (Erickson, 2011).

A combination of audio-video recording seems more reliable than real-time observation and note taking, as it allows for repeated examination of the data.

We aimed at avoiding the problems of selective attention or recollection limit data. We used a digital camera and a recorder for audio and video recording during various formal and informal

meetings. Before recording, we asked the participants for their consent. During the initial dialogue conference, in addition to researcher's digital camera, we hired a technician for video recording. We aimed to let the facilitators concentrate on the discussions, and to ensure accuracy and full coverage of the event and for reliability checks. The recording enabled the facilitators to study the speech and non-verbal actions of the participants in the dialogue conference and meetings. One of the challenges of recording technique is lack of 'contextualness', as it does not show what happened before and after the recording (Marshall and Rossman, 1989). I used the technique in combination with note taking and photographing.

During the initial practice mapping exercise facilitators made notes about each teaching and learning practice concerning the school's daily routine, lesson preparation, teaching strategy, the pupils' whereabouts and interaction between teacher and pupils as well as community and school. As a facilitator, I also wrote down the general descriptions about the school environment: pupils being tired or exhausted especially during afternoon session because of hunger, poor learning and teaching facilities and infrastructure and incidents that were of special interest to help my memory.

I tried to keep the notes as concrete and close to the practice as possible since I intended to use them during the initial dialogue conference for the participants to get a full picture of the daily happenings at the school. During the intervention phase, I made field notes on the progress of the execution of the action plan, mainly on dates, who participated, changes and re-planning, challenges encountered and solutions found, as well as participants' comments and reactions.

3.3.8.4 Semi-structured interviews

Any particular interview can be placed somewhere between 'unstructured' and 'structured' (Kvale & Brinkman, 2009). The interview in the present case was semi-structured. The overall goal of semi-structured interviews is to obtain descriptions of the interviewees' worldview, with the purpose of interpreting the described phenomena (Kvale & Brinkman 2009). I chose the approach because it allows flexibility and the possibility to generate a more comfortable environment, crucial for development of rapport and trust between parties, and respondents' viewpoints and invisible factors related to the research topics. Also understanding the world from the participants' perspectives could emerge.

The core team conducted semi-structured interviews during the practice mapping with teachers, parents and pupils. The team designed an interview guide with key questions grouped thematically for use as reference and prompts when necessary. Each participating group had a different set of questions. We organized the questions around central themes aimed at understanding teaching-learning practices and associated conditions. Four research team members and a representative from the EPINAV program's monitoring and- evaluation unit looked at the questions to check for language clarity, consistency and conformity with the program objectives. Then we interviewed teachers and pupils at school and parents at their households. The atmosphere was relaxed during the interviews since the respondents knew the team members well.
We had all spent a lot of time at the school and in the community prior to the interviews. They also knew that I had been working as a teacher myself, so that they knew that I understood their work from the "inside".

The familiarity with interviewees and relevance of the topic discussed, were instrumental factors to offset the interviewer effect, which according to Denscombe (2007) is a potential weakness of interview as a data collection method.

3.3.8.5 Documents review

In line with Silverman (2006), we used documents as a resource to gather a general picture of how the school and the community operated and to find out meanings and contradictions in the teaching-learning practice at policy and practice levels. The team studied related policy documents and school reports to develop background and contextual information for the research. I found out that, while the curriculum emphasized the use of learner-centered pedagogies, teachers used teacher-centered pedagogies. Regardless of the policy emphasis on strong school–community linkages, schools operated in isolation. Furthermore, although at policy level, ESR is the overall philosophy of education (URT, 2014) the linkages to both community experiences and everyday life realities were poor.

I also reviewed documents produced in the research project: activity reports, minutes of meetings and reflective notes. The reviews offered information on the extent of implementation of agreed actions and challenges encountered. Studying documents within the social situation and context where they were we produced, is important for interpretation and sense making (Punch, 2009). Note that the amount of data collected during the three years in the field is extensive and I only used a part of it for the analysis that appeared in the three articles.

3.3.8.6 Data analysis

Due to the large body of data generated during the project, we employed a thematic data analysis approach for Article I and III using the six stages of thematic analysis as defined by Braun and Clarke (2006). Article II focused on the processes of dialogue conference as a tool for democratic planning and learning for problem solving. We chose Eneroth's (1984) process method and method for dialectical analysis to be able to identify situational characteristics that showed changes in the process and factors that had caused the change.

Using both analytical methods in the data reduction process, certain themes, characteristics, factors and patterns emerged. I identified and summarized them for presentation, at a later stage, to the community and among the research team for discussions and further development (Glaser & Strauss, 1967). In the interactive nature of the action research approach, there is no clear boundary between data collection and analysis, and hence interpretations, revisions, consultations, feedback and input needed to be repeated and confirmed (Marshall and Rossman, 1995). I frequently presented the analyzed data and interpretations to other project participants, who actively expanded on the ideas of what limited or enhanced relevant learning at the local primary school. After several public presentations of the findings, I made final interpretations. The process was lengthy and time consuming. However, the PAR iterative process of exploration, planning, acting, and critical reflection, patience and participants' commitment were key factors that kept the project moving.

3.3.9 Ethical considerations

Ethical considerations are especially important when doing research that give human interests a priority and more so when you have a diverse group of participants and actors including children. As I explain in the articles, after fulfilling ethical clearance as per SUA research activities framework, we (participants) mutually negotiated and agreed on the course of conduct to follow. As a leader, I made sure that all participants discussed and became aware of research aims, processes, freedom to participate and all possible consequences of the research. Through initial discussions, participants in groups verbally granted informed consent. For school pupils, their parents/guardians gave their consent through the parent school committee, after the head teacher and district education officer received full information on the study. We did not grant complete anonymity (for reasons see *Article I & II*). The study posed no harm. However, we took care to make sure that project activities involving pupils did not pose any greater risk than a normal school day entails. In all outdoor tasks, adults worked with the pupils. Throughout we observed the need to facilitate democratic participation, improvement of human life, moral engagement in committed actions as our core values.

3.3.10 Limitations and challenges

Regardless of the good intensions of an interactive research approach employed in this study, research suggests that there are a number of limitations to this kind of work (Townsend, 2013). The most pertinent is Jay's (2003) observation that it is not always possible to be critically reflective as you might sometimes accept the validity of a situation before the research project can move forward. I find this position relevant to the present study, as the research process focused on the transformation(s) in the community (at stakeholders' group level) rather than on personal reflections at the end of each cycle. I provided rich descriptions of the particular community in question, teaching and learning practice in section 2.4 above. For this reason, the participants' perceptions underscored the focus of the findings. However, I interpreted many of the participants' perceptions regarding their own culture. In situations as such, the question arises how the researcher detaches him/herself from the focus of the research project. In addition, the focus of the project may fail to consider other equally valid and important perspectives in the community. I was vigilant in presenting data to participants for feedback and interpretations. However, for the majority of local participants, this was their first time participating in an action research project, or any research project. They had not fully developed knowledge on data analysis and reflection. This means my perceptions as an author had great impact.

Another limitation was the quality of my own perceptions and sensibilities towards the project and the participants. Although I always triangulated my own observations and interpretations by presenting them to other participants, I nevertheless interpreted the gathered data through my own thoughts and feelings. I stressed the need for training local actors on research planning and management, data collection, analysis and reporting to be able to contribute more in the process. I present a reflection on theoretical perspectives guiding the study in the next chapter.

4 A reflection on methodological and theoretical perspectives guiding the study

In *Article 1* of this thesis, I present the theoretical framework guiding this study. Here, I briefly highlight on what motivated me to choose the theoretical framework and research strategy, and how they fit together. In addition, I will discuss how the two align with the situation around the research topic and my experience and academic development aspirations.

I followed the research paradigm conceiving the research process as a product of the values of the researchers and put emphasis on the aspects of theory generation based on the social context and the relevance of results (Glaser & Strauss, 1967, Kemmis, 2001, 2008). In my opinion, considering the social relations between participants, relevance of the results becomes more important than hypothesis testing. Following Schwandt's (2000) assertion that local inhabitants, who live and experience their own situation, should make the conception both of their own circumstances and the complex world around them, I attempted to understand the world of teaching-learning and community development practice from my lived experience. The concept of lived experience both resonates with living theory and with radical empiricism in cultural anthropology (Whitehead, 1989; Jackson, 1989). As a student, when attending basic education, I developed an understanding of and lived teaching practices guided by ESR philosophy. Reflecting on this understanding, I have become aware that the philosophy ground itself on the belief that learning and cognition are more potent when situated within a meaningful context, and within the culture[13] and community within which learners live. Situated learning can enable educational institutions to become arenas both for change and for implementation of change.

In addition, as a secondary school teacher in the mid-1990s, I had tried the practice. I experienced how ESR-based teaching approach availed learners with opportunities to act upon authentic situations in groups, through dialogues, discussions, debates and problem solving. However, I was frustrated when I saw policy makers introducing policy changes that resulted in sidelining the philosophy in the formal education system at all levels in Tanzania. Consequently, teaching and learning practices has predominantly been monologue, examination oriented and detached from local contexts at all educational levels. Thus, the overall educational practice in Tanzania conflicts with the potential I experienced with ESR-based teaching.

After leaving teaching in secondary school, joining higher education and research settings in Tanzania, I have two main experiences: First, in higher education settings, academics seem to perceive quantitative research as superior over qualitative research approaches. Many researchers prefer quantitative research because of its validity, reliability, credibility and rigor in hypothesis testing for generalization of findings even for social sciences research phenomena. Qualitative research approaches, which includes and facilitates participants' contextual and experiential learning, which might lead to individual and social transformation, receives less attention. The positivist era is strong and the debate is still hot in research discourses, although the debate seems to be younger and less intensive in Tanzania than in the West.

[13] I use the term 'culture' to refer to sharings within a social group of artifacts, meanings, ideas and ideologies.

Second, despite of shared understanding among researchers on the pivotal role of higher education and research to catalyze community development, the Tanzanian researchers mainly frame their studies on- observation and reflection on others' practices. Collaborative action research to improve own practices and self-reflection on own practices seldom occur.

My experience is that quantitative research traditions seem to assume a separation of research from the change that researchers aspire to bring about. I have seen many researchers designing studies mainly for scholarly objectives, primarily publishing. In such traditions, the researchers regularly consider the research participants as research objects instead of co-researchers. They extract information from research participants by means of highly structured data collection instruments rather than co-creating knowledge through research dialogues for empowering participants in the process. The value of publishing for sharing results cannot be under-estimated. However, from ethical considerations, research practices ought to have impact beyond the academy. Unfortunately, in Tanzania research has a strong academic focus that diminishes the value and significance of local relevant and practical knowledge. I find the above contradicting with what I perceive as fundamental values of research aiming at enhancing locally grounded initiatives for social change (Freire, 1970; Nyerere, 1967). These values include local participation, cooperation and empowerment.

Some researchers argue that experiences that induce cognitive conflict in a person represent a source of motivation for exploratory engagement (Dewey, 1916; Hunt, 1961; Jarvis, 2012). This insight, on one hand, is a reason and motivation for my continued curiosity and passion to explore how educational programs might improve the fostering, building and sharing of knowledge that fits the context and culture and create conditions resulting to empowerment of members of communities in need of development. On the other hand, my personal experiences with ESR practices and my own struggle in determining my future academic development strengthened my interest on the subject. Nevertheless, I lacked available knowledge on a relevant theoretical framework to anchor my study and a research strategy to follow. The lack of knowledge intensified my frustrations.

In spite of my frustrations, I still had an inner drive to look for solutions and opportunities to widen my theoretical perspectives and research framework, both internally in my position as an academic at SUA and externally towards collaborating partners at the university. In line with Deci & Ryan (1985) my strenuous personal travel from rural Kagera to the university in Morogoro both had developed my perseverance and self-determined motivation to search for, discuss and elaborate more relevant research approaches. Through the collaborative research program between SUA-Tanzania and NMBU, I got the opportunity to meet and hold professional discussions with Norwegian experienced researchers and educators. The exchange of ideas on research experiences, interests and professional aspirations resulted in "sensation seeking" (Zuckerman 1979), and as I explain below, provided a part of a solution for the long-term search of a path to follow to meet my research interest.

Inspiring moments - meeting Erling Krogh and Sigrid Gjotterud: exposure to experiential learning theory and action research as research orientation.

Between 2008 and 2011, financed by a collaborative research program between SUA and NMBU, Erling Krogh visited our department as a researcher from NMBU. In 2011, Sigrid Gjøtterud in company with Erling Krogh also visited our department.

The head of my department, Dismas Mwaseba, did his PhD studies at NMBU and cooperated with Erling Krogh on qualitative methods and theories on agricultural extension. Therefore, he arranged professional meetings with Erling, himself and me when Erling visited SUA. We always had time for professional discussions on our professional experiences, epistemological and ontological stances, research interests and career aspirations. In the process, I noted that Erling's experience with relational based experiential learning (Krogh & Jolly, 2012) founded on Dewey's theory had many similarities with Nyerere's ESR philosophy (see *Article I*). Through these exchanges of ideas, I saw a beam of light towards a solution for my long-lasting theoretical and methodological struggle.

The new insights and perspectives further deepened my trust in pursuing research strategies in accordance with what I believed in and inspired me to read extensively on Dewey's and Nyerere's approaches in the efforts to find theoretical foundation for a study aimed at revitalizing ESR theory in contemporary education in Tanzania. The encounter with experiential learning (pragmatic) ideas relighted my confidence on the relevance of ESR philosophy in education in an ever-changing development environment. I had found a theoretical framework for a study inspired by socio-cultural and experiential learning perspectives.

In addition, Sigrid Gjøtterud's experience on action research strategy broadened my horizon of a possible and relevant research approach that extended my toolbox and the listing on the menu of methodologies to consider. In order to learn how to undertake a systematic investigation founded upon research built by peers in the field, and then to extend the current state of knowledge, I reasoned that an opportunity to further work with the likes of Erling and Sigrid was important. The same year, I applied for a PhD position at NMBU, where I also met other experienced action researchers and teacher educators. The university assigned Erling Krogh and Sigrid Gjøtterud to advise me on my PhD work.

In discussing and negotiating a research strategy appropriate to my research interests, mainly to generate knowledge for social change in democratic dialogue with local inhabitants, we finally opted for an action research strategy. Among others, Sigrid, Erling and I based our choice on the basic methodological principles on which the strategy rests. These includes: a) integrating research and action, b) a high level of reflexivity, c) stimulating learning among the participants, d) embracing broader political and historical contexts, and e) starting from aspiration and vision of social transformation and social justice (Somekh, 2006). These principles resonated well with my curiosity to re-examine the importance of ESR philosophy in contextualizing learning and research for community development in a Tanzanian rural context. In order to reach this end, I wanted to generate an understanding on how actors can re-brand ESR thinking both through reflecting on their experiences and contemporary pedagogical understanding.

As I have said above, the exposure to experiential learning perspectives and action research raised my confidence to choose an action research framework in my study, though uncommon in my department and university. The framework allowed me to design a research project with others, both pursuing my own convictions while exploring betterment of rural livelihood in collaboration and dialogue with local stakeholders.

As Helskog (2014) put it, the members of a society empower themselves and each other through co-operative planning, implementing, evaluating actions, experimentation of ideas and generation of knowledge. Helskog further emphasizes the strong relationship between ideas, empirical data and linking theory and practice. I found that action research could narrow the gap between the more traditional Tanzanian academic endeavors and active generation of knowledge and skills aimed at solving local challenges. The strategy strives to achieve positive change in the lives of research participants and therefore transformation. I envisioned facilitating local processes oriented towards larger integration of everyday experiences in learning for sustainable development through participatory action research approach.

In the following chapter, I give a summary of the articles and a discussion of the major findings.

5 Summary of the articles

In this chapter, I summarize the three articles included in this thesis, which correspond to the three phases of the project. *Article I* focuses on understanding the teaching and learning practices in Tanzania as based on local and global experiences to ground efforts to transform the practices. The article strives to answer the question of *what theoretical approaches can support initiatives aiming at revitalizing ESR for enhancing relevant learning. Article II* focuses on the collaborative reflection and planning for change and addresses the question *of how local actors can empower themselves and engage in local change processes, and thus take their responsibilities to effect the changes, through action research? Article III* focuses on how the actors implemented the actions they collaboratively planned, and explores the question of *what are the successes, limitations and lessons learned in the process of implementing the Nyandira project?* The same co-authors who are members of the project collaboratively wrote the three articles. As described in section 3.3.4 above, the writing process entailed negotiations of each author's role, different beliefs, theoretical positions and contextual understanding. As I fully explain in that section, we worked following an interactive process to produce the articles. We have published all articles in peer-reviewed journals.

5.1 Article I

Ahmad, A.K., E. Krogh, and S.M. Gjøtterud. (2014). Reconsidering the Philosophy of Education for Self-Reliance (ESR) from an Experiential Learning Perspective in Contemporary Education in Tanzania." *Journal of Educational Research for Social Change* 3 (1): 3-19

The article reflects on Tanzanian educational reforms and makes a critical historical review of the ESR philosophy, which Nyerere introduced after the independence, to guide the reforms. The aim of the article is to compare ESR philosophy related to education and community development with relevant contemporary pedagogical approaches and experiences. We use this comparison to found the research strategy and choice of theoretical perspectives in the study. We asked the following interrelated research questions:

- *Is ESR philosophy practically relevant in the contemporary education in Tanzania*?
- *If ESR is relevant, what theoretical approaches can support its sustainable revitalization?*

Informed by participants' reflection and literature, we found that the ESR philosophy is no longer dominant in contemporary education discourse. Yet, from theoretical and contextual understanding, it seems to have a potential to improve learning and community development in many ways. These include fostering linkages between formal and informal education systems as a way to connect school learning with other community institutions among others. However, the article highlights on some challenges that practitioners need to take care of. Following the above realization, the article presents the process of planning the Nyandira project.

The project is an initiative to revitalize ESR in contemporary education from an experiential learning perspective, following action research strategy. Through this collaborative process of formal and informal meetings with the various groups of stakeholders over a period of more than a year, we found that it was possible to capture stakeholders' interests, perspectives, knowledge and agenda. The rather slow and long lasting process resulted in strong relationships built on mutual

trust. The stakeholders' engagement was fundamental for the design and implementation of the project. The initial analysis documented the importance of taking situated contexts and the stakeholders' knowledge and beliefs into account when developing relevant pedagogical strategies. Overall, the article demonstrates linkages of the ideas of ESR with ideas of experiential learning and farm as pedagogic resource. The article further summaries the significance of the initiative for using farm as pedagogical resource for education and Tanzanian society.

Implications for teacher education are that the grounding ideas of ESR still have the potential to contribute to improvement of contemporary education. Thus, teacher education and curriculum development should take needed steps to reemphasize the ESR philosophy to contextualize primary education in rural Tanzania.

5.2 Article II

Ahmad, A.K., Gjøtterud S.M. & Krogh, E. (2015). Dialogue conferences and empowerment: transforming primary education in Tanzania through cooperation. *Educational Action Research international journal:* http://dx.doi.org/10.1080/09650792.2015.1058172

Overall, the article presents and discusses experiences developed through a dialogue conference, which was a vital part of the Nyandira project to achieve different purposes. First as a central action in order to facilitate a collaborative process, this could bring about a much-needed change in a rural school in Tanzania. Then as an example of how such change processes might be organized and thus create an understanding of the role and potential of dialogue conference as an action research tool to empower stakeholders to initiate and manage collaborative partnerships for integrating primary education into the community. The article addresses the following question:

- *How can dialogue conference as an action research method bridge a gap between traditional ways of mutual problem solving and research in Tanzanian communities?*

Research on experiential and situated learning demonstrates the relevance of anchoring learning activities in practical knowledge and contextual experiences (Dewey, 1929; Nyerere, 1967; Lave and Wenger, 1991). Further, literature on participatory research and community development emphasize the notion of localizing development by encouraging local participation (Freire, 1970; Fals Borda, 1995). In this article, we address the dilemma that although Tanzanian communities have a long tradition of cooperative learning and problem solving, the tradition has not permeated the boundaries of the formal education system. The education system has remained highly centralized with limited local participation (Prew, 2009). We provide highlights on how lack of local participation might have contributed to a myriad of challenges facing schools and communities today.

To address the research question and provide a theoretical grounding, the article gives a brief overview of the history of local cooperation and education for cooperation in Tanzania. The authors have related this overview to the development of local participation as espoused by Julius Nyerere (1922-1999). Further, we discuss ideas of promotion of human liberation, local participation and participatory action research as espoused by Paulo Freire (1921-1997). Inspired by the ideas above and our interest to engage actors to participate democratically in the processes of

reflecting on the ideas to inform local change, the article further revisit democratic dialogue traditions, and dialogue conferences specifically as a method developed in action research (Gustavsen, 2001). Finally, we describe and discuss our choice of dialogue conference as a democratic a platform to facilitate collaborative processes among local actors for enhancing relevant learning in a Tanzanian rural context.

Further, we present the planning and organization of dialogue, and emphasize the procedures of the dialogue processes. Thereafter, we show how the dialogue conference unfolded before we present and discuss the agreed action plan. Finally, we reflect on how the whole dialogue process influenced the research participants. We performed the analysis on recorded initial interviews and discussions during the two days of the dialogue conference, focusing one participants' interaction and deliberations.

The study reveals that dialogue conferences as a PAR method has immanent potential for uniting cooperative learning, research, and thus opening up opportunities for self-empowerment. It is a tool to ensure a democratic continuation, as it provides an organizational structure promoting neutralization of hierarchy-based power, at least temporarily. Further, the article presents issues that facilitators of dialogue conferences should avoid or take in to consideration. For example, before embarking on the task, facilitators need to be familiar with and sensitive to the contextual and socio-cultural characteristics of the participants and their experiences. Such familiarity and sensitivity enable them both to internalize and conceptualize contributed ideas and to adapt dialogue criteria in the process.

The implication for research and community development is that, although faced with some challenges, dialogue conferences make it more likely that solutions reached will have meaning for people in real life- conditions. Thus, the method is filling the existing gap between research and the way Tanzanian communities organize discussions and solve pressing social problem. In the process, actors collaboratively develop knowledge for institutional and social change, as in this case, transforming primary education for sustainable community development.

5.3 Article III

Ahmad, K.A., Gjøtterud, S.M. & Krogh, E. (2015). Exploring possibilities for contextualizing primary school education in rural Tanzania following a participatory action research approach. Journal of *Action Researcher in Education* (ARE) (6) p.69-90.

The third article makes an overall reflection of the whole project. Particularly the article focuses on the process of implementation of the collaboratively developed action plan discussed in *Article II*. The purpose of the article is to show and discuss the process and outcomes of the project aimed at improving teaching practices at Nyandira primary school. The research questions we address are:

- *How did the action research process empower different stakeholders to take up school development initiatives? Did they fulfil their responsibilities as stated in the action plan?*
- *Did the actions agreed upon seem to function as solutions for the identified challenges?*

- *What challenges did researchers and stakeholders face in the process, and how did they address them?*

In order to address the research questions, the article presents the action plan and, thereafter, how the participants implemented the plan. We point out areas that needed re-planning and reasons for that necessitated re-planning after reflective exercises. Further, the article presents and discusses to what extent different participants fulfilled their responsibilities as agreed. The article further assesses appropriateness of the agreed actions as solutions of the identified problem, followed by a discussion of challenges we encountered in the process and how we addressed them. Drawing from the project processes, we deduced four key principles that we employed to handle challenges in different phases of the project. These principles are:

a) Establish empowerment opportunities through building a common ground
b) Be patient and courageous to let the situation mature and develop abilities to overcome and handle tough challenges
c) Concrete familiarity with and sensitivity to the context and flexibility in facilitating the process of change
d) Clearly negotiate and define roles and responsibilities among the participants right from the beginning.

We experienced that the transition from the planning stages to implementation is not a smooth ride. Not all participants who commit to take responsibility, even in highly participatory platforms, fully honor their commitments. I have observed that co-operative planning and mutual understanding does not automatically results in actions. We do not find that the issue well problematized in the literature of participatory action research. Findings in this article show that stakeholders identifying themselves as being close to the situation commit more to contributing to improvement of the situation than those who feel more distant.

We argue that despite the fact that the project encountered contextual and structural challenges, we have registered some successes, both in the project school and project community and as a source of inspiration for neighboring communities. This shows that the processes of the project significantly strengthened school-community linkages.

The local actors empowered themselves through their engagement and were able to transform teaching practices for more relevant learning. We have developed an example we hope will prove useful for teacher education in Tanzania. The four principles we have developed, together with skills and knowledge can be a resource to guide PAR projects in similar contexts as Nyandira community.

6 Discussion and implications of study findings

In this chapter, I will discuss the major findings from the study by reflecting on the findings presented in the three articles. Then I will briefly highlight the implications for teacher education and professional development, research and community development practices in Tanzania.

6.1 Discussion of the findings

I have organized this section into five subsections:

a) Understanding of the interrelatedness of ESR, experiential learning and action research strategy.
b) The influence of project processes on participants' understanding of ESR and its prospects to transform primary education pedagogy in rural Tanzania.
c) Improved teachers' knowledge on active learning pedagogies and meaningful teaching.
d) Action research strategy - to guide transformation of teaching and learning, research and community development practices.
e) Engaging with differences in social change.

6.1.1 The Interrelatedness of Education for Self-Reliance Experiential Learning and Action Research and the benefit of engagement of three together

ESR philosophy, pragmatism and socio-constructive learning, coincide as all the perspectives emphasizes education that links theory and practice using learning arenas and activities with local relevance (Dewey, 1929; Nyerere, 1967; Jarvis, 2012). The uses of 'farm' as learning milieu underpin the role of experience and active engagement of learners with experienced others in the learning process. Planning and executing hands-on learning activities with experienced others improve the pupils' engagement. In the process, they appreciate the value of prior experience and connectedness with nature because they develop concrete experience to reflect on during theoretical classroom sessions. These learning processes encourage the pupils to find connections between what they learn in class and the activities of the larger community in which they live. Learning by reflecting on concrete and familiar tasks with experienced others, provides teachers with opportunities to encourage their pupils to develop critical-thinking skills (for example, analyzing, synthesizing, and evaluating). Further acting and reflecting increasingly can help pupils to engage in higher-level thinking and take action based on such thinking. Then, the next cycles of plan-act-reflect becomes better, as the learners apply the new conceptual understanding developed after interpretation of reflections and observations in the earlier cycles. From a conceptual change perspective, the learners approach each lesson using the skills gained from prior experience and then construct knowledge based on their own discernments (Hewson, 1981). Unlike when learning is 'abstract', this way of learning becomes holistic, coherent and meaningful.

By employing the concept of relationship-based experiential learning (Krogh & Jolly 2012) in the current project, we extended our understanding of ESR from an EL perspective beyond Kolb's (1984) conventional cognitive oriented EL model.

The relationship-based experiential learning model stresses the importance of emotional attachment and consequently commitment to the task, as a prerequisite for experiential learning. The relationship and involvement, and the concomitant motivation for learning, both presupposes development of physical and emotional connectedness and directed volition in addition to cognition.

Experiential learning is about learning from experiences, as is AR– you plan, act and reflect. Therefore, when the teachers (and other actors) are learning AR through the process of being engaged in AR, they also learn the principles of experiential learning. John Dewey is an important fore father of the pragmatic philosophy underpinning both experiential learning and AR. Planning, acting, observing and reflecting on concrete experience are important for cooperative learning and developing practical knowledge in democratic spaces and structures availed in AR.

In my opinion, facilitating such learning sequences, characterized by experience followed up by reflection that again informs new actions and experiences is important for improving both education and community development practices. In such a dialectical process, learning becomes an active production rather than a passive reproduction of meaning. Elliot (1991) reminds us that when stakeholders view learning as active production, learning becomes a manifestation and release of human powers. This is because the learners construe their understanding as an extension of their own natural powers in relation to things and events that matter most in their life.

Through the processes of our project, we (participants) realized the need to extend the learners' natural power through education, and the power of the interrelations between ESR, EL and AR in developing scientifically and socially relevant knowledge. This might be a reason why the participants support initiatives to revitalize ESR ideas in contemporary primary education as pointed out by Msuya *et al* (2014). Similarly, discussing connections between the ESR philosophy and higher education in Tanzania, Kiondo and Matekere (2010) noted a broad and rich relevance of the philosophy. We also have gained a similar understanding through a parallel process of AR. Generally, participants' engagement in the project, significantly have influenced the stakeholders' perception and understanding of ESR and its inherent benefits, as discussed below.

6.1.2 The influence of the project processes on participants' understanding of ESR and its prospect to transform primary education pedagogy in rural Tanzania

Participant engagement in the process of the project had a number of benefits. First, we realized the limitation of the former arrangement to implement ESR in Tanzania, which we have well discussed in *Article I*. Other benefits includes the stakeholders' renewed view that ESR still has the potential to improve the teaching-learning process, as well as the prospect of addressing a significant hindrance for learning, namely the problem of pupils short-term hunger[14]. Last but not least, the prospects of enhancing youth involvement in agriculture, which we have published elsewhere (Msuya *et al.*, 2014). Below, I discuss the perceived ESR prospects for improving teaching and learning and solving the problem of short hunger.

[14] Short-term in a way that pupils are not able to access food for the time they are at school though they would be able to eat when they get back to their homes.

6.1.2.1 Perceived prospects of ESR based pedagogy for improving teaching-learning processes

The stakeholders' awareness and conscious understanding of a policy or a program is a prime factor for its smooth implementation. According to Mosha (1990), stakeholders' misconception and shallow understanding of the ESR philosophy, was a main reason for its failure in the past. Through the interactive and collaborative processes of the current project, stakeholders' perception and understanding of ESR philosophy has changed.

In their views, ESR based learning provide learners with opportunities to interact with their everyday surroundings and activities, farmers as familiar professionals and goat keeping as a locally meaningful activity. The key stakeholders (pupils, parents and teachers) no longer perceive the learning activities as a waste of valuable school time, as they felt before. Teachers no longer view the planning and implementation of the activities as a mere task for fulfilling curriculum requirements. They experienced the pedagogical potential of the activities through improvement of pupils' academic achievements among other values (Msuya *et al.*, 2014).

The pupils experienced time spent in performing hand-on activities in the farm as a breathing space, in free air and full of interesting moments. The sessions included light purposeful exercises, for example making terraces, milking goats, crop planting etc., and the pupils found the learning activities interesting. The meaningful experiences contrasted sitting in the classroom receiving instructions from teachers throughout the day, something we observed pupils find boring. Research has demonstrated the relationship between exercise and oxygen uptake with cognitive processes (Colcombe & Kramer, 2003). We have therefore experienced that the inclusion of light physical exercises improved oxygen uptake something that improved cognitive processes and therefore keep pupils cognitively engaged during sessions.

In this study, learning in authentic environments (in farms) provided pupils with opportunities for learning through individual and group tasks, and they seemed motivated. They experienced co-operative learning methods as successful. Yet, regrettably, from my experience, the methods are the least used by primary school teachers in Tanzania. More importantly, pupils' concrete experience of the strong connections between subject matter and their everyday life experience, improves their attitude towards such activities (Lieberman & Hoody 1998, Haubenhofer *et al*, 2008). In our case, in an area with 98 % farmers, agricultural learning activities facilitate this connection. When the pupils connect with their learning material and tasks, the likelihood of transferring knowledge, skills and orientation developed in the process beyond school life, increases (Brookhart, 2010; Jolly & Krogh 2014). The reason is that with increased abilities, pupils can apply knowledge and skills developed in schools to solve daily life challenges. In "Experience and Education" Dewey state that, *'every experience is a moving force and its value can be judged only on the ground of what it moves towards and into'* (Dewey, 1938: 38).

Experience developed in this project, helped pupils develop personal relationships with farm tasks. They no longer perceive the agricultural activities as a punishment, a drudgery economic activity for the poor, elderly rural people, but a meaningful activity for the individual and society's wellbeing. Research indicates that realizing meaningfulness in learning makes the entire learning

process personalized and holistic (Ausubel, 1963). I think, without personal relationship, what is learnt remains meaningless and extraneous information that can be forgotten (Smeds *et al*, 2015).

6.1.2.2 Perceived prospects of ESR based pedagogy for solving short-term hunger among pupils

Our reflection is that, the perceived importance of any innovation depends on the extent to which it contributes to solving a practical problem. This is in line with Dewey's (1938) assertion that relevance of education presupposes meaningfulness in the presence and connectedness to pupil's surroundings.

The study school, as it is true to many public schools in rural Tanzania, does not provide school lunch because parents cannot afford to pay. According to WFP (2006), hunger leads to psychosocial dysfunction in children, and therefore is detrimental to their learning. Research documents that hungry pupils can hardly learn (Bundy et al, 2009). In a school garden, which parents and teachers established as part of the project, the children can produce food for their own lunches. This will improve the educational quality. When learning activities couple food production with learning the academic subjects, the benefit is even higher. Our study ended before we could give evidence of durable improvements of pupils' performance, but the indications of improvements are obvious. The pass rate of Nyandira Primary School pupils at National Standard 7 Examination increased from 27 % in 2012 and 25 % in 2013 (almost same level) to 62 % in 2014 (NECTA[15], 2014). The stakeholders in the AR project implemented the actions to improve the learning milieu at Nyandira Primary School between the national exams in the second week of September 2013 and second week of September 2014. A neighboring school in Mgeta, Kibuko Primary School, adopted the cultivation and school-feeding program at the end of 2012. Before the program started in 2012, 29 % of the pupils passed the Standard 7 examination. In 2013, 69 % passed and in 2014, 84 % passed (http:necta.go.tz/brn)[16]. Thus, the use of farm as a pedagogical resource seems to have promising prospects to address short hunger problems in schools and support pupils' relevant learning, thus contribute in improved academic outcomes.

6.1.2.3 Perceived significance and value of ESR philosophy across ideological traditions

There is an opinion among educationists that policy-makers in Tanzania associate ESR philosophy with socialistic ideology, and therefore find it inappropriate in a liberalized market economy. Therefore, the policy-makers decided to sideline the philosophy soon after adopting liberal market policies in the 1980s. Extensive discussions and reflections with local stakeholders and external audiences through the annual CARN conferences (2012, 2013 and 2015) and publications in

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[15] National Examination Council of Tanzania (http://necta.go.tz). To view the results on this web, select PSLE-2014 Examination results- Morogoro-Mvomero choose Nyandira Primary school-P1106108.

16 BRN stand for Big Result Now, a government initiative that aims at adopting new methods of working under specified timeframe for delivery of the step-change required. To view results on this web page, you first choose 2013 Visualization (PSLE) and thereafter 2014-2015 Visualization (PSLE). For each choose Morogoro, mvomero then select Kibuko (or Nyandira PS) and you get the pass rate of 2012, 2013 and 2014.

international journals indicate that a majority of action researchers and local stakeholders in Mgeta acknowledges the significance of the philosophy in contemporary education in Tanzania, despite some challenges. To the local stakeholders, the philosophy is more appropriate today than it was in the 1960s when it was founded (Msuya *et al.*, 2014).

Informed by the processes and findings of this study, we argue that the philosophy is not limited to a specific ideological orientation. We have experienced that ESR activities carried out together with familiar others helped pupils gain individual and social experiences necessary for construction of knowledge (Lave & Wenger, 1991; Vygotsky, 1978).

6.1.3 Improved teachers' knowledge on active learning pedagogies and meaningful teaching

Teachers are the cornerstones in implementation of any educational innovation, and teachers' knowledge, skills and attitudes are key factors. Before their engagement in this project, the participating teachers neither understood nor practiced active learning pedagogies as envisaged in competence-based curriculum (URT, 2005). Lack of in-service training to retool in-service schoolteachers is one of the impediments for adopting learner-centered pedagogies in Tanzania (Komba & Mwandanji, 2015). Therefore, the project arranged training focusing on developing teachers' capacities and skills to use available resources and relevant local practices in their teaching. After training, teachers' active participation in designing and experiencing the capacity-building program to promote pupils' experiential learning became crucial for implementation of new learning activities at the school. In the process, the teachers developed understanding about the practice and their roles within everyday work. I think this was possible because the teachers experienced the teaching method during the training. They did not only read, hear or write about the subject matter, as is usually the case in previous training. This might have helped them overcome inherent perceptions. This also critically influenced their attitude towards the practice, and these attitudinal changes positively influenced their professional identity. According to Adams *et al* (2006), professional identity means sets of beliefs, attitudes and understanding about their roles, within the context of work. Research informs that development of change-oriented teacher identity only occurs within schools that operate as strong learning environments, that allow for experiential learning and that provide a communicative structure that enable learners to reflect on their prior experiences (Meijers *et al*, 2013).

When we started the program, the teachers' main concern was that employing active pedagogies might consume more time than that slotted in the curriculum. After planning, practicing, reflecting and re-planning cycles they understood that this might not always be the case. However, there is a general agreement among teachers that initially time is required, but a single well-planned, exemplary outdoor task can generate useful experiences applicable to many learning lessons/topics. For example, through boiling goat milk, the pupils developed experience useful for learning mathematics in topics such as *quantities and measurements,* as well as learning science subjects in topics as *state of matter, temperature and energy use, sanitation, and disease control.* The teachers now understand that proper planning is vital and should take into consideration a broader view of the curriculum. In situations where the curriculum is highly prescribed, universalized and rigid, as is the case in Tanzania, we found out that practitioners need to

understand the curriculum content from a broader picture in order to transform the pedagogies. Likewise, a continuing syllabi analysis served the purpose of broadening the understanding of the curriculum content and also introducing broader themes in planning lessons/units.

Through participation in the project, the teachers appreciated the acquired pedagogical strategy as vital for implementing learner-centered curriculum for their own learning. However, knowledge of approaches does not necessarily lead to change of practice. However, we found that the action research strategy we followed in this project provided spaces and structures where the participants found their will, time and energy to commit themselves to the actual implementation of what they collaboratively planned to accomplish. Yet, the spirit of participation and commitment varied among the participants. We observed that parents and teachers were aware of the other's roles, acted to implement the plans. For example, teachers practiced teaching following an experiential learning model, through the small-scale farm in theoretical and experimental orientations (for details see article III). We attribute the change in practice to opportunities developed by the project, such as capacity building, establishment of a school farm and strengthening school-farm cooperation and school-community linkages.

Further, the project processes raised local actors' consciousness about the needs and value of cooperation in education as well. A state of awareness, alongside with communicative spaces and democratic structures provided in the project, allowed expression of all voices through developing a trust-based relationship to and among the participants. Eventually they established a common commitment and solidarity with each other and towards the project. In addition, the increased understanding among the participants on the value of meaningful teaching and closer relations between school and community boosted the willingness of some community members to volunteer in supervising pupils when attending outdoor activities in and out of school boundaries. The active community members made it easy for the schoolteachers to gain access to community resources, get the support required to execute their professional duties, and get needed support to simplify challenges facing them.

The team members developed the above knowledge and perceptions by acting and reflecting on actions. This is 'knowing by doing and thinking about doing' and not 'knowing by thinking'; the former is the emphasis of action research strategy (Bradbury & Reason 2003).

6.2.4 Action research as a strategy for transforming teaching and learning, research and community development practices

The growing use of participatory research approaches within community development and education disciplines explicitly recognize that the core objective of education as a human development process is enhancing community sustainability. As participants in this study, we both have broadened our understanding about the meaning of education and the learning process and developed understanding of the expedience of directing educational efforts towards activating, engaging, challenging and stretching the natural power of the human mind. Thus, our view is that linking teaching-learning practices with everyday realities of the community should be emphasized at all educational levels.

As I have explained in the introductory part and in the articles, the majority of Tanzanians view education as a process of adapting or accommodating the mind to structures of knowledge. This orientation affects the design and implementation of the Tanzanian curriculum. Sometimes curriculum designers seem to assume the structures to be a static framework for action. Curriculum designed following that assumption makes it difficult for learners to relate school knowledge with realities in their everyday life.

Due to participation in this project, many of the stakeholders in the study area now view education as a dialectical, inclusive and collaborative process. According to Elliot (1991), this is a process through which reconstruction of the meaning and significance of structures takes place in the historically conditioned consciousness of individuals as they try to make senses of their life situations.

For the last two decades, the government, through the ministry of Education and Vocational Training, has aimed to restructure and transform education both qualitatively and quantitatively. The emphasis has been to promote creativity and problem-solving skills among learners in order to solve the developmental challenges. Achieving these aims has been a challenge; the misconception about educational processes mentioned above is one of the main factors for the failure. In order to succeed, key actors need to change views and perception. Facilitating processes of change presupposes engaging a wide specter of actors. One possible outcome of the desired change might be to influence educators and researchers to push down 'professional silos'[1] and incorporate an interdisciplinary mentality in our core activities of teaching and research, institutional management and community development practices.

In this study, we found that when people work together as equals on a problem of pressing concern, by 'clarifying and negotiating' ideas and concerns, they are more likely to change. For example, when the parent representatives at Nyandira Primary School faced the District Education Office to demand allocation of more teachers, and immediately had two teachers allocated to their school, that surely gave them courage and a sense of achievement. They realized that challenging the distribution of teacher resources from authorities above local level was possible regardless of their position in the society (see Article III). Through interactive and collaborative processes, the majority of the participants built knowledge and capacities applicable in the community. Malcom *et al.* (2009) assert that capacity building enhances prospects for self-determination among community members and social transformation within the community. Such a potential for transformation is hard to obtain when applying research frameworks that clearly mark boundaries between the researcher and the researched. Researchers' participation and their involvement with other stakeholders in actions headed towards local improvement also aims at local empowerment (Freire, 1970).

Cooperation seemed to provide actors in this project with sufficient support and communicative spaces to make fundamental changes in their practices that endure beyond the research process. These findings are similar with those of Malcom et al. (2009). Though the project

[1] The term "silo mentality" is often used to describe individual and group mindsets which can be divisive within and between organizations and which are most often manifested as communication barriers creating disjointed, disconnected and detrimental ways of working (Stone, 2004).

came to an official end in June 2014, the networks, relationships and infrastructures established in the project still are functional. As a university based researcher and a leader of the project, the Nyandira school staff members initially perceived me as an outsider. Yet, I have become a member of the school family and now I am invited to many social events at school or family level.

Establishing and maintaining cooperation between different stakeholders, such as teachers, village, wards and school leaders, is not uncomplicated. Their views on teaching may differ, and there are power differences that may prevent constructive collaboration. However, by bringing these aspects into open discussions and stimulating dialogues between and among different groups, it becomes easier to deal with the above-mentioned dilemmas. I have experienced that facilitating such arenas is possible when participative approaches are used. I concur with Smith (1999), who report that such approaches allow and stimulate actors to bring the social parameters so neglected in many cases into the research process. For example, in this case, pupils brought the issues of school lunch and hunger into the process. This experience became a crucial one and has informed the designing of similar initiatives at other primary schools in the region, where one of the aims is to produce farm products to enable the schools to provide mid-day meals for needy pupils (Jäckle, 2016).

The inclusiveness, as is a key principle in PAR, provides pupils with an opportunity to have their voices heard. Critical reflection and co-learning, as other key ideas advocated by PAR, enable introduction of the ideas during designing of similar initiatives. Thus, I have realized that action research approaches have a potential to influence the phenomena studied during the research process itself. This is in line with Greenwood & Levin (1998) who argue that the true nature of social systems (social, cultural and institutional considerations) become most evident when you seek to make changes to them. In this study, we experienced how important it is to work with three key elements: action, research and participation (Greenwood & Levin, 2007).

6.1.5 Differences among research team members as an essential resource for change

The profile of our research team (see section 3.3.4) depicts a diversity of members, meaning that the team had inter-and-intra-institutional dimensions. Members came from different disciplinary backgrounds, motivations, skills, aspirations and cultural backgrounds. Reflecting on my previous experience with traditional research methodologies, the practice was to attract like-minded individuals to form a research team. There is a feeling among Tanzanian researchers that diversity might be a potential challenge. Encouraged by Whyte's (1991) observation that action research celebrates diversity as a resource, the team went for diversity. By working together in this study, we have found out that differences among team members may be an essential resource as I explain below.

I both learnt action research from the NMBU-based researchers group and by leading the process. The NMBU group learnt about the local conditions from me and through interacting with other participants during discussions and meetings and when visiting the school community. SUA colleagues learnt action research from me and through the actions of the project. I also learnt issues related to dairy goat production and project leadership and management from them.

Therefore, the extended team both developed necessary knowledge for the research in hand and a shared goal. In addition, we experienced a new way of doing research.

Further, university researchers worked side by side with local actors including teachers and parents. In Tanzania, where only a tiny proportion of the population have access to higher education, society members usually admire and respect highly educated people. The reason is that ordinary people perceive educated people to be intelligent, knowledgeable and exceptional individuals. The experience is that elites work with fellow elites.

When the local actors in this project realized that the university- based researchers appreciated their contributions in the discussions and meetings and inputs during action plan development, they felt recognized, honored and empowered (for details see article II).

For the university-based researchers, to be a part of teachers' everyday life was a novel experience. There is a saying that '*seeing is believing*'. The experience of everyday life of teachers provided the researchers with concrete examples of the carrying out of teaching practices. Thus, they developed familiarity with core issues around teaching practices. This was instrumental during the conceptualization of appropriate actions to take at the ground and alliances to make. Furthermore, the researchers developed cultural competences. Even the SUA group knew little about primary education practices as we mostly deal with the farmers and their institutions. Most importantly, the researchers experienced that hungry pupils not at all are good learners.

From the school authorities, I learned about the difficulties faced in performing their duties. They are working under a highly top-down hierarchical system and felt over stretched. Despite being overwhelmed due to scarcity of resources and little support from the community, they were patient, enthusiastic, united and full of hope. They were also open and welcoming and pioneered for trying out the use of farm as a pedagogical resource. However, I experienced that personal characteristics of the head master are important to influence change. At Nyandira primary school, we worked with two head teachers. The first one retired after one year. For the remaining period, we worked with the second. I experienced differences between the two in terms of level of commitments, quality of leadership and autonomous decision-making. The former seemed to be more competent and engaged than the latter in all three aspects.

Through being team members, the school authorities and the local actors both developed lobbying and stakeholders mapping skills and awareness of their responsibilities in dealing with problems facing their school. Some also learned that there is a different way of doing research. This was very useful as it breaks the long held feeling among community members that research is only for the academics. In addition, they realized that they were able to contribute in teaching and doing research, the competences they thought were limited to educated professionals.

Generally as a team, we developed and learned together. We realized that our differences analyzed from contextual lenses are only superficial and that we needed each other to achieve our research goal. Jansen (2009) argues that one way to overcome barriers to change is to focus on 'common humanity' of people. It seems likely that, when all participants are honored, valued and integrated, a high degree of diversity among participants who still share a common goal enables the research team to handle complexity efficiently. As Niemann (2006) correctly put it, we must not see diversity as a dividing factor but as a challenge where we can change attitudes towards differences.

This aligns well with key characteristics of all forms of action research: human flourishing, participation and democracy, and knowledge in action among others (Reason & Bradbury, 2001). From experience developed in this study and drawing from social-cultural theory (Vygotsky, 1978), I think that interaction between stakeholders who have different life experiences and knowledge may facilitate structured interchange to create a thinking zone that might release and move participants away from everyday mindset and habitus (Bourdieu 1984). Thus, under such conditions differences can provide new insights. Therefore, in the process of this study, we found our differences to be an essential resource for change.

Although we did not consider behavioral traits of individuals when composing the team, I experienced that individuals express their different personal traits when they interact and carry out their work. In our team, some were very good at detailed work, others very good at seeing a big picture. Some were natural communicators and networkers, other were very oriented towards action-just getting things done. After a while, we gradually realized the advantages of positive interdependence in the project team (Johnson and Johnson 2009). Next time I have an opportunity to compose another research team, I will ensure I have a balance of strengths.

6.2 Implications of the study findings

The findings of the study have implications for different practices. I start with presenting implications for teacher education and school practices. Next, I look at implications for the Tanzanian research community and community development practice. Thereafter, I touch on implications for my university (SUA) and finally for the action research community.

6.2.1 Implication for teacher education and school practices

Given the need to integrate primary school teaching-learning practices in community everyday realities for relevance, capacity building for teachers and other actors is important. Even more important, experiential learning based pedagogies should be mainstreamed in teacher education. Introducing vocational skills, networking and communication aspects in teacher education curriculum is crucial to enable teachers to serve as community change agents.

We see the use of farm as a pedagogical resource as a powerful strategy to transform school practices towards improved learning outcomes, and for linking formal education with community development. However, the process needs to be 'bottom –up', consultative, democratic and inclusive. This we know from the history of ESR. Based on this program, I recommend that teacher education colleges engage in action research projects where student teachers, teacher educators and schools collaborate in developing such joint practices we have shown to be possible in this study. Further, mobilization programs in the communities are important in order to create awareness about the significance of the community members' active engagement in the process.

6.2.2 Implication for the research community and community development practice

Research practice in Tanzania is mainly following the more traditional ways maintaining power imbalance between researchers and the participants In addition, in most cases, the researchers separate their research from community development. I have seen that action research has a potential to bring together participants from different disciplines and perspectives to collaborate as

co-researchers. Where communication crosses traditional lines of interaction, such unions has the potential of breaking up frozen patterns.
This allows participants to build trusty relationships and common understanding. Through such processes, they might collaboratively design and conduct research and integrate a variety of perspectives. Hence, the chances that research results will be meaningful and useful to the community increases.

I see AR strategy as a new possibility in Tanzania to bring about community development that is research driven. Through the AR processes, the local actors build competency to carry on the community development, independent of researchers from the university. This, in turn, might foster independence and confidence that the stakeholders in the community need to be able to influence policy makers.

In Tanzanian contexts, where communicating agricultural technologies is important for community development, using schools as a 'hub' for learning and community development can complement the agricultural extension service system which is less effective (Kyaruzi *et al.*, 2010). It is therefore important to encourage and facilitate capacity-building programs for actors including researchers and extension service providers to enable them practice AR.

6.2.3 Implication for my university

After I started my study, my department has established an action research PhD-course. I also see a need for the department to introduce the course at masters and bachelor degree levels across the university. Further, the SUA management needs to train more staff in action research methodology. When I have finished this degree, this might be a realistic aim. Not only I have now developed AR competency, but also the core-team members have some experience. Besides, the university has recognized our work, both in practice and academically. Since SUA aims at pursuing community driven research for community development, mainstreaming action research strategy in her research activities is important. The research driven community development will enable SUA to achieve her mission - contributing in transforming agriculture and rural livelihoods. I think, using AR strategy, makes it possible to build 'context–sensitive' knowledge that in turn broaden participants' understanding and will have a real-world impact. Besides, building trust and reciprocal relationships for collaborative research require time and other resources. Therefore, SUA research-funding mechanism must recognize such needs and avail the needed resources. Through agricultural extension and community development department, SUA need to conduct the research on a wider scale to generate more evidence to advocate for transforming primary education including use of farm as pedagogical resource.

6.2.4 Implication for action research community

A central idea in action research is that the concern or issues for research need to come from those affected. This ensures that the research is concerned on issues important to the persons or communities involved; something deemed crucial for ownership and for ensuring a democratic process. However, in the reality it is often a fact that researchers bring ideas for change into a situation, as was the case in the Nyandira project (see for instance Gjøtterud and Krogh 2012;

Schabort, 2013). The teachers in rural areas in Tanzania, such as Nyandira, are stuck in a situation where their responsibility for teaching maybe up to 200 children in a class; with a teaching load of up to 50 periods per week (one period lasts for 40 minutes). In addition, there is a weak school-community linkage, and the school gets little support from the immediate community. Primary school teachers are at the lower level of school hierarchy. Therefore, they operate under a top-down framework. In such circumstances I regard oppressing, teachers become implementers of directives from top leaders. Operating under such situations may be overwhelming and prevent them from initiating processes of change.

These circumstances may result in lack of awareness and understanding among teachers and other local actors of their pivotal position and ability to initiate change. All the above may affect local actors' motivation and innovativeness to initiate bottom up change even when the desire for change may be vivid. In our experience, what they needed to motivate themselves, was the initial support from someone outside, in our case the researchers from the university. It is possible to ensure a widely democratic process, even though the university-based researchers first recognized the need for change, and even the main ideas for the solutions did come from them. The bottom line is to facilitate that the stakeholder together "conscientize" themselves about the situation and their rights, and democratically encourage them to cooperate and engage in the process of social change.

6.3 Final remarks

Reflections on the project processes show that PAR, well facilitated, can have an integrating function that prompts social connections and establishing of structures for meaningful engagement and self-empowerment among research participants. I strongly believe that the democratic and interactive nature of the PAR research process ensures meaningful engagement and bottom up generation of practical knowledge and intervention. For this case, the following factors strengthened the study:

- Solid mapping of the practices, familiarity and sensitivity to contextual realities from diverse perspectives, and willingness of the participants to share insider knowledge.
- Interdisciplinary research team and availability of professional action research and experiential learning based pedagogies trainers in the team.
- Availability of adequate time and resources for facilitation, training and capacity building as well as for common planning, acting and reflecting.
- Strong leadership and collaboration between university (SUA&NMBU) and the Nyandira community.
- Negotiating and having clear definition of roles and responsibilities among participants right at the start of the project.
- Openness, commitment, flexibility, present alertness and willingness of facilitators to let time go to allow the process to mature.
- Funding organization (EPINAV) who committed to action research approach to education, community-driven research and research driven community development initiatives.

Further, I believe that the facilitation was necessary in order to create the room where local actors could find the time and structures needed for them to envision the future, create the action plan and implement it. Thus, through their own actions, research participants became empowered. In addition, the project provided the structure for collaboration needed for them to find the courage to stand up for their rights (for example, more teachers and quality learning infrastructures). Because of my engagement in the project processes, I now understand that:

- It is possible to transform primary education from traditional teaching techniques to active and contextual based pedagogy in Tanzania from below. Nevertheless, building trust through social interactions as a way to reform hierarchical power structures is crucial for the transformation.
- Dialogue conference, as a participatory action research tool, seems to have a powerful impact in terms of balancing asymmetrical power-relations among the participants and uniting cooperative learning and research among participants and enabling the democratization of knowledge creation as well as sharing despite of their differences.
- The use of farm as a pedagogical resource in Tanzania rural contexts might be a promising strategy for strengthening school-community linkages. This is important because primary schools are more likely to be effective and relevant when they have strong links with the immediate communities. I see this as encouraging since relevant primary education is an essential condition for development of sustainable livelihood in rural Tanzania.

I hope that this thesis will contribute to expand our knowledge about possibilities and constraints related to engaging actors towards integrating everyday experiences in primary school education. In addition, I am of the view that this empirical research will be useful as a 'living case' for discussing strategies and limitations for facilitating local processes towards larger integration of everyday experiences in primary education in Tanzania. Possibly the thesis will also contribute to the understanding that collaboration between different local actors and university based researchers, can help to bridge the gap between practice and theory in education and research and community development practices.

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PART 2:

PAPERS

Reconsidering the philosophy of Education for Self-Reliance (ESR) from an experiential learning perspective in contemporary education in Tanzania

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Educational Research for Social Change (ERSC) Volume: 3 No. 1, April 2014 pp. 3-19
ersc.nmmu.ac.za ISSN: 2221-4070

Paper I

Educational Research for Social Change (ERSC)
Volume: 3 No. 1, April 2014
pp. 3-19
ersc.nmmu.ac.za
ISSN: 2221-4070

Reconsidering the philosophy of Education for Self-Reliance (ESR) from an experiential learning perspective in contemporary education in Tanzania

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Abstract

After independence, Tanzania introduced its ESR policy to guide the education system. Despite its contextual, theoretical, and practical relevance, ESR gradually lost its position in education circles due to a lack of support from policy makers after the political and economic changes effected in the mid-1980s. This article analyses ESR philosophy from the perspectives of social learning theory and experiential learning. Based on the analysis below, and on a discussion of current educational and community development challenges, we argue for the revitalisation of ESR in contemporary education in Tanzania through an approach based on action research.

Keywords: Experiential Learning; Education for Self-Reliance; Action Research; Agricultural Experience; Pedagogy.

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Introduction

For decades, Tanzania has made various attempts to reform its education system to prepare students to be better able to cope with the social and economic realities they will face after school. A few years after independence, Education for Self-Reliance (ESR) was introduced to guide these reform efforts. Following

political and economic changes in the mid-1980s—and in spite of its overriding contextual, theoretical, and practical relevance—ESR gradually lost its position in domestic education circles due to lack of support from policy makers. But 50 years of education reform have not assisted the country in eradicating poverty and overcoming technological dependence, and there are many explanations for this. We concur with explanations pointing out that the planning and management of education systems have been largely devoid of contextual realities. Formal and informal education systems have been dissociated. During the past 15 years, the highest societal status—and thus, societal and individual attention—has largely been afforded to formal education.

Even within the framework of Tanzania's Education Sector Development Programme (ESDP)[1], attempts to improve pedagogies and to link school learning with community realities have consistently been weak. This explains why calls for innovative approaches to improve learning in and outside schools are on the increase (United Republic of Tanzania, 2006). Elsewhere, studies to explore the learning effects of using practical arenas and learning activities such as agricultural projects, handicraft, and outdoor recreation have been carried out. We will elaborate on some recent studies because they buttress the idea of revitalising ESR in Tanzania.

In the 1990s, a comprehensive and comparative research programme was conducted in the USA focusing on the learning effects of teacher-guided, but pupil-managed, projects in local environments (Lieberman & Hoody, 1998). Participating pupils showed significantly better performance in standardised tests in mathematics, science, and language compared to non-participating pupils at the same schools. In addition, participant observation documented improvement in the learning milieu, and increased motivation among pupils towards further learning in relevant fields. Based on experience obtained from the Norwegian model of school–farm cooperation, Haubenhofer, Hassink, and Kragt (2008) investigated learning effects and goal achievement in curricula based on three case studies involving pupil participation in The Netherlands: farm visits of one day (Case 1), a week-long visit (Case 2), and 20 successive daytime visits (Case 3). The results of the inquiry showed a gradual, but substantial and measurable, increase in the effects of learning and goal achievement in Cases 1 to 3. In addition, a survey among parents of the pupils showed that the pupils in Case 3 became proponents of sustainable development in their households.

Taylor and Munhall (1997) conducted three case studies in Tanzania, Ethiopia, and Sri Lanka to examine the role of agricultural experience as a vehicle for supporting the development of learners in rural primary schools. The practice, they found, allowed curricula to be made relevant to learners' prior experience and, possibly, for developing knowledge, attitudes, and skills identifiable as important nationwide. Kibwika, Kyazze, Loga, and Apolot (2010) observed that within learning arrangements in which farmers served as teachers, the farmers also learned new agricultural technologies in the process. Other studies (Ballentyne & Packer, 2009; Black, Govinda, Kiragu, & Devine, 1993; Krogh & Jolly, 2012; Taylor, 2007) also demonstrated that agricultural topics used as a teaching medium provided concrete and meaningful experiences—an aspect which, in turn, helped pupils in many parts of the world to master cognitive, physical (motor), and social skills.

The literature cited above attests to the fact that, with the appropriate strategies, the use of agricultural activities in and outside school in Tanzania has the potential to improve learning and community development in a number of ways: first, to build a bridge between teaching and the practical use of knowledge acquired in schools to improve local subsistence activities and pupil engagement in (and interest for) such activities; second, to induce improvement in academic performance by making theory more relevant and understandable, in particular to the pupils; and, third, to foster linkages between formal and

[1] United Republic of Tanzania. (1997). *Education Sector Development Programme*. Dar es Salaam Tanzania: Government Printers.

informal education systems as a way to connect school learning with other community institutions. These suggested outcomes call for a robust theoretical and contextual analysis. This paper thus aims to identify theoretical approaches that can support sustainable revitalisation of ESR. In the process, we will also analyse ESR philosophy through the lens of cognitive and social learning theory and investigate its potential to inform and inspire education processes in a contemporary Tanzanian setting. Finally, we will show how the theoretical discussion informs the development of a participatory action research project aimed at developing and implementing participatory teaching strategies that take community realities as their point of departure.

Education for Self-Reliance: Origin and theoretical underpinning

In this section, we present an overview of the challenges that would be faced in the event of ESR policy implementation. To assist in a better understanding of ESR policy, we discuss its objectives. We further describe characteristic features of education provision under liberal market policies in Tanzania and present an argument for revitalising ESR in Tanzanian contemporary education.

Aims and foundations of ESR policy in the Tanzanian education system

ESR aims at providing learners with abilities in appropriate vocations[1] and with self-employment skills (Nyerere, 1967). Acquired skills and abilities are meant to be useful in performing community tasks and for solving personal and community challenges. In this way, education becomes a tool for emancipation. Following this intention, Nyerere reiterated that:

> education provided must encourage development in each citizen of three things; an enquiring mind; an ability to learn from what others do, and reject or adapt to their own needs; and a basic confidence in their own positions as a free and equal member of the society, who values others and is valued by them for what he does and not for what he obtains. (Nyerere, 1968, p. 274)

This means that educational efforts should provide spaces for meaningful learning in relevant contexts for developing appropriate knowledge, skills and emotions, while at the same time instilling ideal values such as love, respect, morals, and cooperation. In a Tanzanian rural context, this means that education becomes meaningful and useful when learners, as community members, acquire the basic principles of modern agriculture and adapt knowledge and skills to solve local problems such as malnutrition and soil degradation. Boosting self-confidence, a sense of equality, and responsibility among learners for achieving collective goals, is also important. This, however, presupposes an underlying spirit of community.

Conceptually, ESR was a sequel to the Arusha Declaration, a framework for operationalising a sociopolitical and economic policy called Ujamaa. Ujamaa was grounded on values such as respect, cooperation, and common property, which ensured that everyone could benefit from the natural resources and meet an obligation to work for the community, hence building a classless society through a spirit of self-reliance. The policy was operationalised by introducing agriculture as a subject in primary school, and mobilising rural and urban workers into cooperatives and workers unions respectively. Cooperation in collective actions and a spirit of self-reliance were instrumental in building schools and related infrastructure such as school farms, which integrated pupils into local life. Correspondingly, curricular reforms in terms of content and delivery methods were made to integrate theoretical teaching with the acquisition of practical skills. Also, school organisation was modified to accommodate outdoor activities, and the entry age for primary school was raised from six to seven years (see Box 1, adopted from Nyerere, 1967).

[1] Such vocations might include catering, carpentry, agriculture, and information technology.

Box 1: Operational terms for education reforms, as envisaged in ESR (adopted from Nyerere, 1967)

i. Education should be oriented toward rural life, because a larger part of the population lives in rural areas (95% after independence; over 80% at present).
ii. Together, teachers and students should engage in productive activities such as animal husbandry and crop production. Students should participate in the planning and decision-making process that surrounds the organisation of these activities.
iii. Productive work should become an integral part of the school curriculum and provide meaningful experience through the integration of theory and practice.
iv. The importance of examinations should be downgraded because they only assess a person's ability to learn facts and present them on demand within a limited time period. This approach excludes assessing other qualities such as the ability to reason and a willingness to serve others.
v. Children should begin school at the age of seven years. They would then be old enough and sufficiently mature to engage in self-reliant activities and productive work a few years after graduation. (The usual age at graduation is 15 years or older).
vi. Primary education should be self-contained, that is, provide knowledge and skills necessary to be self-reliant, rather than merely serve as preparation for further education at the secondary level.
vii. Education given must ensure that students can become self-reliant and cooperative (that is, develop willingness and an ability to work with others), be creative, and develop inquisitive minds.

ESR aligned educational efforts with national socioeconomic development plans. The policy called for the inclusion of practical and productive activities into the educational curricula as an integral part of the learning process, thus enhancing relevant learning but also making schools self-sufficient production units. Schools would run a farm or a workshop to meet educational objectives and to contribute to the school's own economy. Thus, school learning was designed and run in such a way that it linked well with community needs and realities. This was done by utilising everyday life experience to prepare pupils, while still in school, for the life they were going to live.

Challenges encountered in sustaining ESR policy in the Tanzanian education system

Almost four decades have passed since ESR was integrated into the Tanzanian education discourse. Looking at the timeline from its inception to the 2000s, ESR has shown mixed results. Between the early 1970s and the early 1980s, high enrolment rates were registered in primary and secondary schools, as well as an increase in literacy levels among adults (United Republic of Tanzania, 1984, cited in Malekela, 1984). During this period, many schools were built by community members who were inspired by the self-help spirit. Increasingly, a number of schools offered more pupils the opportunity to attend school. The link between school and community life was established during the decade. Unfortunately, this achievement was short lived. Analyses of ESR design and implementation processes revealed a number of conceptual and practical challenges. First, a top down decision-making process to introduce ESR, and how it had to be managed, was made at central government level and then trickled down the implementation ladder in the form of directives. The same trend was emulated at school level. Pupils had no voice in planning and evaluating ESR activities. Second, the concept was misconstrued and subsequently poorly implemented. Going to school was believed to be a panacea to escape the misery of farming and rural life (Mosha, 1990). Key stakeholders did not view school agriculture as educational but rather as a means of gaining manual skills. The pedagogical potential of ESR activities was not understood and therefore not utilised by teachers. Instead, the emphasis was mainly placed on the economic gain that accrued from self-reliance activities because teachers, in some cases, used ESR activities as their own means for extra income. Third, the lack of feedback mechanisms for reflection and improvement was a challenge. Practitioners were not empowered to learn from their involvement in ESR activities in a manner that promoted improvement (Mbilinyi &

Mwobahe, 1975). Fourth, although ESR aimed at establishing linkages between education institutions and communities, the roles of each party were not explicitly established and communicated between them. Fifth, assessment procedures were not designed to capture knowledge developed from participation in ESR activities; thus, the pedagogical contributions of ESR activities were not assessed.

Furthermore, in the early 1980s, external shocks (energy shortages, low coffee prices, and drought) caused an economic crisis. Efforts to arrest the crisis demanded adopting economic restructuring and recovery mechanisms that required a fundamental ideological shift from a socialistic to a capitalistic ideology. This was in response to demands by the international donor community that encompassed the International Monetary Fund and World Bank structural adjustment programmes. A clear-cut market orientation was demanded, especially in Tanzania but also in other developing countries, as a condition for receiving loans and grants. Tanzania, like many other developing countries, adopted and adapted to free market economic policies in which goods or services are held individually and exchanged (as "private property") with the act of exchange occurring through a pricing mechanism that responds to individual preferences (rather than state control). The education sector, as was the case with other publicly financed sectors, was heavily impacted. For example, a reduction in resources to this sector reversed progress made during the 1970s. Education provision was privatised and cost sharing was introduced. As a result, education was no longer used as an instrument of social change but as an instrument of economic efficiency (Galabawa, 2001). This new orientation has had profound implications on education planning and associated delivery mechanisms.

It is important to examine how the combination of the above challenges affected the provision of education in Tanzania. We start by looking at education provision under free market policies.

Education under liberal market policies in Tanzania

Following the adoption of liberal market policies in the mid-1980s, national developmental orientation shifted from Ujamaa and commitment to collective responsibilities, to individualism. Educational focus also shifted from preparing learners for life, to observable and quantifiable outcomes. A look into education delivery mechanisms as organised under liberal education policies shows two distinct features, namely, teaching for the purpose of selection for further education, and lack of contact with communities. From our point of view, these features turned out to be limiting factors for the provision of relevant education in Tanzania—as explained below.

Teaching for the purpose of selection

At all levels of education, efforts are geared towards knowledge acquisition and the memorisation of facts (rote learning) to pass examinations with good grades and qualify for the next level or, alternatively, to enter the labour market as unskilled worker. This is contrary to the spirit of learning for self-reliance and the new reality of preparing pupils for jobs that demand marketable skills. Exit certificates from secondary school, college, and university make better paying jobs more accessible. The higher the level, the more prestige and power. This seems to have widened the social gap among Tanzanians and engendered an unwillingness among those in power to change the status quo. Pupils of more affluent parents attend well-staffed, well-equipped, usually private, schools while those with less affluent parents continue at understaffed, poorly equipped, public schools. However, to keep up with policy requirements, they all have to sit for the same standard national examination, regardless of the quality of education they have received.

In practice, passing an examination is more highly valued and weighted in the learning process than developing knowledge, skills, and attitudes for and towards life. This demonstrates the paradoxical nature of the Tanzanian education system, which theoretically aspires to prepare learners to enter a world of work (United Republic of Tanzania, 1997) but in practice, is a screening institution. Those who are neither selected for the next educational level nor absorbed into formal employment upon exiting school have fewer options to cope with social life in the community. As a result, after graduation, large numbers of

young people migrate to towns to look for employment. Lacking the competencies needed by an urban labour market, the lucky ones, at best, end up in poorly paid and insecure jobs. Creating new and different kinds of jobs requires creativity and problem-solving skills as well as the ability to think critically. The school fails on two counts: both in not giving the students basic self-reliance skills, and in not developing competencies in such skills as numeracy, literacy, and communication. A study conducted by Uwezo[1] in 2011 found that across Tanzania, only four out of 10 students in Standard 7 could complete a Standard 2 assessment in Kiswahili, English, and numeracy (Uwezo Tanzania, 2011). This means that more than 50% of Standard 7 graduates lacked competencies the school should have developed. It should be noted, however, that those who were able to complete the assessments were not, necessarily, more likely to become productive and active citizens in the community than those who did not. So, the current pedagogies in Tanzania do not seem to enable learners to develop useful skills and knowledge.

Lack of contact between school and community

The overall goal of education is to prepare young people for a productive life in society (United Republic of Tanzania, 1997), the attainment of which requires integration of formal learning with community experience, thereby enhancing pedagogical contact at a variety of local levels. Emphasising the importance of school–community linkages, Brookes (2003) observed:

> if education is to become more relevant, to become a real force for improving societies in which we live, then it must become more closely linked to the local, to the spheres of action and influence which most of us experience. (p. 5)

Curriculum content and pedagogies therefore need to be informed by experiences gained in familiar contexts so that knowledge and skills developed can be employed to solve community problems. In proposing ESR for the Tanzanian education system, Nyerere (1967) argued that education could not be considered separate from society. And formal schooling cannot educate a child in isolation from the social and economic system in which it operates. Understood thus, the introduction of ESR activities in schools was aimed at enabling contacts between schools and their immediate communities.

During the 1970s and throughout the early 1980s, ESR activities in a school learning environment were adopted which, in turn, enhanced contact. Unfortunately, under the current school system, such contact is no longer happening. School–farm activities, orchestrated under ESR and the source of increasingly stronger networking ties, are no longer being utilised. They are perceived as a waste of time—time otherwise required for completing subject matter content in accordance with national curriculum standards. The pedagogical values associated with ESR activities seem to be wasteful. Nowadays, the practice of teaching is mainly perceived to be an abstract activity only possible in school classrooms. As a result, schools as community institutions are operating in isolation. Instead of striving to integrate and make use of learners' everyday life experience and to strengthen institutional partnerships with communities, schools evade, almost by default, this responsibility. The above may constitute a significant reason for poor learning outcomes in primary schools, especially in mathematics and science subjects, as reported by the National Examination Council of Tanzania (United Republic of Tanzania, 2010), HakiElimu (2011), and Uwezo (2011), as well as in the lack of competencies registered among graduates in applying school learning to real-life situations.

[1] Uwezo is a non-governmental educational research organization based in Tanzania. Uwezo means *capability* in Kiswahili. The Uwezo organization is an initiative that aims to improve competencies in literacy and numeracy among children aged 5 to 16 years in Kenya, Tanzania, and Uganda by using an innovative approach to social change that is citizen driven and accountable to the public.

Another consequence is the declining status of, interest in, and positive attitude towards agriculture, especially among the youth, despite the fact that the agricultural sector provides a livelihood for more than 80% of the population. This has serious consequences for the quality of community life for children, as well as for overall community development in Tanzania. Life in the community requires development of cooperative behaviour, positive attitudes toward work, fortitude with respect to weather and, hopefully, mastery of the multiple adversities that are part and parcel of daily life. Development of positive coping responses is only possible when learning is contextualised and relevant to specific social and economic circumstances.

Reflecting on the foregoing arguments, we believe that the Tanzanian education system seems out of touch with local community life. Its focus is on improving cognitive performance and enabling learners to acquire knowledge and skills that prepare them only for the formal labour market, which is already oversubscribed. Educational efforts designed to create job seekers are, unfortunately for most, efforts that lead to further unemployment. This makes realisation of the Tanzania Development Vision (TDV) by 2025[1] elusive. Attaining the TDV objectives requires the education system to employ pedagogical approaches that integrate teaching and learning on a recurring, daily, basis, and factor in community experience. The TDV clearly stated that:

> education should be treated as a strategic agent for mind-set transformation and for the creation of a well-educated nation, sufficiently equipped with the knowledge needed to competently and competitively solve the development challenges which face the nation. In this light, the education system should be restructured and transformed qualitatively with a focus on promoting creativity and problem solving. (United Republic of Tanzania, 1999, p. 19)

Stated differently, the idea of revitalising ESR is a response to repeated calls in education discourses for transformation of the education system into one that enhances relevant learning. Lave and Wenger (1991) called for situated learning, as did Gruenewald (2003). In a study on exploring possibilities for management of education in Africa, Twalo (2010) called for reconsidering the role of context in ensuring relevance, quality, affordability, and accessibility with the ultimate goal of inculcating youth with knowledge. Examining the relevance of Nyerere's contributions in education, Kadenyi and Kariuki (2011) called for rethinking education for liberation and self-reliance by focusing on educating rather than merely schooling. Implicitly, the above calls have more in common with Nyerere's ESR thinking and Dewey's observation that learning that endures is *"got through life itself"* (1916, p. 1; our emphasis), implying that learning must to take place in the community fabric.

Efforts to revitalise ESR in school curricula are predicated on an understanding that such an education arrangement is supported by established social learning theories/traditions that transcend historical contexts of ESR in Tanzania, and on the need for its revitalisation for the sake of social change. In the following section, we explore how Nyerere's ESR thinking does just that, while specifically emphasising experiential learning.

ESR and the socioconstructive learning perspective

ESR aims at meaningful, collaborative school learning by engaging learners in practical agricultural activities in farms and workshops. Through ESR activities, learners had opportunities to actively learn and reflect

[1] TDV 2025 is a long term roadmap to transform Tanzania from a least-developing to a middle-income country by the year 2025. This transformation is envisioned to turn Tanzanian economy into a strong, competitive economy that will provide improved socioeconomic opportunities, public sector performance, and environmental management. As a result, it strategically positions education as a driving force to push action.

together with practitioners within community frames, capacities, and limits. By emphasising the utilisation of relevant tasks in familiar environments, the ESR framework took a stride away from equating learning with the banking concept of education, to induced knowledge creation in learners (Freire, 1970). When learners are just informed by teachers about facts derived from prescribed sources and compelled to accept and memorise the facts in preparation for an examination, the knowledge developed is unlikely to enhance critical thinking. This could have a ricochet effect and hinder community development. However, when learners get a chance to construct their own knowledge through practical, hands-on experience, as envisaged in ESR thinking, problem-solving skills and critical thinking are more likely to develop. The ESR framework strove to facilitate interaction between learners, society, and the environment. The framework built on the understanding that learning is not solely an individual, abstract undertaking (as it is viewed under the current education system in Tanzania). Rather, it is a social undertaking (Vygotsky, 1978) in which knowledge is mutually constructed and developed and not imposed on learners.

In a sociocultural perspective, learning takes place in an interaction with culturally embedded tools and in situational contexts (Lave & Wenger, 1991; Vygotsky, 1978). While some tools might involve physical activity or action, the main tool in the learning process is language. Communication is crucial to learning in a social perspective (Vygotsky, 1978). Learning also takes place by participation in practical working communities (Lave & Wenger, 1991). Students participating in local agricultural activities will learn by participation, by engaging in simpler and gradually more complex tasks. Learning from skilled role models is an important benefit of participating in real-life activities (Bandura, 1986). Practical work experience might be repetitive and might not automatically lead to learning. Reflecting on the actions and communicating about experience are crucial, and contribute to a deeper understanding and the building of a professional vocabulary, which improves cognitive skills and enhances practical performance. A sense of coherence is developed when learning processes are characterised by comprehensibility, manageability, and meaningfulness (Antonovsky, 1979). In addition to being relevant to everyday life experience, meaningful learning situations often activate the senses and motor skills, as well as heart and mind (emotion and cognition). Such holistic learning processes guarantee a deeper understanding. But, where connections to the outside world have not been established, as is the case with Tanzanian schools today, learning can still function within the classroom though it might be almost impossible to transfer to the outside. In this understanding of learning, it is obvious that the socioconstructive view supports ESR. To further explore its robustness in enhancing relevant learning, we analyse ESR from an experiential learning perspective (ELP) in the next section.

ESR and the experiential learning perspective (ELP)

As an integral part of school systems, school farms and/or workshops were an iconic feature of ESR. It aimed at meshing theory and practice through concrete, familiar, and meaningful tasks in order to integrate mental learning in preparing learners for life in society. In terms of societal attitudes and values, pupils were stimulated to internalise meaning and understand the need for working collaboratively towards the common good. Under ESR arrangements, holistic learning was possible because learning was based on experience and on "doing". Therefore, it combined experience, perception, cognition, and behaviour. According to Kolb's (1984) four-stage experiential learning model, all learning begins with concrete experience. Observation from experience is reflected and formed in abstract and generalised concepts. This forms a basis for new concrete experiences or actions originating from a new and improved understanding. Wilson (1998) asserted further that the human brain—and thus problem solving capacities as well as critical thinking—is developed through hands-on activities.

Cognisant of the above, ESR and ELP share a common understanding of basic principles for learning. Both underscore the active role of learners. A teacher's role changes from one who transmits information to passive pupils to a facilitator who encourages learners to interact with others and with the physical environment for relevance and comprehension.

In spite of the advantages of experiential relevance as a point of departure for learning and encouraging reflection, Kolb's theory was criticised for focusing mainly on cognitive aspects of learning. This diminished other important aspects, such as emotional connections and relations, bodily engagement, and willpower, which are crucial in enhancing relevant learning. Krogh and Jolly's (2012) relationship-based experiential learning (REL) model includes these qualities. The point of departure is that all experience and learning starts with humans relating to each other and to the physical world (Dewey, 1929). To extend possibilities for lasting learning outcomes, the formation of relevant relationships should be emphasised in the learning process. This can be motivated by teacher introduction, instruction, and inspiration. Learners develop confidence in using tools and in their role in the overall value chain. Also, they learn to appreciate how the key, human, element functions: how pupils deal with others and with more experienced adults.

Through mastery of learning activities in guided learning processes that offer comprehensibility, manageability, and meaningfulness, resistance against learning can be fought by the learner. Consequently, willpower and a sense of coherence can be strengthened (Antonovsky, 1979). Mastery and sense of coherence are mirrored by the desired, or a concrete, outcome of a given activity. Achieving desired outcomes not only motivates towards further involvement but also imprints in the learner's mind a sense of what it takes to succeed. These might include such attributes as patience, perseverance, cooperation, and the role of proper planning before attempting any task. Also, well-guided reflection processes on failure to achieve a desired outcome, provide learners with an opportunity to identify and analyse reasons for the failure. Useful knowledge can be developed for dealing with similar or related tasks in the future. Execution of such tasks can be improved with better results in terms of outcomes. If properly acknowledged and guided by experienced facilitators, such learning processes will tend to resonate in the learner and stimulate mental activity.

The REL model suggests that establishing relevant connections and experience, motivating willpower, and developing agricultural skills in learning situations can enhance problem solving capacity, creativity, and ability to manage changing and demanding circumstances. The REL focus on building and strengthening the inner motivation of the learner is in line with self-determination theory (Deci & Ryan, 2000). Furthermore, the REL model stresses the significance of relatedness to meaningful activities for both teachers and others, as well as how those activities relate to the physical world. These are the reasons why we have chosen the REL model to guide our work.

The main argument of this article is that Ujamaa, inspired by experiential learning theories, may constitute a platform for revitalising ideas of meaningful learning that take the requirements of the local community as a point of departure for learning self-reliance skills, as well as such academic school subjects as science and mathematics. Both socioconstructive and experiential learning theories have common characteristics with the philosophy of Ujamaa. We believe that revitalising ESR informed by these learning theories will make it possible to overcome some of the challenges the implementation of ESR has previously encountered, as discussed above.

In the next section, we present an outline of a project to revitalise ESR based on REL, and preliminary results from the first phase of the project, which was still under way at the time of writing this article. To ensure ownership of this in the schools, we started the research project with the aim to establish how these ideas can be brought into the schools. Only the results from the initial consultation with the community are provided here. The complete findings will be presented in subsequent papers once the project is finished.

The school–farm cooperation project: Project outline

Aims of the project

The project is a collaborative initiative between researchers from Sokoine University of Agriculture in Tanzania and the Norwegian University of Life Sciences, practicing teachers (Nyandira primary school), school administrators, and community workers at the village and district level, and farmers of Nyandira village community in Tanzania. This project aims at developing interactive teaching and learning strategies in cooperation between the stakeholders. The school selected is in a rural, underprivileged area of Tanzania, where farming is the main source of income. Project participants included a group of university-based researchers, five teachers, the parents' school committee (seven members), four community workers, three education administrators at community and district levels, and all pupils in Standards 5 and 6 at Nyandira primary school (total, 142 pupils). The pupils were selected on two criteria: (1) sufficient age-based physical maturity for meaningful engagement, and (2) availability at school for the whole period (two years) of the project evaluation period. The central research question was: How can the use of farms as a pedagogical resource in primary school improve pupils' performance in science and mathematics, influence their attitudes toward agriculture, and foster school–community linkages in Tanzania?

Methodology

The project was methodologically inspired by the participatory action research (PAR) paradigm (Fals Borda, 2001), which foregrounds participative democracy; all voices should be heard and retain equal status (Bradbury & Reason, 2003; Kemmis, 2001). Hence, the project aims to promote shared ownership of the project, mutual understanding of the challenges the school faces, as well as cooperative planning and solution finding. The research methodology follows Kemmis and McTaggart's (1988) action research spiral inquiry embodied in plan–act–reflect–cycles. According to Elliott (1991), action research enhances the improvement of performance and furthers the development of persons in their professional capacities. Therefore, the project also has an aspect of professional development for teachers.

For students, the project has three objectives: (1) to promote the active use of experience developed from concrete work on farms, school farms, or at other learning centres in the community in order to learn both self-reliance skills and academic skills; (2) to emphasise collaborative involvement in planning, executing, and evaluating their own learning; and (3) to heighten awareness through sharing experience and knowledge in classrooms and in other encounters with adults, expanding the knowledge needed in the community.

From a long-term perspective, the goal is to show how ESR can be revitalised in the case of one selected primary school in Tanzania. It is hoped that this case can inspire other schools elsewhere to undertake similar approaches.

Project plan

The project involves two distinct phases: preparatory and intervention. This paper emphasises the preparatory phase, but Table 1 below shows the main actions to be associated with both.

Table 1: Project plan

Phase 1: Preparation phase		
Action	**Purposes**	**Remarks (Input for the subsequent actions)**
Apply for access and research permission (including participant consent).	Compliance with research ethics and procedures.	Entry granted with a call for adherence to established procedures.
Contact and visit the community in dialogue with local stakeholders. Hold several formal and informal discussions.	Diagnose and validate project ideas. Plan together for grounding the project into the community, addressing participants' realities (needs, worries and possibilities), and generating knowledge and insight for replanning. Identify roles and responsibilities for each party.	Project idea and execution plan analysed and modifications/changes suggested.
Design survey instruments and conduct baseline survey with teachers, parents/farmers and students.	Conduct situation analysis/teaching–learning practice mapping. Familiarisation with available assets and infrastructure in the community, and with school schedules.	Developed inputs for discussion during dialogue conference. Highlighted who is to participate in the dialogue conference.
Dialogue conference.	Reflect on the baseline survey results and, collaboratively, decide on subsequent plans of activities.	Critical constraints affecting teaching and learning identified and prioritised. The need for ESR activities in school, in parallel to re-establishing school gardens, envisaged. The need for capacity building programme for school and community teachers to use experiential learning strategies also highlighted.
Phase 2: Intervention phase		
Design and implement capacity-building programme.	Build capacities of teachers, parents/farmers to be able to use experiential learning strategies and methodology in facilitating pupils learning.	The need for coaching and backstopping.
Facilitate trained teachers to carry out teaching following a developed experiential-learning teaching strategy.	Customise the strategy into day-to-day activities.	Not yet implemented, hence no reflections as of yet.
Collect data and evidence.	For communication and decision making.	Not yet implemented, hence no reflections as of yet.

Data collection and analysis methods

The researchers visited participants and conducted informal and formal meetings to present and discuss issues of interest with respect to the research project. Data were collected by tape recording meetings and note taking. Thematic analysis procedure (Braun & Clarke, 2006) was the data analysis method utilised in this study. The procedure enables sorting and categorising data into different themes (patterns), and numerous cross-references between evolving themes.

The initial phase: ensuring a democratic process from the start

The purpose of the initial phase was to ground the project in the community and to ensure a democratic process. In this section, we want to discuss a few examples of what was done and the ensuing results. Soon

after fulfilling the research-related procedural and ethical requirements, the multidisciplinary team, comprising university-based researchers, classroom teachers, and community members (extension workers and farmers), established themselves in the project area. Then a participatory exercise for discussing the research idea and its significance for improving learning and community development was carried out. This initial consultation process sought to ground the idea within the fabric of community realities and to gain knowledge and insights from the target community for later use in the planning phase.

Over a period of 12 months, formal and informal meetings were held with the above-mentioned stakeholders to share and reflect on the project idea and to develop an execution plan. Also, a baseline survey was carried to collect information on teaching–learning practices and associated conditions. These practices and conditions included teachers' socioeconomic characteristics, teaching strategies employed, teachers' level of knowledge and attitudes towards experiential learning through agricultural practices and school–community linkages. Other issues were stakeholders' levels of satisfaction with current learning and teaching practices as well as their perceptions of agriculture and rural life.

Preliminary results

As shown in Table 2 below, analysis of recorded information during meetings and discussions throughout the process show three important themes categorised as stakeholder views, stakeholder worries, and stakeholder wishes about the project and action plan.

Table 2: Stakeholders' analysis of project and action plan

Stakeholder category	Stakeholder views	Stakeholder worries	Stakeholder wishes (prospects)
Researchers	Pertinent to enhance learning, but its execution may be complex, laborious, and risky.	Resources such as time and finances may be limiting factors. Methodological aspects: action research is not common in our area. Conflict of interest between teachers and parents. The idea may be regarded as old-fashioned.	Generate lessons from African context. Boost teachers' and pupils' confidence and motivation. Demonstrate values of school–community interaction and upscale the evidence.
Teachers	Pertinent for enhanced learning, although more teachers are required.	Time may be a limiting factor because the school has few teachers but large classes (50+). Hungry pupils (may not eat lunch every day). Farmers are not "professional" hence their involvement in teaching may be unacceptable to professionals.	Enhance memory and understanding. Provide chance for pupils to engage actively and take control of own learning.
School committee	Commendable because it may be a way of building bridges between school and community.	Equipment and tools. Travel time between school and learning sites may interrupt school routines.	Help pupils learn in three areas: passing exams, working after school, and promoting cooperation.
Education administrators	Good and feasible because it may be a pathway toward education for community development.	Teachers may not be cooperative if not suitably motivated.	Assist in implementing curriculum (more pupils selected for next level). Reinvigorate ESR concept.
Pupils	May provide opportunities for sharing ideas.	Not getting any lunch.	Opportunity to learn from practical activities by reducing passive sitting and listening.

It is clear that stakeholders' views on the idea were generally favourable (Table 2). Different groups pointed out different areas of interest—everything from providing collaborative learning opportunities to enhancing relevant learning, and linking schools with their respective communities. On the one hand, researchers and teachers had a feeling that the execution of the idea was complex, risky, and demanded that more teachers be deployed at school level. On the other, physical and financial resources, time, pupils suffering from short-term hunger, conflicts of interest (the perception that parents are not teachers by profession), and the size of classes (large number of pupils and few available spaces) were among the worries expressed by stakeholders—worries that ultimately could hinder the change process, it was felt. Nevertheless, stakeholders were of the opinion that the project idea had some merit, which included empowering teachers, helping pupils to learn in all aspects, demonstrating the pedagogical value of school–community interaction, and the importance of concrete tasks in school learning. This kind of participant orientation demonstrated that initial consultations open up communicative spaces, which, according to Kemmis (2001) among others, permit people to achieve mutual understanding and consensus about what to do. We generally worked to align the interests and agendas of the participants in the research project. This had a knock-on effect as they felt the need for intervention. Also, willingness to participate increased and, as a result, participants gave suggestions that necessitated re-examining the previous research plan, as shown in Table 3 below.

Table 3: Project plan before and after consultation with stakeholders

Aspect	Initial plan	Modified plan
Stakeholders consultation	Officials from two ministries, the zonal school inspectorate, school inspectors and education officers at the district and community levels, and school teachers and parents.	Consulted education administrators at local level, school teachers, parents (through school committees), pupils, and community workers (agriculture, community development and health sectors). Briefs should be developed for policy makers.
Who should be trained?	School teachers.	School teachers, selected farmers, and community workers.
Source of experience (out of class learning sites)	Established sites in the community, such as progressive farms, extension services, demonstration sites, research centres, and processing units in the community.	In addition, a school farm should be established at the study school.
Scope	Target two schools.	Target fewer schools/classes (e.g., Standards 5 and 6 at one school).
Baseline study coverage	Only targeted schools and their communities.	To satisfy policy makers, cover some other schools not targeted for intervention, for comparative purposes.
Approach to follow in choosing actions to take	Structured dialogue conference.	Open and inclusive approaches may include dialogue and/or interviews.

The overall outcome of the initial process was the development of an intervention strategy based on a relationalship-based experiential learning framework. It enabled us to engage with stakeholders; an engagement that resulted in building trust and strong relationships. Boog (2003) and Stringer and Genat (2004) identified strong relationship as key factor in success of PAR projects. This is because PAR practices aim at allowing all voices to be expressed (Bradbury & Reason, 2003). Creating such communicative spaces is vital for voicing views, designing ideas, and their implementation but also allows discussion of what Bradbury and Reason (2003, p. 165) called "undiscussables". This, in turn, made it possible to clarify common goals and resources, thus providing a basis for planning the future together and consolidating agreements to establish structures required to effect the planned changes to meet community needs and realities. Building such relationships takes time, but as Smith (1999) put it, the research process and relationship building process are crucial in developing effective initiatives. The initial phase with all its various meetings took about one year. This was mainly because we needed time to attain valuable

participant collaboration. As Smith (1999) suggested, by actively collaborating with participants, researchers would be confident that their research benefits participants. Establishing and nurturing quality relationships and active collaboration at the initial phase, developed positive experience among and between participants which, according to relationship-based experiential learning theory, is an asset in subsequent stages of the project.

Significance of the initiative for education and Tanzanian society

Developing the strategy and launching the implementation plan kick-started the project to revitalise ESR policy in Tanzania. This may pave the way for building a bridge between teaching in schools and the application of practical knowledge in the communities. It has the potential for contributing to the development of local activities, which, it is hoped, will engage pupils in a positive manner and foster further interest in such activities. As we see it, the main challenge is in bridging the gap between practical work and theoretical learning. Facilitating experiential learning represents a new way of teaching—a new pedagogy—for teachers in the area (in the whole country, for that matter), and is one that needs to be learned and developed over time.

Different studies (Ballentyne & Packer, 2009; Haubenhofer, Hassink, & Kragt, 2008; Krogh & Jolly, 2012; Lieberman & Hoody, 1998; Taylor & Munhall, 1997) have demonstrated that the teaching–learning process, which takes its point of departure from everyday life experiences and resources, has the potential to enable future citizens to manage growing education and community development challenges. It also fosters a positive attitude towards, and restores the status of, agriculture, especially among youths, but also generally in Tanzanian society.

In a Tanzanian rural context, most learners have agricultural experience, acquired either by working on their family farm or by observing people involved in farming on a daily basis. Also, after graduation, the majority are likely to be involved in similar activities, either directly (the majority) as farmers or indirectly (fewer) as experts in agriculture and related fields (after additional years of training). Revitalising ESR, and thus maintaining agricultural-related learning activities in contemporary education, is an important step towards quality education and community development. As we have said before, ESR has the potential to develop actionable capacities/skills applicable to similar or different situations in the future, such as with decisions to organise or join existing farmers groups, cooperatives, networks, and associations

Also, when working with real-life problems, appropriate problem-solving skills are required throughout the trial-and-error process that informs practice grounded in theory. Guided by experienced adults, learners are likely to develop useful skills (Bandura, 1986), unlike a situation when learners are directly given (spoon-fed) correct answers to enable them to pass examinations rather than teach them how to learn. The latter is important to optimise social and economic capabilities in a community setting.

Tanzania needs innovative and creative citizens who can produce enough food in an increasingly unstable environment—among many other tasks that need development. Young people comprise over 50% of Tanzanian population. Improving their entrepreneurial skills, influencing them to take part in agricultural activities, and providing access to appropriate technologies is essential for improving food security and reducing poverty.

Agriculture has the potential to provide employment for many young people. This labour market potential will sensitise students to the available opportunities and resources to promote a productive life. Hopefully, over the long term, this will reduce the rural–urban migration exodus from the countryside that invariably results in social dislocation and increased crime rates in the cities.

The learning strategy discussed in this paper is well positioned to enable learner development, critical thinking, and transferable problem-solving skills. These are structural capacities to which the Tanzanian education system aspires and, at the individual level, aspects which must be reflected and developed in classroom curricula among learners at all levels (United Republic of Tanzania, 1995; United Republic of Tanzania, 1999). Ideas to enhance learning processes described in this article are welcome because we believe this project is working, with proven potential for the years ahead as an example from which others can learn, and one designed to influence significantly, teacher education in Tanzania.

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Educational Action Research, 2015
http://dx.doi.org/10.1080/09650792.2015.1058172

Paper II

Educational Action Research

Routledge
Taylor & Francis Group

ISSN: 0965-0792 (Print) 1747-5074 (Online) Journal homepage: http://www.tandfonline.com/loi/reac20

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To cite this article: Athman Kyaruzi Ahmad, Sigrid Gjøtterud & Erling Krogh (2016) Dialogue conferences and empowerment: transforming primary education in Tanzania through cooperation, Educational Action Research, 24:2, 300-316, DOI: 10.1080/09650792.2015.1058172

To link to this article: http://dx.doi.org/10.1080/09650792.2015.1058172

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ad by: [NMBU], [Sigrid Gjøtterud] Date: 31 May 2016, At: 07:26

Educational Action Research, 2016
Vol. 24, No. 2, 300–316, http://dx.doi.org/10.1080/09650792.2015.1058172

Dialogue conferences and empowerment: transforming primary education in Tanzania through cooperation

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(Received 11 February 2015; accepted 1 June 2015)

In this article we present and discuss experiences developed through a dialogue conference which we organised as part of a three-year participatory action research project related to primary education and agricultural education in Tanzania. We explore how dialogue conference as a research method can fill a gap between traditional ways of mutual problem-solving in Tanzania and research. Talking and sharing ideas is important for problem-solving, but the research demonstrated the need for a concrete base for the dialogue. After direct exposition to the local school practice, participants became more responsible and responsive to their environment. The participants agreed upon an action plan and distributed the responsibilities to implement the plan between themselves. The results show that the method opened up for uniting cooperative learning and research among participants and enabled the democratisation of knowledge creation and sharing. We argue that taking cultural conditions and concretisation of local challenges into consideration is important for harnessing the potential of the method in community development-oriented research.

Keywords: dialogue conference; action research; primary education; cooperation; local participation; emancipation

1. Introduction

This study was conducted in Nyandira, a village located in the fairly temperate hilly landscape in the western slopes of Uluguru Mountains, between 1100 and 1750 metres above sea level. The landscape is characterised by terrace cultivation of horti-cultural crops. Land is productive but scarce, and the steep hillsides are intensively used, leaving patchy areas for animal (goat) grazing. Regardless of poor roads and lack of electricity, Nyandira hosts a weekly regional market for horticultural goods that serves the population in the nearby cities of Morogoro and Dar es Salaam. The overall majority of the population is employed in agriculture. Although agriculture is at the heart of village life, neither agriculture, agricultural activities or other every-day practices were used as learning arenas in Nyandira Primary School before the initiation of the action research project. Yet the overall goal of education is to pre-pare young people for productive life in society (United Republic of Tanzania 1995).

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Primary education in rural Tanzanian communities faces serious challenges. Generally, learning outcomes are unsatisfactory due to poorly staffed and ill-equipped schools and lack of contact between school and community. Although less than one-quarter of the pupils exceed secondary education, subjects taught at school are related to national examinations and are poorly linked to community experiences, everyday life and local realities. In Nyandira, the classrooms at the primary school could only seat one-half of the pupils. In Tanzania, teachers are employed by the Tanzanian government and distributed to primary schools from the district authorities. Considering the school population of 742 pupils, the school should employ 15 teachers according to the national standards, but there were only four. Weak bonds between the school and the community and lack of physical and human resources is the cause of largely unsatisfactory learning outcomes and a failure to reach the overall goal of education.

Nyandira is one of the main research sites in the long-lasting cooperation between the Norwegian University of Life Sciences (NMBU) and Sokoine University of Agriculture in Tanzania. Through more than 30 years of cooperation, the researchers have developed many examples of best practices in different agricultural productions together with selected groups of farmers. Still, the wider distribution of the knowledge and adaption of new practices among rural farmers is unsatisfactory. Therefore, using the primary school as an arena both for practical learning and for dissemination of best practices through agricultural activities became a proposed strategic intervention in the research cooperation.

Aware of the above challenges, the university-based research team met, discussed and interviewed a range of local stakeholders – teachers, parents' representatives, community leaders, education administrators, policy-makers and community development workers – about the situation and how it could be improved. The team consisted of an executive group from Sokoine University of Agriculture, Department of Agricultural Education and Extension, the first author being the leader, and two teacher educators/action researchers from NMBU with mainly advisory functions. Through the process, ideas for the project aimed at improving the learning milieu and teaching practice were negotiated and welcomed.

Entrance to the project was less democratic than we would have preferred, as the ideas both for improving teaching and for using dialogue conference came from the researchers and not from the teachers or the community themselves. However, we argue that the dialogue conference in itself is an arena for establishing democratic processes, ensuring the participant's ownership to the ideas as they are discussed and negotiated.

Tanzanian communities' socio-political community development practices have a long tradition of cooperative learning and problem-solving. Nevertheless, formal education is an exception. It has remained highly centralised with limited local participation (Prew 2009). This article discusses our experience with the use of dialogue conferences as a method for initiating a collaborative partnership for context-based social change among local actors in Nyandira. It is based on a two-day dialogue conference with 26 local stakeholders involved in education, a group which also included university-based action researchers. Dialogue conferencing is a working method in action research that has been developed in Scandinavia, and is well established in action research communities (Gustavsen 1996; Pålshaugen 1998). Yet it was a learning experience for the research team. Action research and the use of

dialogue conferences accord with Tanzanian traditions for cooperation and problem-solving. We suggest that this assemblage has the potential to motivate research-based change in local communities. Therefore, we address here the question: 'How can dialogue conference as an action research method bridge a gap between traditional ways of mutual problem-solving and research in Tanzanian communities?'

We have organised the article into three parts. First, we describe the ongoing action research project in the area where we conducted the dialogue conference. We then relate the action research approach to a historical account, locating the concept of cooperation in development theories, local participation and community development processes that currently exist in Tanzania. Second, we outline the principles of dialogue conferencing as a research method and give an account of how such a conference was conducted in practice. Third, based on mutual reflections and impressions from the dialogue conference, we present and discuss the findings of the study. Looking towards future applications, we finally point out that dialogue conferencing carries the potential for uniting cooperative learning and research, a connection that promises to be emancipatory.

2. Participatory action research to enhance education in a primary school in Nyandira

In 2012 we started a three-year project that focused on developing pedagogical interactive teaching strategies for relevant learning in Tanzanian rural contexts. We implemented the project in two distinct phases: a preparatory phase and an intervention phase. The preparatory phase included fulfilment of research/related procedural and ethical requirements, community consultations through formal and informal meetings, practice mapping and the dialogue conference. The latter was organised in order to: provide a platform for democratic engagement of stakeholders (teachers, community members, local administrators and university-based researchers); reflect critically on problems, which had been identified during community consultations and practice mapping; and develop solutions and plan of actions to transform learning/teaching practices in Nyandira primary school. The aim was to improve teaching in this particular school, but also hopefully to create examples which could influence teaching in Tanzania.

Dialogue conference, one among many actions in the project, forms a foundation for the design and implementation of the project. In this understanding, this article specifically details experience from the dialogue conference to document its potential to fill a gap between traditional ways of mutual problem-solving and research. Further we will discuss to what extent and in which ways the approach empowers local stakeholders to acquire, develop and subsequently integrate their own knowledge with that knowledge already existing in society. Such an approach is necessary in order to take broad-based action on issues that concern the community members (Reason and Bradbury 2008).

Following Gustavsen's (1992) suggestions, our research role was to establish suitable arenas for an inclusive form of 'democratic' dialogue and to provide discursive tools to facilitate the continuation of a productive dialogue among the participants following traditional forms of local cooperation in the community.

3. The history of local cooperation in Tanzania as it relates to the development of local participation and participatory action research

Julius Nyerere and Paolo Freire are known for their efforts in the field of political and pedagogy practices for the promotion of human liberation and education through cooperation in the 1970s. Their works critique the one-dimensional political focus on economic growth and the lack of consideration of social and economic inequalities between north and south (Freire 1970; Nyerere 1968). They both strived to mobilise and empower local people to participate (with others) in pursuit of practical solutions that concerned individuals and communities alike. Nyerere's efforts have influenced the cultural context for this project, while Freire's approach has inspired our common strive, together with participants, to raise consciousness as a gateway to emancipation.

3.1. Julius Nyerere (1922–1999) on local cooperation in Tanzania

After independence in 1961, the policy of Ujamaa (familyhood) and self-reliance was introduced and adopted in Tanzanian social, economic and political life. In order to promote self-reliance, the policy rested on principles of equality, local cooperation and the development of locally relevant education that draws on prevailing knowledge in the community.

In the 1970s and 1980s these principles became an integral part of Tanzanian culture and were evident in communities' social and economic groups, like the Farmer Field Schools (FFS). The FFS are a participatory and interactive method for social learning, founded on experiential learning, a group approach to facilitate decision-making, problem-solving and learning new techniques (Duveskog and Friis-Hansen 2009). Inspired by the policy, the Uluguru Mountains Agricultural Development Project (UMADEP) has, since 1993, been staging its operations out of a farmers' centre in Nyandira village run by Sokoine University of Agriculture. This is an integrated agricultural development programme using multidisciplinary approaches, including those envisioned by FFS. At the beginning of the 2000s, there were 35 active FFS in the area (Krogh, Eik, and Kifaro 2007).

Although market-oriented cooperatives have replaced previously publicly regulated cooperatives, there was, when this project started, a system of formalised organisation in groups that sought to solve common challenges and was integrated in private and public societal interaction and organisation in Nyandira. Hence, due to Nyerere's contribution, the foundation for cooperation and collective initiatives in local problem-solving and local development existed.

3.2. Paulo Freire (1921–1997) on local participation and participatory action research

Freire strived to facilitate local participation in development. To that end, Freire developed a pedagogy for empowerment and liberation, of which a key tool and concept is conscientisation or the raising of consciousness of oppressed groups through dialogue (Freire 1970). In the 1970s, Freire advocated a participative action research methodology, which combined the creation of an appropriate environment for learning with a promotion of emancipation by giving locals the opportunity to express their needs and to take an active part in development processes. Real local

participation in action research can lead to local empowerment and liberation on different levels (Freire 1970).

We find this emancipatory aspect crucial to develop knowledge that is locally relevant and to achieve an awareness level whereby participants recognise that when they create knowledge their confidence may increase. Hence, local self-reliance spirit is strengthened. All these attributes are necessary for the local actors to become architects of their own destinies for the betterment of their respective communities. Through elaborating and clarifying these principles and prerequisites for emancipation, Freire's work has been an inspiration and guideline for this project.

The cultural traditions of cooperation and local participation described above open up for a participatory action research approach, a path that, potentially, leads to the empowerment of local actors. Forty years of dedicated work in this area has produced a number of well-tested methods for cooperative action research, as discussed in various research milieus (Fals Borda and Rahman 1991; Gustavsen 1996). Dialogue conference is one of the developed methods. This method underscores the need for mutual discussions of status, desired changes and possible solutions toward realisation of an envisioned future for the participants involved (Pålshaugen 1998). Congruent with the purpose of the study – integrating primary education into community processes – we found the method suitable as explained in the following.

4. Principles for the dialogue conference, data collection and analyses

4.1. Principles for dialogue conference

Dialogue conferences employ a format of successive group conversations, each group session followed by reporting back to a plenary session (Gustavsen 2001).This design aims at stimulating interactions and broadening conversational participation. The format, aims and criteria (described below) of organising dialogue conferences help to neutralise, at least temporarily, hierarchy-based power, as power issues are thought to be solved through dialogue and the pooling of insight acquired during the course of successive sessions. Dialogue is a process of exchange where ideas and arguments move between participants (Leirvik 2005). Dialogue can make development processes inclusive, democratic and contextual, and can help in creating a platform for future cooperation in new practices.

The team organised the dialogue conference based on democratic dialogue criteria and a provision for accommodating what really happens in the process. The criteria, presented in Gustavsen (2001, 18–19), emphasises that the dialogue is based on principles of mutual participation regardless of position and mutual responsibility for this to happen, two-way communication and acceptance that the better argument wins. Further, valuation of each participant's experiences and vocational background is important.

One principle states that an argument should only be rejected after an investigation. Finally, the dialogue needs to integrate a growing degree of disagreement, and to continuously generate decisions that provide a platform for joint action. The facilitators ensured that the criteria were communicated to participants and guided participants to familiarise and adapt the criteria to suit their understanding, experience and context, and ascertained that agreed criteria were followed in the actual dialogue. We emphasised the creation of a space for internal dialogue as a prerequisite

for free communication within the group organised by research-informed criteria, but shaped by what happened in the dialogues. This requires tolerance, respect and observation of democratic values.

4.2. Data collection, analysis and ethical consideration

We recorded the initial interviews and the discussions with video and tape recorders, which were complemented by flipcharts produced during the group sessions for presentation and individual note-taking by the researchers. The data were analysed by the researchers according to Eneroth's (1984) process method and method for dialectical analysis. We conducted process analysis in order to identify situational characteristics that showed changes in the dialogue process. Through dialectical analysis we identified which factors had caused the changes when moving from one situation to the next. During the initial consultations in the community, we raised ethical concerns and discussed possible consequences of the research with the stakeholders. The participants have agreed upon and allowed publication of the information shared in this paper. Practically, it is impossible to trace individual persons in this remote rural community through information given in this paper.

5. Planning and organising the dialogue conference

During a period of 12 months, the research team planned and prepared the Nyandira dialogue conference. Through series of meetings and consultations, the team and prospective participants explored relevant issues. The planning process also included a practice mapping. The team sent invitations two weeks before the conference date, and explained the logistics and purpose of the conference. Among invitees were parents, local school teachers and government employees working in the community development sector. We also invited local policy-makers and administrators, as well as business representatives who provided various services to schools in the community. The team of university-based researchers conducted the conference. Of the 28 invited participants, 26 attended. Even though the co-researchers offered no incentives to boost attendance, this high attendance rate, in our opinion, demonstrated a high willingness to participate. They dedicated two full days (15 hours) of their time, when promised nothing more than the prospect of possibly authoring a joint action programme for making short-term and long-term change in their respective communities.

Gustavsen (1996) emphasises position, competences and interests as criteria to consider when selecting participants. With the exception of the university-based researchers, the participants had a variety of duties in the management of primary school education.

Apart from the university team and a district education officer, the participants resided in the immediate research area. In addition to their role in primary school education, a majority of the participants also claimed farming as their sole livelihood.

The research team organised the two-day dialogue conference in accordance with Engelstad's (1996) three-stage procedure:

(1) conference organisers provide briefings with respect to theme, group composition and work/discourse procedures;

(2) participants spend a majority of the time within small discussion groups; and
(3) each group selects a reporter to make presentations to the plenary session.

The goal for the first day was to build relationships by sharing experiences and identifying areas of common concern, overarching needs and visions for the future. The second day focused on broad-based teamwork: establishing alliances and building agreement on concrete actions and to make steps towards an action plan.

5.1. Day one: creating a learning community by defining the needs and solutions

The initial challenge was to build trust and a sense of equality among people who rarely interact professionally. In sharing objectives, procedures and hopes for the con-ference, we sought to establish non-hierarchical relationships. We invited participants to introduce themselves by name only, without adding title or profession. Thereafter, without giving anybody priority, we asked the participants to find a comfortable seat located around a long round table. The arrangement allowed face-to-face contact between the participants, reinforcing the equality notion. The facilitators then instructed the participants, without being overly didactic, on the conference ground rules, thus indirectly familiarising them with the democratic design criteria and dialogue organisation as suggested by Gustavsen (2001). The researchers ensured that a consecutive interpretation was made from English into Swahili.

Next, we presented the relevant findings from the initial mapping we had conducted to explore the existing learning milieu and current teaching practices at the school. Our intent was to provide documentation of the real-world conditions for the school practice, thus hoping to harmonise participants' understanding of the situation while at the same time preventing prejudices and misconceptions that might potentially influence the dialogue. Four diagonal (heterogeneous) groups, each consisting of representatives from all categories of participants, then discussed and reflected on their findings before a plenary session designed to map a common vision worth pursuing. Next, we reorganised the participants with more or less similar roles in horizontal (homogeneous) groups. In a two-step process, each of these groups explored a number of expected obstacles; they then tried to find ways to negotiate those obstacles.

Throughout the presentations and discussions, we attempted to ensure that sound dialogue was taking place – that the communications between participants was free and easy – and that adequate allowance was being made for each and every participant to participate. We listened carefully to each participant's contributions, reflected on their content/relevance and, when necessary, made clarifications to ensure the process remained constructive. We constantly re-assured and encouraged participants to collaborate by sharing their own personal experience and anecdotal stories, thereby attempting to facilitate the search for areas of commonality that might be used to consider new approaches. As facilitators, we also reminded the participants that no one was more expert than the other on a given topic. In keeping with the nature of brainstorming, no one would be prejudged for contributing ideas, feelings or personal experiences. All input was welcomed. We aimed to keep the dialogue focused by summarising any conclusions/consensuses reached at plenary sessions. That objective, however, was not allowed to interfere with the process used to reach and formulate content.

The overall atmosphere in the discussions seemed to be friendly, constructive and accommodating. 'Hot' moments did occur; for example, discussing reasons for poor learning outcomes, when the teachers criticised parents for not being enthusiastic enough. Community-level leaders pointed a finger to authorities at central and district levels for deficient support for development of satisfactory learning environment at the school. The counter-argument was that community members did not carry out their supervisory work well. The participants managed to handle the controversies amicably and within the context of the ground rules and the criteria agreed beforehand. As time passed, intimacy and integrative bargaining seemed gradually to cement mutual respect and trust, and the realisation of interdependence between the participants, which served to enhance the overall efficacy of the dialogue process.

5.2. Day two: concretising solutions and development of an action plan

At the beginning of the day, the trust and respect developed during the first day was evident. All participants arrived on time. We observed spontaneous smiles and handshakes among the participants, signalling a completely different feeling of 'togetherness'. After having reflected on the process of the first day, we (the facilitators) found the suggested solutions from the first day too abstract and lacking in serious commitment (see 'Data presentation and discussion'). Therefore we decided to start the second day with a tour of Nyandira Primary School. We arranged this tour spontaneously, as a direct result of the suggested solutions to various obstacles identified the day before. This experience served as input for the following discussion and concretisation of the action plan.

In a plenary session following the school tour, participants re-examined the dialogue conference criteria, with particular attention paid to criteria that emphasised equality of status and the need to turn words into platforms for concrete action. Next, participants in small groups and in further plenary sessions revisited the solutions agreed to on the first day in order to assess their usefulness after having observed the school practice that morning. As a result, they made some modifications, all of which were used in the action plan development step.

6. Data presentation and discussion

In this section of the paper we go deeper into the process and discuss it. We look at the major questions addressed during the conference and how democratic the participatory process actually was according to participants. These addressed questions were: how did participants react to the criteria for dialogue conference organisation; did participants have a voice in deciding the theme of the conference; and were they heard – did they feel that they were heard? Next, we identify existing problems between the school and the community: what is the nature of that relationship; and how substantive, how meaningful are these contacts? This is then followed by a discussion about how the conference influenced participants to shift from 'othering' to a sense of joint responsibility. We present and discuss the agreed action plan developed, followed by an overview of the final position group participants took on the key issues: what was the impact of the whole process?

6.1. Participants' reaction to the criteria for dialogue organisation

Experiences from previous meetings arranged to facilitate action learning suggest that the timely sharing of – and the reflecting on – ideas encourages deep learning and enhances mutual understanding and respect (Gustavsen 2003). Therefore, we presented for in-depth discussion the suggested criteria for the organisation of this particular dialogue conference. On values of equality, freedom of communication and action orientation, participants found the criteria relevant. Eventually, these criteria were accepted, but the participants modified one criterion which states that an argument only can be rejected after an investigation – and not, for instance, on the ground that it emanates out of a source with limited legitimacy. In our case there was no time for investigation, and therefore they decided that rejection of an argument could be based on consensus.

The participants also questioned the modality of group formation proposed and implemented by the facilitating team. The team explained the rationale behind the group formation: to enhance healthy discussion and debate; to encourage a sense of collective responsibility; and to promote the (cross-)fertilisation of ideas as suggested by Latour (1998). After a follow-up discussion, the participants reached an informed consensus. They accepted the division of participants into diagonal and horizontal groups, although they professed that this way of organising group work was a 'new experience' for many of them. We have interpreted this as a largely positive signal from the participants. One comment was as follows:

> I see this arrangement of having different groups formed by the same participants in the same meeting as a new experience to me. (Village leader participant)

Participants, we observed, freely aired their views, gave each other adequate space to contribute and, when disagreements occurred, especially on the appropriateness of introducing outdoor tasks in school learning, were amicably compromised. It was evident that the participants were used to informal gatherings at work and in the community to discuss issues of common concern, although not in such a formal set-ting as that foreseen by the dialogue conference. Furthermore, the majority had previous experience with cooperative learning, probably developed through their par-ticipation in FFS. The participants perceived the approach as time consuming. Still, they emphasised that individual participants, including the less talkative ones, obtained more space to voice their views than would have been the case outside the confines established by the dialogue conference. This was especially the case in small group discussions, in which the give and take among the participants was most intense and the outcome most productive. Commenting on the approach, one participant stated:

> I have found that in the dialogue conference we did not fear instructions from the chair, as all the participants had equal status and equal rights to contribute. Conclusions were based on consensus after a serious discussion and negotiations, not vice versa. (Policy-maker participant)

Although the approach seems to consume much time, relative to the informal decision-making gatherings, the participants seemed to find decisions made because of this lengthy process both accommodating and locally informed. Listening to every voice, pooling ideas and collaborating on decision-making are characteristics of dialogue conference facilitation and structure. Decisions take their departure in participants' experience and will potentially yield a result that is informed by real

needs and aligned with the aims and capacities that exist in the community. In our experience, in line with Gustavsen (2001), this approach seems to generate understanding between participants, enabling them to focus on the right information sources to produce useful knowledge for creating a plan to implement agreed changes together. We believe the knowledge will also help in future development.

6.2. Meaningful teaching and closer relations between school and community: identifying the problems

As stated previously, the efforts at furthering constructive community engagement in education have been insufficient (Prew 2009). This is mainly due to a lack of under-standing of the number of problems encountered among stakeholders operating at local levels. Awareness of the context-specific problems is an important step towards finding effective solutions. In this dialogue conference, the participants identified problems in two distinct, albeit related, areas:

(1) Classroom learning – what constitutes relevant, meaningful teaching?
(2) School/community relations in the context of the Nyandira community – how do we advance closer relations?

While dealing with these two challenges, participants assigned to four separate groups, each of which operated autonomously, identified the same or similar arrays of problems. Subsequently, the plenary discussion set in motion a form of collaborative 'streamlining', whereby all participants focused on the problems that each group had identified in their discussions; that is, problems which hindered progress towards meaningful classroom teaching against the backdrop of school and commu-nity relations. All of the groups mentioned a shortage of teachers, teaching and learning facilities. Other points made by the groups were as follows:

- Group 1 (teachers): low level of parental involvement in school activities; shortage of opportunities for in-service training and continuing education; unattractive school environment (physical appearance and maintenance).
- Group 2 (parents): shortage of practical classroom instruction in certain subjects; low level of parental involvement in school activities.
- Group 3 (policy-makers): low or little awareness of the importance of education among community members; lack of in-service training and continuing education for teachers.
- Group 4 (administrators): lack of in-service training and continuing education for teachers; unchallenging teaching, undemanding programmes and a learning environment ill-suited to expand thinking among pupils.

We noted that none of the groups mentioned hungry children, which certainly is a significant problem. This issue was not addressed in the conference; fortunately other projects are dealing with finding solutions related to a school-feeding programme in the study area. One of these is the community school nutrition programme that provides dairy goat yoghurt to school children twice a week on a cost-sharing mechanism between parents and a private sponsor (a non-governmental organisation operating in Nyandira).

After the plenary discussions, some group contributions were omitted while others were added. The participants, as result of the collaborative 'streamlining', agreed to focus on five explicit problems: inadequate physical and human resources; underperforming school/community links; lack of teacher in-service training and continuing education; unattractive learning conditions such as overcrowded classes; and teachers' lack of knowledge/skills to utilise available resources in the school and/or in the greater community in teaching.

The participants identified problems in a friendly atmosphere. They were there-fore able to negotiate, accommodate and, to a certain degree, integrate disagreements in a constructive manner. Thus, the processes of the dialogue conference facilitated the growth of strong bonds, mutuality, trust and, looking towards future contact after the conference, prospects for networking. Collective consciousness – developed through such dynamic networks and broad coalitions – might mature and expand to such an extent that oppressive practices are spontaneously revealed and subsequently overcome by the participants, as observed by Freire (1970). The dialogues provided opportunity for reflection and in-depth analysis of self-formative processes leading to a transformative consciousness (Duveskog and Friis-Hansen 2009; Taylor 2009). According to Freire (1970) such processes are prerequisites for collective responsibility and ownership of social change processes by all actors.

6.3. The shift from 'othering' to responsibility

Johansson and Lindhult (2008) suggest that the overall envisioning, management and leadership of reform processes should be and remain in the hands of local actors, with other actors (outsiders) playing supportive roles. Unlike conventional planning practice, where planning and acting are separate, with an action research strategy the two are intertwined. For instance in the dialogue conference, a process that lies in the hands of the participants to dialogue on their own, planning is intertwined with acting.

As facilitators we found it necessary to reflect on the results of the dialogue conference processes after the first day to see whether participants were making substantive commitments to realise the above. We discovered that the participants excluded themselves during identification of problems and that the vast majority seemed to shy away from making concrete commitments in dealing with the problems identified. Many participants 'anchored' their proposed solutions onto someone else; for example, the government or the local district. The following statement presented by a parent participant in one of the plenary sessions demonstrates this:

> The government should remind parents of their overriding responsibilities for the education of their children. Furthermore, the government should supply required teaching and learning tools and resources, while the immediate employer [local district council] should set aside adequate funds for motivating teachers who work in these rural settings. (Third plenary discussion session)

The above signalled a need to redirect the dialogue conference to one of its fundamental objectives: establishing a platform for joint action. As a result, we introduced two new activities on the second day: the school tour and a revisiting of the dialogue criteria. Inspired by Edmund Husserl's (1859–1938) saying that we can only know what we experience, we organised the local school tour at the beginning of the second day. There the participants had the opportunity to experience, however

vicariously, the school's teaching/learning facilities and infrastructure. Furthermore, the aim was to refresh participants' memories, past and present, and thus to bring to the fore a common understanding of what was actual and observable in the way of school practices, and how that insight bears on what is practically 'doable' in the future. The school tour provided space for critical reflection, individually and as a group, on the sustainability/validity of certain assumptions and current biases, something both Schön (1983) and Mezirow (2009, 2012) underlines as important in order to take responsibility.

Analysis of the dialogues of day two revealed a significant change in terms of participants' sense of urgency, responsibility and self-commitment. The following remark made by one parent-participant demonstrated a sense of urgency:

> Before visiting the school I had no idea that even the basics, like chalk boards, were either lacking or in such bad shape [not readable]. We need to do something right now to rectify this situation. (Fourth plenary discussion session)

In addition, participants assumed a degree of self-imposed commitment, as evidenced by a community health officer's questions during the third plenary session that aimed at concretising proposed solutions:

> Why don't we go and meet the responsible authority to discuss issues surrounding teacher shortages?
>
> Why don't we look for other stakeholders who might assist us instead of relying only on the government to take action?

Finally, the participants developed a concrete action plan that they felt could be implemented. This demonstrated a seminal shift from 'othering' to responsibility. Learning, trust and relationship building made substantial headway on day one. By day two, however, after exposure to an actual school setting and learning situation, the seriousness of their endeavour dawned on them. Together with the growing realisation that the dialogue conference had to conclude with a viable context-based action plan, participants accelerated the process of solution seeking, thus ending the conference with an outline of the necessary 'building blocks' that might constitute a programme for change.

6.4. The development of an action plan during the meeting

Developing a plan to propel actors towards social action is the prime purpose of dialogue conferencing. 'Social action' refers to collective endeavours to improve the current state of community interest and involvement (Greenwood and Levin 1998; Gustavsen 2001). The dialogue conference reached agreement on an action plan that sought to address a number of different aspects.

First, the action plan shows that participants recognised and accepted their own responsibility for their situation; that is, the one created in the context of the conference and in their group meetings. The participants set a firm timetable to ensure keeping to future deadlines and follow-ups such as information gathering and reflecting on collected information. Local actors accepted assuming enormous responsibilities toward implementation of the plan. This is important for the sustainability of inclusive practices in cooperative learning. Second, in accordance with present institutional set-ups, the plan detailed action steps as well as an equitable distribution of responsibilities among actors for implementation of the various steps.

For instance, policy-makers agreed to handle actions related to policy issues such as teacher allocations through government organisations, whether at the village or district level. Third, the plan demonstrates an aspect of co-generation of knowledge, as both participants and researchers proposed solutions to identified challenges. For example, the participants introduced the idea to apply for additional teachers through statutory decision-making organisations, via either the district executive director or another law-making body, while the researchers suggested a different hands-on approach that did not require political or legislative action: training teachers in the use of Education for Self-Reliance (ESR) based on outdoor activities through experiential learning (Ahmad, Krogh, and Gjøtterud 2014; Corcoran and Krogh 2012; Dewey 1929). Fourth, the participants agreed upon concretisation of ESR in school practices as a main point in the action plan. Many participants had discussed ESR in meetings before the conference. In support of ESR, one participant (education officer) remarked during a plenary discussion:

> I strongly believe that ESR is still relevant and sorely needed, now more than ever before, especially when we are going into the market economy where a tight labor market exists and jobs are scarce. Because based on my experience in the 1970s, ESR activi-ties in school learning instilled students with a positive attitude towards agriculture and equipped them with the necessary hands-on skills for pursuing self-employment and enhanced a spirit of self-reliance. (Fourth plenary session)

Several studies (Corcoran and Krogh 2012; Taylor and Mulhall 1997) support these conclusions. Further, Lieberman and Hoody (1998) and Wilson (1998) add that the learning milieu presupposes an array of hands-on activities designed to improve classroom learning. Nyerere (1967) claims that ESR-based outdoor tasks provide opportunities for pupils to work together with experienced adults in meaningful and relevant contexts, thus making school learning both relevant and fully integrated into the community.

The main pillars of the action plan are capacity-building, establishing and strengthening school community linkages, establishing infrastructures and facilities for enhancing active learning and teamwork and ensuring accountability. All of these factors, drawing strength from local cooperation and steeped in local participatory traditions, translate into emancipation and liberation on different levels (Freire 1970). Ultimately, this enables local actors (insiders) to occupy a central position and to recognise that they are at the centre of knowledge generation and application. Reactions to the action plan showed that participants were optimistic, and saw the dialogues as a step toward realisation of commonly set goals. However, its useful-ness will depend on subsequent implementation. One participant, a community development officer, cautioned:

> There is a tendency to make good and promising plans like this, but sometimes we fail to put them into practice. A good thing with this one is that we have indicated who is to do what and when and why, so it may be easy to undertake follow-ups, make necessary adjustments and to evaluate progress as we move along. (Fourth plenary session)

This quotation serves as a reminder and a cautionary note for not putting word into action with respect to participant experience and consensus decision-making. Furthermore, it is a loud call for a closer focus on the implementation of an agreed action plan, its aftermath and also for documenting lessons learned by the participants. As described above, the developed action plan shows roles for all participants and provides a follow-up mechanism for its implementation. It should be noted that

the decisions made were followed up in a second dialogue conference two months later, and that the actions were to a large extent carried out.

6.5. Participants' reactions on their role and overall influence on the dialogue conference process

In this study, participants revealed that they felt respected, valued and capable in solution seeking. Through the dialogue conference, they received feedback on the baseline survey, concerning the state of the practice in which they were involved. They also got an opportunity to discuss issues of concern and contribute with ideas on equal terms about what to do, when and how to do it, regardless of their position and status. To that end, they felt respected, empowered and thus to have been actively involved in the processes and have direct influence on the outcomes. Summarising the claim, a community development officer from the third group said:

> Through this project, I have learnt that there are two types of research: true research, like the practical running of the dialogue conference, and academic research. The difference is that those doing true research respect respondents and their needs by coming back to provide feedback and to provide us an opportunity to contribute with our ideas as a part of the larger solution. Those doing academic research never come back, and therefore we never know the outcome or see their impact in our communities after responding to a long list of questions. (Fourth plenary session)

Some participants reported realising that they were active co-action researchers. They became part of a team seeking to bring about social change. Their participation in the dialogue conference encompassed a practical vision of change and an invitation to analyse problems and solutions, propose a plan and generate knowledge in pro-active cooperation. This is in line with Swantz' (2008) argument that participatory action research creates conditions which allow researchers to walk shoulder to shoulder with ordinary people rather than one step ahead or one step above. Local voices are heard and recognised, during the process of which the researcher-researched dichotomy is blurred, to the benefit of all concerned. New lines are drawn, and the control over representations is increasingly and constructively shared (Gergen and Gergen 2000).

We argue that dialogue conferencing has immanent potential for uniting coopera-tive learning and research. This union promises to be emancipatory, as it enables local actors to control the overall vision process and what it means in practical terms for planning of community development processes aimed at creating better, more sustainable solutions in the field of education.

7. Conclusions and implications

Throughout this paper we have discussed the role and potential of dialogue conferencing as an approach to initiate collaborative partnerships for integrating primary education into the community. Facilitating dialogue conferences requires familiarity with and sensitivity to the contextual and socio-cultural characteristics of the participants and their experiences. Such familiarity and sensitivity can enable the facilitators both to internalise and conceptualise contributed ideas and to adapt dialogue criteria in the process. Otherwise, dialogue conference processes may force participants to be submissive, leading to instrumental consensus over informed consensus (Elliott 2006). In our case, the first author and his research team were familiar with

the contextual and socio-cultural realities in the research area, while the other authors were skilful facilitators and action researchers.

Throughout the preparations ahead of and during the dialogue conference, we still struggled with the reluctance against being committed among some participants. Being aware of cultural conditions and skilful facilitation of dialogues are not satisfactory conditions for promotion of motivation and engagement. External actors initiated the action research project as a whole, including the dialogue conference. This remains a main critique of the project, and can explain the reluctance to commit amongst some participants. On the other hand, teachers in the actual school, as in many rural schools, were facing day-to-day problems of such dimensions that they seemed not to have the energy to improve their own practice and conditions. Owing to limited contact with school practices, overload of work on their own farms and the perception that provision of education is a government responsibility, other stakeholders did not have the necessary experience or capacity to initiate actions to improve the situation at school.

Thus, in line with Schabort (2013), we found that lack of resources and the overload of other everyday tasks among all stakeholders both justified and called for ideas from the outside and an external initiative. We sought to overcome the dilemma of a poor democratic start by creating communicative spaces where stakeholders could debate and negotiate the ideas, to achieve mutual understanding and consensus about what actions to take. We found that dialogue conference was a tool to ensure a democratic continuation, as it provides an organisational structure promoting neutralisation of hierarchy-based power. Furthermore, during a long period prior to the dialogue conference, the researchers presented, discussed and developed the ideas in dialogue with various stakeholders. Ideally, the stakeholders should have taken an even more active part in planning the conference and hence perhaps become even more involved and responsible. Yet the research-team-members had to learn action research themselves, so just the cooperation within the team was one milestone. Second, the initial phase with the stakeholders and the dialogue conference was a stepping-stone for participatory research. Without this experience, our advices related to management of such reluctance would be without deeper foundation.

Although faced with some challenges, dialogue conferences can serve as a catalyst for uniting cooperative learning and research, and for bringing disparate actors together who are – and would surely see themselves – as an integral part of any viable solution. This union opens up for empowerment, emancipation and meaningful local decision-making at heart. The reason is that knowledge created can be freely distributed and freely exercised. It does not remain in the group who created that knowledge, or with the co-researchers who may have promoted a certain result. Thus, the method can fill an existing gap between research and the way Tanzanian communities organise discussions and solve pressing social problems. Records should be kept, however, so that knowledge and insights created from the experience of dialogue conferencing in one venue can inspire and inform others who might be facing similar problems in their local communities.

Disclosure statement

No potential conflict of interest was reported by the authors.

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Exploring possibilities for contextualizing primary school education in rural Tanzania following a participatory action research approach

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Action Researcher in Education, Issue 6: September, 2015

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Abstract

In this paper, we reflect upon and discuss experiences from a participatory action research project aimed at facilitating local processes oriented towards better integration of everyday experiences in learning at a Primary School in rural Tanzania. We discuss the need for such initiatives for improved teaching practice in light of a rapid growth in population and a failing education system. Though we struggled with contextual and structural challenges, the processes of the project resulted in improvement of the learning environment and in stakeholders' belief in their own ability to change the situation, despite the harsh conditions they live in. In the common struggle our horizons met and expanded. Thus, we developed an understanding that deep knowledge about local cultural and sociopolitical conditions, as well as awareness of and sensitivity to contextual issues, flexibility, alertness and attention are crucial attributes for facilitation of demanding participatory action research projects. We believe the example created from one local school and area, may serve as inspiration for teacher education in Tanzania and hence contribute to change on a larger scale.

Keywords: action research, contextualization, primary education, relevant learning, community engagement

1. Introduction

This study addresses a broadly acknowledged deficit of Tanzanian primary (and secondary) education. Formal learning is poorly linked both to community experiences, everyday life and to local realities and therefore not contextualized (Taylor and Munhall, 2001; Kenea, 2014). Largely graduates fail to transform school knowledge into real life situations and challenges. Agriculture, which still employs 80 % of Tanzanians, is scarcely used as learning arena (Kinyaduka, 2013). Neither food production, dissemination of best farming practices nor learning math, science or

Kiswahili seems to be connected with learning from agricultural activities in school. In our experience, many pupils are constantly hungry and strive to see everyday relevance of teaching that mainly is aimed towards achievement in standardized national examinations. In 2009, only 49.4 % of the pupils carried on to secondary education. In 2010, the failure rate at ordinary secondary education exams was 49.2% (Mlyakado, 2012).Generally, formal learning system seems not to help learners develop creatively and emotionally and acquire skills, knowledge, values and attitudes necessary for responsible and productive citizenship after graduation. It seems, the school system has failed to meet the overall goal of formal education in Tanzania which is to provide graduates with a concrete and reliable basis for a self-reliant life.

Tanzanian population now is 45 million; 44 % of the population is youth under15and 65 % is under 24years (URT, 2013).The rapid increase of the population is not followed by an increase in available job opportunities. Therefore, there is an urgent need to assist youths to be able to transform acquired knowledge and skills into income generating self-employments. The education of innovative and creative citizens requires a transformation of learning and teaching practices. Memorization and drilling headed for passing national exams need to be supplemented with integration of knowledge, skills and attitudes in accordance with everyday experiences, needs and livelihood possibilities for socio-economic sustainability.

As teacher educators and agricultural extension workers educators, we joined to address the aforementioned challenges in collaboration with relevant stakeholders in the rural village of Nyandira situated in Uluguru Mountains in Tanzania. In 2012, we established a participatory action research project to facilitate local processes oriented towards larger integration of everyday experiences in learning. Mainly to make meaningful cultural connections and engage pupils in higher order and creative-thinking learning activities as a result: a) improve learning achievements and (b)help learners develop creatively and emotionally and acquire skills, knowledge, values and attitudes necessary for productive life in the society. Contextualized learning approach is grounded in a conceptual framework relating to contextual learning perspectives (Hull, 1993; Gergen, 1995). We organized a Dialogue Conference (Gustavsen, 2001) to (1) establish a platform for democratic engagement of stakeholders, (2) reflect critically on identified problems during the initial phase of the project and (3) develop solutions and alliances for collective actions to transform the practice. The dialogues were based on local, social, political and organizational infrastructures, yet followed the principles of dialogue conferences.

The combination of principles for dialogue conference, local organization and communication seemed to enable stakeholders to negotiate and agree on a desired future of school learning practice: linking schools and farms closer together. Additionally, the participants discussed, negotiated and streamlined associated challenges and explored alternative solutions. Based on a shared

understanding, they developed an action plan to guide collective actions to realize a common vision. Throughout the process, the participants' willingness and ability to take a lead in solving local school challenges seemed to rise (Ahmad et al., 2015).

The main purpose of this article is to show and discuss the process and outcomes of the participatory action research project aimed at improving teaching practices in Nyandira Primary School. We address the following three questions:

i. How did the action research process empower different stakeholders to take up school development initiatives? Did they fulfill their responsibilities and commitments as stated in the action plan?
ii. Did the actions agreed upon seem to function as solutions of the challenges?
iii. What challenges did researchers and stakeholders face in the process, and how did they address them?

After the introduction, we provide an overview of the context and structural conditions that framed the initiation and influenced the realization of the study. Thereafter, we explain the chosen research design. After presenting the action plan which was developed among the participants, we give an account of the implementation of each of the actions, after which we present the findings under three themes: participants' fulfillment of commitments and empowerment, appropriateness of agreed actions as solutions of challenges and challenges experienced during implementation. Thereafter, we reflect on and show how the local stakeholders managed the challenges. In the following discussion we recapitulate the project processes to deduce general principles related to management of challenges which we believe are of interest for the action research community, in particular connected to improvement of education in rural, underprivileged areas.

The education system in Tanzania: visions, practice, organization and management

Less than 25 % of Tanzanians exceed secondary education. Though, the Tanzanian development vision up to 2025 highlights the significance of education to improve citizens' quality of life (URT, 1999). As early as 1967, Julius Nyerere, denoted as the father of the nation, introduced Education for Self-Reliance (ESR) as the philosophy to guide educational practices (Nyerere, 1967). Tanzanian educational policy advocates learner-centered pedagogy to empower pupils to become independent thinkers and actors (URT, 1995). Correspondingly, the school curriculum recommends the use of active and hands on activities in learning (URT, 2005). In practice though, everyday-teaching mainly takes place in the classroom through lectures focused on memorization of facts aimed at national exams. This was also the case in Nyandira Primary School, where there are up to 60 children in the classroom, few books available, the blackboard has become white, and the children's attention span is often short due to hunger.

The structure of the formal education is two years of pre-primary, seven years of primary, four years of ordinary secondary and finally two years of advanced secondary education. Ordinarily, candidates who fail to advance to the next level may opt, if they qualify, to attend vocational training at mid-career level. At policy level, management and delivery of education is vested into two key ministries, the Ministry of Education and Vocational Training (MoEVT), and the Prime Minister Office-Regional Administration and Local Government (PMO-RALG).

The mandate of MoEVT is to formulate policies, policy implementation guidelines and frameworks, prepare and supervise teacher-training programs as well as designing and developing curricula, textbooks and teaching resources. Curricula instruct the teaching content, in detail, how to teach and evaluate, as well as prescribe common textbook(s) that ought to be used in all schools in the country irrespective of gross contextual differences across the country. Furthermore, curricular specifications regulate standardized national exams. Evaluation of exams determines who passes for next level, based on established standards. Thus, MoEVT strictly define and monitor the entrance from one level to another. Passing the national exit exams at each level is difficult, but a priority for pupils to be able to climb up the education ladder.

PMO-RALG is obliged to recruit, employ, allocate and manage teachers through local government authorities (LGAs). Authorities at district level assign teachers to local schools and monitors management of teachers within the district. Depending on the existing central government funding policy for such provision, LGAs coordinate provision of school materials and equipment. Currently, no provision is secured for primary schools. The village government, the school owner, both has the duty to facilitate planning, budgeting and implementing school development plans and to mobilize community members to voluntary contribute labor, money or building materials such as timber, sand and bricks for building classroom when needed.

Village governments are responsible for everyday functioning of local schools, but they have less or no influence over allocation of teachers to schools, neither determining the number nor the competence of the assigned teachers. While rural schools experience shortage of teachers, schools in urban or suburban areas struggle to employ allocated teachers. Nyandira Primary School, located 50 kilometers from Morogoro town, has five teachers serving over 700 pupils, instead of the 19 as is the prerequisite, while Mzumbe Primary School, located between Morogoro and Nyandira, has 20 extra teachers. One solution to manage the teacher shortage is engaging the community as our project suggests. This is not meant as a replacement for the responsibility of the authorities to work for better ways of allocating teachers, but still it is a way for the rural schools' teachers and community members to be aware of alternatives to the victim role.

The framework and structural conditions for the Nyandira project

For more than 20 years Sokoine University of Agriculture (SUA) and Norwegian University of Life Sciences (NMBU) have cooperated in agricultural and environmental oriented research programs aimed at improving livelihoods in rural Tanzania. Norwegian Agency for Development Cooperation (NORAD) funds the programs. NORAD's main strategy is to help to empower recipient countries to achieve their own development goals. Therefore, the Tanzanian part both has considerable influence on selection of research projects and administrative responsibility of distribution of funds to selected projects. Although the program both have opened for and comprehended projects in natural and social science, the structure, implementation and evaluation framework of the program is influenced by structure and methodology more appropriate for natural science research.

Based on this framework and principles the implementation of the program and the research projects has been organized in the following way:

i. Selection of projects based on the aims in the research program.
ii. Baseline studies, primarily focused on mapping of measurable facts relevant for the research project. The studies cannot be performed before financial resources are distributed to the projects
iii. Execution of research projects following a pre-determined framework
iv. Reports and papers based on the results from the projects.

In 2011 our proposal for an action research project aimed at using agriculture and agricultural activities as a learning arena in the school was accepted as a strategic intervention in EPINAV, Enhancing Pro-poor Innovations in Natural Resources and Agricultural Value-chains program (SUA, 2010)[1]. The strategic interventions window strived to provide space for learning and communicating knowledge and best practices to various value chain actors in and around 15 program projects. We oriented the project towards the above described challenges. The project merged NMBU researchers with expertise inaction research and farm-school cooperation in education, with SUA researchers with expertise in agricultural education, extension and rural development. One year later, when economical resources were distributed, we established the participatory action research project and carried out a baseline study in order to examine the practices for the purpose of understanding the current state, problems and opportunities. We had to use the results from the baseline study as benchmarks for the action plan.

[1] http://www.umb.no/noragric/article/enhancing-pro-poor-innovations-in-natural-resources-and-agricultural-value-chains-epinav

2. Research design

The project followed a participatory action research approach (Bhana, 1999) inspired by Freirean and transformative learning perspectives (Freire,1970; Taylor, 2009). Participatory action research advocates the ideas of critical reflection and co-learning to ensure that stakeholder participation is intentional, inclusive and critical (Reason and Bradbury, 2008). Therefore, we wanted to involve all participants on equal terms, to secure that all voices contributed to the process of change (Kemmis, 2001). As facilitators, our roles were to assist stakeholders in discovering their own abilities and understanding of the situation, encouraging them to take ownership and control of the problem definitions as well as finding solutions. When the participants control the process of knowledge production from problem definitions to creation of solutions, they are more likely to develop capacities that influence their future actions (Gaventa and Cornwall, 2001).Thus, raising critical consciousness among the stakeholders is important for community transformation (Freire, 1970).We used transformative learning perspective as a meta-theoretical lens to explore the extent to which the process provided participants with a chance to examine, question and review their perceptions and experiences. Thereafter we examined to which degree the changes in perception transformed their orientation and actions.

We implemented the project into three interlinked phases: a preparatory, a planning and an implementation phase. The initial preparatory phase started with collaborative practice mapping where everyday practices at the school were examined. Thereafter, we arranged formal and informal meetings with the stakeholders to collect their experiences of the school practices and their understanding of the situation (Ahmad et al, 2014). The activities both strengthened and developed mutual learning, relationships and confidence in each other (Bowen & Martens, 2005).Then we arranged a dialogue conference to facilitate dialogues and reflections oriented towards change of teaching and learning practice (Ahmad et.al. 2015). We presented our mapping of the ongoing the practices in the conference. This exposed the participants to the practice at school and facilitated sharing of experiences and ideas. In Freire's (1970) spirit, mutual consciousness about challenges on the practices provided a platform for development of an action plan based on democratic interaction between the stakeholders. Theoretically the plan is founded on John Dewey's concept of 'education as life itself'; experiential learning' (Kolb, 1984); and Paulo Freire's 'humanizing education' (Freire, 1970). Pragmatically, the plan rests on the policy of Education for Self-Reliance that calls for context based pedagogy (Nyerere. 1967). The plan aimed to link formal learning with community experiences, everyday life and local realities and communities of practices (Lave and Wenger, 1991).The implementation phase, which is the main focus of this article, ran for ten months. In collaboration, researchers and local actors implemented most of the planned actions, but made some adjustments in terms of timing, solutions and strategies (see action plan implementation

section). In the following section we present the chosen data collection methods, principles for analysis of data and ethical considerations.

Data generation, analysis and ethical considerations

Data collection methods included observation of implementation of agreed activities and document progress, changes, experiences (participants' participation, completion rate, and timing against plans, success and challenges), reflective meetings and reflective journals. We captured data by means of audio recording and note taking. Thereafter we transcribed the audio recorded data and analyzed the data following a thematic analysis procedure (Braun and Clarke, 2006).Four research team members independently read the transcripts and notes thoroughly to gain an overall impression in relation to the research questions, making deep interpretations for specific statements and content. With the aid of literature and experience on the topic, the researchers identified final themes, which were shared and discussed through self-evaluation meetings (see the findings section).

We began the project processes, after ethical clearancethrough mutual negotiations where we as co-researchers openly discussed and agreed on the terms and conditions of the joint efforts with the participants. Possible consequences of the research were discussed. However, the topic of research *'improving school learning'* did not present any harm to participants. In line with Malcolm et al (2009) we found the question of anonymity irrelevant. The participants wanted to be public.

In the following section we present the implementation process following chosen sequences. For each action line, we show if the stakeholders implemented the action or not, if not, what were the reasons, and what alternative options the stakeholders decided to choose.

3. Implementation of the action plan

The action plan was a result of systematic mapping and analyses of the situation through numerous research dialogues between researchers and stakeholders over a period of one year, as well as comprehensive discussions and analyses prior to and during the dialogue conference (Ahmad et al 2014, 2015). The plan consisted of five mutually agreed main actions: application for additional teachers, training to promote pupils' experiential learning, improvement of teaching and learning facilities, activation of parents and improvement of the learning environment (Table 1).

Table 1: An action plan developed during stakeholders' dialogue conference

Key Challenge addressed	Action line	Who take the lead role
Shortage of teachers.	Make application for additional teacher following government	Village and ward leaders and

	administrative machinery by the end of December 2013.	District education officer.
	Identify community members to volunteer in school learning activities by the end of October 2013.	University based researchers and school teachers.
Teachers' limited capacity and skills to utilize available resources.	Design a training program to build capacity for experiential pedagogy approach by the end of September 2013.	University based researchers (facilitators) and school teachers.
	Train School teachers on the use ESR activities to develop experience for classroom in teaching/ learning by the end of October 2013.	University based researchers, school teachers and Nyandira Ward Education Coordinator.
	Train volunteers (community teachers) to assist supervision of ESR activities in and out of school by November 2013.	University based researcher and identified community members.
Shortage of Teaching and learning facilities.	School farm (agricultural unit) and science learning corners are established by end of October 2013	Head teacher, pupils, agricultural extension agent, parents and project coordinator.
	Mobilize parents and the Nyandira community to improve teaching and learning facilities such as chairs and desks by the end of December2013.	Village and ward leaders, school committee & parents.
Weak school –community linkages.	Convene the first teacher-parent meeting to create awareness on the need of parents' participation in school practices, their role and how to assist teachers in practical learning activities by end of September 2013.	Head teacher, school committee and parents.
	Organize parent school day to see school learning activities twice a year.	Head teacher, school committee and parents.

	Plan, organize and conduct outdoor activities in school farm learning unit and farms of selected best farmers in the community by the end of December 2013.	Teachers, selected farmers, university based researchers and community development officers.
Unconducive/demotivating learning environment.	Organize pupils in outdoor tasks learning clubs and study tours outside Nyandira community by November 2013.	Head teacher, parents and university based researchers.

Application for allocation of teachers

After realizing the deficit of teachers at the school, 5instead of 19 and its consequences of pupil learning, the stakeholders decided to apply for additional teachers. We planned to present argumentation for the demand of additional teachers to the respective district authorities by the end of December 2013.

However, until March 2014, the responsible stakeholders had not been able to organize_statutory meetings at village and ward level as expected. Participants on a teacher–parent meeting in March 2014 raised the issue and formed a committee to expedite the process by visiting the responsible officer at district level within two weeks. Contrary to their anticipation that the proposal might not be taken seriously because of their status as mere villagers, the District Education Officer (DEO) welcomed them respectfully. The presentation of the school situation, and the request for additional teachers led to a fruitful discussion with the DEO, who immediately allocated two teachers for the school. One teacher reported at the school the next day. The second did not turn up, despite follow-ups made.

Teacher training to promote pupils' experiential learning

In the dialogue conference, participants agreed that existing school practices' lack of local relevance was a major challenge and one of the reasons for poor performance among the pupils. Therefore, one planned activity aimed at promoting relationship-based experiential learning (Krogh and Jolly, 2012), through capacitating the employed teachers and volunteers to be able to develop capacities and skills to use available resources and relevant local practices in their teaching. This also meant to relate classroom activities with out-of-school experiences and other relevant activities, but also to learners' experiences, interests and abilities. The point of departure is that all experience and learning starts with human relating to each other and to the physical world (Dewey, 1929).The university based co-researchers developed a capacity building program for both teachers and volunteers.

After two postponements, because teachers had to give priority to other unanticipated official commitments, we conducted the training program with six trainees, five teachers and a ward education coordinator for five days in two separate sessions. First for two days, then for three days in October 2013.We mostly utilized Saturdays and Sundays to avoid interrupting the school teaching timetable. Though the days were not official working days, all trainees attended. The training was structured in three sections: foundations for learning and teaching; active learning and the use of immediate environment to enhance active learning; experiential learning approaches and customizing an experiential learning model in classroom teaching. In February 2014, almost two months behind schedule, due to delays of payout of project funds for facilitation, we conducted an orientation workshop with ten community members. The workshop focused on orienting the participants on how pupils learn and how to assist them learn in outdoor activities.

Improvement of teaching and learning facilities

The practice mapping and the school visit during the dialogue conference revealed a lack of teaching materials, including text-books, chairs and desks, and a learning environment with limited local connection and relevance. In this respect, the participants planned to establish a school-farm for outdoor teaching, and to contribute funds for constructing chairs and desks. At the end of April 2014, pupils and parents' representatives finished the unit. The unit consisted of one goat shed to house 12goats, and a 64 square feet size vegetable garden cropped with cabbage, beans and Irish potatoes crops. The research project provided funds for purchasing farm tools and initial inputs: vegetable seeds, feed supplements, 6 goats as the parent stock and industrial building materials.

Local participants contributed labor and building materials.

The purpose of establishing the school unit was multifold. The first intention was to establish a learning arena for linking of theoretical knowledge construction in concrete and familiar tasks with apparent useful results. Experiences from these outdoor learning activities for example calculating size of seedbed, feeding animals and participating in milk processing, are intended to stimulate, inspire and enrich classroom learning. Secondly, the creation of a 'living laboratory' aimed at learning and building locally relevant knowledge in collaboration between pupils and adults. We conceptualized a 'living laboratory' as real world setting (in this case a school farm), involving multiple stakeholders and their interaction. Thirdly, the outdoor learning unit is a meeting ground for disseminating agricultural innovations both to pupils and to community members. As the production improves, the unit will also contribute to the school's lunch program.

Construction of chairs and desks was not accomplished as mobilization of resources from community members proved to be a challenge. Hence, the responsible team applied to the district

forestry department to get permission to harvest over grown or dry trees from a reserved community forest. After harvesting they planned to make desks and chairs from the timber. At the time of writing this paper, the process is still underway.

Activating parents

During the dialogue conference, the stakeholders agreed that parents' awareness about the school practices and their participation in instructing practical learning activities were important means to improve the learning environment at the school. To facilitate a step-by-step mobilization of parents, the planned activities followed a process of parent-teacher meetings before organization of parents' days at school and thereafter parents' assistance in outdoor learning activities.

At the first meeting, in December2013, the participants discussed the action plan, project progress and acknowledged the progress made. After a lengthy discussion, they agreed on the need for organizing frequent meetings for evaluating progress, challenges and taking timely collective measures. On the second teacher-parent meeting, in March 2014, the key issues discussed were the implementation of the action plan, especially on application for additional teachers (see action one), andestablishment of the school-farm teaching unit (see action two).The participants made three resolutions for parents to 1)participate in establishment of the farm learning unit under the coordination of the school committee, 2)assist in supervision of outdoor learning activities and 3)contribute for funds to hire a security guard for the school and a nursery class teacher to ease teachers' workload. Due to the delays explained above, the parents and teachers have not yet conducted the planned parents' day at school.

Improvement of learning environment

Facing mainly teacher driven school practices and a dreary school environment during the dialogue conference, the participants planned to establish pupils' groups based on their interests and participation. The groups should be meeting grounds were pupils could develop activities or discussions based on topics of their own interest under the guidance of adults, thus encouraging discovery/active learning. In March 2014, with the facilitation of school teachers, grade five and six pupils organized themselves in three groups: Agriculture, Science and Environment groups.

The objective of the groups is to organize outdoor activities depending on the nature of activity and learning experiences to be developed as defined by teachers. For example, Environment group coordinates school beautification and tree and pasture planting. So far, the Agriculture group has organized several field visits to farms in and out of Nyandira community. At the end of August 2014, a group of 25 pupils and two teachers made a study tour to nearby Morogoro town and visited an agricultural research and training institution, a sugar-processing factory and commercial

agricultural firms. For three quarters of the children, this was their first trip out of their community. The visit exposed pupils to unfamiliar experiences, for example, application of scientific principles in agricultural productions and relevance of agriculture from a large scale perspective.

Consequently, teachers and other actors developed capacities, awareness, relationships and infrastructure for linking school learning with community everyday realities. Two teachers, a mathematics teacher and a science teacher, pioneered and developed some experiential based learning lessons. For example, to concretize and stimulate standard five pupils' learning of mathematical measurements, like height and width, the mathematics teacher introduced a pupil competition designing the goat shed for the outdoor learning unit. A few weeks later, the pupils presented their drawings of the sheds with explanations of size, measurements and shapes. Drawing on the teacher's experience, the pupils showed a high level of understanding as for example they were able to relate different drawn shapes with actual home appliances and participation in terms of asking and answering questions during the lesson, compared to other lessons that their planning did not follow the procedure. The grade six science teacher and pupils made several visits to a nearby yoghurt processing unit managed by a farmer group. During the initial visits, they received explanations and observed the steps of milk processing from receiving milk, treatment, boiling, packing and storage (refrigeration). During the latter visits they participated in the whole process of milk processing. The teacher thereafter conducted a lesson on the main concepts three state of matter and the change from one state to another. Using milk processing experience, he explained the science behind. He reported that the pupils seemed to easily grasp the concepts.

4. Research findings

Through the analysis we identified themes related to the *implementation* of planned actions. These included participants' engagement in the implementation process, enhanced capacities and a spirit of voluntarism, appropriateness of solutions agreed upon and encountered challenges. We address these themes in the following section, which is organized as responses to the three research questions presented in the introduction.

Fulfillment of commitments and empowerment

The parents and teachers fulfilled the commitments as agreed upon. They showed increased awareness about the learning situation. Furthermore, they acknowledged their share of responsibility for the welfare of the learners and showed willingness to act to improve the current learning environment. During one of the teacher-parent meetings, discussing the progress of the project a parent commented that:

> Although the school is a community property, pupils who are studying at the school belongs to individual parents. I have realized that we have a big role to play to make sure they learn something for their future life and also maybe for helping us in the future (second teachers-parents meeting, 18.03.2014).

To a less degree, policy makers, education administrators and village leaders accomplished actions they had taken responsibility for, for example improvement of learning facilities as desks and chairs, and application for additional teachers. This finding shows that stakeholders identifying themselves to be closely tied to the situation, in this case parents and teachers who felt socially and academically responsible for the welfare of learners at the school, were in the front line to contribute to efforts aiming at improving the situation.

Most of the participants gained a new perspective about their potentials and abilities to contribute in planning, managing and evaluating social processes with others.

Both in planning, action and reflections, the participants increasingly emphasized the importance of sustained local engagement in actions aimed at improving local conditions.

> Through the process it has become clear to me that making an action plan and thereafter its implementation is not a smooth ride. You need to keep on following up and re-planning in the light of encountered challenges and developed knowledge in the process. It is difficult to realize this when you are not engaged in both steps (Village executive officer, 26.7.2014).

Facing local challenges together, cooperating in analyzes of challenges, planning actions to improve the learning environment and thereafter reflecting on the results, promoted a common situational understanding among the participants. They experienced that they had power to influence the learning conditions for their children. One parent emphasized the potential of transferring this sense of power to other situations:

> Before visiting the officer and a discussion on shortage of teachers at our school and request of additional teachers, deep in my thoughts, to be honest, I had a feeling that what we were up to was an impossible mission. After the visit, I have a different experience and understanding with which now I can meet and enter in a discussion with anybody regardless of the status or position. What is important is having facts about the topic and following right procedures (Special parent committee member, 23.04.2014).

The parent group realized that they could reach their common goal in negotiation with central authorities when they based their arguments on solid facts and dared to meet the authorities face to face. A comment from the District Education Officer indicates also that the parents' action influenced the power relations between the district authority and the local stakeholders.

> I have held this position for years now, but do not remember to have hosted such a large delegation of parents from a rural school asking for teachers for their school. In this respect I am pleased to host you and request you to continue supporting school teachers in your village to improve performance (District Education Officer, 03.04.2014).

From the parents' perspective, this specific experience opened up for a move from victimization to empowerment, from feeling helpless to being in charge of the situation (emancipation).

Appropriateness of agreed actions as solutions of challenges

Many of the actions agreed upon during the planning phase seemed to function as solutions of challenges, but some did not. Building capacities of actors through trainings, facilitating establishment of informal and formal alliances for collaborative work and establishment of outdoor learning units are among the actions participants found mostly functioning. Mobilization of community members to contribute to fund construction of chairs and desks as well as establishment of science learning corners at the school, are among the actions that were not accomplished due to scarce resources.

In the following we summarize characteristics of selected actions that seemed to function as solutions. Participation in the capacity building program increased the teachers' awareness on available teaching resources within the immediate environment of the school and gave them tools and skills to utilize the resources in conducting experiential learning lessons. The parents' raised awareness about the bad learning environment at the school combined with frustration with delays in the plan implementation led to several resolutions in the parent meeting in March 2014. These resolutions were followed up by actions. Increased support of labor for construction and building materials resulted in a finished learning unit. Six parents volunteered to supervise pupils in agricultural learning activities at school and farms in the community even though they are under a lot of pressure to ensure their own livelihood. Such an addition to the teaching resource is significant.

Both factual and procedural characteristics seem to be important for the appropriateness of actions. If a group of stakeholders perceives an action as relevant, important and feasible, they probably both find it appropriate and possible to accomplish. The successful teacher training fulfills the three mentioned conditions. The action for construction of chairs and desks fulfill the conditions of experienced relevance and importance, but had low degree of feasibility because parents lacked the resources (money). As a result they did not accomplish the action. It follows that when stakeholders are aware of and emotionally engaged with important challenges, even if the procedure followed in dealing with the challenges is frustrating, they keep on. This is because the process itself can provoke and release agreement on actions that are feasible through common efforts. After

becoming aware of the poor school conditions, the teachers and parents took extra initiatives to make things work. Although policy makers became aware of these conditions, their distance to the situation, as compared to teachers and parents, might have caused their low level of engagement in actions for improvement.

Encountered challenges and how they were addressed

The participants emphasized various challenges related to the implementation process. We have organized their experienced challenges in two categories: structural and contextual challenges. Structural challenges comprehend external conditions for project organization and implementation, while contextual challenges encompass conditions that are relevant for organization and implementation of this project in Nyandira and at the school.

a) Structural challenges

As described above, the implementation of the EPINAV projects was based on the assumption that truth and reality is free and independent of the viewer and observer, thus framed and monitored through an objectively defined sequential structure. The rigidity caused some of the delays referred to above. In addition, the top-down organization prevented invitation of local stakeholders to dialogues about the project content ahead of project start. The result was a prolonged initial stage to ground the project idea in the community and ensure democratic foundation of the project. The delay caused frustration and project exhaustion among participants. Furthermore, the EPINAV administration at SUA used more than one year to discharge funds to the project after formal project approval. Since project activities could not start before funds were available, the exhaustion and demotivation increased because it became hard to keep the participants' attention when they had to wait for so long in between the activities.

b) Contextual challenges

The shortage of teachers and a loaded school curriculum combined with teachers' lack of vocational skills and the pressure towards prioritizing mandatory obligations, greatly affected teachers' participation in project activities. When teachers were to attend the capacity building sessions, they were also supposed to attend classes. This led to frequent postponements and changes in the schedules. Sometimes the teachers had to carry out project activities on weekends. The fact that they did this, shows their motivation.

At the beginning of the project, the parents were unaware of the insufficiencies of the learning environment at the school and did not experience a responsibility for improvement or take a direct role in school teaching activities. Raising the awareness took time. In addition, the frustration level needed to become high before they decided to act. Time taken for this to happen affected the rate of activity completion. Though teachers and parents gradually took actions,

politicians and responsible government officers at district level remained rather passive. Policy makers did not honor commitments made, and the district authorities did not fulfill their promises. One of the allocated teachers did not report, and the District Education Officer never gave any explanation why.

Although parents and teachers in Nyandira volunteered to improve the school learning environment, their level of volunteerism was modest compared with the neighboring village Kibuko, located some kilometers further into Uluguru Mountains. Parents and teachers at Kibuko Primary School on their own initiative established a school farming unit inspired by the Nyandira project. Compared with Nyandira, Kibuko community offers fewer income opportunities, no electricity, and no bus transportation out of the community. Still, local volunteerism has contributed to pupils' cultivation of maize and beans. This has enabled the school to offer 350 pupils lunch four times a week. Kibuko pupils' school attendance and their performance significantly have risen since this project started in the end of 2012. In 2012, 32 % of Kibuko pupils passed Standard 7, in 2013, 69 % passed and in 2014, 84 % passed(DED-Mvomero, 2014). We wonder if the difference between Nyandira and Kibuko is a result of a 'center-periphery contradiction', where the different activities and opportunities in Nyandira to a larger degree fosters individualism and points away from the community than in Kibuko. According to Simon (2011) the centre-periphery' concept is a spatial metaphor which describes and attempts to explain the structural relationship between the advanced or metropolitan- 'centre' and a less developed 'periphery', either within a particular country, community or (more commonly) as applied to the relationship between developed and developing societies.

As we have explained earlier, project planning and implementation process rested on democratic principles and with relevant local stakeholders. Some of the stakeholders at ward level also provide services to other villages. One of these was the Ward Education Officer and Ward Councilor. In their day to day interactions with the community members and teachers in other villages and schools they created awareness on the project idea and methodology. Probably since the villages have common situations and face similar challenges, villagers found it appropriate to try out the initiative. The main ideas that sailed were the possibilities for a shared understanding and action and awareness that they have responsibilities to contribute into deal with local school challenges. Dialogues and shared planning between school– teachers and community members was the main tool adopted.

Despite the encountered challenges, the project has registered some success as elaborated above. Additionally, it certainly has been a source of inspiration for other neighboring communities. Some of the teachers from these schools were inspired by the Ward Education Officer who attended the teacher training units organized under the project. Apart from Kibuko, Kododo and Lukunguni

Primary Schools, located even further into the Uluguru Mountains, have started similar initiatives. One of the prime goals is to be able to provide mid-day meals for hungry pupils. In the section below we discuss how we managed several challenges faced throughout the action research project.

5. Discussion

We find the fact that the initiative to the project came from the external research team, the rigidity of the project given by the structure of the EPINAV program and the lack of certain resources to implement actions among stakeholders as main challenges for this action research project. During the project we, together with the stakeholders, continuously developed and reframed approaches in our efforts to cope with and manage these challenges and their emerging and ever changing consequences. But, we also acknowledge that the EPINAV program provided essential funding which made the project possible. The research team was mobilized and was financed to have time in the field. At the school a goat shed used as a 'living laboratory' and learning center for both pupils and parents was established. In the following section we recapitulate the project process to deduce principles used to handle challenges in different phases of the project. To contextualize our discussions, the heading of each paragraph is a Tanzanian proverb.

Umoja ni nguvu –empowerment through building a common ground

The project idea and initiative came from the external research team, not from the local stakeholders. This opposes the democratic values of action research. Nevertheless, Adler-Collins (2014) claims that empathically and equitably cooperation seems to enable participants to overcome cultural blind spots, because in the process, they share their values and develop partnership for learning based on trust and mutual support. Thus, insiders cooperating with outsiders can result in transformative learning (van Dijk and van Dijk, 2012). The following raise of common consciousness promotes empowerment (Freire, 1970). This, to some extent, justifies the less democratic start of the project.

The Tanzanian agricultural educationists in the research team were familiar with the socio-political and cultural context in Nyandira, while the Norwegian teacher educators had experience in facilitating democratic participation in action research projects. We found that contextual knowledge was crucial to ensure participation and common understanding among stakeholders. Gradually we sensed a shared understanding among the research team and the local stakeholders. As participants in this research team, we experienced that our mental horizons met and expanded through our efforts to present and share our perceived challenges with the stakeholders (Gadamer, 1979).

Penye nia pana njia – where there is a will, there is a way

In the beginning we sensed that there was a reluctance among participants to take action although they seemed to understand the challenges. However, as the participants started implementing some of the planned activities, they seemed to realize the relevance of their actions. *Concrete, affecting experience* with the relevant situation can bridge mental understanding with willingness to act (Dewey, 1916).As discussed in Ahmad et al (2015), the implementation process confirmed that cultural knowledge, as well as *sensitivity* was important to facilitate the process that activated engagement of stakeholders. In addition, continuous *flexibility* seems to be necessary both to grasp the significance of emergent situations and then to be able to reflect and act according to the situations throughout an action research process.

Present alertness and attention promotes sensitivity and flexibility. Regarding the management of challenges in this project, these vigilant attributes were successfully supplemented with present patience. The mentioned attributes can promote action researchers' capacity to act as instigators in development processes (Postholm, 2008).

Haraka, haraka, haina baraka - haste makes waste

Development of shared and valid knowledge, mutual trust and agreed upon decisions was time-consuming. Nevertheless the time used for mapping, discussions and reflections both seemed to catalyze willingness to act and to enable the participants to find common solutions for some of the central challenges. This happened in spite of lack of important resources, like money. The stakeholders' solid knowledge about the situation, their ownership to and a growing frustration over the challenges combined with the democratic meeting grounds for discussions, reflections and decisions were important factors. In addition, the facilitators' patience to let the situation mature seemed to enable the participants to overcome and handle tough challenges. In this case, the key to accomplishment was openness to consume time, to have courage to let the planned time schedule go. This might be a hard lesson for approaches and frameworks that value efficiency and emphasize that "time is money'. However, if the aim is to improve practice (Elliot, 1991) in similar or related contexts as in Nyandira community, this lesson is worth learning.

Wapishi wengi huharibu mchuzi-Too many cooks spoil the broth

The management of challenges was not only promoted by sufficient time for planning, reflection and action, but also by project organization and procedures that demanded a clear definition of roles and responsibilities among participants. Through a democratic process, the participants agreed on the project goal, activities and evaluation parameters and also distributed roles and responsibilities between themselves. We experienced that deliberation and negotiation with participants in

participatory action research is crucial for establishing a 'social contract' for conducting such a type of research (Mackenzie et al, 2012). Furthermore, in line with Gjøtterud (2011) and Schabort (2013) we found that in order to ensure a democratic process, the leader (here the first author) needed to guide the process firmly.

By clarifying the roles and responsibilities the group as a whole could reveal who among the stakeholders fulfilled or did not fulfil their commitments, and thereafter take necessary actions. We also have learned, from ethical and practical points of views, that local actors need sufficient understanding of possible risks associated with participatory action research. The facilitators have the responsibility to ensure that participation is informed, consensual and transparent to strengthen the shared ownership. In this project we devoted the first phase for community consultation to promote common and shared awareness of the situation and reveal possible needs for change together. Then, through democratic dialogues we analyzed the situation together, envisioned the future and developed a plan for action; and thereafter distributed roles and responsibilities to realize the plan.

6. Conclusion

In conclusion we argue that regardless of the challenges faced, the project shows the significance of strengthened school-community linkages, especially as a means to empower local actors to take active part in transforming teaching practice to be more relevant for both the pupils and the local community. We find this encouraging since relevant primary education is an essential condition for development of sustainable livelihood in rural Tanzania.

Although the stakeholders' resources were scarce, the time-demanding procedures for democratic dialogue gradually empowered teachers and pupils' parents. Solid mapping of the actual situation combined with common planning, acting and reflecting as stepping stones for new actions, resulted in improvements of the learning environment and in the parents' belief in their own ability to take charge in changing the situation. The challenges faced through this project have been gifts to us as action researchers. By being able to manage the challenges faced in Nyandira, we have experienced the advantages and the necessity to combine deep knowledge about local cultural and sociopolitical conditions with competence in participatory action research, including the use of procedures for democratic dialogues and decision-making. In addition we became aware of the need for sensitivity, flexibility, present alertness and attention as attributes of facilitation of participatory action research projects.

We have also experienced that the Tanzanian school system neither offers satisfactory nor relevant primary education and, in addition, that hungry pupils not at all are good learners. The idea of our project has rapidly spread to three other primary schools in Uluguru Mountains, but Tanzania has

more than 11.000 primary schools. We hope and intend to use the developed knowledge and procedural skills to apply similar approaches elsewhere in Tanzania and invite other educational action researchers to join us in this effort. More importantly, we have developed examples we hope will prove useful for teacher education in Tanzania. We believe that since this was achieved in Nyandira, a very poor community, it may also be possible in other communities facing harsh conditions

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