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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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