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## The Teacher Education in sub-Saharan Africa Programme (TESSA): Evolving, Extending, Embedding, Reflecting

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## The Teacher Education in sub-Saharan Africa Programme (TESSA): Evolving, Extending, Embedding, Reflecting

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### Introduction

Since its inception in 2005, TESSA has been closely associated with primary education. The TESSA open educational resources (OERs) which were created 2005-2010 by the TESSA community (a partnership of universities and educational organisations across Africa) were created to improve the quality of the teacher education of primary teachers in universities and teacher training colleges, and to develop in student teachers and teacher educators an understanding of the practical skills involved in good quality classroom teaching.

The current TESSA OERs are a toolkit of subject-specific pedagogical resources for teachers, for teaching primary-school level literacy, numeracy, science, social science, creative arts and life skills. They have been created to map onto the national primary curricula of countries across Africa, versioned for specific countries and written in Arabic, English, French and Kiswahili. The OERs are written to provide innovative and active teaching and learning, and to deal with the challenges of teaching in schools with large classes and few resources. They are made available on the TESSA website (<http://www.tessafrica.net/>) for download, on CDs, on university intranets and as paper copies. The concept of TESSA – combining theory of education with the practicalities of classroom teaching – has been evaluated as “somewhat ahead of its time in recognizing teacher quality as the key need within a new model of teacher education” (Harley and Barasa 2012)

That the ambition of TESSA in 2005 to improve the quality of teacher education was focused on primary education was due to the influence of the EFA agenda and MDG goals, the emphasis on universal primary education, and the success in the early years of the 21<sup>st</sup> century in increasing access to primary education in many countries across Africa.

In 2013, notwithstanding the continued challenges in providing children with good primary teaching, the focus of attention is shifting. Globally, the world is looking to its new agenda post-2015. The shape of that agenda is still far from finalised but early indicators and draft recommendations suggest a widening of the focus from primary education, and that a post 2015 goal for education will be to

ensure that by 2030 all children and adolescents, whatever their circumstances, have equal access to, and complete, comprehensive early childhood education, primary and lower secondary education. (UNESCO 2013)  
<http://unesdoc.unesco.org/images/0022/002200/220033E.pdf>

## **Increasing numbers in secondary education**

The need to focus on secondary education is visible and inevitable: hundreds of thousands more young people in Africa are successfully navigating primary school and 'knocking on the doors' of secondary school. For many countries in Sub-Saharan Africa, secondary education is the fastest-growing sub-sector (Mulkeen 2010, p, 25). Between 1970 and 2010, the total enrolment in secondary education grew ten-fold in sub-Saharan Africa, expanding from 4.3 million to 43.7 million. As a result, the gross enrolment rate (GER) rose from 11% to 40% between 1970 and 2010 (UNESCO, 2012). There is concern around the scale of this increase in enrolment, and an equally important concern that the quality of secondary education needs to be improved to give students the foundational knowledge and skills required to succeed in the 21<sup>st</sup> century. Furthermore, the increase in student numbers has not been accompanied by a commensurate increase in the number of professionally trained teachers in secondary education. A high percentage of teachers at this level do not have the requisite qualifications to teach. An urgent need therefore exists to provide quality resources to support initial and continuing teacher professional development of these teachers. There is also an urgent need to focus on what Mulkeen (Mulkeen 2010, p, 26) refers to as the problems of teacher shortages in specialist subjects and the upward migration of primary school teachers without specialist qualifications. Altogether, this raises concerns among HEIs and teacher training colleges about their capacity for teacher education at secondary level at this much larger scale.

## **Increasing focus on early childhood education**

Currently there is also widespread concern among countries across Africa that by primary age, many children are already struggling to keep up with their peers because they have not had access to good quality pre-primary education. Early childhood education and development has been a neglected area of education in Sub-Saharan African countries. In line with the recommendations of the Dakar World Forum for Education and the Millennium Development Goals, African governments are beginning to give greater attention to early childhood education (ECE). Enrolment in pre-primary increased by 100% between 1999 and 2010 while the GER increase from 10% to 17%. However,

Less than 15% of children in Sub-Saharan Africa can look forward to a full year of preschool education... There is a wide gap between the poor (and more so at the community level), the rich (most of whom are in private schools), and ethnic minorities. (UNESCO 2010 p,10)

While recent policy moves in some African countries (e.g. South Africa, Ghana and Kenya) involve including ECE as part of the state provision of basic education, in most countries there is a complex relationship between state and the private sector in respect of ECE. Since this level predisposes children to formal education, there is a great need to provide trained teachers for the increasing number of children. What is clear overall is that there is impetus to increase the provision of ECE and concomitant concerns about the quality of current teaching and teacher education for children in this age group. A situation exists where many of the teachers are untrained and are few in numbers. There

are concerns about the quality of infrastructure and teaching materials, the lack of qualified teachers for this age group, the lack of age-appropriate curricula, and the lack of systems for measuring and evaluating gains (UNESCO 2010). New resources with the appropriate child-centred pedagogical strategies embedded within them are needed to support this.

### **In-service teacher education**

Overall, there is recognition that teacher education through university or teacher training college cannot keep pace with the numbers needed for teaching, that what Moon (2010) refers to as 'the gold standard' of teacher education is of itself an inadequate response to teaching needs across Africa. Estimates of the proportion of unqualified primary schoolteachers vary, (where 'unqualified' is defined as 'not holding the certification required in the country to be considered a qualified teacher' e.g. Mulkeen 2010), but between one third and one half of the region's primary schoolteachers may be unqualified on that basis (Anamuah-Mensah et al 2009). Mulkeen in the 2010 World Bank study of 8 education systems in Sub-Saharan Africa (Eritrea, The Gambia, Liberia, Lesotho, Malawi, Uganda, Zambia and Zanzibar) notes that the

inadequate supply of qualified teachers has resulted, in most cases, in large-scale use of unqualified primary teachers. In many cases the shortage of capacity in initial teacher training is such that there is little alternative to continued recruitment of unqualified teachers in the medium term (Mulkeen 2010, p,23)

This being the case, the in-school professional development of unqualified and underqualified teachers, and programmes for para-teachers and teaching assistants are also extremely important for maintaining and developing the quality of classroom teaching.

Where no qualified teachers are available, recruitment of local people as unqualified teachers, combined with appropriate in-service training opportunities, may be a promising way to develop capacity in rural areas. Even in remote schools where governments are unable to deploy teachers, there are often people already in the area with sufficient education to contribute to the teaching within the school (Mulkeen 2010, p, 58)

What has also shown itself to be significant is the explicit need expressed among headteachers for resources to develop their skills in leading on this kind of in-school professional development of their staff. Headteachers "enjoy little support from local or regional bureaucracy" (Bush and Oduro 2006, p, 370) with regional and district offices mainly involved in regulation and administration, and with district officials "playing a mostly supervisory role in relation to teachers" (Mattson 2006, p, 10). There is significantly little external support for headteachers especially in the rural areas in Ghana (Oduro and MacBeath 2003), with in-service training, for example in Kenya being funded by the school and the individual teacher rather than by local or national government (Onderi and Croll 2008). The school is pressured to respond to district and national guidelines in terms of teaching to the curriculum and examination performance, but with limited resources to improve the quality of teaching among its own staff

## **TESSA expanding and evolving**

In Africa among our TESSA community there is recognition of the successes of the UPE agenda, and already a realisation that there are these other related challenges which have either been relatively neglected, or which are now coming more to prominence directly as a result of the success of UPE. The TESSA community is already turning its attention to secondary education, to Early Childhood education, and to the benefits of TESSA OERs for in-service, in-school professional development.

This does not mean that we are neglecting our original aims or our current TESSA community. Primary school teacher education continues to be of central importance to all our work. The longevity and dynamism of the TESSA community, a community which is thriving and growing 8 years after its inception, and the continued successes of the TESSA programme – with 3 or 4 projects regularly running concurrently among our partner institutions – is predicated on the continued availability and the quality of the Open Educational Resources which were produced 2005-2010. And of course, because of the long establishment of this work, TESSA research continues currently to focus on the primary sector.

However, our community is expanding to include new partnerships and new collaborations. Our overall aim is that of improving the quality of teacher education across sub-Saharan Africa and we are extending our focus in four additional areas:

- Secondary school teacher education
- Early childhood teacher education
- The in-school in-formal professional development of teachers, volunteer teachers, para-teachers, teaching assistants etc.
- Provision of audio and video resources to support teacher education across all 4 areas (ECE, primary, secondary, in-school)

Increasing our focus and extending and evolving in this way is matching our work to evolving institutional and policy agendas across Africa. It gives TESSA opportunities for further growth within institutions which are already members of TESSA, extending and embedding the use of TESSA resources and approaches further within and across departments in HEIs and TTCs. There has already been significant success in 'institutionalising' TESSA in our partner HEIs beyond any particular project funding (Harley and Barasa 2012) and we are now pursuing further opportunities to extend this further within the HEIs and TTCs.

It also gives TESSA the opportunity to become involved with more and different kinds of educational organisations for example working more directly with schools, with NGOs and with organisations involved in informal schooling. This also provides the opportunity for developing a better and deeper understanding of the dynamics involved in embedding TESSA within institutional programmes, or within national policies through research.

### **TESSA collaborations in secondary education**

With modest funding from the Waterloo Foundation 2010-2012, we have created working versions of science teaching resources in Biology, Chemistry and Physics at Lower Secondary Level: creating 3 modules (15 units) in all. These are, in 2013, currently being trialled in the participating HEIs in Ghana, Tanzania, Kenya, Uganda and Zambia. This work has entailed forming new collaborations in our current TESSA partner HEIs, for example with the new staff members, units and departments which focus on secondary education in the HEI. This also gives increased possibilities for dialogue about TESSA across units and departments - e.g. primary and secondary departments - in the HEI. This work also necessarily entails new collaborations with science departments in networks of secondary schools (for example where Lower Secondary education is taught in separate schools)

### **TESSA expansion into Early Childhood Education**

At University of Education Winneba in Ghana, a member of the TESSA community since its inception, TESSA OERs have been adapted for the early childhood curriculum and the model for creating the TESSA OERs has been used to create some new kinds of OER which are ECE specific. Harley and Barasa report that "TESSA has not only helped inform the national ECD curriculum in Ghana but has also been approved by the Teacher Education Division of the Ghana Education Service" (Harley and Barasa 2012)

Furthermore, within the field of early childhood education, we have recently begun working on a 'Teaching Early Reading' module with funding from the Ferguson Trust. This module focuses on teaching reading to pre-primary students. TESSA partners from HEIs in Ghana, Tanzania and South Africa are involved. The module will consist of 5 units, is due for completion in August 2014, and for trialling in participating HEIs 2014-2015. The module will be published in its final form as web-based OERs in 2015. As with the development of the TESSA Lower Secondary Science resources, we anticipate with this TESSA ECE module new collaborations within our existing partner HEIs, to include new staff members, units and ECE departments.

And as a result of the work of this project a new partnership which is being developed directly is with the University of KwaZulu-Natal which had not previously been a member of the TESSA community. This is an example of our community enlarging as a result of extending our focus. In addition, the work of the 'Teaching Early Reading' module also involves collaboration with the 'African StoryBook' project which is being developed by SAIDE and OER Africa and which we are drawing on for children's reading resources to inform the pedagogy of teaching early reading.

## **TESSA and in-school professional development**

Apart from its use in supporting initial teacher education, TESSA OERs have been used in school-based professional development of teachers in Ghana, NGO-led teacher development for untrained teachers, and informal continuing professional development for trained practicing teachers.

Work among our HEIs, for example Egerton University in Kenya, shows that TESSA OERs can meet the needs for improving the quality of teaching through their use in in-school professional development. Schools local to Egerton University are increasingly interested in in-school professional development using TESSA OERs across all the staff in a department or all the staff in the school (Cullen, Keraro and Wamutitu 2012; Wamutitu, Keraro, Changeiywo and Cullen 2011). Egerton University has provided a regular series of workshops for large groups of headteachers, subject panel heads and DEOs over the last 4 years and the interest in using TESSA resources and approaches in these schools is being sustained.

Elsewhere in the TESSA community we have started working in a new kind of TESSA partnership. For example, in addition, first with the Zambian Open Community Schools (ZOCs) and then with a wider network of community schools in Zambia, TESSA resources are being used creatively to accelerate the training of community volunteers who teach in their schools. TESSA OERs have been used as orientation materials for members of Volunteer Services Overseas (VSO) who were assigned to work in teacher training colleges and primary schools in Namibia.

In a major project in Malawi 2010-2016, TESSA is working with the Forum for African Women Educationalists, a grassroots organisation operating in 32 countries in Africa and aiming to empower women and girls through education. We work with the Malawi chapter FAWEMA on a project which focuses on providing a 2 year gender-focused training programme for Teaching Assistants in primary schools. Also as part of this project, and in collaboration with educationalists in Malawi, we are producing a mentoring programme for primary school teachers, and a tutor programme for secondary school teachers who provide distance education support for the Teaching Assistants to retake their secondary school examinations for the opportunity to enter teacher training. All the teacher education and teacher assistant education programmes we are creating are already available as working versions of OERs and once iteratively developed, with feedback from each successive group using them within the project, will be published in their final versions as web-based OERs in 2016.

## **TESSA and Harnessing technology**

For TESSA, it is important to continue to meet the needs of our community and to provide resources which schools, for example in the rural areas and with little or no access to technology can access and use. But technology is making advances at great speed across Africa, and we need to ensure TESSA resources are also offered in high-tech formats and in ways which harness new technologies. The work of OLA College of Education, Ghana over the last five years for example, where student teachers are taught to use computer-based

versions of the TESSA OERs, is helping to shape the TESSA agenda in harnessing technology.

In August 2012, we launched a new TESSA website: a platform to support different kinds of media and with improved navigation and links through the website. Development work on the website continues. We continue to supply the all the country versions of the TESSA OERS on CD, and these will shortly be produced in versions which are simpler and easier to load.

We have been experimenting with a very small pilot of the use of TESSA OERs on tablet computers, through the NGO War on Want, which is using them in a remote area of South Sudan. We are about. Through our TESSA partner National Teachers Institute of Nigeria, to launch a more intensive pilot. The tablets is for teaching practice supervisors and the tablets will be preloaded with TESSA OERs and the 'teaching practice supervisor toolkit', a TESSA OER developed at NTI.

In terms of the development of audio and video OERs we see this as extremely important in expanding and extending the work of TESSA. We want to use video and audio to model classroom pedagogy, with short lesson excerpts demonstrating good quality subject teaching which uses the TESSA approach. We think both video and audio are important, given the range of contexts which TESSA OERs are used in, with high quality video for situations where there is Internet connectivity, data projectors etc., and audio accompanied by still photographs for use in situations where there is relatively little infrastructure. We plan for a small number of audio and video OERs to accompany the Teaching Early Reading module, with filming due to take place 2014-2015, after the written versions of the module are finalised.

## **Future aims**

Our current work in these areas is modest and capable of work on a much larger scale. For example in both secondary teacher education and ECE, we are only working on one curriculum area and only at Lower Secondary level. With the in-school professional development of Teaching Assistants, currently the work is specific to Malawi and involves working with 3000 Teaching Assistants. Of course through our continued commitment to publish all of the materials in their final form as OERs, this does open the doors to much wider participation both within country and across Africa, once these resources are fully developed.

But there is much more we could do. The TESSA primary teacher education resources - the original TESSA OER toolkit - covers all major primary curriculum areas. Our ambition is to do the same for secondary teacher education - at both Lower Secondary and Upper Secondary level and for ECE. We aim to produce complete 'toolkits' of resources at secondary level and for ECE, looking to cover all or as many as possible curriculum areas as can fit within the funder's framework. We would aim to include the creation of as much audio and video material as possible within each project. Where we are creating resources which are currently country-specific, (e.g. the resources for Teaching Assistants in Malawi), we aim to create written resources which completely meet the country and project needs AND which are amenable for use across our whole TESSA

community. We aim to create a library of audio and video resources, augmented with materials from each different country-based project.

One further area of interest – and very recently developed among the TESSA community, is Massive Open Online Courses (MOOCs). These are garnering interest in both North America and Europe, with online, free versions of HE courses being offered by universities such as Stanford University and MIT. Recently a UK –based consortium of universities led by the Open University UK has launched FutureLearn which will shortly be offering MOOCs. One concern raised in both Europe and North America has been the assessment and accreditation models currently offered within MOOCs. But we are exploring the potential within TESSA of developing TESSA MOOCs in exactly the same way as we develop TESSA OERs, that is of collaborating HEIs in Africa coming together to construct the MOOC, along with a generic assessment framework, and then each HEI in each country creating its own contextually-appropriate MOOC, with an adapted assessment framework which suits its own institutional needs. And just as with the TESSA OERs, while the MOOCs would be available in online versions, there need be no presumption of connectivity and the MOOCs could be used in paper format as easily as online.

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