PROCEEDINGS OF THE 14th INTERNATIONAL CONFERENCE ON PRIVATE HIGHER EDUCATION IN AFRICA

Tuesday, 12th & Wednesday, 13th July, 2016

Theme: The Role of Private Higher Education Institutions (PHEIs) in Sustainable Development

Held at African Union Conference Centre, Addis Ababa, Ethiopia

Editor: **Prof. Olugbemiro Jegede.**

The Role of Universities in Supporting the Professional Development of Secondary School Teachers Serving both Refugee and Host Communities: The Case of South Sudan by Temechegn Engida and Yumiko Yokozeki, UNESCO-IICBA

Abstract

Teachers are a critical resource for children in refugee settings as well as change agents to bring peace and security in the area. It is also recognized that teacher quality is a primary driver of variation in student learning outcomes in refugee contexts. Yet few studies have examined what motivates or demotivates teachers, especially in refugee camps. Investment in refugee teachers as professionals and as learners is an investment in durable solutions to improve the situations. Refugee teachers develop on the job professional experience and skills as teachers, which builds human capital for refugee and host communities. This study therefore presents UNESCO-IICBA's attempt at examining the needs of teachers in refugee camp schools of the Republic of South Sudan in 2016. For this purpose, three camps, namely Adjuong Thok, Maban and Yei, were selected in collaboration with the UNHCR and UNESCO-Juba Offices. The study employed a descriptive survey study using questionnaire for secondary school teachers of children of the refugee and host communities, focus-group discussions with teachers, students and relevant authorities/stakeholders. The paper also presents the proposed solutions and the limited attempts carried out to alleviate the challenges in relation to the roles of universities, both public and private.

Keywords: Universities, professional development, refugees, host communities, South Sudan

Introduction

South Sudan gained its independence from Sudan on 9 July 2011, after over five decades of conflict that brought about untold suffering to its people. However, the hard-won independence could not last long enough for the people to reap its benefits. The country is plunged again into a devastating civil war starting from December 2013 until recent time when the two sides signed the agreement..

Meanwhile, South Sudan is facing the added challenge of having to cater for refugees who fled their countries due to similar problems. South Sudan is now home to thousands of refugees from neighboring countries, namely Sudan, Ethiopia, Democratic Republic of Congo, and Central African Republic. According to figures released by the UNHCR (2016), there were 268,352 registered refugees residing in South Sudan, among which 16,131 are from DRC, 4,341 from Ethiopia, 1,889 from Central African Republic, and 245,991 from Sudan. Most of the refugees are put in camps located close to the borders of their countries of origin (Central African Republic, DRC, Ethiopia, Central African Republic, and Sudan). The situation is compounded by the 1.69 million IDPs displaced in the aftermath of the December 2013 South Sudan conflict.

So such situations have created a lot of challenges in the country. One of the challenges relates to the provision of good quality education to the children and youth whose lives have been destroyed by conflicts and natural disasters in their own countries, and are crammed in refugee camps that are not very convenient for an effective learning and teaching to take place. South Sudan has one of the lowest education indicators in terms of access, equity and quality. The country is therefore not in a position to meet the expectations of refugees, more specifically in terms of availability of qualified teachers.

Despite such challenges, education plays a key role for the refugees' settlement and development. In the short term, keeping refugee learners in schools will help prevent them from engaging in conflict or crime, losing hope and becoming child soldiers and/or join an armed insurrection group. In the long term, education benefits mitigation of the effects of war and displacement, and plays a role in conflict resolution, peace building, and acquisition of life skills.
Meanwhile, education supports the harmonization of refugees and host communities with secondary schools playing a key role as a bridge. In many South Sudan regions with refugee camps, local secondary schools are serving both the refugees and the host communities, providing both education and health facility. However, huge gaps exist between the needs and availability. Qualified teachers are scarce in such schools, while gender disparity in education goes to extreme with girls taking up less than five percent of the students in many schools. Support in terms of teacher training and gender mainstreaming is urgently in need for the secondary schools in the regions located with refugee camps.

UNHCR- and UNESCO-Juba Offices, in cooperation with the UNESCO International Institute for Capacity Building in Africa (IICBA), therefore conducted mathematics and science teachers' needs assessment survey study in three refugee camp schools of the Republic of South Sudan (RSS) from 4 to 10 March 2016. The purpose of this needs assessment was to document and prioritize professional development needs for content, instructional approaches and technological tools to support high quality teaching and learning in science and mathematics. The results of this needs assessment are expected to provide valuable information to both the Government of RSS and its development partners.

Methods and Procedures

UNESCO-IICBA developed the needs assessment questionnaire and was represented by Dr Yumiko Yokozeki (Director of IICBA) and Dr, Temechegn Engida (Program Officer, ICT in Education), Whereas UNESCO-Juba was represented by Dr. Awol Endris (Education Specialist), UNHCR-Juba was represented by Ms. Mmone Moletsane (Community Services Coordinator). In addition to the questionnaire the team used focus group discussions with teachers in the refugee camps to supplement the data. The team of four experts first drove to Yei (Western Equatorial) on 4th March and conducted the needs assessment on 5th March. After returning back to Juba on 6th March, the team met the Ministry of Education, Science and Technology (MEST) officials of the Republic of South Sudan on March 7. Then Dr. Yokozeki and Dr Awol flew to Maban and Dr. Temechegn and Ms Mmone to Adjuong Thok.

The following findings are therefore based on the results of the questionnaire administered to secondary school teachers and the focus group discussions conducted by the team in the three refugee camp schools.

Background and Demographic Information

Table 1: Background of Respondents

No	Question Item	Number (%) of Respondents				
		Nyori (Yei)	Soba (Adjuong Thok)	Yusuf Batil (Maban)	Buni (Mban	Total
1	Sex: Male	6 (75)	27 (96)	8 (100)	2 (100)	43 (93)
	Female	2 (25)	1 (4)	0 (0)	0 (0)	3 (7)
2	Age: 20-29	4 (50)	23 (82)	--	--	
	30-39	3 (37.5)	5 (18)	--	--	
	40-49	0 (0)	0 (0)	--	--	
	50-59	1 (12.5)	0 (0)	--	--	
3	Highest Qualification:					
	Degree	2 (25)	0 (0)	6 (75)	1 (50)	9 (20)
	Diploma	6 (75)	2 (7)	1 (12.5)	1 (50)	10 (22)
	Certificate	0 (0)	5 (18)	0 (0)	0 (0)	5 (10)
	Secondary school complete	0 (0)	21 (75)	1 (12.5)	0 (0)	22 (48)
4	Subjects Taught:*					
	English	1 (12.5)	3 (11)	1 (12.5)	0 (0)	5
	French	1 (12.5)	0 (0)	0 (0)	0 (0)	1
	Chemistry/Biology	1 (12.5)	5 (18)	3 (37.5)	2 (100)	11
	Physics/Math	2 (25)	11 (39)	1 (12.5)	0 (0)	14
	Geography/Commerce	1 (12.5)	2 (7)	1 (12.5)	0 (0)	4
	History/Religious Educ	1 (12.5)	6 (21)	1 (12.5)	0 (0)	8
	Agriculture	1 (12.5)	3 (11)	0 (0)	0 (0)	4
	Arabic	0 (0)	0 (0)	1 (12.5)	0 (0)	1
5	Years of Teaching Experience: 1-5	3 (37.5)	22 (79)	1 (12,5)	0 (0)	26 (57)
	6-10	4 (50)	3 (11)	5 (62.5)	1 (50)	13 (28)
	11-20	0 (0)	1 (4)	2 (25)	0 (0)	3 (7)
	20+	1 (12.5)	0 (0)	0 (0)	1 (50)	2 (4)
6	Have Teaching Certificate:					
	Yes	8 (100)	8 (29)	7 (87.5)	2 (100)	25 (54)
	No	0 (0)	20 (71)	1 (12.5)	0 (0)	21 (46)
7	Certificate obtained through:					
	College/University Study	8 (100)	3 (11)	7 (87.5)	1 (50)	19 (41)
	Short-Term Training	0 (0)	5 (18)	0 (0)	1 (50)	6 (13)

	Other	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
8	Participation in Professional Development workshops					
	Yes	4 (50)	13 (46)	6 (75)	2 (100)	25 (54)
	No	4 (50)	15 (54)	2 (25)	0 (0)	21 (46)
9	Preferred mode of future training (rank order):					
	1. Face-to-Face	7 (88)	27 (96)	3 (387.5)	2 (100)	39 (85)
	2. Blended	5 (62.5)	10 (36)	1 (12.5)	1 (50)	17 (37)
	3. Asynchronous Online	3 (37.5)	0 (0)	0 (0)	0 (0)	3 (7)
	4. Synchronous Online	3 (37.5)	0 (0)	0 (0)	0 (0)	3 (7)
10	Instructional materials use:					
	Printed Textbooks	8 (100)	28 (100)	6 (75)	2 (100)	44 (96)
	Electronic Textbooks	0 (0)	5 (18)	0 (0)	1 (50)	6 (13)
	Online Resources	1 (12.5)	0 (0)	0 (0)	0 (0)	1 (2)
	Specific Educational Website	0 (0)	0 (0)	0 (0)	1 (50)	1 (2)

*Many teachers teach multiple (about 3) subjects and hence maybe counted more than one times.

Table 1 above provides the background information of respondents from different perspectives. Leaving aside data analysis at school level, the table depicts the following major points about the secondary school teachers of the four secondary schools visited, namely: Nyori (Yei), Soba (Adjuong Thok), Yusuf Batil (Maban) and Buni (Maban).

- A total of 46 teachers filled in the questionnaire and participated in the focus group discussions. Whereas 93% of the teachers are males, there are only 3 (7%) female teachers in the refugee camp secondary schools. This raises a concern in the sense that, in the refugee contexts, the available females were of the opinion that they were providing a motherly feelings to the students and hence the lack of sufficient female teachers compromises that feeling.

- The focus group discussion further revealed that seven of the teachers in Lasu Secondary School (Yei) are South Sudanese in nationality whereas one is from DRC. The situation in Soba Secondary School (Adjuong Thok) is opposite in the sense that, of the 32 teachers, only one is South Sudanese.

- Although age data are missing from Yusuf Batil (Maban) and Buni (Maban) secondary schools, the available one reveal that almost all teachers are below the age of 40.

- It is unfortunate that about half of the teachers have qualifications equivalent to the level they are teaching. The better school in terms of teacher qualification is Lasu (Yei) in which six of the teachers in Lasu were educated in Uganda with a diploma, the one from DRC has a degree in French and the other one is educated in South Sudan with a degree.

- The low level of qualification of teachers is compounded with another challenge in which about 60% of them have less than 5 years of teaching experience while teaching multiple subjects. It is however encouraging that about half of the respondents participated in some form professional development workshops during their limited years of teaching

experiences. For future professional development efforts, over 85% of the respondents prefer to be trained in a face-to-face mode.

- Printed textbooks are the most exclusively used instructional materials even though expressed during focus group discussions that the textbooks they use and the curricula under implementation do not match in most cases. Such mismatches between the curricula and textbooks in use have been creating confusions in the secondary school students who sit for one national exam from the Republic of South Sudan, the results of which were lesser achievement in the national exams. The students in particular highlighted the absence of textbooks to support their learning. They said this is the single most important thing they want to have solved for them.

In addition to the above four schools, in Maban there is SIC (Sudan Inland Church) private secondary school in Doro:

- SIC is supported by missionaries from SIM (Service in Mission). The school started in 2012/13 but was interrupted in 2014 with the security issues. The school re-started in 2015.
- There are 12 teachers in total including five female teachers. There are eight local teachers and four international missionaries from India, the Philippines and the USA. Student population is 60 with three girls only. Students were selected by the entrance exams and over 300 came to write. 75 students were given admission but only 60 came. The school charges nominal fees.
- The school program is as follows: attendance and devotion from 7:45 to 8:10, classes are 8:10-11:00, 11:30-13:35 and 14:40-15:45. Students and teachers have tea and lunch.
- The school has five classrooms, one science lab and one library. There is a solar power system for lighting. They have recently bought a projector for the school. Science lab is for multi-subjects with simple but practical kits.
- The school is using Kenyan syllabi and textbooks.

In addition there have been Spanish Jesuit priests in Maban for the last two years working with refugee and host communities.

- Their focus is 1) education, 2) psychosocial support, and 3) pastoral care.
- They are providing teacher training in primary schools in coordination with University of Juba. They provided training to 100 teachers last year and 30 this year. They provide training, distribute pedagogic materials and support community initiatives.
- They are providing basic English course (six months) at Arupe TVET center. They also provide computer courses in the afternoon for NGO workers teachers and community members.
- For psycho-social support, youth activities through sports are carried out providing balls and organizing tournaments. Support to persons with special needs is also carried out through parish. The support includes home visit, material support and cash transfer as well as basic counseling.

- For pastoral work, peace and reconciliation is stressed.

The teacher's role in creating an environment and building relationships conducive to learning goes beyond the traditional academic duties to include the provision of additional support and care. Research has found a positive relationship between participative decision-making and classroom instruction, noting an increase in innovations adopted by schools, professional development activities, teacher exchange of ideas and knowledge, and improved understanding of learning and classroom instruction. The following table (Table 2) presents the teacher-teacher interactions in the refugee camp schools based on the premises just presented.

Table 2: Types and Number (%) of Teacher-Teacher Interactions

No	Type of Interaction	Never/ almost never	2 or 3 times/month	1 to 3 times/week	Daily/ almost daily
1	Discuss how to teach a particular topic	2 (25)	4 (50)	1 (12.5)	1 (12.5)
	Nyori (Yei)	6 (21)	8 (29)	5 (18)	4 (14)
	Soba (Adjuong Thok)	3 (37.5)	0 (0)	2 (25)	3 (37.5)
	Yusuf Batil (Maban)	0 (0)	0 (0)	0 (0)	2 (100)
	Buni (Maban)	11 (24)	12 (26)	8 (17)	10 (22)
	Total				
2	Collaborate in planning and preparing instructional materials				
	Nyori (Yei)	2 (25)	3 (37.5)	1 (12.5)	2 (25)
	Soba (Adjuong Thok)	5 (18)	5 (18)	7 (25)	5 (18)
	Yusuf Batil (Maban)	1 (12.5)	0 (0)	0 (0)	7 (87.5)
	Buni (Maban)	0 (0)	1 (50)	1 (50)	0 (0)
	Total	8 (17)	9 (20)	9 (20)	14 (30)
3	Share what I have learnt about my teaching experiences				
	Nyori (Yei)	2 (25)	2 (25)	1 (12.5)	2 (25)
	Soba (Adjuong Thok)	8 (29)	6 (21)	5 (18)	4 (14)
	Yusuf Batil (Maban)	1 (12.5)	1 (12.5)	2 (25)	4 (50)
	Buni (Maban)	0 (0)	1 (50)	1 (50)	0 (0)
	Total	11 (24)	10 (22)	9 (20)	10 (22)
4	Visit another classroom to learn more about teaching				
	Nyori (Yei)	6 (75)	0 (0)	1 (12.5)	0 (0)
	Soba (Adjuong Thok)	15 (54)	5 (18)	2 (7)	2 (7)
	Yusuf Batil (Maban)	3 (37.5)	37.5)	1 (12.5)	1 (12.5)
	Buni (Maban)	1 (50)	0 (0)	1 (50)	0 (0)
	Total	25 (54)	8 (17)	5 (11)	3 (7)
5	Work together to try out new ideas				
	Nyori (Yei)	1 (12.5)	4 (50)	2 (25)	1 (12.5)
	Soba (Adjuong Thok)	3 (11)	7 (25)	2 (7)	10 (36)
	Yusuf Batil (Maban)	1 (12.5)	0 (0)	1 (12.5)	6 (75)

	Buni (Maban)	0 (0)	1 (50)	0 (0)	1 (50)
	Total	5 (11)	12 (26)	5 (11)	18 (39)

From Table 2 it is clear that, in the majority of the cases, the teachers rarely discuss how to teach a particular topic, and rarely visit another classroom to learn more about teaching. In addition the teachers' tendencies to collaborate in planning and preparing instructional materials, to share what they have learnt about their teaching experiences and to work together to try out new ideas are not that encouraging. Given their small number in the schools, the teachers (at least those teachers teaching similar subjects) should have been encouraged to engage in teacher-teacher relationships.

Teachers' Beliefs about Teaching and Learning (of Science and Mathematics)

Research suggests that teachers' beliefs and values about teaching and learning affect their teaching practices. Influencing teachers' beliefs, therefore, may be essential to changing teachers' classroom practices. Teachers' beliefs can be shaped through various factors such as understanding the nature the subject they teach, understanding how best their students learn the subject in general and the various concepts/principles in particular, understanding their roles in the teaching-learning processes, etc. The goal of the questions in Table 3 below is to better understand the nature of the refugee camp schools teachers' beliefs about teaching and learning science and mathematics and the links between their beliefs and practices.

Note that, although the question items were originally formulated for science and mathematics teachers, other subject teachers were encouraged to answer the items by referring to their subject fields as much as the items apply to their subjects. As a result some teachers of subjects other than science and math might have not completed the items in table 3 below.

Table 3. Teachers' Beliefs about Teaching and Learning

No	Statement	Number (%) of Teachers who:			
		Strongly Disagree	Disagree	Agree	Strongly Agree
1	Mathematics/science learning should focus on practicing procedures and memorizing basic facts				
	Nyori (Yei)	1 (12.5)	2 (25)	2 (25)	2 (25)
	Soba (Adjuong Thok)	0 (0)	1 (4)	13 (46)	13 (46)
	Yusuf Batil (Maban)	0 (0)	0 (0)	2 (25)	5 (62.5)
	Buni (Maban)	1 (50)	0 (0)	0 (0)	1 (50)
	Total	2 (4)	3 (7)	17 (37)	21 (46)
2	The role of the teacher is to tell students exactly what definitions, formulas, and rules they should know and demonstrate how to use this information to solve mathematics/ science problems				
	Nyori (Yei)	0 (0)	2 (25)	4 (50)	2 (25)
	Soba (Adjuong Thok)	0 (0)	0 (0)	9 (32)	19 (68)
	Yusuf Batil (Maban)	0 (0)	0 (0)	3 (37.5)	5 (62.5)

	Buni (Maban)	1 (50)	0 (0)	0 (0)	1 (50)
	Total	1 (2)	2 (4)	16 (35)	27 (59)
3	All students need to have a range of strategies and approaches from which to choose in solving problems, including, but not limited to, general methods and procedures				
	Nyori (Yei)	0 (0)	1 (12.5)	0 (0)	6 (75)
	Soba (Adjuong Thok)	3 (11)	1 (4)	15 (53)	8 (29)
	Yusuf Batil (Maban)	0 (0)	1 (12.5)	4 (50)	3 (37.5)
	Buni (Maban)	0 (0)	0 (0)	2 (100)	0 (0)
	Total	3 (7)	3 (7)	21 (46)	17 (37)
4	The role of the teacher is to engage students in tasks that promote reasoning and problem solving and facilitate discourse that moves students toward shared understanding of mathematics / science	0 (0)	1 (12.5)	4 (50)	3 (37.5)
	Nyori (Yei)	2 (7)	1 (4)	8 (29)	17 (60)
	Soba (dAjuong Thok)	0 (0)	0 (0)	1 (12.5)	7 (87.5)
	Yusuf Batil (Maban)	0 (0)	0 (0)	1 (50)	1 (50)
	Buni (Maban)	2 (4)	2 (4)	14 (30)	12 (26)
	Total				
5	Mathematics/science learning should focus on developing understanding of concepts and procedures through problem solving, reasoning, and discourse				
	Nyori (Yei)	0 (0)	1 (12.5)	3 (37.5)	4 (50)
	Soba (Adjuong Thok)	0 (0)	0 (0)	13 (46)	13 (46)
	Yusuf Batil (Maban)	0 (0)	0 (0)	6 (75)	2 (25)
	Buni (Maban)	0 (0)	0 (0)	1 (50)	1 (50)
	Total	0 (0)	1 (2)	23 (50)	20 (43)
6	An effective teacher makes the mathematics /science easy for students by guiding them step by step through problem solving/ investigation to ensure that they are not frustrated or confused				
	Nyori (Yei)	0 (0)	0 (0)	3 (37.5)	5 (62.5)
	Soba (Adjuong Thok)	0 (0)	2 (7)	8 (29)	18 (64)
	Yusuf Batil (Maban)	0 (0)	0 (0)	1 (12.5)	7 (87.5)
	Buni (Maban)	0 (0)	0 (0)	0 (0)	2 (100)
	Total	0 (0)	2 (4)	12 (26)	32 (70)
7	Students can learn to apply mathematics/science only after they have mastered the basic skills				
	Nyori (Yei)	2 (25)	2 (25)	3 (37.5)	1 (12.5)
	Soba (Adjuong Thok)	3 (11)	10 (36)	10 (36)	2 (7)
	Yusuf Batil (Maban)	0 (0)	1 (12.5)	6 (75)	1 (12.5)
	Buni (Maban)	0 (0)	0 (0)	2 (100)	0 (0)

	Total	5 (11)	13 (28)	21 (46)	4 (9)
8	Students can learn mathematics/science through exploring and solving contextual and mathematical /scientific problems				
	Nyori (Yei)	0 (0)	1 (12.5)	5 (62.5)	2 (25)
	Soba (Adjuong Thok)	2 (7)	5 (18)	15 (54)	3 (11)
	Yusuf Batil (Maban)	2 (25)	0 (0)	4 (50)	2 (25)
	Buni (Maban)	0 (0)	1 (50)	1 (50)	0 (0)
	Total	4 (9)	7 (15)	25 (54)	7 (15)
9	An effective teacher provides students with appropriate challenge, encourages perseverance in solving problems, and supports productive struggle in learning mathematics / science				
	Nyori (Yei)	0 (0)	1 (12.5)	4 (50)	3 (37.5)
	Soba (Adjuong Thok)	0 (0)	0 (0)	17 (61)	11 (39)
	Yusuf Batil (Maban)	1 (12.5)	0 (0)	5 (62.5)	2 (25)
	Buni (Maban)	0 (0)	0 (0)	1 (50)	1 (50)
	Total	1 (2)	1 (2)	27 (59)	17 (37)
10	The role of the student is to memorize information that is presented and then use it to solve routine problems on homework, quizzes, and tests				
	Nyori (Yei)	1 (12.5)	4 (50)	2 (25)	1 (12.5)
	Soba (Adjuong Thok)	1 (4)	2 (7)	15 (54)	10 (35)
	Yusuf Batil (Maban)	2 (25)	2 (25)	3 (37.5)	1 (12.5)
	Buni (Maban)	0 (0)	0 (0)	1 (50)	1 (50)
	Total	4 (9)	8 (17)	21 (46)	13 (28)
11	The role of the student is to be actively involved in making sense of mathematics/science tasks by using varied strategies and representations, justifying solutions, making connections to prior knowledge or familiar contexts and experiences, and considering the reasoning of others				
	Nyori (Yei)	0 (0)	1 (12.5)	3 (37.5)	4 (50)
	Soba (Adjuong Thok)	1 (4)	3 (10)	12 (43)	12 (43)
	Yusuf Batil (Maban)	0 (0)	0 (0)	3 (37.5)	5 (62.5)
	Buni (Maban)	0 (0)	0 (0)	1 (50)	1 (50)
	Total	1 (2)	4 (9)	19 (41)	22 (48)
12	Students need only to learn and use the same prescribed methods to solve problems				
	Nyori (Yei)	3 (37.5)	3 (37.5)	1 (12.5)	1 (12.5)
	Soba (Adjuong Thok)	3 (11)	17 (61)	7 (25)	0 (0)
	Yusuf Batil (Maban)	1 (12.5)	4 (50)	2 (25)	1 (12.5)
	Buni (Maban)	0 (0)	2 (100)	0 (0)	0 (0)
	Total	7 (15)	26 (57)	10 (22)	2 (4)

From epistemological point of engaging learners in inquiry/constructive learning is not only the modern perspective of science and mathematics teaching-learning but of any subject. However, the majority of the respondents (over 75%) believe as follows:

- Mathematics/science learning should focus on practicing procedures and memorizing basic facts
- The role of the teacher is to tell students exactly what definitions, formulas, and rules they should know and demonstrate how to use this information to solve mathematics/ science problems
- The role of the student is to memorize information that is presented and then use it to solve routine problems on homework, quizzes, and tests

Given the large proportion of untrained teachers for the level they teach and the low years of teaching experiences, such beliefs should not be surprising. As stated earlier in this section, teachers' beliefs can be shaped through various factors such as understanding the nature the subject they teach, understanding how best their students learn the subject in general and the various concepts/principles in particular, understanding their roles in the teaching-learning processes, etc. Therefore, the results mentioned above and the other findings in Table 3 strongly justify the need for intensive training in those areas.

The Teaching-Learning Processes (in Science and Mathematics Classes)

The teaching-learning processes are influenced, among others, by the competencies (knowledge, attitude and skills—KAS) of both teachers and students. Table 4 and the focus group discussions with teachers and refugee students were therefore intended to explore such factors.

Note that, although the question items were originally formulated for science and mathematics teachers, other subject teachers were encouraged to answer the items by referring to their subject fields as much as the items apply to their subjects. As a result some teachers of subjects other than science and math might have not completed the items in table 4 below.

Table 4: Limiting Factors of the Teaching-Learning Processes

No	Factors	Number (%) of Teachers Responding			
		Not Applicable	Not at All	Some	A Lot
1	Students lacking prerequisite knowledge or skills	1 (12.5)	1 (12.5)	1 (12.5)	3
	Nyori (Yei)	0 (0)	4 (14)	14 (50)	(37.5)
	Soba (Adjuong Thok)	0 (0)	2 (25)	4 (50)	7 (25)
	Yusuf Batil (Maban)	0 (0)	1 (50)	1 (50)	2 (25)
	Buni (Maban)	1 (2)	8 (17)	20 (43)	0 (0)
	Total				12 (26)
2	Teacher (myself) lacking sufficient knowledge and skills in the subject I teach				
	Nyori (Yei)	0 (0)	3 (37.5)	1 (12.5)	3
	Soba (Adjuong Thok)	0 (0)	6 (21)	14 (50)	(37.5)
	Yusuf Batil (Maban)	0 (0)	5 (62.5)	2 (25)	6 (21)

	Buni (Maban) Total	0 (0) 0 (0)	1 (50) 15 (33)	1 (50) 18 (39)	0 (0) 0 (0) 9 (20)
3	Students suffering from lack of basic nutrition Nyori (Yei) Soba (Adjuong Thok) Yusuf Batil (Maban) Buni (Maban) Total	 0 (0) 5 (18) 3 (37.5) 0 (0) 8 (17)	 3 (37.5) 4 (14) 1 (12.5) 1 (50) 9 (20)	 4 (50) 5 (18) 0 (0) 0 (0) 9 (20)	 1 (12.5) 11 (39) 3 (37.5) 1 (50) 16 (35)
4	Teacher (myself) suffering from lack of motivation/incentives Nyori (Yei) Soba (Adjuong Thok) Yusuf Batil (Maban) Buni (Maban) Total	 0 (0) 2 (7) 0 (0) 0 (0) 2 (4)	 1 (12.5) 4 (14) 1 (12.5) 0 (0) 6 (13)	 7 (87.5) 10 (36) 3 (37.5) 1 (50) 21 (46)	 0 (0) 11 (39) 2 (25) 1 (50) 14 (30)
5	Students suffering from not enough sleep Nyori (Yei) Soba (Adjuong Thok) Yusuf Batil (Maban) Buni (Maban) Total	 2 (25) 9 (32) 2 (25) 1 (50) 14 (30)	 1 (12.5) 4 (14) 4 (50) 1 (50) 10 (22)	 2 (25) 7 (25) 1 (12.5) 0 (0) 10 (22)	 3 (37.5) 3 (7) 0 (0) 0 (0) 6 (13)
6	Teacher (myself) lacking adequate practical work facilities for teaching the subject Nyori (Yei) Soba (Adjuong Thok) Yusuf Batil (Maban) Buni (Maban) Total	 0 (0) 2 (7) 0 (0) 0 (0) 2 (4)	 0 (0) 0 (0) 1 (12.5) 0 (0) 1 (2)	 4 (50) 5 (18) 0 (0) 1 (50) 10 (22)	 4 (50) 20 (71) 6 (75) 1 (50) 31 (67)
7	Students with special needs (e.g., physical disabilities, mental or emotional/psychological impairment) Nyori (Yei) Soba (Adjuong Thok) Yusuf Batil (Maban) Buni (Maban) Total	 1 (12.5) 4 (14) 0 (0) 0 (0) 5 (11)	 0 (0) 1 (4) 1 (12.5) 0 (0) 2 (4)	 6 (75) 14 (50) 3 (37.5) 2 (100) 25 (54)	 1 (12.5) 8 (29) 2 (25) 0 (0) 11 (24)
8	Lack of textbooks/reading materials and teaching aids for visualizing math and science concepts Nyori (Yei)	 0 (0)	 1 (12.5)	 3 (37.5)	 4 (50)

	Soba (Adjuong Thok)	0 (0)	2 (7)	2 (7)	24 (86)
	Yusuf Batil (Maban)	0 (0)	0 (0)	0 (0)	7
	Buni (Maban)	0 (0)	1 (50)	1 (50)	(87.5)
	Total	0 (0)	4 (9)	6 (13)	0 (0)
					35 (76)
9	Disruptive students				
	Nyori (Yei)	1 (12.5)	1 (12.5)	5 (62.5)	0 (0)
	Soba (Adjuong Thok)	0 (0)	4 (14)	15 (54)	5 (18)
	Yusuf Batil (Maban)	0 (0)	2 (25)	4 (50)	1
	Buni (Maban)	0 (0)	1 (50)	1 (50)	(12.5)
	Total	1 (2)	8 (17)	25 (54)	0 (0)
					6 (13)
10	Uninterested students				
	Nyori (Yei)	0 (0)	3 (37.5)	5 (62.5)	0 (0)
	Soba (Adjuong Thok)	3 (7)	7 (25)	13 (46)	4 (14)
	Yusuf Batil (Maban)	2 (25)	1 (12.5)	3 (37.5)	1
	Buni (Maban)	0 (0)	2 (100)	0 (0)	(12.5)
	Total	5 (11)	13 (28)	21 (46)	0 (0)
					5 (11)

As can be deduced from Table 4, item 1, about 70% of the teachers argue that students lacking prerequisite knowledge or skills have been affecting the teaching-learning processes. This lack of pre-requisite knowledge and skills is also mentioned during the discussing in that teachers attributed the problem to the multiplicity of curricula and textbooks in use from the neighboring countries.

The teachers were also genuine in rating their own competencies in that about 60% of them stated that current teachers lacking sufficient knowledge and skills in the subject they teach has an influence in the teaching-learning processes. Some of the students who participated in the focus group discussion also raised the issue of teacher competencies. In particular they stated that they would like to have teachers who are trained in the particular subject they teach as their major. They say some are teaching more than one subject, and seem to need additional support in terms of subject matter knowledge. They also said they feel the teachers need training in the methodology of teaching the subjects they are assigned to teach.

The issue of students suffering from lack of basic nutrition was rated as a factor by about 55% of the teachers. In fact, the students also raised similar issues. For instance, students in Batil secondary school stated that they wish to have school meals. While water is provided, they do not have enough to eat. They are often "too hungry to study". The students further say that as they stay in school from 8 a.m. to 2 p.m. without food, and as they normally don't have enough for breakfast, they say this takes away their energy and concentration to attend to their classes attentively. They therefore want to have some kind of school feeding scheme if they can, such as snack during break time or a mid-day meal. They say their ration has been reduced by 30% and that is not enough for some families.

About 90% of the teachers say that they lack adequate practical work facilities for teaching the subject. Although there are a kind of stores in some schools where the schools keep some outdated chemicals and equipment, the teaching-learning processes are devoid of practical work particularly for science subjects. Teachers also pointed out during the discussion that they need science labs for teaching the subject properly. Students also stated that they would eventually like to study science at the higher level. And for this to be done effectively, they think they need a science laboratory in all the three fields – biology, chemistry and physics. In particular some schools stated that science kits were ordered by LWF but they are yet to arrive. LWF is not sure whether they ordered the right kinds.

It is not only lack practical works that are challenging the teaching-learning processes, but also lack of textbooks/reading materials and teaching aids for visualizing math and science concepts. This facto was echoed by about 90% of the teacher respondents.

Some 76% of the teachers state that they have been suffering from lack of motivation/incentives. Almost all teachers during the discussion highlighted that they are in dire need of education and training that can lead them to higher level of certification from what they currently possess. In addition teachers are in need of INSET with certification so that they can improve their qualifications. Female teacher recruitment is also raised as an urgent issue. At the moment, as indicated above, almost all teachers are male in secondary schools serving refugee/host communities. Moreover, all teachers stated they need better/secure accommodation as there was an attack on teachers in the past. Teachers also asked for tea break and lunch provided for them and students. In this way, the school can run longer to cover the packed curriculum.

Use of ICT in Teaching (Science and Mathematics)

The use of information and communication technologies (ICTs) in teaching-learning is no more a luxury in the 21st century. ICTs have enabled teachers and students to visualize concepts and processes that once have been impossible to understand their nature. The following section therefore explores this potential the technology in the refugee camp schools.

Note again that, although the question items were originally formulated for science and mathematics teachers, other subject teachers were encouraged to answer the items by referring to their subject fields as much as the items apply to their subjects. As a result some teachers of subjects other than science and math might have not completed the items in table 5 and 6 below.

Table 5: Use of ICTs in Teaching

No	Question Item	Number (%) of Respondents				
		Nyori (Yei)	Soba (Adjuong Thok)	Yusuf Batil (Maban)	Buni (Mban	Total
1	Do you use computers for lesson preparation? Yes	0 (0) 8 (100)	5 (18) 22 (79)	0 (0) 8 (100)	0 (0) 2 (100)	5 (11) 40 (87)

	No					
2	Do you use computers for administration? Yes No	 0 (0) 8 (100)	 0 (0) 23 (82)	 4 (50) 4 (50)	 1 (50) 0 (0)	 5 (11) 35 (76)
3	Do you use computers for classroom teaching? Yes No	 0 (0) 8 (100)	 1 (4) 25 (89)	 0 (0) 8 (100)	 1 (50) 0 (0)	 2 (4) 41 (89)
4	Do you have a PC? Yes No	 0 (0) 8 (100)	 1 (4) 27 (96)	 2 (25) 6 (75)	 0 (0) 2 (100)	 3 (7) 43 (93)
5	Do you have a Laptop? Yes No	 2 (25) 6 (75)	 2 (7) 26 (93)	 2 (25 6 (75)	 0 (0) 2 (100)	 6 (13) 40 (87)
6	Do you have a Tablet? Yes No	 0 (0) 7 (87,5)	 1 (4) 27 (96)	 0 (0) 8 (100)	 1 (50) 1 (50)	 2 (4) 43 (93)
7	Do you have an Ordinary Mobile Phone? Yes No	 8 (100) 0 (0)	 10 (36) 18 (64)	 5 (62,5) 3 (37.5)	 2 (100) 0 (0)	 25 (54) 21 (46)
8	Do you have a Smartphone? Yes No	 3 (37.5) 5 (62.5)	 1 (4) 27 (96)	 3 (37.5) 5 (62.5)	 0 (0) 2 (100)	 7 (15) 39 (85)
9	Do you have email address? Yes No	 3 (37.5) 5 (62.5)	 18 (64) 10 (36)	 7 (87.5) 1 (12.5)	 0 (0) 2 (100)	 28 (61) 18 (39)
10	Do you use any social media?					

	Yes No	4 (50) 3 (37.5)	19 (68) 9 (32)	2 (25) 6 (75)	0 (0) 2 (100)	25 (54) 20 (43)

From Table 5 above and Table 6 below it is safe to conclude that the majority of the teachers in the refugee camp schools have not been using computers for lesson preparation, administration or classroom teaching. In fact, classroom observations revealed that, except Soba secondary school in Adjuong Thok, no other school has a computer lab.

Although a little more than 50% of the teachers have ordinary phones, use emails and social media, they are not in passion of laptops, tablets, smartphones or PCs. The discussions however revealed that teachers possess basic computer skills and are eager to use the technologies for teaching-learning purposes with appropriate trainings.

Table 6: Extent of Agreement in Using Computers for Classroom Instruction

No	Statement	Number (%) of Teachers who:			
		Strongly Disagree	Disagree	Agree	Strongly Agree
1	I feel comfortable using computers in my teaching				
	Nyori (Yei)	3 (37.5)	2 (25)	1 (12.5)	0 (0)
	Soba (Adjuong Thok)	4 (14)	2 (7)	12 (43)	7 (25)
	Yusuf Batil (Maban)	0 (0)	4 (50)	2 (25)	2 (50)
	Buni (Maban)	1 (50)	0 (0)	0 (0)	0 (0)
	Total	8 (17)	8 (17)	15 (33)	9 (20)
2	When I have technical problems, I have ready access to computer support staff in my school				
	Nyori (Yei)	2 (25)	3 (37.5)	2 (25)	0 (0)
	Soba (Adjuong Thok)	1 (4)	6 (21)	8 (29)	11 (39)
	Yusuf Batil (Maban)	1 (12.5)	1 (12.5)	3 (37.5)	3 (37.5)
	Buni (Maban)	0 (0)	1 (50)	0 (0)	0 (0)
	Total	4 (9)	11 (24)	13 (28)	14 (30)
3	I receive adequate support for integrating computers in my teaching activities				
	Nyori (Yei)	3 (37.5)	2 (25)	2 (25)	0 (0)
	Soba (Adjuong Thok)	6 (21)	5 (18)	8 (29)	7 (25)
	Yusuf Batil (Maban)	0 (0)	4 (50)	2 (25)	2 (25)
	Buni (Maban)	0 (0)	1 (50)	0 (0)	0 (0)
	Total	9 (20)	12 (26)	12 (26)	9 (20)
4	I have sufficient Internet connectivity in my school				
	Nyori (Yei)	4 (50)	1 (12.5)	1 (12.5)	1 (12.5)
	Soba (Adjuong Thok)	7 (25)	5 (18)	10 (36)	5 (18)
	Yusuf Batil (Maban)	1 (12.5)	3 (37.5)	1 (12.5)	2 (25)
	Buni (Maban)	1 (50)	0 (0)	0 (0)	0 (0)
	Total	13 (28)	9 (20)	12 (26)	8 (17)

5	I have been using online lessons specific to the subject I teach				
	Nyori (Yei)	4 (50)	3 (37.5)	0 (0)	0 (0)
	Soba (Ajuong Thok)	15 (54)	6 (21)	3 (11)	2 (7)
	Yusuf Batil (Maban)	4 (50)	3 (37.5)	1 (12.5)	0 (0)
	Buni (Maban)	1 (50)	0 (0)	0 (0)	0 (0)
	Total	24 (52)	12 (26)	4 (9)	2 (4)
6	I feel comfortable in using online/offline simulations/animations specific to the subject I teach				
	Nyori (Yei)	2 (25)	4 (50)	1 (12.5)	0 (0)
	Soba (Adjuong Thok)	7 (25)	10 (36)	7 (25)	2 (7)
	Yusuf Batil (Maban)	1 (12.5)	4 (50)	1 (12.5)	2 (25)
	Buni (Maban)	0 (0)	0 (0)	1 (50)	0 (0)
	Total	10 (22)	18 (39)	10 (22)	4 (9)

Recommendations

The needs assessment exercises described in the previous pages requires a short-term as well as a long-term solution to offer quality education in the refugee camp schools and beyond. The long-term solution needs extensive consultation with the Government of Republic of South Sudan, development partners working in the country and other stakeholders.

The short-term solution however is proposed to be targeted training and follow-up in four thematic refresher areas:

1. General Pedagogy for all teachers
2. Gender Issues and Life Skills for all teachers
3. Subject matter/Content mainly for science and math teachers
4. Use of ICTs in teaching-learning science and math

UNESCO-IICBA will take the lead in designing and implementing the targeted training with support from University of Juba and CEMASTEA (based in Nairobi).

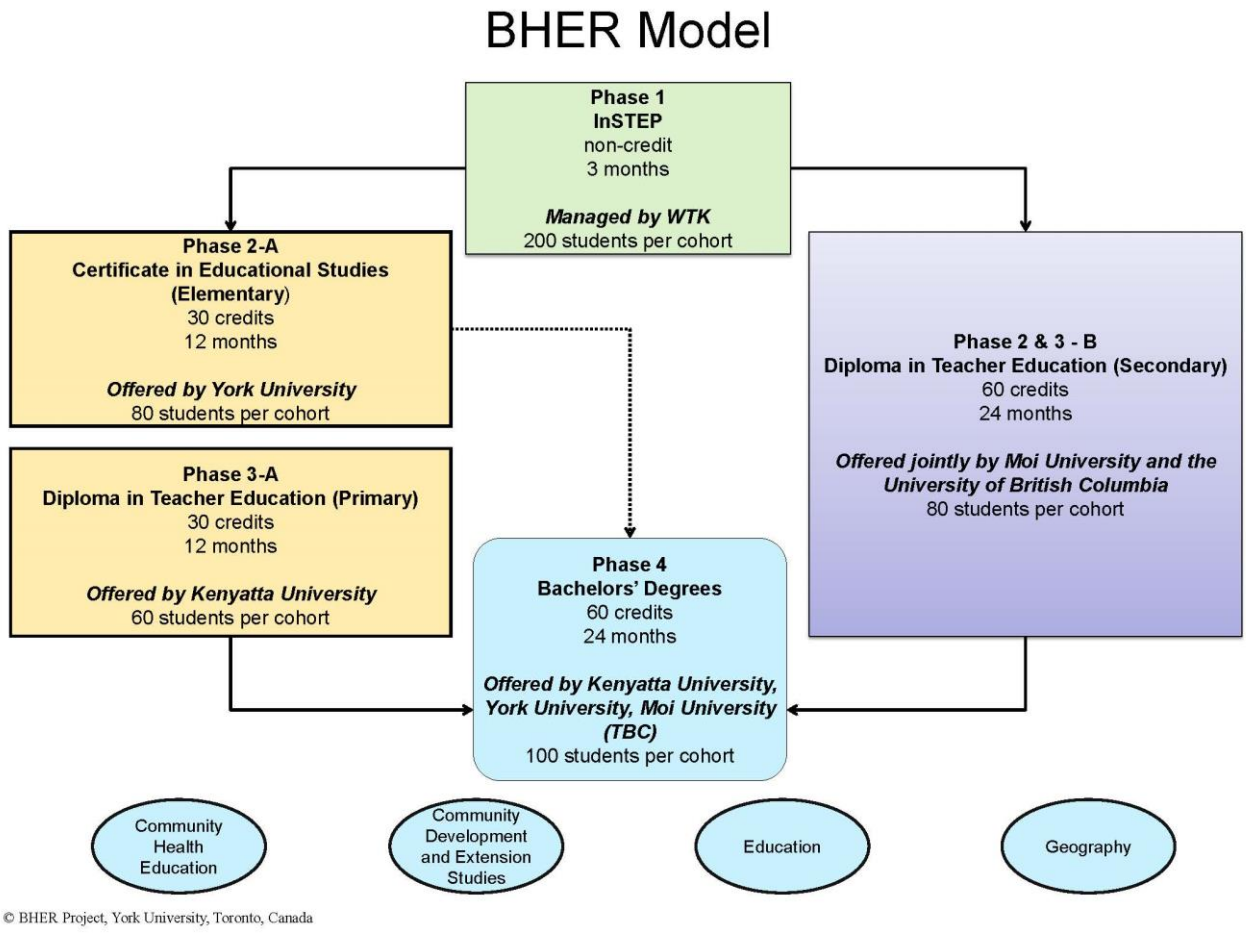
Since UNESCO-IICBA is not a degree-granting institution, the long term solution is for public and private universities joining hands and upgrading the qualification of teachers so that they deliver quality education to the refugee and host community students. This is important because the students from the refugee camps are ultimately required to sit for the official school leaving examinations of the Government of South Sudan together with the students from the more privileged school. Such a situation creates a great burden to the students from the refugee camp schools since their education quality is hampered by the use of multiple curricula from neighboring countries, being taught by under-qualified teachers, with little or no practical experiences in the sciences, etc.

There is already an experience in Kenya refugee camp, Dadaab, the largest refugee camp in the world. An innovative consortium of universities, including York University and the University of

British Columbia from Canada and Moi University, Kenyatta University and the African Virtual University from Kenya created Borderless Higher Education for Refugees, known as BHER, whose aim is to provide formal training to the dozens of uncertified teachers who already teach in the camp (Bowness, 2013). The university consortium, partnering with World University Service of Canada (WUSC), Windle Trust Kenya and other non-profit organizations, secured $4.5 million in funding from the Canadian International Development Agency, as well as partnership development grants and additional support from the Social Sciences and Humanities Research Council. York and UBC are also foregoing tuition to offer the programs on a cost-recovery basis.

Academic programs of universities affiliated with BHER are offered to students organized in to "cohorts", each of which accommodates up to 200 students and lasts 4-5 years. Each cohort initially enrolled in a university preparation program called the Increased access and Skills for Tertiary Education Program (InSTEP). Its purpose is to prepare prospective students for university education through courses in English Language for Academic Purposes, Information and Communication Technology (ICT) and Research Skills. Successful students will receive a non-credit Certificate.

The following diagram depicts the BHER program structure.



It is therefore recommended that such structures as BEHR could be established for supporting the professional development of teachers in the refugee camps of South Sudan. It is believed that public and private partnership among universities in the country as well as the region will join hands together to realize such an initiative.

References

BHER (Nd.). http://bher.apps01.yorku.ca/about-bher/

Bowness, S. (2013). Training teachers at the world's largest refugee camp. http://www.universityaffairs.ca/news/news-article/training-teachers-at-the-worlds-largest-refugee-camp/

UNHCR (2016). Factsheet - South Sudan February 2016, accessed on 21 March 2016, data.unhcr.org