



A COMPARATIVE REVIEW OF LITERATURE ON THE INTEGRATION OF SOFT SKILLS IN MATHEMATICS AS REFLECTED IN THE REVISED CURRICULUM FRAMEWORKS FOR KENYA, RWANDA, AND ZAMBIA

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ABSTRACT

This paper comparatively analysed policy documents and peer-reviewed papers regarding the integration of soft skills in Mathematics taught in secondary schools in Kenya, Rwanda, and Zambia. The analysis highlights how the curricula for Kenya, Rwanda, and Zambia were revised, how soft skills were integrated and assessed in Mathematics and how Mathematics teachers were prepared to integrate soft skills in the teaching and learning of Mathematics. The review has shown that the three countries acknowledge Mathematics as one of the subjects in which soft skills should be integrated. Additionally, the three countries have a common understanding that the integration of soft skills requires changes in pedagogical and assessment approaches. However, the literature reviewed from the three countries indicates that there is very little data available highlighting the integration and assessment of soft skills in Mathematics as well as how mathematics teachers were prepared. This lack of adequate information on the integration and assessment of soft skills points to the fact that these skills may not be integrated in the teaching and learning of Mathematics which could lead to producing secondary school graduates, who are not creative, innovative, critical thinkers and problems solvers. The paper, therefore recommends that researchers should explore the challenges related to the deficiency in policy focus by the three countries on the integration of soft skills in Mathematics.

KEYWORDS: teaching and learning Mathematics; competences; soft skills; integration; assessment; teacher development.

INTRODUCTION

This article is a review of literature on the integration of soft skills in the teaching and learning of Mathematics in secondary schools of Kenya, Rwanda and Zambia. According to (Lippman, Ryberg, Carney and Moore (2015), "Soft skills refer to a broad set of skills,

competences, behaviours, attitudes and personal qualities that enable people to effectively navigate their environment, work well with others, perform well, and achieve their goals"(P. 4). Furthermore, the Organisation for Economic Cooperation and Development [OECD] (2015) grouped soft skills, which are similar to what

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Kenya, Rwanda and Zambia have adapted in their curriculum, into three categories namely: learning skills (critical thinking, creativity, collaboration and communication), literacy skills (information literacy, media literacy and technology literacy) and life skills (flexibility, leadership, initiative, productivity and social skills). Kenya, Rwanda and Zambia in their policy documents, refer to soft skills as core, generic and key competences respectively (Curriculum Development Centre [CDC], 2013a, p. xii; Kenya Institute of Curriculum Development [KICD], 2017, p. 21; Rwanda Education Board [REB], 2015, p. 27). It is important to note that competences by definition are a collection of knowledge, skills, values and attitudes (CDC, 2013c; KICD, 2017; OECD, 2018) hence soft skills are a subset of competences. Thus, in this paper, the term soft skills have been used to bring clarity on the terms used by the three countries to describe them.

Mathematics taught in secondary schools was the focus for two reasons. Firstly, it is an area of specialisation of the authors. Secondly, Mathematics was chosen because research has established that the subject has many areas of learning involving soft skills such as critical thinking, problem solving, collaboration and communication (CDC, 2013). Also, the Ministry of Education [MINEDUC] & REB (2015b) indicate that students acquire skills such as communication, cooperation, problem solving and critical thinking through the process of observing, constructing, using symbols, applying and generalising mathematical ideas as well as presenting the information.

The learning skills, particularly critical thinking and problem solving skills, communication and collaboration skills, and creativity and innovation skills are referred to as soft skills, which are essential for students to cope with the rapidly changing society (Chu et al., 2016). In agreement, Origa, Muthoni, Okuro, and Wairimu (2013) state that learning Mathematics is key in developing students' creative and critical thinking, logical reasoning, communicating and solving problems among other soft skills. Further, it is an indisputable fact that teaching Mathematics to students helps enhance knowledge, skills, the right attitudes, and connectedness of what they learn to real life situations and enable students to acquire skills needed for improved living in society (Moser, Kinney & Purdy, 1948). Additionally, it is believed that when teachers "provide a rich and relevant context for Mathematics; students are motivated to explore,

to investigate and to find their solutions" (CDC, 2013c, p. 6). Given this, teachers are required to provide learning experiences, which encourages the integration of soft skills (Theodora and Marti'ah 2018) where both number concepts and social meanings are developed by students through learning Mathematics.

Learning Mathematics enables students to develop both hard and soft skills because the subject helps them to think critically as well as develop abstract and analytical thinking skills necessary in life (Cox 2018). Furthermore, Cox revealed that soft skills required from job seekers can be developed during the teaching and learning of Mathematics in secondary schools. This is in agreement with the peer-reviewed literature from other countries, which stipulates that, during the learning, and practicing of Mathematics, students acquire both hard and soft skills. For instance, Rohaeti (2019) states that Mathematics teachers are expected to develop both students' hard and soft skills at the same time because these two sets of skills are vital to the future life of students which becomes complex with each day that passes. The higher order thinking required in learning Mathematics may lead to hard skills development and this is enhanced by soft skills development (Tanudjaya and Doorman 2020). When teachers are able to stimulate both hard and soft skills through teaching Mathematics it leads to improving students' thoughtful, critical, and creative thinking skills (Nathan & Koedinger, 2000).

PROBLEM STATEMENT

It is a fact that Mathematics is fundamental to the integration of soft skills. However, despite the critical role Mathematics plays, there is reported low competency in soft skills and this is partly associated with challenges in the teachers' instructional and assessment practices (Origa et al., 2013). Further, improved teacher practices in the teaching and learning of Mathematics guarantees improvements in soft skills and "yet, the use of multi-disciplinary approaches which depend on using students' experiences in Mathematics and project based teaching has not been fully exploited" (Origa et al., 2013). Thus, the review was conducted to establish what the literature says about the inclusion of soft skills in the curricula, integration and assessment of soft skills in Mathematics and the professional development Mathematics teachers have undergone to be able to integrate soft skills in the three countries.

METHODOLOGICAL APPROACH

A variety of literature ranging from curricula frameworks, guidelines on assessment as well as on teacher development, policies, Mathematics syllabi and peer-reviewed papers were reviewed, analysed and synthesised. These documents were used to establish how the curricula for Kenya, Rwanda, and Zambia were revised, how soft skills were to be integrated and assessed in Mathematics, as well as how Mathematics teachers were been prepared to integrate soft skills in the teaching and learning of Mathematics. The literature from policy documents was matched with peer-reviewed literature from these three countries and other countries within and outside Africa regarding the integration of soft skills in Mathematics.

Refining of peer-reviewed documents was done to ensure that the documents selected contained information on the integration of soft skills in the teaching and learning process, with a preference

on Mathematics. The idea was to get as much information as possible related to soft skills integration in Mathematics from the three countries. Much of the literature reviewed were selected purposively from Kenya, Rwanda, and Zambia on the assumption that the soft skills adapted in these countries have some similarities and were adapted almost in the same period. From the 38 documents reviewed, there were 11 policy documents from the three countries, while only two peer-reviewed papers published in Journals were from Zambia and Rwanda respectively and one paper from Kenya that were related to soft skills integration in schools. Additionally, there were three reports from Zambia, one report from Kenya and three reports from other countries that were selected that had some information related to soft skills. The total number of documents reviewed was 38 as shown in Table 1.

Table 1**Description and quantity of documents reviewed**

SN	Description	Kenya	Rwanda	Zambia	Other Countries	Total
Policy documents						
1	Revised curriculum frameworks	1	1	1	0	3
2	Curriculum framework summary documents	0	1	1	0	2
3	Education policies	1	0	0	0	1
4	Syllabi	0	1	1	0	2
5	Guidelines on School based Assessment (SBA)	0	1	2	0	3
Peer-reviewed documents						
6	Papers published in Journals	1	2	2	8	13
7	Conference papers	0	0	0	1	1
8	Working papers	0	0	0	1	1
9	Reports	1	0	3	3	7
10	Books	0	0	0	3	3
Non-peer-reviewed documents						
11	Websites	0	0	0	1	1
12	Magazines	0	1	0	0	1
Total		4	7	10	17	38

Table 1 shows the 38 documents reviewed and out of which four were from Kenya, seven were from Rwanda, 10 were from Zambia and 17 were from other countries.

FINDINGS AND DISCUSSIONS

In this section, we discuss how the soft skills are integrated and assessed in Mathematics and how Mathematics teachers are oriented on the integration of soft skills.

a. THE INTEGRATION OF SOFT SKILLS IN MATHEMATICS

The integration of soft skills through teaching and learning has led to the emerging of two schools of thought (Moore 2004). One school of thought believes that soft skills can be taught independently from the content and applied to any discipline while the other school of thought, contends that soft skills are inseparable from their disciplinary context. However, literature widely supports the need for soft skills to be interwoven within the subject content (De la Harpe, Radloff & Wyber, 2000; Moore, 2004; Stauffer, 2020). Also, (Green Hammer and Stephens (2005) argue that the practise of integrating soft skills within a subject area is based on the premise that subject content is required to make meaning of soft skills. Mathematics has many areas of learning that involve soft skills such as critical thinking, problem solving, collaboration, and communication. Below is an analysis of how soft skills are integrated in the teaching and learning of Mathematics.

Kenya

The KICD (2017) indicates that soft skills are to be developed through core subjects taught in schools like Mathematics. KICD (2017) also, emphasises that knowledge and soft skills should not only be developed but also be applied to real life situations. Furthermore, KICD (2017) specifies that “subjects, for example, English, Mathematics, Science and Technology are the means through which the skills [soft skills], values and knowledge will be taught across all levels of learning” (p. 27). Kenya gives a road map on how soft skill integration could be attained, that is, through teacher empowerment. The curriculum in Kenya echoes a collaborative and co-development model of integration where stakeholders in the curriculum design are involved to a level of tapping into local proficiency to enhance its design and development (KICD, 2017). This is to say the development and delivery of content have to be flexible, exploratory, as well as tailored to the local community. However, even after revising the curriculum, there were still complaints among some employers in Kenya on the lack of a positive attitude towards work and failure to

communicate well by many young people seeking employment. Some of the problems cited were poor time management, failure to work in teams, lack of proper work ethics (Ondieki, Kahihu & Muthoni, 2019). Ondieki, Kahihu and Muthoni (2019) further recommend that to address the challenges raised, soft skills should be mandatory and examinable, as well as be taken as an integral part of the education curriculum.

Rwanda

The REB (2015), indicate that soft skills cannot be taught directly like subject knowledge as they are developed over a period of time. REB also acknowledges the fact that soft skills “are seen as generic competencies because they apply across all curricula, and can be developed in all the subjects studied” (REB, 2015, p. 27). The Rwanda Education Board further states that soft skills require students to practise and apply these competencies through subjects that they study. Teachers need to adopt approaches that enable students to carry out research, think critically, be creative and innovative, solve problems, be able to communicate, collaborate and become life-long learners (REB, 2015). Thus, it is the responsibility of subject teachers to focus on the integration of soft skills.

A study conducted in Rwanda to establish how Mathematics and Science teachers at secondary school understood and implemented learner-centered instructions revealed that this teaching approach was limited to simple oral questioning, doing exercises, group discussion, or experimentation (Nsengimana, Habimana, and Mutarutinya 2017). They added that Mathematics and Science teachers were not aware of learner-centred methods such as open-ended, close-ended, problem solving, problem tree, concept map, memory card, backward teaching, discovery learning, project-based, brainstorming and resource-based. The concern here is how the soft skills adapted in the curricula were being integrated when teachers were not knowledgeable of the appropriate pedagogical methods that incorporate both the cognitive and non-cognitive skills such as soft skills. This spells a dark covering on the integration of soft skills in Mathematics in Rwanda as to whether the efforts been made yield positive results.

Zambia

From the Zambian perspective, explicit integration of soft skills is entrenched into each subject taught and it is the responsibility of subject teachers to integrate these skills during the teaching and learning process (CDC, 2013c).

The peer-reviewed literature from Zambia on the integration of soft skills in the teaching and learning of Mathematics revealed challenges. For instance, in an evaluation report on the reform of Zambia's secondary education system, Kuiper (2017) states that learning outcomes in the Zambian Mathematics syllabus for secondary schools resonate well with the soft skills as provided in the Zambia Education Curriculum Framework (ZECF) of 2013. However, the literature reviewed shows that secondary education in Zambia does not sufficiently prepare students with the soft skills demanded in the global economy (Blom, Cao, Andriamihamina, & Akinlawon, 2017). Further, Blom, Cao, Andriamihamina and Akinlawon (2017) in their report recommend for accelerated integration of a competency-based curriculum to ensure that learning objectives that include soft skills such as self-management, collaboration, entrepreneurship, and problem solving be integrated. Thus, this gives the impression that the integration of soft skills in secondary schools is still a challenge in Zambian schools.

The developers of the revised curricula in Kenya, Rwanda, and Zambia agree that soft skills should be integrated within the core subject areas as evidenced in the paragraphs above. However, there is no evidence from the literature reviewed to establish how soft skills are integrated in the teaching and learning of Mathematics in the three countries. Therefore, there is a need to refocus on the integration of soft skills, especially, in Mathematics, as they are vital in ensuring that students are successfully prepared for life.

b. ASSESSMENT OF SOFT SKILLS IN MATHEMATICS

Kenya

The Ministry of Education in Kenya recognises the need for student evaluation processes that focus on both cognitive and non-cognitive attributes while balancing among other forms assessments and School-Based Assessment [SBA] (Ministry of Education 2018). However, the Ministry of Education in Kenya admits that for a long-time, assessment of student's learning has been focused on memorisation of knowledge and facts (KICD, 2017). This kind of assessment has not been able to effectively measure learning outcomes involving soft skills. The Kenya Institute of Curriculum Development states that there was a need to reflect a little more on how strategies that will ensure soft skills adapted in the curriculum were assessed (KICD, 2017). Thus, if soft skills are to be integrated,

assessment of soft skills must be made mandatory.

Rwanda

Based on the Rwanda education policy documents, assessment is an essential part of the teaching and learning process. According to Ministry of Education and Rwandan Education Board, it is through assessment that evidence of an individual students' learning progress is collected and interpreted to make judgments about the students' accomplishments measured against some set standards (MINEDUC & REB, 2015b). Thus, the purpose of assessment in Rwanda has been, monitoring student's progress, providing feedback on student's performance, guidance on future progressions, promotion, selection and certification (MINEDUC & REB, 2015a). These have remained in the revised curricula but with an emphasis on not only assessing knowledge but soft skills as well. In Rwanda, a simplified guide to classroom-based and national assessments was developed which instructs teachers to set questions aligned to unit assessment criteria and soft skills, as outlined in the curriculum policy (MINEDUC & REB, 2015c). The guideline, further states that teachers should look at assessment criteria and soft skills when setting continuous assessment activities, end of year exams and preparing students for national exams (MINEDUC & REB, 2015c).

The REB (2015, p. 34) advocates that soft skills be measured by assessing the stages the student goes through to "perform a given task and reasoning behind it to resolve a situation and the evidence can be used as a basis to determine the student's advancement towards the fulfilment of performance tasks". Further, soft skills in Mathematics can best be assessed through SBA conducted by the subject teachers through monitoring the steps students take to perform a given assignment, the rationale behind it and how the student overcomes each challenge. REB articulates that the other factors to be considered during the assessment of soft skills in Mathematics are indicators such as "reasoning, manipulating, presenting, value judgment and application of knowledge" (MINEDUC & REB, 2015b, p. 13).

Zambia

The quality assessment of soft skills in Mathematics depends on accurate and reliable measurement of key performance indicators. CDC (2013b) argues that soft skills though reported as difficult to measure, require techniques designed to capture indicators of

these skills, such as projects, portfolios and performance assessments. In Zambia, there are three, notable types of assessment conducted, namely formative assessment, summative assessment and School-Based Assessment (SBA) whose scores contribute toward the final results of a particular course (Examinations Council of Zambia [ECZ], 2020b).

The ECZ reiterates that SBA forms a vital part of teaching and learning as it leads to improvements in the quality of teaching and assessment. However, the current guidelines on assessment indicate that the only secondary school subjects in Zambia where SBA is conducted are Social Sciences, Business Studies, Geography, Literature, Languages and Natural Sciences (ECZ, 2020b). Mathematics is not one of those subjects where SBA is conducted although SBA in Mathematics is inevitable to enable Mathematics teachers to focus on assessing soft skills such as students' logical thinking, critical thinking, and problem solving skills (ECZ, 2020a). This would improve the students' learning process and understanding of the subject matter (ECZ, 2020b) as teachers can diagnose the needs of the students for purposes of remediation and improving the learning outcomes.

In the peer-reviewed literature from Zambia, there appears to be no data available on how the assessment of soft skills in Mathematics is done. This is confirmed by a study conducted by Muzata (2018) on assessing soft skills among students with disabilities in teacher training institutions in Zambia. Muzata concluded that there is a need to provide a more practical way of teaching and assessing soft skills. This is because when implementing the revised curriculum, educators still emphasise teaching skills "that lead to the award of certificates [hard skills] leading to employment and if soft skills are taught, they are not intended" (Muzata, 2018, p. 1). In support of this, it is indicated that there is a lack of SBA in Mathematics to complement national examinations by measuring students' skills and competencies (Kuiper 2017) which are not assessed in the standardised tests. CDC also echoes that standardised tests are not the only way to measure students' achievement, thus performance assessments should also be considered to measure what students know and can do (CDC, 2013a). The concentration on standardised tests has hampered the assessment of soft skills in Mathematics in Zambian schools.

Generally, the revised curricula for Kenya, Rwanda, and Zambia recommend a wider range of assessment strategies that focus on the development of student's learning outcomes, which includes both knowledge and skills (CDC, 2013c; KICD, 2017; REB, 2015). The three curricula frameworks recommend a variety of assessment approaches such as projects, assignments, portfolios, and rubrics. From this, it can be said that the curricula frameworks for Kenya, Rwanda, and Zambia appreciate that standardised tests cannot adequately assess soft skills hence proposing a variety of assessment techniques/methods/strategies. The three countries guide on how soft skills can best be assessed although from the literature reviewed there are no indications to show that Mathematics teachers in the three countries employ such guidelines and assesses soft skills. The peer-reviewed literature from the three countries gives the impression that there is very little data available regarding the development and assessment of soft skills in Mathematics. This resonates well with the findings by Virtanen and Tynjälä (2018) who indicate that although soft skills have received widespread attention, little is known concerning how they should best be taught, assessed and how students attain these skills. This is because when assessment is matched with the aims and objectives of the curriculum (CDC, 2013c) the integration of soft skills in teaching and learning can be supported.

c. MATHEMATICS TEACHERS ORIENTATION ON THE INTEGRATION OF SOFTS SKILLS IN MATHEMATICS

The curriculum framework is every nation's guiding document that translates vision into practice and reflects learning, assessment and monitoring as well as evaluation of the education system. Njeng'ere (2014, p. 2) states that "curriculum development emphasises that education should enable society to achieve its needs and aspirations". Since the adoption of Outcome Based Education (OBE) in Zambia and Competency Based Curriculum (CBC) in Rwanda and Kenya, stakeholders in these countries expect improvements in the teaching methods and assessment approaches leading to improved students learning outcomes.

It is also the expectation of these countries that school leavers acquire the right skills, knowledge and values to enable them to deal with social, cultural, economic and real life challenges at local, regional and global levels (REB & Flemish Association for Development and Technical

Assistance [VVOB], 2018). However, all these factors are dependent on the preparation of the Mathematics teachers to implement what is contained in the revised curricula.

Kenya

In Kenya, the Ministry of Education (2018) echoes that to successfully implement the revised curriculum, teachers need re-orientation on methods of delivery that will take into consideration the prevalent trends in education and students' needs. It is evident in the Kenyan education policy that teachers are key in integrating soft skills through "pedagogical approaches that support creativity, innovation, critical thinking, inclusivity and sustainable development" (Ministry of Education, 2018, p. 10). In Kenya, the Kenya Institute of Curriculum Development KICD (2017) recommends learner centred teaching approaches in the curriculum and emphasise focusing more on all competencies than on content and that the goal of education be an appropriate application of knowledge rather than on its acquisition. It is believed, that soft skills enable students to create important connections within and among subject areas like Mathematics. In other words, the curriculum should be relevant to students and teachers should take the role of a facilitator to enable them to be responsive to the diverse needs of students. However, there is no adequate literature found that indicates the preparation of teachers on the integration of soft skills in Mathematics in Kenya.

Rwanda

In Rwanda, the effective integration of soft skills is dependent on teacher quality. Thus, Mathematics teachers are expected to engage students in a variety of learning activities, using a variety of teaching and assessment approaches (MINEDUC & REB, 2015b). Furthermore, a well implemented curriculum addresses students' interests, needs, abilities and creates an atmosphere where students are encouraged to construct knowledge at an individual level or in collaborative groups (MINEDUC & REB, 2015a). Additionally, to improve the quality of education across subjects in teaching and learning practises students must have access to ICT tools (MINEDUC & REB, 2015a).

Based on the peer-reviewed and non-peer-reviewed sources it is established that there have been efforts in Rwanda to sensitise teachers on soft skills through interventions in the form of retraining. In 2016, REB organised a training of trainers on CBC who were expected to train other teachers on appropriate teaching methodology

that is responsive to the revised curriculum, which incorporates soft skills (REB & VVOB, 2018). The appropriate teaching approach advocated for was a shift from teacher-centred, where a teacher spends most of the teaching time in a classroom without students' participation to learner-centred teaching, which emphasises on linking what a student acquires in class to daily life experiences.

The literature reviewed also highlights that REB and other stakeholders engage Sector Education Officers (SEO) to supervise and support schools in education on the integration of CBC after realising that some teachers were not yet familiar with the use of CBC techniques (REB & VVOB, 2018). The SEO ensures that every school in their area of operation organise teacher-training workshops on the continuous improvement of CBC integration. The school-based mentors and school-based trainers who are trained by REB facilitate training workshops. Furthermore, CBC focuses on educating the whole child and soft skills such as creativity and innovation, critical thinking, problem solving and research, communication, cooperation, lifelong learning, interpersonal relations and life skills are critical.

To deal with the challenges of implementing the Competency-Based Curriculum and support the improvement of learning outcomes the VVOB Rwanda, in collaboration with REB and the University of Rwanda College of Education (UR-CE) have embarked on a teaching and learning programme (REB & VVOB, 2018). The programme aims at promoting the quality of education, enhancing school leadership, and putting up an induction system for new teachers. It has been revealed that in some districts "teachers were trained but it is reported that some teachers resisted changing" (REB & VVOB, 2018, p. 6).

It was anticipated that the partnership between VVOB and REB through UR-CE would result in ensuring that teachers acquire skills to integrate soft skills. However, in a study conducted in Rwanda to establish the extent to which sector-based trainers were aware of soft skills, it was found that only 27.3 percent of the 731 teachers surveyed understood the role and tenacity of these skills (Ndihokubwayo, Habiyaemye & Rukundo, 2019). Thus, if the trainers who are supposed to train Mathematics teachers are not familiar with soft skills, how do Mathematics teachers develop and assess soft skills in the students. It was also, suggested that there was a need to establish why trained sector-based trainers were not aware of soft skills and the

cross-cutting issues yet the integration of soft skills in secondary schools was to be achieved.

Zambia

In Zambia, the Zambia Education Curriculum Framework of 2013 directs that teachers should use a variety of teaching methods that promote active student participation and interaction. In this regard, teachers are encouraged to use methods that encourage students to reflect, think and act rather than rote learning (CDC, 2013a). Furthermore, CDC (2013c) states that teaching should expose students to hands-on applications with reference to the local environment in everyday life. Therefore, teaching and learning of Mathematics are not only based on knowledge or the cognitive domain of learning but also on discrete skills such as soft skills. The capacity of teachers to interpret and implement the curriculum is a precursor to the provision of quality education. The Ministry in charge of Education in Zambia acknowledges that successful integration of the revised curriculum depends on many factors, which include suitable teaching methodologies and assessment strategies.

A peer-reviewed paper in Zambia, the World Bank Group (2017, p. 16) states that youth unemployment is a big challenge in Zambia due to a lack of appropriate skills that are in line with industrial requirements and the country remains "among five worst performers on human development indicators". This means that serving teachers require being upskilled in the appropriate teaching and learning approaches (Mulenga & Kabombwe, 2019) that will enable them to successfully integrate soft skills. Additionally, no data was found that highlights how teachers were prepared to integrate soft skills in Mathematics. Therefore, this calls for schools and other stakeholders in education to pay attention to soft skills as much as they do with hard skills by making their learning and assessing obligatory, especially, in Mathematics. In the Outcome Based Education (OBE) and Competence Based Curriculum (CBC), there is an emphasis on teachers using collaborative learning groups to encourage students towards self-directed learning where they will get an opportunity to receive feedback from fellow students (REB & VVOB, 2018). Not only that but also the teaching of Mathematics should be linked to real life to increase students' motivation towards liking the subject and improve their learning outcomes. Therefore, teachers, among many other interventions should be capacity built

to strengthen the SBA of soft skills and utilise the feedback results to improve learning.

The successful integration of a curriculum is dependent on teachers' practices, knowledge and ability to adapt to new changes in the way they carry out their work. Teacher knowledge is fundamental to ensuring that the curriculum aimed at producing students for lifelong learning is successfully achieved. This demands for a comprehensive teacher professional development (Williamson & Clevenger, 2008). MINEDUC and REB argue that the teacher should possess the qualities of a good facilitator, organiser, problem solver, listener and adviser (MINEDUC & REB, 2015b, p. 21), to be able to integrate soft skills in the teaching and learning of Mathematics. It entails that the successful integration of soft skills in Mathematics also depends on Mathematics teachers.

CONCLUSION

The paper focussed on reviewing the literature regarding the integration and assessment of soft skills in the teaching and learning of Mathematics in secondary schools in Kenya, Rwanda and Zambia as well as establishing how Mathematics teachers were prepared to integrate soft skills in the teaching and learning of Mathematics

The findings are that developers of the revised curricula in the three countries share the same view that soft skills are to be integrated within the core subject areas. They also, acknowledge the fact that soft skills cannot be taught directly like subject knowledge as they are developed over a period of time hence require practicing and employing these skills in the subjects taught in schools. The literature further reveals that from the Zambian, Rwandan, and Kenyan curriculum frameworks soft skills can be developed and assessed. It is also clear, that the three countries indicate that the integration of soft skills in Mathematics requires the transformation of teaching methodologies and assessment approaches. However, the literature reviewed from the three countries, show that very little is known about the development and assessment of soft skills in Mathematics despite considering them as very critical in producing students who will be able to contribute to the development of the country. The small number of peer-reviewed papers from the three countries confirms this assertion. In particular, there were only two peer-reviewed papers published in Journals from Zambia and Rwanda respectively and one paper from Kenya related to soft skills integration in schools. Additionally, there were three reports

from Zambia and one report from Kenya that were selected that had some information related to soft skills. This lack of adequate literature on the integration and assessment of soft skills may point to the fact that these skills may not be integrated in the teaching and learning of Mathematics, which may lead to producing school leavers who are not adequately prepared to contribute to the development of the country and fit well in society.

The other important factor in the integration of soft skills in teaching and learning of Mathematics is the teachers' professional development. It is irrefutable that, when Mathematics teachers embrace the integration of soft skills with an open mind it yields great benefits for students and the wider community. However, from the literature reviewed, it is noted that there have been some efforts in developing teacher capacity on the integration of the competence-based curriculum, which incorporates soft skills in Rwanda than in Zambia and Kenya. However, there is inadequate data to confirm that the effort made in Rwanda has yielded positive results. Additionally, there is no evidence found from the literature reviewed from the three countries to ascertain the facts that soft skills integration and assessment are prioritised as well as Mathematics teachers are equipped with skills to develop and assess soft skills. Furthermore, the literature reviewed does not indicate that Mathematics teachers put a great effort in integrating soft skills as tools for developing students' understanding of the subject.

Finally, the inclusion of soft skills in the teaching and learning of Mathematics and the curriculum at large in Kenya, Rwanda and Zambia may not yield any favourable results. This may lead to producing secondary school graduates, who are not creative, innovative, critical thinkers and problem solvers. Based on the literature reviewed there is a need for researchers to particularly explore the challenges and propose mechanisms to address such challenges in the integration of soft skills in Mathematics from the three countries

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