

Implementation of Competence-based Curriculum in Rwanda: Opportunities and Challenges

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Abstract

Five years ago, Rwanda shifted from a knowledge-based to competence-based curriculum. The main purpose was to enable school graduates to cope with job-related demands and enable them to become problem solvers. From my knowledge however, no research was done to evaluate the opportunities and challenges associated with the implementation of this new curriculum in order to develop mitigation strategies. To fill this gap, the study being reported in this article was designed. Data were collected through focus group discussions, surveys and school visits. Results indicated the appreciation of the new curriculum. Major challenges included the lack of teaching and learning materials, laboratory equipment and chemical reagents. Teachers suggested collaboration between the government and other education stakeholders to overcome the identified challenges. They also suggested a continuous professional training for in-service teachers based on the subjects they teach, and on English since it is used as a medium of instructions.

Key words: Competence, critical thinking, high level of thinking, knowledge, skills, teacher

Introduction

In 2015, Rwanda introduced a competence-based curriculum (CBC) from a knowledge-based curriculum (Ndiokubwayo and Habiyaremye, 2018). By changing the curriculum, Rwanda shifted from knowledge and skills acquisition learning to critical thinking, creation and innovation, research and problem solving, communication, cooperation, interpersonal life skills and lifelong learning competencies (Ngendahayo and Askill-williams, 2016). These competencies were introduced together with cross-cutting issues including genocide studies, environment and sustainability, gender, sexuality, inclusive, peace and values, financial and standardization culture education (REB, 2015).

The CBC is appreciated to engage a dynamic learning that is in line with the future employment needs of Rwanda and the global economy (REB, 2015). Further, the CBC is appreciated to help graduates to overcome challenges faced at the labour market, and for promoting standards in competencies needed at the international level (REB, 2015). The introduction of the CBC was expected to put more emphasis on the needs of students (Mbarushimana and Kuboja, 2016), hence it was conceived as an approach for addressing the aspirations of Rwanda and its population to satisfy their needs through improved education system (Singer et al., 2014).

After five years that the Government of Rwanda opted to implement the CBC in all educational system, less is known about the progress of its implementation. It is very important to evaluate the current situation, in order to determine the available opportunities and challenges associated with its implementation, and develop mitigations. This paper comes to fill the gap and provide prior information on the implementation of the CBC in Rwanda.

Specifically, it seeks to answer the following research questions: (1) What is the level of appreciation of the CBC by secondary school teachers? (2) How is the CBC implemented at school level? (3) What are the challenges faced by teachers during the implementation of the CBC, and (4) What can be done to overcome the challenges presented by secondary school teachers in relation with CBC implementation?

Literature review

The CBC started in the United States of America in 1970s (Ford, 2014). It was later expanded in the United Kingdom and Germany in 1980s, and in Australia in 1990s (Likisa, 2017). Further, the CBC was adopted by other countries including the New Zealand, and a number of European countries (Finch and Crunkton, 1999). In Africa, countries like Rwanda, Zambia, Tanzania, South Africa, Nigeria, Kenya and Ethiopia have also adopted the CBC (Nsengimana et., 2020^a). In most of developing countries, the CBC was adopted from developed countries and adapted to the specific needs of the country (Muraraneza, Mtshali and Mukamana, 2017).

The CBC incorporated the context and resources that students are able to manipulate and come up with a solution to a given problem (Araya and Munoz, 2017). From the CBC, the competence-based education (CBE) was introduced. The CBE is considered as a combined and integrated learning combining knowledge, procedures, and attitudes that are definable in action and in experience (Muñoz and Herrera, 2017). In CBE, students develop competences through the development of the ability to do what is needed (Hoffmann, 1999; Mulder, 2007; Shaikhah Sarmad, Wafi and Karaghoul, 2009). In this regard, the competence is a key organizational resource exploited by students to gain competitive advantage, analysis, and doing things (Deist and Winterton, 2005). The CBE is one of the ways to relate education with the current world of work (Kouwenhoven, 2003); that can reduce the unemployment caused by the lack of skills needed on the labour market (Sudsomboon, 2007).

In Rwanda, the CBC is centred on higher order and critical thinking skills that develop the understanding and enable effective learning, where skills learning objectives use more challenging and active verbs that can help learners to think deep (REB, 2015). The CBC aims also to move from memorization and recall to the higher level of thinking that contribute to deep and lasting learning. The key aim of the CBC is that students should attain a competence level in all subjects they learn, and shift from memorization and recalling information to the understanding and application of learning in practical situations. These require a learning environment which allows students to generate their own ideas and suggest solutions to different problems (REB, 2015), and hence to cope with job related demands. In this regard, they become problem solvers in the society (Nsengimana et al., 2020^a).

Reference to studies conducted in Ethiopia and Tanzania (Likisa, 2017; Tambwe, 2017), the development of the CBC has to be followed by its evaluation and assessment. The evaluation involves gathering information and making a judgement or decisions based on the information collected to determine how well the curriculum is

performing (Kentucky Department of Education, 2013). The feedback from the evaluation might serve for changing the curriculum, provision of resources or provision for the training to the in-service teachers (Krajcik and Delen, 2007). In the assessment phase, information is gathered from teachers, students and school administrators (Likisa, 2017). The information obtained indicates the degree to which the curriculum is being implemented, the strengths and weaknesses of the curriculum (Aflatoony, Hawryshkewich and Wakkary, 2018).

This study aims at the identification of the opportunities and challenges related to the CBC implementation in Rwanda. It follows the curriculum implementation theory developed by Gross, Giacquinta and Bernstein (1971). This theory indicates that for successful implementation of any educational program, factors such as teacher awareness and attitudes must be taken into consideration. Further, the theory indicated that when teacher is not aware of changes in curriculum, the implementation may not be effective and sufficient. Furthermore, teacher might have positive attitudes towards the curriculum and changes therein, and hence contribute to its implementation.

Materials and methods

Research Design and Data collection

To ensure the validity of data and develop a comprehensive understanding of the CBC implementation in Rwanda, triangulation was applied (Carter, Bryant-Lukosius and Neville, 2014). The first method consisted of the empirical investigation undertaken based on quantitative research by the use of a closed and open-ended questionnaire to secondary school teachers. Six secondary schools were purposively selected in Muhanga district, Southern Rwanda. These schools included two schools of excellence, two twelve-year basic education and two private schools. A total of 60 teachers randomly selected answered the questionnaire. In order to ensure the confidentiality and relevance of the responses, the purpose of research was explained to respondents during the introduction (Nsengimana, Weihler and Beth, 2016^b), and a consent form was signed. During data collection, the on- spot data collection method was adopted to ensure accurate responses and time management (Cerny and Kaiser, 1977).

The second method consisted of the focus group discussion, where six secondary school teachers were randomly selected at school level as the minimum number of participants based on the theory developed by Shamdani, 1990. A total of six focus group discussions were organized between May and June 2018, with one focus group discussion organized at each school. The schedule for the discussion was planned in advance based on the availability of teachers at school level. Specific topics were given to the participants. They consisted of listing the opportunities and challenges that favour the implementation of the CBC, discuss each of the stated point, and suggest strategies that can be useful to overcome mentioned challenges.

The third method consisted of visiting schools and observing different lessons, evaluate available resources at school level such as library, computer labs, and laboratories. The main purpose was to verify different ways used in teaching and learning, identify available resources at each school, and to prove or improve the validity of data collected by the questionnaire and group discussion. This exercise was facilitated by the delegated teacher, school head teacher, deputy head teacher, or any other person delegated by the school authorities, able to provide enough information about the school. Three lesson observations were organized two times at each school as follows: one lesson in arts and social sciences, one lesson in mathematics and one lesson in each of science subjects namely biology, chemistry and physics. All lessons were observed in ordinary level in classes of senior one (S1) and senior two (S2). The ordinary level because it was available in all studied schools.

Data analysis

Data from the focus group discussion were analysed qualitatively, while data collected through the questionnaire and lesson observations were analysed quantitatively (Abu-Taleb and Murad, 1999). Qualitative data were analysed by the use of thematic approach, and the quantitative data were statistically analysed using the SPSS 25 version. The analysis was initially done for each school before it was undertaken for the overall schools and the information collected from the lesson observations and available resources were used to supplement data collected by questionnaires and focus group discussions (Nsengimana et al., 2016^b).

Results

Results of the study were summarized into three main points: (1) opportunities related to the appreciations and current implementation of the CBC, (2) challenges faced by teachers during the implementation of the CBC, and (3) mitigations suggested by teachers to overcome identified challenges.

1. Opportunities

The feedback from questionnaires and focus group discussions indicated that the CBC is appreciated by teachers to focus on the development of students' skills, attitudes and values. The CBC was also appreciated to improve the quality of learning, and shifts from memorization of the subject content to the practical activities. In addition, the CBC was appreciated by teachers to summarize the professional skills and to define the objectives in teaching and learning. Further, the CBC develops personal ability of students and links social values with the subject-content, and the world of work. Furthermore, teachers reported that the CBC helps to achieve the goals of the Government of Rwanda aiming at producing skilled students, able to create and compete for jobs at the labour market.

The lesson observation indicated that teachers could take into consideration students' prior experiences during the lesson planning. During teaching and learning, some teachers could also keep a well-organized classroom

arrangement to ease student's interactions. Others could involve students in setting a key question of the lesson, and work together with students to develop the content to answer the formulated question. Some other teachers could facilitate students to get skills and give them opportunities to participate in making decisions about studied topic. In this regard, the majority of teachers could encourage students to ask questions. The group discussion was used by almost all teachers. However, in some schools the discussion was in Kinyarwanda, mainly in twelve-year basic education schools, and this was the sign that students still have limitations to use English.

It was also observed that during the group discussion, some teachers could let students work at their own speed despite the time it takes to learn new concepts. For almost all observed lessons, there was strong control and classroom management. The feedback from focus group discussions indicated that the control was necessary to maintain discipline and to avoid interferences to the learning process. Teachers indicated that for a big class (more than 60 students in twelve-year basic education schools), the control was necessary to prevent the noise which could occur once all students could be allowed to talk at the same time. After the group work, it was observed that teachers gave time to learners to present findings. Some teachers could orient the feedback and correct misconceptions. Some others could tolerate errors and consider them as an opportunity for learning. In some schools, it was not always possible for all groups to present due to the shortage of time and big number of groups.

Results indicated that during the planning of teaching and learning activities as well as the lesson assessment, some teachers could plan activities that help students to move from the dependence on others to greater independence. Only 31.8% of teachers could use tests as predominant methodology to evaluate students. Other teachers (45.5%) could adjust the instructional objectives to match them with the ability and needs of individual learners. During the lesson observation, it was noticed that the assessment followed lesson objectives, even though questions were mainly limited to low level of thinking dominated by remembering questions.

2. Challenges

Few teachers (8.6%) were consulted during the development of the new curriculum, and the majority of them (87.5%) got the information about the curriculum review from school authorities. During the focus group discussions, teachers argued that their inputs could help curriculum developers to improve the new curriculum. Their contribution could for example help to avoid problems related to the subject content, which sometimes has been developed without considering learners' prior skills. A small number of teachers (20.5%) got a training about the implementation of the new curriculum. Others (30.6%) who did not get the training found the implementation of the CBC to be more time consuming. Hence, the majority of teachers (78.2%) could not cover the content at the end of the year. Teachers indicated that this is because the time allocated to one lesson was reduced from 50 to 40 minutes. They reported that sometimes they have to use teacher-centred teaching methods to cover the content.

Teachers reported also that the implementation of the CBC started with the increase of the number of teaching load per week (from 28 hours per week to between 35 and 40 hours per week). This was coupled with the increase of the number of students, specifically in ordinary level (sometimes 60 students and above). As a result, it is hard for them to follow the methodology suggested by the CBC as sometimes they are tired, could not get time for preparation, and for effectively support every student during teaching and learning processes.

The majority of teachers (91.3%) highlighted that some content of the CBC requires materials that cannot be improvised, especially in science subjects, and hence taught theoretically. In this regard, it was observed that the majority of teachers could not conduct planned experiments due to the lack of laboratories, reagents and materials, mainly in twelve-year basic education schools. Private schools had moderately equipped laboratories, compared to schools of excellence having fully equipped laboratories. In the courses of history and geography subjects, the problem related to the lack of maps was mainly observed in private schools, and in some twelve-year basic education schools. As an alternative, some teachers could use computers to smoothly implement the CBC. However, computers were not enough to be used by every student, and every teacher in every subject.

The lack of adequate teaching and learning materials affected teaching and learning processes. Some teachers reported that learners do not fully acquire skills in the ways suggested and wanted by the CBC. Teachers argued also that the aim of the CBC to encourage students to be creative and innovative in what they are studying, and the ideal for learners to work together and build skills by themselves may not be achieved. Other teachers indicated that most of students do not get good marks during assessments, particularly when the questions are related to innovation and creativity, particularly in science subjects. In this regard, the focus group discussion indicated that even though teachers tried other teaching methods that help students to understand the content, some topics such as enzymes in biology and chemical reaction in chemistry could not be effectively taught due to the lack of adequate teaching and learning materials at school level.

3. Mitigation

To overcome the above challenges, few teachers looked for alternatives to effectively teach in the ways suggested by the CBC. Alternatives include the improvisation of missing materials and use of simulations for some particular practical experiments in mathematics and science subjects. During lesson observation, it was found that improvised materials were mainly used in schools of excellence and twelve-year basic education, particularly in mathematics and science subjects. Some other teachers could try to give examples and applications of concepts in relation with everyday life situations familiar to students. Teachers suggested that teaching load may be reduced to avail enough time to make good lesson plans and look for effective teaching and learning materials.

Further, teachers suggested a continuous collaboration between the Government with education stakeholders to increase the number of teaching and learning materials, particularly equipped laboratories at school

level. They suggested also that the teaching and learning materials provided by the Ministry of Education should not only be limited to mathematics and science subjects. Other subjects, including arts and social sciences should also be considered. Furthermore, teachers suggested a continuous professional training for in-service teachers, based on the subjects they are teaching. They also requested the on-going English language training as a medium language of teaching and learning, particularly for teachers who were trained in French.

Discussion

Results of this study indicated a positive appreciation of the CBC by secondary school teachers. However, few teachers expressed that they were consulted during the curriculum development. The majority of teachers said that they got information about the curriculum change from school authorities, and few teachers were trained on the new curriculum. Taking into consideration the role of curriculum in education reforms, a good process in curriculum change could be the early consultation of all education stakeholders, particularly teachers, in order to allow them to understand the reasons for curriculum change, agreement on the new elements to be added or removed in the new curriculum and the timeline for the implementation (Moreno, 1999). Participation during the reform is very important. It promotes the understanding of the reasons for curriculum change by all stakeholders, allow the contribution of each stakeholder, and helps to agree on possible changes in curriculum (Moreno, 1999).

The implementation of a curriculum after reforms was found to be influenced by individual perspectives, understanding of the reasons for change, and personal commitment to accept changes (Pritchett, 1992). These are reinforced by the training, especially when concerned teachers did not participate in the processes of reforms (Adleman and Walking-Eagle, 1997). The training does not only contribute to the understanding of the purposes for change. It helps also to understand the innovations, technologies, techniques, and strategies that might be applied to reach the desired objectives indicated in the new developed curriculum (Adleman and Walking-Eagle, 1997).

As discussed above, the majority of teachers, specifically 78.2% of the total participants, said that they were facing different challenges in implementing CBC. These challenges may be linked to different factors such as the quick start of the implementation of the new curriculum, without giving enough time to teachers for effective preparation. Studies in this regard have indicated that a better and successful implementation of reforms in curriculum requires enough time (Hord, 2004; Fullan, 2007). This time allows teachers to stabilize the mind and think about how to do things differently from what they were used to do (Bandura, 1977). During this time, teachers may think about which activities to do, and design how these activities can be done. In this regard, teachers set the list of required materials, identify the ones available, and those that can be improvised, and determine possible options for those which are missing (Bandura, 1977).

It is important to consider teachers as the main actors in curriculum change and implementation. Once the role of teachers is ignored, there might be lack of ownership (Cavelti, 1995; Keltner et al., 1993). They can almost always have excuses, with pretext that teaching materials are missing, and instructions about the implementation of the new curriculum are not clear (Sarason et al., 1990). To overcome these pretexts, teachers have to be involved, and be given training after the curriculum development as a way of empowering and giving them more influence to own the curriculum and be committed for fully implementation (Shen, 1998). Once teachers are highly motivated to implement the new curriculum, they apply their expertise to overcome faced challenges and try to look for other ways of doing things (Hope, 1994). Participation empowers teachers, increases the commitment and ownership, and hence teachers become innovative and active (Barrow, 1984). It can be concluded that promoting participation of all stakeholders in the process of decision-making could be one of the strategies to use for enhancing the ownership and the implementation of curriculum (Andrade and Rhodes, 2012), and that one way to solve the mentioned teachers' challenges is to train them and conduct regular school visits.

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