Unit 9: Competence Based Curriculum in Rwanda
Unit Learning Outcomes

By the end of this unit, you should be able to :

- Explain the meaning of CBC, its history, principles and the rationale for CBC in Rwanda for its effective implementation in the teaching and learning process.
- Adress generic competences, integrate crosscutting issues and conduct competence- based assessments while teaching to ensure effective teaching and learning practices.
- Discuss opportunities, challenges and mitigation strategies of CBC implementation in for better understanding of the practical aspects of implementing CBC in Rwanda.

Introduction

Curriculum is the vehicle through which a country empowers its citizens with the necessary knowledge, skills, attitudes, and values that enable them to be empowered for personal and national development. Therefore, it should meet the needs of the individual citizens and the nation.

9.1 Meaning of Competence Based Curriculum (CBC)

Competence: the ability to perform a particular task successfully, resulting from having gained an appropriate combination of knowledge, skills, and attitudes. It is ability to use an appropriate combination of knowledge, skills, attitudes, values, and behaviour to accomplish a particular task successfully. That is, the ability to apply learning with confidence in a range of situations.
Competency-based curriculum: a curriculum that emphasizes what learners are expected to do rather than mainly what they are expected to know. CBC is designed to develop learners' competences rather than just their knowledge. A competence-based curriculum is characterized by approaches that are largely learner-centred, criterion-referenced, constructivist, and focused upon learning outcomes (rather than content definition) and with an emphasis on formative assessment. The CBC aims to move from memorization and recall to the higher level of thinking that contributes to deep and lasting learning. In CBC, 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 and become problem solvers in society.

9.2 Brief history of CBC

The CBC started in the United States of America in 1970s. It was later expanded in the United Kingdom and Germany in 1980s, and in Australia in 1990s. Further, the CBC was adopted by other countries including New Zealand, and a number of European countries. In Africa, countries like

Rwanda, Zambia, Tanzania, South Africa, Nigeria, Kenya, Namibia, Botswana, The Seychelles, and Ethiopia have also adopted the CBC. In most developing countries, the CBC was adopted from developed countries and adapted to the specific needs of the country. A common concern in most of these countries is a lack of vocational skills and generic competences for graduates of secondary schools, particularly technical and vocational education and little emphasis placed on basic skills required in general education (Nsengimana, 2021).

9.3 Competence Based Curriculum in Rwanda

In 2015, Rwanda introduced a Competence-Based Curriculum (CBC) from a knowledge-based curriculum (KBC). By changing the curriculum, Rwanda shifted from knowledge and skills acquisition learning to critical thinking, creation and innovation, research and problem solving, communication.

9.3.1 Why a Competence-Based Curriculum in Rwanda?

The trend in education systems all over the world has been moving from a knowledge-based curriculum towards competence-based programs of study. Rwanda was not an exception.

Rwanda strives to build a knowledge-based economy, with particular emphasis on science and technology as engine of socio-economic development. One of the national priorities in the education system in Rwanda is to ensure that the quality of education continues to improve through closer integration of curriculum development, quality assurance and assessment, improved supply of learning materials, particularly textbooks, and improved teaching and learning strategies.

The Government reviews programs and teaching methods to equip a critical mass of the population with knowledge, skills, and attitudes to be highly competitive in the global market. It put in place a curriculum that will drive Rwanda to the economic development it desires.

Therefore, the ambition to develop a knowledge-based society in line with globalization and particularly the growth of the world market and competition at the global level calls for a shift from an objective based to a competence-based curriculum.

Therefore, the underlying principle behind the shift from KBC to CBC was to ensure that the curriculum is responsive to the needs of the learner, society, and labor market and to streamline the coherence within the existing syllabi by benchmarking them with those from other countries with best practices.

The table below summarizes the difference between Knowledge-Based Curriculum (KBC) and Competence-Based Curriculum (CBC)

Knowledge-Based Curriculum	Competence-Based Curriculum
Focuses on subject content and what learners can know and memorize rather than what they can do.	Focuses on what learners can do and apply in different situations by developing skills, attitudes and values in addition to knowledge and understanding.
The learning process is teacher-centered with minimum involvement of the learners.	The learning process is learner focused where a learner is engaged in active and participatory learning activities.
The teacher provides the subject content concepts, through writing or dictating notes and practical demonstration where experiments are required.	The learner builds new knowledge from prior knowledge through discovery and problem solving based learning (constructivist theory).
The assessment is after a period of time through tests or exams of pen and paper.	The assessment is an integral part of the learning process and takes place all the time by informal or formal methods.
The assessment is norm-referenced for the purpose of ranking or selection mainly.	The assessment is mainly criterion-referenced for the purpose of evaluating and measuring what learners are able to demonstrate.
Records show only naked scores or grades without indicating what the learners have demonstrated.	Records with clear statements about competence achievement are necessary for feedback

9.3.2 Vision, aims, values and principles of CBC in Rwanda

A. The curriculum vision

Considering national policies, the East African Community Protocol, the national context, the views of stakeholders, the learner profiles and the range of objectives expressed in the rationale, the following curriculum vision has been agreed up.

The vision of Rwanda is to establish an inspiring 21st century curriculum, optimizing the potential of all learners and enabling every young Rwandan to make a valuable contribution to the sustained growth of the nation.

B. The curriculum aims

The vision determines the aims for the curriculum and for learners. These aims define what the nation envisions its young people to be by the time they leave education and the nature of curriculum that will bring this about.

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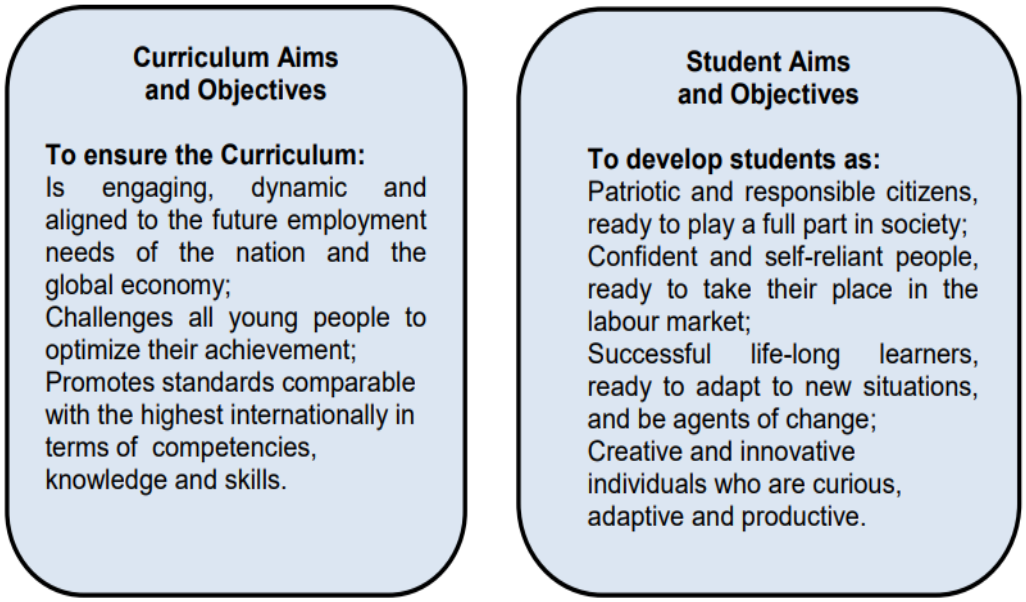
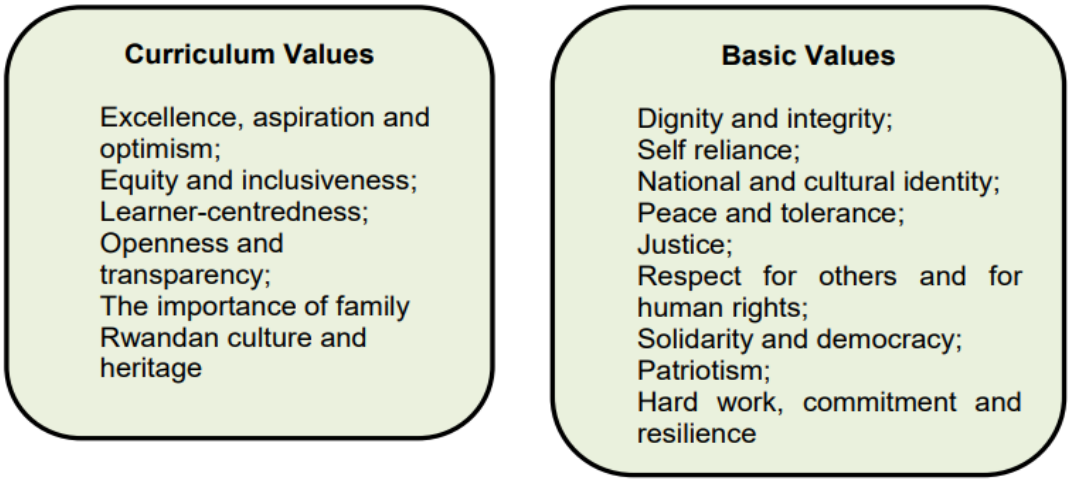


C. The curriculum values

The Rwandan curriculum is underpinned by the values that represent the basic beliefs of the nation. The Curriculum Values determine the nature of the subject syllabi.

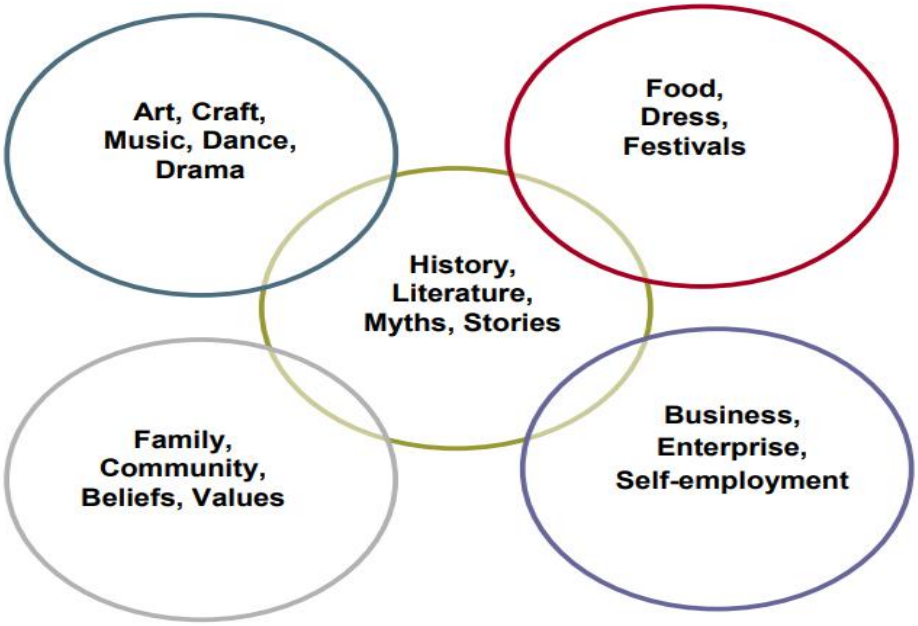


D. Rwandan culture and heritage

The subject syllabi must reflect Rwandan culture and heritage. This is important for two reasons:

- It is important that all young people learn to understand and value their own heritage and culture, so that their heritage will not be forgotten, and the culture will be nurtured.
- Learning is most effective when it relates to the immediate context of the learner and subject learning is enhanced by the Rwandan context.

Five interlinking elements of heritage and culture to be incorporated into the syllabi, have been identified as follows:



In the figure above, the central circle, Rwandan history, literature, myths, and stories, can be seen as providing the link to the other elements. It is important to include heritage and traditions, but also to reflect present-day culture.

E. Principles of Rwandan Competence-Based Curriculum

The curriculum principles guide the way the curriculum is constructed but have an impact on teaching and learning, on the way progress is assessed, on the way teachers are trained and, on the way, schools are led and managed. The identified guiding principles are the following:

- **Learner-centered:** The curriculum must address learners' individual needs, interests, abilities, and backgrounds, creating an environment where learning activities are organized in a way that encourages learners to construct the knowledge either individually or in groups in an active manner.

- **Competence-based:** This is an approach where teaching and learning is based on discrete skills rather than dwelling on only knowledge or cognitive domain of learning. Learners work on competences through units with specific learning outcomes broken down into knowledge, skills, and attitudes. The student is evaluated against a set of standards to achieve before moving on. The learning activities should be learner-centered rather than the traditional didactic approach.
- **Inclusive:** The curriculum must ensure that every individual is valued and there are high expectations of every learner. Learning must be organized so that all learners thrive, including girls, learners with disabilities, learners with special educational needs and regardless of their background.
- **Interconnected with crosscutting issues:** The curriculum must reflect the significance of connections between different subject areas and cross-cutting issues and integrating them across years and cycles where applicable.
- **Flexible:** The curriculum is to cater for learners' individual needs and talents and to ensure provision of a holistic education that include knowledge, skills, attitude and values and facilitates horizontal and vertical mobility within and across different education systems. This involves developing a curriculum that allows interactive teaching and learning involving all categories of learners to provide opportunities to nurture them.
- **Transparent and accountable:** Schools, learners and communities must communicate openly and honestly about the curriculum and learning in the school, to ensure successful teaching and learning. Parents and teachers and senior management staff in schools must be engaged together in supporting teaching and learning and holding each accountable for their contributions. School management must be open to stakeholders and policy makers to support efficient administration and effective teaching.
- **Integrated with ICT as a tool:** The curriculum must enable educators and students to use ICT as a tool, to improve the quality of education in all subjects at all levels in teaching and learning practices. ICT must support the emergence of teaching and pedagogical learner-centered approaches as well as encourage research, communication, and collaborative learning.

9.3.3 Competences and cross-cutting issues in Rwandan CBC

A competence-based curriculum takes learning to higher levels by providing challenging and engaging learning experiences which require deep thinking rather than just memorization. Its focus is on what young people can do rather than just on what they know.

A. Competences

There are two categories of competences in a competence-based curriculum: Basic competences and generic competences. These two components are built into the subject syllabi.

Basic competences

Basic competences are key competences which were identified basing on expectations and aspirations reflected in the national policy documents. Their descriptors give orientation about the learners' profile in each level of education, subjects to be taught and learning areas, broad subject competences and key competences on year basis. Basic competences are:

- Literacy.
- Numeracy.
- ICT.
- Citizenship and National Identity.
- Entrepreneurship and Business Development.
- Science and Technology.
- Communication in official languages.

These have all been identified as competences with relevance to Rwanda on account of its history and context. Literacy and numeracy are basic to accessing learning in other subjects. Competence in ICT can be developed using ICT across the subjects. The focus on citizenship and national identity is important because one of the nation's great strengths is its unity in terms of both its population and its sense of purpose.

Entrepreneurship and business development is regarded as basic as it is a key drive to ensure that Rwandans actively create employment opportunities rather than having a mindset of relying on others. The impact of science and technology increasingly affects all aspects of life and therefore should be considered a basic aspect of subjects across the curriculum.

Generic competences

Generic competences are the competences which are transferable and applicable to a range of subjects and situations including employment. Generic competences involve and promote the development of higher order thinking skills. In doing so they boost subject learning as well as being highly valuable in themselves. They are seen as generic competences because they apply across all curricula and can be developed in all the subjects studied. The generic student competences that are developed within all subjects are:

- Critical thinking
- Creativity and innovation
- Research and problem solving
- Communication
- Co-operation, interpersonal relations, and life skills
- Lifelong learning

These generic competences help students deepen their understanding of subjects and apply their subject learning in a range of situations. They therefore contribute to the development of subject competence. As students develop these generic competences, they also acquire the set of skills that employers look for in their employees, so the competences help prepare students for the world of work. Generic competences are also vital for enabling students to become lifelong learners who can adapt to our fast-changing world and the uncertain future.

National curriculum competence descriptors

Competences	**Competence Descriptors (what learners are able to demonstrate during the learning process)**
Literacy	Reading a variety of texts accurately and fast. Expressing ideas, messages, and events through writing legible texts in good handwriting with correctly spelt words. Communicating ideas effectively through speaking using correct phonetics of words. Listening carefully for understanding and seeking clarification when necessary
Numeracy	Computing accurately using the four mathematical operations. Manipulating numbers, mathematical symbols, quantities, shapes, and figures to accomplish a task involving calculations, measurements, and estimations. Use numerical patterns and relations to solve problems related to everyday activities like commercial context and financial management. Interpreting basic statistical data using tables, diagrams, charts, and graphs
ICT and digital	Locating, extracting, recording, and interpreting information from various sources. Assessing, retrieving, and exchanging information via internet or cell phones. Using cell phones and internet for leisure and for money transactions. Using computer keyboard and mouse to write and store information. Using information and communication technologies to enhance learning
Citizenship and National Identity	Relating the impact of historical events on past and present national and cultural identity. Understanding the historical and cultural roots of Rwandan society and how the local superstructure functions in relation to the global environment. Demonstrating respect for cultural identities and expressing the role of the national language in social and cultural context. Advocating for the historical, cultural, and geographical heritage of the nation within the global dimensions. Showing national consciousness, a strong sense of belonging and patriotic spirit. Advocating for a harmonious and cohesive society and working with people from diverse cultural backgrounds

Entrepreneurship and Business development	Applying entrepreneurial attitudes and approaches to challenges and opportunities in school and in life. Understanding obligations of parties involved in employment. Planning and managing micro projects and small and medium enterprises. Creation of employment and keeping proper books of accounts. Taking risks in business ventures and in other initiatives. Evaluating resources needed for a business
Science and technology	Applying science and technology skills to solve practical problems encountered in everyday life including efficient and effective performance of a given task. Develop a sense of curiosity, inquisitiveness, and research to explain theories, hypotheses, and natural phenomena. Reasoning deductively and inductively in a logical manner. Using and experimenting with a range of objects and tools of science and technology and drawing appropriate conclusions.
Lifelong learning	Taking initiative to update knowledge and skills with minimum external support. Coping with the evolution of knowledge and technology advances for personal fulfilment. Seeking out acquaintances who are more knowledgeable in areas that need personal improvement and development. Exploiting all opportunities available to improve knowledge and skills
Critical thinking	Think reflectively, broadly, and logically about challenges encountered in all situations. Weigh up evidence and make appropriate decisions based on experience and relevant learning. Think imaginatively and evaluate ideas in a meaningful way before arriving at a conclusion. Explore and evaluate alternative explanations to those presented by others
Creativity and Innovation	Responding creatively to the variety of challenges encountered in life. Use imagination beyond knowledge provided to generate new ideas to enrich learning. Take the initiative to explore challenges and ideas in order to construct new concepts. Generate original ideas and apply them in learning situations. Demonstrate resilience when faced with learning challenges
Research and problem solving	Be resourceful in finding answers to questions and solutions to problems. Produce new knowledge based on research of existing information and concepts and sound judgment in developing viable solutions. Explain phenomena based on findings from information gathered or provided
Communication	Communicating and conveying confidently and effectively information and ideas through speaking and writing and other forms of communication using correct language structure and relevant vocabulary effectively in a range of social and cultural contexts. Comprehending language through listening and reading. Using oral and written language to discuss, argue and debate a variety of themes in a logical and appealing

	manner. Communicate clearly and confidently using a range of linguistic, symbolic, representational, and physical expression. Developing and communicating formal messages and speech appropriate to the target recipient or audience
Cooperation, Interpersonal management, Life skills	Co-operating with others as a team in whatever task assigned. Adapting to different situations including the world of work. Demonstrating a sense of personal and social responsibility and making ethical decisions and judgments. Practicing respect for the rights, views, and feelings of others. Practicing positive ethical and moral attitudes with respect to socially acceptable behavior. Perform practical activities related to environmental conservation and protection. Advocating for personal, family and community health, hygiene, and nutrition. Developing motor skills to perform a variety of physical activities for fitness, health, leisure, and social interaction

Higher Order Thinking Skills (HOTS)

Higher Order Thinking Skills (HOTS) are central to a competence-based curriculum because they develop the understanding that enables learning to be applied effectively. Knowledge and Understanding learning objectives relate to memorization and explanation -the lower levels of learning (remembering, understanding, applying). Higher-order thinking skills are reflected by the top three levels in Bloom's Taxonomy: analysis, synthesis, and evaluation. High levels of knowledge and understanding are crucial for a successful knowledge-based economy. It is through the focus on competences and higher order thinking skills in a competence-based curriculum that learners' skills and abilities are developed and, consequently, their knowledge and understanding are deepened.

Developing competences

Competences cannot be taught directly like subject knowledge. They are acquired over time through the cumulative effect of a competent approach to learning. They require students to practice and employ generic competences throughout the subjects that they study. They require the syllabi to be constructed with competences at their heart. They require teachers to adopt approaches that encourage and enable students to think critically, to carry out research, to solve problems, to be creative and innovative, to communicate, to co-operate and to become life-long learners.

It requires setting learning activities that will develop knowledge, skills, and values as well as generic competences by adopting approaches that encourage and enable learners to engage in active learning. Active learning of this nature requires ground rules including but not limited to active participation, discussions, constructive criticism, and compliments during discussions.

The subject content provides a necessary context for students to develop the competences, and the basic and generic competences help deepen students' understanding of the subject and build students' ability to apply their subject learning.

Example: Primary Mathematics

Teacher asks learners to work in groups to discuss how to fill in the next two numbers 1, 3, 7, 15… The competences being developed are the imagination on relationships between numbers. This includes critical thinking, problem solving, cooperation, innovation, positive attitude towards a task, and communications as the learners explain how they solved the problem. The competence of mathematical operations of multiplication and addition together with the concept of sequence/pattern is being developed, and assessment is also integrated in the process. The activity also offers opportunities for assessment.

The role of the teacher and learner in developing competences

The role of teachers

Teachers are not required to teach the way they were taught. They must embrace the new approaches with the aim of developing competences in the learners. This requires them to shift from teacher-centered to learner-centered methods. The following are important points to consider while implementing the competence-based curriculum:

- From the syllabus units, the teacher identifies different competences to be developed by the learners which are fostered by engaging learners through inquiry methods, group discussions, research, investigative activities and group and individual work activities.
- The teacher focuses on observation of evidence on what learners can do and then identifies any difficulties encountered by them so that appropriate strategies can be developed for those with special needs (slow learners, fast learners, learners with disabilities, talented and gifted learners).
- The teacher should take into account different cross-cutting issues and integrate them in the learning activities where applicable.
- The teacher should encourage individual, peer and group evaluation of the work done in the classroom. She/he must also use appropriate competence-based assessment approaches and methods.

- The teacher is a facilitator and a guide in the learning process. He/ she must provide supervised opportunities for learners to develop different competences by giving tasks which enhance critical thinking, problem solving, research, creativity and innovation, communication, and cooperation.
- The teacher is an advisor and provides guidance and counselling for learners. He/she supports and comforts learners by valuing their contributions in the class activities.
- The teacher acts as educator ensures discipline, follows up learners' behaviour, and communicate with parents about the learners' performance at school.

The role of learners

The learners are central of the learning process. They are not empty vessels to fill, but people with ideas, capacity and skills to build on for effective learning. Therefore, the following are some of expectations for learners in a competence-based approach:

- Learners communicate and share relevant information with other learners through presentations, discussions, group work and other learner-centered activities (role play, case studies, project work, research and investigation).
- Learners are active participants and take some responsibilities for their own learning.
- Learners develop knowledge and skills in active ways. – Learners carry out research and investigation, consulting print and online documents and resourceful people and present their findings.
- During the assigned tasks, learners ensure the effective contribution of each group member, through clear explanation and arguments, critical thinking, responsibility and confidence in public speaking.

Achieving a Competence-Based Curriculum

The key aim of a competence-based curriculum is that students should attain a competence level in all that they learn. This means moving beyond the recall of information to a level where understanding is sufficient for students to apply their learning in practical situations. This, in turn, requires learning that is practical and relevant and allows students the scope to generate their own ideas and solutions to problems. The subject syllabi must include the basic competences as well as the generic competences. Like the generic competences, the basic competences are developed through the cumulative effect of a learning approach that focuses on building competences over time.

All the two categories of competences need to be built into the subject syllabi where possible. There must be opportunities in subjects for students to develop and apply basic skills and cross-cutting issues where possible. Subject syllabi must focus on what learners need to be able to do as well as on subject knowledge. Basic competences are developed through application of subject learning. Generic competences help the development of the higher order thinking skills so both deepen subject learning and be valuable in themselves.

B. Cross cutting issues

The competencies were introduced together with cross-cutting issues. Cross-cutting issues are topics that are identified as important and that affect and cut across most or all aspects of development. These topics should therefore be integrated throughout all or some subjects of learning. They refer to important curriculum content that does not belong to any one subject or learning area exclusively, but which is best taught and learned in a number of subjects. There are eight (8) cross-cutting issues (REB, 2015):

1. Peace and values education.
2. Genocide studies
3. Gender education
4. Inclusive education
5. Comprehensive sexuality education
6. Financial education
7. Environment and sustainability
8. Standardization culture

1. Peace and Values Education

Peace and Values Education (PVE) is all about how education can contribute to a better awareness of the root causes of conflicts, violence, at the personal, interpersonal, community, national, regional, and international/global levels. It is also about how education can simultaneously cultivate values and attitudes which will encourage individual and social action for building more peaceful families, communities, societies and ultimately a more peaceful world. PVE is further defined as education that promotes social cohesion, positive values including pluralism and personal responsibility, empathy, critical thinking, and action in order to build a more peaceful society (a society that does not use violence to resolve conflicts). PVE is also understood as being the process of acquiring values and knowledge, and developing attitudes, skills, and behavior to live in harmony with oneself, with others and with the natural environment.

Instead of being a stand-alone subject in this curriculum, PVE is integrated as a crosscutting issue in the following three ways:

- Firstly, PVE content elements and teaching-and-learning methodological approaches (including tools and resources) are mainstreamed in different subjects.

• Secondly, PVE is integrated in all other subjects through infusion of its specific teaching-and-learning methodological approaches (including tools and resources).
• Thirdly, PVE is integrated in all subjects by making Peace and Values an everyday life practice and by requiring all teachers to (1) behave as peaceful facilitators of learning or to be "Guides on the Side" instead of being "Sages on the Stage"; and (2) behave as peace builder models for the students, i.e. PVE role modeling or PVE teaching by examples.

2. Genocide studies

Rwandan children should know about the genocide perpetrated against the Tutsi as well as other genocides, including the Holocaust of World War II. They should know what caused the genocide in Rwanda, its planning and execution, how it was stopped and what the consequences have been. Rwandan children should take part in fighting genocide ideology and genocide denial. By learning about the Holocaust and other genocides, they will analyze the similarities and differences in the methods used to carry out genocide. Rwandan students will remember the genocide, which is a means to protect the memory of those who were lost. Rwandan students need to remember those who are absent, and humanity needs to remember what it is capable of.

3. Gender education

Gender refers to the socio-cultural definition of man and woman; the way societies distinguish men and women and assign them social roles. It entails the behaviors and attitudes which are culturally accepted as appropriate ways of being a woman (femininity) and ways of being a man (masculinity). The sex of a person is biologically determined, whereas ways of being a man or a woman are learned: they are constructed, reinforced, maintained, and reconstructed over time through social and cultural practices. Such constructions of gender vary across cultures, social class, and time.

The introduction of a gender perspective to the curriculum aims to improve the outcome of quality teaching by enabling girls and boys to exploit their full potential and talents without any discrimination or prejudice. Curriculum development to address gender inequality cannot happen in isolation from other aspects of schooling, such as ways of teaching and learning, and interactions within and out of the classroom.

4. Inclusive education

Inclusive education aims to improve access and offer chance to all irrespective of needs and ability. It is regarded as a balanced, equitable and globally oriented program that is adaptable according to circumstances. Inclusion is based on the right of all learners to a quality and equitable education that meets their basic learning needs and understands the diversity of backgrounds and abilities as a learning opportunity.

Thus, inclusive education is perceived as the core of EFA (Education for All) and must be an integral part of the education reform, from vision to practices. All students' learning needs are to be considered and accommodated. To be successful, it entails a range of issues including teacher's positive attitude, adapting learning resources, differentiation of teaching/learning methods and working together. Overall, the benefits of an inclusive curriculum extend to all learners.

Inclusive Education is central to the achievement of high-quality education for all learners and the development of more inclusive societies. It is not only about issues of input, such as access, and those related to processes such as teacher training, but it involves a shift in underlying values and beliefs, along with very specific approaches, positions, and solutions. A broad range of strategies at all levels are needed to realize the right of children with disabilities to an inclusive education.

5. Comprehensive sexuality education

Comprehensive Sexuality Education is broader than sex education; it includes topics such as sexual and reproductive health, human growth and development, communication, relationships, gender, prevention of STIs, HIV and AIDS, unwanted pregnancies, and gender-based violence among others. It supports a rights-based approach in which values such as respect, acceptance, tolerance, equality, empathy, and reciprocity are inextricably linked to universally agreed human rights.

The primary goal of a school based comprehensive sexuality education curriculum is to equip children, adolescents and young people with the knowledge, skills, and values in an age appropriate, culturally and gender sensitive manner so as to enable them to make responsible choices about their sexual and social relationships, explain and clarify feelings, values, and attitudes, and promote and sustain risk-reducing behavior.

6. Financial education

Financial Education is about teaching people the principles of managing their money throughout their lives. It shows people the skills and giving them the knowledge to effectively deal with their money. Effective financial education shows people how to maximize savings while minimizing risks and expenses. It gives people the principles of how to make money work for you and frees you from being a lifelong slave to money.

The integration of Financial Education into the curriculum is aimed at a comprehensive Financial Education program as a precondition for achieving the financial inclusion targets and improved financial capability of Rwandans, so that they can make appropriate financial decisions that best fit the circumstances of their life.

Financial Education will build a strong foundation among the children for responsible money management by developing good planning and saving habits and preparing them for the life cycle events such as entering the work force and managing their own finances after school.

7. Environment and sustainability

The integration of environment, climate change and sustainability in the curriculum places considerable emphasis on knowledge, skills, attitudes, and values to be developed by learners aimed at sustainable ways of living. It focuses on and advocates for the need to balance economic growth, the well-being of society and ecological systems.

The integration of environment, climate change and sustainability require contributions from all subjects by incorporating related content in subjects like sciences and humanities, in subjects like mathematics and literature.

8. Standardization culture

Standards are everywhere in our daily life and the benefits that stem from the use of standards do not solely come from their implementation only; but they are rather the product of a "Standard Culture" when it is firmly rooted in the practices, activities, and lifestyle of the citizens.

While education is the foundation and strength of our nation, standards are one of the key pillars of sustainable economic development. Therefore, the use of standards must be echoed in our education system and most of our daily life principles. It is in this context that the standardization culture in Rwanda through formal education, will play a vital role in terms of improving the health of the people, economic growth, industrialization, trade, and the general welfare of the people.

All cross-cutting issues are important for students to learn about and must be integrated across learning areas appropriately since they are not confined to one subject.

Subjects and crosscutting issues

The table below shows which subjects cross-cutting issues have been integrated.

Cross-cutting Issue	Subjects incorporating aspects of the cross-cutting issue
Genocide Studies	Social Studies, History and Citizenship, General Studies, RE, ICT, Music
Environment and sustainability	SET, Social Studies, Geography, Biology, General Studies, Agriculture, Home Science, English, French, Kinyarwanda, Kiswahili, Entrepreneurship, Art and Craft, Economics, ICT, Music, PE, Physics, Chemistry
Gender	Social Studies, History and Citizenship, General Studies, English, French, Kinyarwanda, Kiswahili, Entrepreneurship, Economics, Literature in English, ICT, Music, PE, Physics
Comprehensive Sexuality Education (HIV/AIDS, STIs, Family planning; Reproductive Health…….)	SET, Social Studies, History and Citizenship, Biology, General Studies, English, French, Kinyarwanda, Kiswahili, RE, ICT, Music, PE
Peace and Values Education	All subjects
Financial Education	Mathematics, Economics, Entrepreneurship, General Studies, Social studies, ICT, Pre- primary
Standardisation Culture	All subjects
Inclusive Education	All subjects

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How to integrate cross-cutting issues?

Cross-cutting issues are not standalone subjects; they cut across the entire curriculum. They are integrated in the curriculum in two ways: – Some cross-cutting related topics are integrated in specific subjects as standalone units.

Example 1: Units related to CSE are found in Social Studies and Science and Elementary Technology in primary and in Biology and health science at an ordinary level.

Example 2: Units related to Environment and sustainability are found in social studies in primary and in Geography, Chemistry, etc.

– The second way of integrating crosscutting calls all teachers of different subjects to keep in mind the 8 cross-cutting issues when making lesson plan: in this way they can integrate possible cross-cutting issues depending on the learning activity's context.

Example: In Mathematics class, after resolving a word problem about statistics on prevalence of HIV/AIDS in Africa, the teacher engages a discussion on transmission and prevention of HIV/AIDS. In this way, the teacher integrated the CSE in Mathematics.

9.3.4 Competence based assessment

Assessment is an integral part of the national curriculum and an essential element of the teaching learning process. Competence based assessment is an assessment process in which the learner is confronted with a complex situation related to their everyday life and asked to put into practice what has been learned (knowledge, skills, and attitude) to resolve or overcome this situation. In competence-based assessment the evidence collected is then used as the basis on which judgments are made concerning the learner's progress towards the satisfaction of fixed performance criteria.

1. **Principles of competence-based assessment**

The Curriculum and Assessment Policy (2014) outlines the principles for both informal and formal assessment, in classrooms and national examinations, and for different purposes.

The following principles are the essential characteristics of assessment which complement and support the curriculum, and which enable learners to understand their progress and make good choices for their future. Assessment forms the basis for an equitable system on which to make decisions at individual, school, and national levels.

- **Coherence**: It is essential that assessment measures are coherent across ages and schools so that learners can be confident that the standards being applied to their work are compatible with standards across the country. To achieve this level of confidence in the design on the assessment, the marking or grading must be trustworthy, delivering reliable and valid tests and examinations.
- **Recognition of achievement:** Assessments must examine or measure what learners know and can do, and how far they succeed, avoiding focusing on what they are unable to do. Assessments must allow learners to show their knowledge and skill in appropriate ways which may vary with learner, topic, and competence.
- **Accessible, equitable and fair:** Assessments must offer equal opportunities to learners to succeed and be adaptable to learners' circumstances. Assessments must be accessible to all learners in terms of the forms of questioning and testing. Accessibility involves particular attention to the language demands for learners, especially those for whom English is an additional language.

- **Support progression:** Assessments should yield information about aspects of learners' performance which can then be used to diagnose strengths and weaknesses, and next steps for learners. Formative assessments which are relevant to current learning should provide evidence which teachers can use to give feedback to learners. Competencies, which include knowledge, skills, and attitudes, should be assessed in the context of practical application in order for progress to be identified and supported.
- **Fit for purpose:** The methods and forms of assessment should vary, according to such factors as the domains being assessed, the age of the learners, the language in which the assessment is made. The use of the results of assessments affects the forms used, in both formal and informal contexts.
- **Valid:** Any assessment must assess what it sets out to measure and be clear about what is being assessed, including such aspects as memory, processes, application. To be valid, the forms of assessment vary with what is being assessed.
- **Reliable** Formal assessments and examinations must be consistent in the results they produce over time and for all learners. In examinations, as far as possible, sources of inconsistency, such as item production, marking and linguistic barriers must be eliminated.
- **Transparent and accountable**: Learners, teachers, and parents must understand the purposes, forms, and uses of assessments that schools make. Schools should make the results of assessments available to learners and parents. Stakeholders and policy makers should consider the results of assessments nationally when making decisions.

2. Purposes of assessment

Assessment is an integral part of the teaching and learning process.

- One purpose of assessment is to determine the extent to which learning objectives and competences have been achieved and to identify which schools and learners need pedagogical advice and strategic intervention.
- Another purpose of assessment is to monitor progress and provide feedback, selection, guidance on future courses, certification, and promotion.

Understanding the purposes of assessment ensures that an appropriate match exists between the purposes and the methods of assessment. This, in turn, will help to ensure that decisions and conclusions based on the assessment are fair and appropriate for the particular purpose or purposes.

Many stakeholders including learners themselves, parents, District authorities, Rwanda Education Board, higher education and training institutions, the Ministry of Education and employers have an interest in how learners perform. Evidence of individual learner's progress is collected at different times and places, and with the use of various methods, instruments, modes, and media.
In order to facilitate access to learners' overall performance and to make inferences on learners' competences, assessment results have to be reported.

3. Levels of CBC assessment in Rwanda

Assessment is conducted at the following levels: School based assessment, national assessment (LARS), district examinations and national examinations. LARS stands for Learning Achievement in Rwandan Schools. It consists of assessing the learners' skills at a given grade or age (P2 and P5 in selected schools) at least after every two years. This helps to evaluate and improve the quality of education and the policy of the education system-in line with EFA goals, MDGs, Vision 2020, EDPRS I and II, and the Mission Statement of MINEDUC. LARS is meant to depict the weaknesses of the education system, if any, and make recommendations to policy makers to take necessary actions).

4. Types of assessment

4.1 Formative assessment (Continuous assessment)

Formative assessment is a crucial element of teaching and learning. The goal of formative assessment is to monitor student learning, to provide ongoing feedback that teachers can use to improve their teaching and by students to improve their learning. More specifically, formative assessments help:

- Learners identify their strengths and weaknesses and target areas that need work.
- Teachers in recognizing where students are struggling and address problems immediately.

Constructive feedback is a vital component of assessment for formative purposes. Formative assessment involves using both formal and informal methods to check whether learning is taking place. They are given throughout the school year at classroom and school level in order to have a complete picture of the learners' progress and achievements in subject concepts and in competencies. They help teachers to develop appropriate instructional strategies to improve the teaching-learning process. Formative assessments use one or a combination of the following: observation, pen and paper and oral questioning to measure:

a) Knowledge and understanding: Evidence of acquisition of knowledge and understanding is through testing mastery of subject concepts and subject competencies and how they are applied in a specific skill area.
b) Practical skills: Evidence of the ability to perform and accomplish a given task is measured through aptitude and or practical tests and evaluation of the outcome of learning.
c) Attitude and values: Assessing the behavioral approach towards a given task or a situation.
d) Generic competencies: Assessing the steps the learner goes through to perform a given task and the reasoning behind it. Through formative assessment, the logic behind each step and skills utilized to overcome each challenge can be measured.

4.2 Summative assessment (assessment of learning)

Summative assessments are used to evaluate student learning, skill acquisition, and academic achievement at the conclusion of a defined instructional period—typically at the end of a project, unit, course, semester, program, or school year.

The tests, assignments, or projects are used to determine whether students have learned what they were expected to learn. In other words, what makes an assessment "summative" is not the design of the test, assignment, or self-evaluation, but the way it is used—i.e., to determine whether and to what degree students have learned the material they have been taught.

Summative assessments are given at the conclusion of a specific instructional period, and therefore they are generally evaluative, rather than diagnostic i.e., they are more appropriately used to determine learning progress and achievement, evaluate the effectiveness of educational programs, measure progress toward improvement goals, or make course-placement decisions, among other possible applications. Summative assessment gives a picture of a learner's competence or progress towards the achievement of a goal or the completion of a term's work or at the end of the year.

Summative-assessment results are often recorded as scores or grades that are then factored into a student's permanent academic record, whether they end up as letter grades on a report card or test scores used in the college-admissions process.

While summative assessments are typically a major component of the grading process in most districts, schools, and courses, not all assessments considered to be summative are graded.
Information from summative assessments can be used formatively when students or faculty use it to guide their efforts and activities in subsequent courses. When assessment is used to record a judgment of competence or performance of the learner, it serves a summative purpose.

Summative assessment should be planned, and a variety of assessment instruments and strategies should be used to enable learners to demonstrate competence. This assessment should have an integrative aspect whereby a student must be able to show mastery of all competencies.

Norm referenced summative assessment is used to rank or grade learners by comparing their performance, while **criterion referenced summative assessment** judges a student against an established criteria or standard. School summative assessment average scores for each subject are weighted and included in the final national examinations grade. School based assessment average grades contribute a certain percentage of the final grade.

9.3.5 CBC implementation in Rwanda

The study done by Nsengimana (2021) revealed opportunities, challenges, and mitigations in relation to the implementation of the CBC in Rwanda.

A. Opportunities of CBC in Rwanda

The CBC is appreciated for the following:

- Engaging a dynamic learning that is in line with the future employment needs of Rwanda and the global economy (REB, 2015).
- Helping graduates to overcome challenges faced at the labor market, and for promoting standards in competencies needed at the international level.
- Focusing on the development of students' skills, attitudes, and values.
- Improving the quality of learning and shifts from memorization of the subject content to the practical activities.
- Summarizing professional skills and defining the objectives in teaching and learning.
- Developing the personal ability of students and links social values with the subject-content, and the world of work.
- Helping 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.
- It was conceived as an approach for addressing the aspirations of Rwanda and its population to satisfy their needs through improved education system.

B. Challenges faced during the implementation of the CBC

- Few teachers (8.6%) were consulted during the development of the new curriculum, and most of them (87.5%) got the information about the curriculum review from school authorities. Their input could have helped curriculum developers to improve the new curriculum. Their contribution could have for example helped 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 training about the implementation of the new curriculum and found the implementation of the CBC to be more time-consuming. Hence, most teachers (78.2%) could not cover the content at the end of the year. This is because the time allocated to one lesson was reduced from 50 to 40 minutes. Teachers sometimes have to use teacher-centred teaching methods to cover the content.
- The implementation of the CBC started with an 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, cannot get time for preparation, and effectively support every student during teaching and learning processes.

- Some content of the CBC requires materials that cannot be improvised, especially in science subjects, and hence taught theoretically. In this regard, many 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 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:

✓ Learners do not fully acquire skills in the ways suggested and wanted by the CBC. Therefore, 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.

✓ Most of students do not get good marks during assessments, particularly when the questions are related to innovation and creativity, particularly in science subjects.

✓ 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.

C. Mitigations to overcome the identified challenges

- The improvisation of missing materials and use of simulations for some practical experiments in mathematics and science subjects
- Give examples and applications of concepts in relation to everyday life situations familiar to students.
- Reduction of teaching load to avail enough time to make good lesson plans and look for effective teaching and learning materials.
- A continuous collaboration between the Government with education stakeholders to increase the number of teaching and learning materials, particularly equipped laboratories at school level.
- The teaching and learning materials provided by the Ministry of Education should not only be limited to mathematics and science subjects but other subjects, including arts and social sciences, should also be considered.
- Continuous professional training for in-service teachers, based on the subjects they are teaching.

- The on-going English language training as a medium language of teaching and learning, particularly for teachers who were trained in French.

References

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