COMPETENCY-BASED ASSESSMENT GUIDELINES

2022

Bhutan Council for School Examinations and Assessment

COMPETENCY-BASED ASSESSMENT GUIDELINES

2022

ASSESSMENT AND MONITORING DIVISION

BHUTAN COUNCIL FOR SCHOOL EXAMINATIONS AND ASSESSMENT

BABESA, THIMPHU, BHUTAN

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FORWARD

The Competency Based Assessment Guidelines is the first of its kind developed by BCSEA in consultation with relevant agencies. Its purpose is to bring about a standardized and uniform process of assessment across schools, while guiding all stakeholders to design, implement, monitor and evaluate students' learning, so that they are suitably equipped with the skills needed to meet the challenges of 21st century.
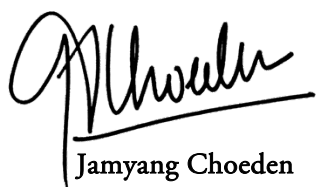
These guidelines expound and define competency in the context of Bhutanese education system – central to which is the need to establish a common understanding across the broad spectrum of stakeholders - teachers, educators, curriculum developers, assessment tool designers etc.

The guidelines underscore the salient features of competencies (knowledge, skills, values and attitudes) and the qualitative criterion for measuring these competencies, which has evolved over the years.

It is also an attempt to institutionalise standard assessment practices and strengthen CBAT VI, Class VIII Common Examinations, BCSE, BHSEC, LCSE X and XII, including the National Education Assessment within the overall system.

I would like to extend my appreciation to the professionals at the Assessment and Monitoring Division, BCSEA and other experts and specialists who were involved in the preparation of these guidelines, for their tireless efforts. It is my hope that these guidelines would serve as a useful resource document for schoolteachers, assessment experts and curriculum developers, in improving assessment systems and methods, which would eventually go to prepare our youth to face life beyond the school classrooms.

Tashi Delek!

Jamyang Choeden
Director
Bhutan Council for School Examinations and Assessment

1. Background

The main purpose of the education system across the globe has always been to nurture and empower the young minds to enhance their quality of life. Among the many changes that have been made in various aspects of the education system, one major shift has been in the approach of teaching and learning that gave birth to Competency-Based Education (CBE). The concept of CBE first emerged in the 1970s, this brought radical change in defining educational and curricular goals, reorienting pedagogy and assessment practices towards promoting competency-based learning. CBE mainly consists of two facets, program outcome competencies and assessment competencies. The outcome competencies are explicitly outlined in curriculum frameworks of respective subjects, thereby it is imperative that the assessment of competencies be defined to indicate the confirmation of the achievement of intended competencies.

In keeping pace with the global educational trend, Ministry of Education (MoE), introduced Competency-Based Assessment (CBA) in Bhutan in 2011. In the same year, BCSEA started the development of reference books for teachers on competency-based test items in various subjects for different grade levels. Gradually, competency-based test items were incorporated in the year-end assessments for grades III and VI (2013) and extended to the high-stake examinations (BCSE and BHSEC) in 2014. BCSEA also provided capacity building workshops on the development of competency-based test items to teachers in various schools.

The development of Competency-Based Assessment Guidelines is a step towards the standardization of assessment of intended competencies and to guide stakeholders to design, implement, monitor and evaluate students' learning.

2. Rationale

Since the inception of the modern education system in Bhutan, a considerable progress has been made to improve the standard of education. The standardization of assessment system is crucial to inform about the quality of education and teaching-learning practices in schools in Bhutan.

Bhutan Education Blueprint 2020-2024, recommends elevating national examinations by strengthening competency-based assessment. The Operational Framework of BCSEA also specifies the need to develop and administer competency-based assessment items and to provide professional support to schools. Similarly, the findings from Bhutan's participation in PISA-D also underscore the need to strengthen competency-based activities and items in both formative and summative assessments. The draft National Education Policy, 2020 emphasizes on the careful consideration of 21st century elements in pedagogical approaches and curricular models for active student participation, development of competencies, and the use of ICT in teaching and learning processes. It also highlights the importance of holistic school level assessment and national examinations.

In an effort to realize policy requirements, the National Student-learning Assessment Framework (2021) has identified competencies, such as Values and spirituality, Enterprising and industrious, Transversal competencies, Health and wellbeing, Language and communication, Digital competency and Sustainable living in the assessment framework for respective subjects that declare the competency standards for each key stages of learning.

Consequently, the development of this document and the incorporation of competency-based items in the national examinations and assessments are featured as significant indicators in the 12th Five Year Plan (FYP). Therefore, it is intended to achieve the educational development goals of the nation, more so to standardize and strengthen the assessment system.

3. Objectives

The objectives of this guidelines are to:

- set the standards of assessment competencies to assure uniformity and consistency in the assessment of competencies across all grade levels;

- develop common understanding of the competency-based assessment among stakeholders;

- identify and establish generic competencies that students need to acquire from across the curricula at all grade levels;

- guide schools and BCSEA in the development and incorporation of competency-based test items to assess and report on students' competencies;

- develop capacity of teachers on competency-based assessment; and

- strengthen competency-based assessment in the education system in order to ensure that students are equipped with the required knowledge, values and attitudes and real-world skills.

4. Scope

This guideline clarifies the concept of competency and defines competency in the context of Bhutanese education system to have common understanding among teachers, educators, curriculum developers, assessment designers and other relevant stakeholders. It is also an attempt to institutionalise the standard assessment practices and to strengthen CBAT VI, Class VIII Common Examination, BCSE, BHSEC, LCSE X and XII, and National Education Assessment.

The guideline defines the generic competencies (knowledge, skills, values and attitudes) to be assessed in the process of achieving the learning objectives specified across the disciplines of learning. The criteria for design and development of quality assessment programmes and approaches, and the digitalization of assessment would further fortify the assessment of students' competencies. This guideline also paves a way for the development of CBA items and tasks for school based assessment, high stakes examinations and large scale assessment.

5. Competency

Majority of education systems place competencies at the heart of curricula. Since the understanding of competency is not entirely established, it is understood in several different ways and reflected through a certain number of variants in the curricula. Nevertheless, it agrees to the following common denominators[1].

- Education content should be beyond knowledge and know-how.

- Learner is central to learning processes.

- Emphasis is more on knowing how to act in situations.

Competencies are often found to be defined variedly in different education systems, contexts, and regions. Nevertheless, these definitions seem to agree with the fundamental principle concepts and ideology that the key indicator of success is apprised equally by cognitive, interpersonal and intrapersonal attributes and abilities of an individual to use knowledge, skill, values and attitudes appropriately in purposeful contexts.

Knowledge comprises of a set of facts, concepts, ideas, theories, events and procedures about certain aspects of the world acquired or learned through experience or instructions. A skill is an ability to choose and perform the right technique at the right time and situation. It is usually developed through training and practice. An attribute is an inherent characteristic or quality and is often expressed through what individual value, think, feel and respond to motivation appropriately.

A competency is seen as the ability to apply learning outcomes adequately in a defined context (education, work, personal or professional development). It is not limited to cognitive elements (involving the use of theory, concepts, or tacit knowledge); it also encompasses functional aspects (involving technical skills) as well as interpersonal attributes (e.g., social or organizational skills) and ethical values. A competency is therefore a broader concept that may actually comprise skills as well as attitudes, knowledge, etc. (Cedefop, 2014).

A competency is more than just knowledge or skills. It involves the ability to meet complex demands, by drawing on and mobilising psychosocial resources (including skills and attitudes) in a particular context. For example, the ability to communicate effectively is a competence that may draw on an individual's knowledge of language, practical IT skills and attitude towards those with whom he or she is communicating (OECD, 2003, p. 4).

According to Alberta Education (2016), competencies are combinations of knowledge, skills and attitudes that students develop and apply for successful learning, living and working.

Competencies are also expressed in terms of one's behaviour in utilizing ability, skill, knowledge or trait that is needed for the successful performance of a task within that role.

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[1] A Conceptual Framework for Competency Assessment, (Roegiers, 2016)

BCSEA defines competency as the ability to perform desired actions using relevant knowledge, skills, values and attitudes appropriately in a defined context. It normally involves application of knowledge and skills in combination with appropriate values and attitudes, attributed by mental, physical and emotional characteristics, in carrying out proper actions in a given context.

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Understanding Competency

Dorji is a dental surgeon. He has a knowledge of dental anatomy, the various dental surgery procedures and treatment. His manual dexterity, good hand-eye co-ordination, excellent vision and visuospatial awareness have contributed to his fine motor skills. Dorji's ability to carry out surgery might be attributed to his emotional resilience, empathy, a calm temperament and the ability to work well under pressure. A combination of his knowledge, skill and his attitude to carry out a surgery determines how competent he is as a dental surgeon in a given surgical task.

Similarly, Sonam, a student in class X has knowledge on linguistics, diction, vocabulary, use of right accent and to communicate in written, oral, non-verbal and visual means. She is polite, respectful and has good manner. Sonam's language competency is determined by her ability to use linguistic knowledge in combination with communication skills, respect and attitude to communicate meaningfully based on social and cultural context.

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Competence is the quality or state of being functionally adequate or having sufficient knowledge, abilities, skills and attitudes.

6. Competency-Based Assessment

Competency-Based Assessment is an assessment of student's competence usually inferred from their performance in the assigned tasks which is generally measured against the prescribed standard and competency indicators. It measures the demonstration of one's knowledge, skills, values and attitude through proper actions and evaluated against the set of prescribed competencies or learning outcomes defined for respective curriculum or programme.

The following are the merits of competency-based assessment:

- focuses on the application and demonstration of knowledge, skills, values and attitude,

- facilitates the assessment of students' actual learning competencies,

- enables the assessment of students' learning processes not just their ability to memorize, store and recall facts,

- lays greater emphasis on measuring higher order thinking skills and deeper learning,

- enables the assessment of transfer of knowledge and skills in local, national and global contexts,
- creates avenues for the assessment of 21st century skills, and
- enables gathering evidences on students' learning and drawing inferences.

7. Assessment of Competencies

7.1. Generic competencies

Generic competencies[2] are the common and cross-cutting competencies which are not linked to academic or technical contents. They are the qualities or capacities linked more to the personality of the person and to the types of context but not bound with particular situations or specific tasks making it "generic" in nature.

The generic competencies[3] of Bhutan are inspired by the Nine Student Attributes[4] and five extraordinary qualities of Bhutanese[5]: Sincere, Mindful, Astute, Resilient and Timeless.

7.1.1. Intellectual competencies

Comprises of two components namely, academic mastery and intellectual resourcefulness. Academic mastery in general includes the in-depth subject knowledge and literacy, while intellectual resourcefulness fundamentally involves solving problems in a given context. The assessment of intellectual competence is the assessment of the mastery of learner on the subject knowledge and the methods of active cognitive processes in understanding, applying, analyzing, generalizing, evaluating, synthesizing information and creating new knowledge. The assessment determines the ability of student to eventually solve authentic problems of different levels of complexity effectively, using personal qualities and experience in a specific subject area. Assessment of intellectual competency requires a student to demonstrate the following abilities.

- Acquire conceptual and practical knowledge
- Apply knowledge, reasoning and innovative thinking
- Approach challenges with creativity, flexibility and determination
- Solve meaningful, real-life and complex problems
- Construct new knowledge

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[2] Generic competencies are often synonymously used as key or core competencies, transversal skills, soft skills, employability skills, key or core skills, essential competencies, necessary skills or workplace know-how depending on the region and countries.

[3] These six generic competencies cannot be assessed in isolation and inferences of learner's ability is collective of competencies.

[4] Bhutan Education Blueprint 2014-2024 outlines attributes as Knowledge and understanding, Intellectual competence, Communicative competence, Enduring habits of lifelong learning, Family, community and national values, Spirituality and character, Physical wellbeing, Leadership competence and World readiness

[5] His Majesty's Address at the 12th Convocation of the Royal University of Bhutan

- Provide creative and innovative solutions to problems

- Work cooperatively and value honesty, fairness and open-mindedness

- Address issues and design and manage projects

- Connect and transfer learning from one situation to another

- Recognize opportunities and imagine possibilities to apply ideas in new ways

- Demonstrate initiative, entrepreneurship, resourcefulness, perseverance and courage to pursue new ideas

7.1.2. Social, cultural and global citizenship competencies

Recognizing the increasingly globalized society, it is imperative to emphasize more on social, cultural and global citizenship competencies in education and workplace. The assessment of these competencies involves the measurement of students' ability to effectively interact, work, and develop meaningful relationships with people in various social, cultural and cross-cultural settings. The performance is compared against the following competency standards.

- Acquire and apply sound knowledge on language, values, traditions, citizenship and civic rights

- Foresee possible consequences of the actions and accept consequences

- Recognize the influence of beliefs on emotions and of emotions on behaviors in expression, communication, and sharing

- Handle conflict and recognize common interest

- Identify, understand and evaluate local and global problems, or challenges and act willingly for a common good

- Demonstrate care, kindness, love, gratitude, respect, trust, equality, fairness, harmony, loyalty, patriotism, national identity and respect for environment

- Bear sense of belongingness, respect for diversity and the potential for a collective identity that transcends individual economic, cultural, religious, ethnic or other differences

7.1.3. Information and technological competencies

In the modern society everyone needs an increasingly sophisticated set of competencies for information finding, handling and use. The assessment of these competencies involves the application of a set of knowledge, skills and attitudes to determine when and what information is needed, how to extract information, interpret and understand it, organize it, and evaluate its credibility and authenticity. The ability of a student to assess the relevance of information, communicate it to others, then utilize it to accomplish desired purposes using appropriate technologies efficiently is also the scope of the assessment. Assessment of information and technological competencies requires individual to demonstrate the following abilities.

- Recognizes and assess the need for information and determines the nature and extent of the information needed

- Critically evaluates information and the information seeking processes

- Manages information collected using ICT or generated new information, concepts or understandings

- Employs technology to access and use information ethically, legally and respectfully

- Uses technology to retrieve, assess, store, produce, present and exchange information in learning and to communicate and participate in collaborative networks

- Usees information and ICT to responsibly support critical thinking, creativity, and innovation and to engage communities and networks for economic, cultural, social and learning purposes

7.1.4. Well-being and Lifelong learning competencies

Development and learning are best achieved in a state of well-being. Assessment of well-being and lifelong learning involves measurement of ability of student to manage emotional, intellectual, physical, social and spiritual aspects of living. Assessment also determines capability to organize or structure ones learning, effective management of time, learning information management, and problem solving. The assessment of these competencies are inferred to the attributes of being reflective, resourceful and optimistic to develop interest, skills and talents and strive for personal excellence. Assessment and evaluation are carried out against the following standards.

- Demonstrate optimism, flexibility or resilience when adapting to new situations and transitions

- Make choices or take actions to promote the safety and well-being of self or others

- Explore, select or adapt strategies and resources that support personal growth in life, school or career pathways

- Identify interests, values or skills to set learning, life or career goals

- Understand and manage own emotions, strengths, inclinations and weaknesses

- Be self-motivated, exercise discipline, work hard, manage time and display strong goal setting, leadership and organizational skills

- Identify and analyse a situation and reflect upon the implications of decisions made, based on personal, moral and ethical considerations

- Recognise duty to him/herself, family, community, nation and the world, and fulfil responsibilities with love and commitment

- Uphold ethical principles and has the moral courage to stand up for what is right

- Act with kindness and compassion, and contribute to the betterment of the community and the world

- Demonstrate emotional strength and persevere in the face of challenges with learning-to-learn attitude

- Seek inner happiness and promote social cohesion by appreciating the unity and diversity of a multicultural society

7.1.5. Collaborative and communicative competencies

Communication comprises of three qualities: clarity, information shared, and balance among participants[6] and collaboration involves competencies related to conflict resolution, decision making, problem solving, and negotiation during communication[7]. Therefore, assessment of these competencies involve degree of development of collective intelligence, co-construction of meaning, sharing ideas through various media with respect, empathy and responsibility while working with others to achieve a common goal. The assessment of these competencies comprehends following abilities of students.

- Provide others with clear, concise, accurate, and timely knowledge, information and ideas

- Use appropriate media, technologies and communication style that effectively engages and involves audiences

- Understand and correctly apply verbal and written instructions, procedures, technical information

- Analyze, clarify, and interpret complex information and issues effectively and respond appropriately

- Ensure full participation and interact with others in a courteous, pleasant and helpful manner with empathy, understanding and patience in all communications

- Accept and discuss ideas, opinions, concepts and feedback positively and constructively in a receptive and congenial manner while treating all with dignity, respect and fairness

- Share time, energy and knowledge with others to ensure that they can succeed and resolve interpersonal conflicts constructively

- Appreciate and leverage the strengths of others to accomplish goals regardless of background

- Establish and maintain healthy and rewarding relationships through communication, resolving issues and providing assistance effectively

8. Components of competency

8.1. Knowledge

Knowledge is a set of established facts, terms, concepts, ideas, principles, theories, experiences,

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[6] Collaborative Communication in Interfirm Relationships: Moderating Effects of Integration and Control; (Mohr, Fisher, and Nevin, 1996)
[7] Collaboration: A literature review. *Research Report: Pearson Assessments;* Lai, E. R. (2011).

phenomena and aspects of the world and universe acquired through cognitive, epistemic and metacognitive process. Knowledge is a building block for cognitive capacity (to think, solve problems and create), affective capacity (to value, appreciate and care), psychomotor capacity (to move, perceive and apply physical skills) and conative capacity (to act, decide and commit).

The assessment generally tests, measures and evaluates the following categories of knowledge.

8.1.1. Factual knowledge

Factual knowledge encompasses the basic bits of information about a particular subject or discipline that is used to communicate about academic discipline, understand it, organize it systematically or solve problems in it. These elements usually need little or no alteration from one use or application to another. Factual knowledge exists at a relatively low level of abstraction.

Assessment of knowledge of specific labels and symbols, such as alphabets, words, numerals, signs, pictures, terms, makes it possible to infer student's ability to discuss phenomena and problems in their discipline. Assessment of knowledge tests the ability to remember and recall specific information of events, locations, people, dates, sources of information, and magnitude of a phenomenon which are used to describe the subject matter and in thinking about specific problems or topics in the field.

8.1.2. Conceptual knowledge

Conceptual knowledge involves establishment of categories, classifications, generalizations and relationships among basic pieces of information to understand the functions of interconnected and interrelated information in a more systematic manner. Assessment of conceptual knowledge includes the measurement of ability of student to use schemas, models and theories to understand concepts and describe phenomena. Assessment of this knowledge determines the knowledge a student has about organization, structure of particular subject matter, the way different parts or bits of information are interconnected and interrelated in a more systematic manner and how these parts function together.

8.1.3. Procedural knowledge

Procedural knowledge can be understood as knowledge of subject-specific skills and algorithms, techniques and methods, collectively known as procedures. Procedural knowledge often takes the form of a series or sequence of steps to be followed. It also emphasizes on the knowledge of when to use appropriate procedures using criteria. Assessment of procedural knowledge tests the knowledge of how to execute as task or activity which might range from completing fairly routine exercises to solving novel problems. The emphasis assessment is on the individual's knowledge of the procedure rather than on the ability to use it.

8.1.4. Metacognitive knowledge

A good measure of metacognitive knowledge is critical to performance, well-being and success.

Assessment of metacognitive knowledge includes testing of strategic knowledge (Knowledge of strategies for learning and thinking), knowledge about cognitive tasks in given condition and context (when and why to use these different strategies) and self-knowledge (both cognitive and motivational components of performance). Therefore, assessment of metacognitive knowledge determines the level of individual awareness of one's own and the others' capabilities and learning processes, knowledge of cognitive task and the strategies of learning, thinking, and problem solving.

8.1.5. Epistemic knowledge

Epistemic knowledge involves an understanding of the nature and origin of knowledge. Assessment of epistemic knowledge measures the ability of student to distinguish between observations, facts, hypotheses, models, and theories, identify procedures, and ability to reason the importance of these procedures as central to establishing knowledge. Its assessment tests the knowledge of process to monitor the epistemic nature of problems and alternative solutions, the limits of knowing and the criteria of knowing, and choosing right solutions for different types of problems.

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Knowledge Emphasis

The emphasis of teaching-learning and assessment varies with set of educational objectives even when the content is apparently the same.

In learning Material and Oral culture of Bhutan in class VII history, the instruction and assessment may emphasize on the names of Lhakhangs, their locations, types of megaliths found in Bhutan and dates (*Factual knowledge*), while emphasis on the significance of material and oral culture in building unique identity and the methods of studying them allow students to make connections to Bhutanese civilization (*Conceptual knowledge*).

The emphasis of learning and assessment may be know-how of the process and step-wise method of historical documentation and recordings with evidences of material and oral culture of Bhutan. This eventually enables students to apply the procedure to document material and oral culture in the community (*Procedural knowledge*).

Material and oral culture are significant and varies with civilization and countries. In order to learn a set of general procedures or tools, students must understand, analyze, and appreciate other cultures. However, students do not just apply or use these tools in a mechanical fashion but think about what they are doing as they do it (*Metacognitive knowledge*).

Students involve in an understanding of the nature and origin of knowledge of material and oral culture of Bhutan based on observations, facts, hypotheses, models and theories. They identify procedures and reason these procedures as central to establishing knowledge on Bhutanese culture (*Epistemic knowledge*).

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8.2. Skills

Skill is the ability to use one's knowledge effectively and responsibly to achieve a desired goal. Skill forms an integral part of competency as it is one of the three facets besides knowledge and values and attitude.

Basically, three broad categories of skills[8] are assessed in the assessment of competencies.

8.2.1. Cognitive skills

Assessment of cognitive skills tests verbal, nonverbal and higher order thinking skills, including learning-to-learn, critical thinking, creative thinking, communication skills, etc., and ability to apply skills to effectively and optimally use all forms of knowledge for meaningful outcome.

8.2.2. Social, emotional and cultural skills

Assessment of social, emotional and cultural skills assesses those skills that regulate one's thought process, emotions and behaviours and bring about self-development and character. It also tests the skills to build cordial relationship with others, and the way student exercise cultural and civic responsibilities in the community.

8.2.3. Physical skills

Assessment of physical skills are the testing of practical/manual skills to perform a task and achieve a desired outcome using physical tools, operations and functions. The assessment includes the testing of skills to manipulate and operate tools, devices, apparatus and equipment (mechanical or digital) in terms of dexterity, speed, flexibility, coordination, agility and accuracy.

8.3. Generic Skills

Generic skills are generally defined as per the context and emphasis of learning in an education system. The emphasis may be employment related, socially relevant or relevant to a person's learning, career and life. Generic skills for students are the common and basic skills that they may acquire, which might help them to build their competencies, attributes and qualities. Thus, generic skills are used for literacy, communication, interpersonal, teamwork, information management, problem-solving, planning and organising, learning-to-learn and development of personal skills and attributes.

There are five generic skills considered for assessment.

1. Critical thinking and Problem-solving skills

2. Communication and Collaboration skills

3. Creativity and Innovation skills

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[8] The OECD Learning Compass 2030, (OECD, 2019)

4. Media, Information and Technological skills

5. Socio-Emotional and Conative skills

8.3.1. Critical thinking and Problem-solving skills

Assessment of critical thinking and problem-solving skills involves testing of cognitive processes of actively and skilfully identifying, conceptualizing, applying, analyzing, synthesizing, and evaluating information to provide best possible solution to a problem.

Assessment evaluates the skills to carry out three basic operations: reason critically, evaluate and make judgments and decisions, and solve meaningful problems effectively and efficiently.[9]

Sub-skills

1. *Conceptualization skills* – assess skill to comprehend, recognise problem, categorize, clarify meaning and describe without bias.

2. *Analytical skills* – assess skills to examine ideas, detect arguments and identify claims, reasons and relationships among concepts and information.

3. *Logical reasoning and Evaluation skills* – assess skills for collection and credibility and interpretation of information, data or facts to draw reasonable conclusions and arguments, hypotheses and then deduction of consequences and inferences from the selected relevant information, data or facts.

4. *Synthesizing skills* – assess skills for determining alternatives, generalizing ideas from explored facts and generating new ways to achieve a specified task, synthesizing results by justifying in terms of evidential, conceptual, methodological, and contextual considerations and relating results to form a new perspective.

5. *Self-regulation and Decision-making skills* – assess the skills for making choices and decisions, monitoring, regulating, examining, correcting one's own cognitive thinking, the elements used and the results deduced in a self-consciousness manner[10].

8.3.2. Communication and Collaboration skills

Assessment of communication and collaboration skills involves testing of articulation of thoughts and ideas effectively using verbal, visual, non-verbal mode of communication to work together, negotiate different perspectives and to make decisions to reach a common goal in a multilingual and multicultural society.

Assessment evaluates the skills to carry out two basic operations: communicate clearly and collaborate with others.

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[9] 21st Century skills and knowledge in educator preparation, (AACTE, 2010)
[10] Critical Thinking: What it is and Why it counts. (Facione, 2015)

1. *Verbal and Non-verbal skills* – assess the skills for active listening to decipher meaning, including knowledge, values, attitudes and intentions, articulation and expression of thoughts and ideas effectively using appropriate language, gestures, facial expressions, tone of voice, eye contact, body language and posture in relevance to context and culture.

2. *Visual Communication skills* – assess writing skills of thoughts and ideas effectively and skills to express information and ideas through various printed or digital formats, such as books, posters, websites, social media posts, digital presentations, infographics, charts and graphs and reports.

3. *Teamwork and Conflict-resolution skills* – assess the skills to work in a team to share ideas and information responsibly and respectfully with diverse team members, including the flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal.

4. *Leadership skills* – assess decision-making skills, skills to resolve obstacles and solve-problems in collaboration with others, including mentoring and maintaining strong relationship through trust, empathy and diplomacy to achieve common goal.

8.3.3. Creativity and Innovation skills

Assessment of creativity and innovation skills are defined by testing the imagination and wide range of perspectives to view previous ideas, methods, rules, patterns, etc., and form new and meaningful ideas and methods to create new or improved products and services.

Assessment evaluates the skills to carry out two basic operations: think and work creatively and innovate ideas, products and services.

Sub-skills

1. *Creative thinking and Working skills* – assess the skills to develop and implement wide range of techniques to create original ideas and communicate them effectively by being open and responsive to new and diverse perspectives of team members and others.

2. *Innovation skills* – assess the skills to understand the existing ideas and situations, implement creative ideas to create new or improved useful products and services through risk assessment, continuous improvement strategies, and positive attitudes and behaviours.

8.3.4. Socio-emotional and Conative skills

Assessment of socio-emotional and conative skills includes the measurement of degree of open-mindedness and self-directedness, and tests the skills to regulate emotions, and to be aware of one's needs. The skills to optimize the ability to interpret situations, cultivate a growth mindset, develop resiliency or grit, avoid negative thinking and develop goals and commitments are assessed.

Assessment evaluates the skills to carry out three basic operations: self-direction and emotional control, development and management of goals and time, and being adaptable, flexible and participatory.

Sub-skills

1. *Emotional skills* – assess skills for modulation of anxiety, regulation of temper and frustrations, positive approach to problems through empathy, open-mindedness, self-reflection, tolerance, optimism, emotional control and persistence.

2. *Self-directed learning skills* – assess skills required to set goals, establish strategies, use resources, monitor progress and work independently. The skills necessary to be initiative, resourceful, persistent, flexible and adaptive to varied roles, responsibilities, schedules and contexts for life-long learning and commitment are assessed.

3. *Social skills* – assess skills required to value interconnectedness and diversity among all people. The skills to initiate and manage social connections, voice opinions, needs, and feelings are tested. The skills to exert social influence, invest in close relationships, live in harmony with others particularly in multi-cultural environments and approach to life with excitement and positivity are also included in the assessment.

8.4. Values and Attitudes

Values and attitudes are the principles and beliefs that influence one's choices, judgements, behaviours and actions on the path towards individual, societal and environmental well-being[11].

The Bhutanese education system aspires for basically three categories of values, namely: Foundational Principle values, Moral values and Practised values[12]. The practised values[13] are to be taught, learned, and expressed in accordance to national ethos, culture, etiquettes and disciplines, and standard practices at homes, schools and the communities.

Any attempt to assess values and attitudes in isolation is ill-famed and unreliable. The assessment of values and attitudes is often achieved by integrated approach and can be included in performance criteria as a part of a task[14]. The values and attitudes have significant influence on the acquisition, application and composition of knowledge, skills and competencies.

The assessment of values and attitudes involves the students' demonstration of the following abilities.

- Regulate emotions through compassion, love, kindness, care, generosity, sharing, friendliness, helpfulness and cooperation for enriching experiences and building up one's belief and personality

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[11] The OECD Learning Compass 2030, (OECD, 2019)
[12] Values Education Framework, MoE,2021
[13] Includes: love, kindness, generosity, sharing, care, friendliness, helpfulness, cooperation, honesty, trustworthiness, honour courtesy, gratitude, respect, punctuality, determination, duty, patriotism, obedience and unity
[14] The Development of Competency-based Assessment Strategies for Professions (Gonczi, Hager, & Athanasou, 1993)

- Adapt and respond to a situation with determination, rationality, objectivity, resilience, sensitivity, optimism, responsibly and loyally for fair judgement or progressive action
- Avoid or prevent intentional harm to others and protect and respect others
- Maintain integrity to build trustworthiness, honesty, or fairness for harmonious living
- Interact with compassion and allegiance in speech, thought, behaviour and actions
- Manage individual, family, social and national affairs responsibly and voluntarily
- Conduct with sincerity, mindfulness, astute, resilience and timeless (SMART) to serve the humanity and the nation with integrity and diligence

8.4.1. Media, Information and Technological skills

Assessment of media, information and technological skills includes the assessment of skills required for media literacy, information literacy and ICT literacy. The skills required for extraction, use, analysis, evaluation and creation of information and media products using appropriate technology and devices are assessed.

Assessment evaluates the skills to carry out three basic operations: access, use and evaluate information, develop media contents, and apply technology effectively and ethically.

Sub-skills

1. **Information literacy skills**– assess the skills to access information efficiently and effectively, evaluate information critically and manage and use information accurately, creatively, ethically and legally.

2. **Media literacy skills** – assess the skills required to understand and examine media contents in terms of their purpose, values and ethical/legal issues, and the skills to use appropriate tools, characteristics and conventions to create media products and services that cater to the needs of multi-cultural environments.

3. **ICT literacy skills** – assess the skills to use communication networks, networking tools, technology and devices to access, organize, evaluate, manage, create and communicate information successfully and ethically.

9. Competency Assessment Programmes

9.1. Criteria for quality competency assessment

Competency comprises a complex integration of knowledge, skills, values and attitudes, thereby assessment of competencies is very complex and is impossible to assess a competency using only one assessment method[15]. Therefore, competency assessment methods should be of high-quality, if not

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[15] Competencies: from complications to compromise. (Van Merrinboer, Van der Klink, & Hendriks, 2002)

it would be equal to the traditional form of testing. The aspired quality is determined by the basic criteria of assessment strategies and methods used while the traditional quality criteria of assessment methods are validity and reliability. The quality criteria have evolved and expanded over time and is more applicable in the assessment of competencies. The competency assessment strategies are governed by the following quality criteria[16].

a. **Authenticity** relates to the degree of assessment of those competencies needed in the future workplace. The authenticity of assessment method can be varied through assessment task, the physical and social context, the assessment result or form and the assessment criteria.

b. **Cognitive complexity** dictates that an assessment task should elicit various levels and depth of thinking processes depending on the cognitive level of students.

c. **Fairness** specifies assessment methods should not be biased to certain groups of students, such as including tasks that are developmentally not appropriate or tasks containing cultural aspects that are not familiar to all students.

d. **Transparency** ensures that the purpose of assessment and scoring criteria is clear and the process of assessment is understandable to all the students.

e. **Directness** considers the extent to which teachers or assessors can immediately interpret the assessment results without having to translate and make inference.

f. **Consistency** ensures that the assessment is conducted in a consistent and responsible way using same criteria for all students and the evaluation of results is accurate and constant over time and assessors irrespective of mood of assessor or the specific assessment situation.

g. **Costs and feasibility** are considered to ensure the time and resources utilised justify the benefits. It also determines and explores the administrative, technical, logistic feasibility and alternatives.

9.2. Competency assessment approaches

There are several approaches adopted for competency assessment. Though these approaches assess competencies, it is to be considered that all approaches do not equally emphasize on knowledge, skills, values and attitudes and in equal proportion. One approach may prove to be more effective in measuring skill while the other may be in the assessing both skills and knowledge, nevertheless, they contribute to the assessment of competencies. The suggested effective assessment approaches are:

- direct observation of work activities;
- work sample tests;

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[16] Adapted from Baartman, L. K. J., Bastiaens, T. J., Kirschner, P. A., & van der Vleuten, C. P. M. (2006). The wheel of competency assessment: Presenting quality criteria for competency assessment programs. Studies in Educational Evaluation.

- case studies;

- projects/assignments;

- log books/reports/portfolios;

- evidence from prior learning;

- written tests;

- oral questioning;

- simulations; and

- practicum/practical work.

The above assessment approaches have the following advantages.

- Provide high level of fidelity

- Emphasize on products and processes

- Provide high level of integrated assessment

- Provide direct evidence of demonstrated performance

- Provide evidence of knowledge/understanding

- Generate evidence to prove differing skills

- Allow assessment of attitudinal, problem solving and interpersonal skills

- Allow assessment of practical and technical skills

- Allow the evaluation of problem solving skills

- Focus on relevant performance criteria

- Provide opportunity to observe specific elements of competence

- Provide realistic simulation of activities

- Provide evidence to demonstrate transferability

9.3. Competency-based assessment instruments

Competency-based assessment instruments are the tools to measure students' performance and application of knowledge, skills, values and attitudes using various approaches in different contexts.

CBA test items must be linked to the competencies as per the curriculum framework and designed based on the Blooms 6 levels of thinking.

CBA test items:

i.   allow transfer of knowledge, skills and values/attitudes to a new situation;

ii.   are context based, task based and issue based including real life situations;

iii.   test the use of knowledge rather than the knowledge itself;

iv.   assess the ability to learn and generate new knowledge; and

v.   assess the ability to think beyond literal questions and promote critical thinking.

9.4.   Types of assessment tasks used in assessing competencies

There are four types of assessment tasks commonly used for school based assessment to measure the competencies of students.

9.4.1. Conventional format

Generally, in an education testing system, conventional format includes multiple-choice questions (MCQ), and closed and open constructed response tasks (CRT).

MCQ are items that require the selection of a single response from a set of multiple options. This format is most commonly used owing to its validity and reliability in measuring students' learning outcomes within a short time frame. However, it restricts students from explaining their answers or providing supporting statements. Therefore, other items such as closed and open constructed response tasks are necessary.

CRT are items that require students to provide an explanation or support an answer with reasons or evidences either through writing or drawing. These items are well-suited for identifying the processes involved with competencies and assessing higher order thinking skills. The length of the written response may vary from a phrase to a short paragraph (two or three sentences).

9.4.2. Worksheet tasks with rubrics

Worksheet tasks are those that demand students to perform a series of activities that include finding their own sources of information, organizing the information, recording and reporting their responses against those activities. Such tasks require rubrics that clearly define what is expected and what will be assessed.

9.4.3. Activities with performance indicators

Activities are tasks that students perform either individually or in groups to achieve a specific goal. Activities should be scored through performance indicators or observational rubrics. It allows students to demonstrate knowledge and skills they have acquired, and those they need to improve on. Even students' behaviours can be understood from these activities which will serve as an evidence of their ability in each skill or domain.

9.4.4. Performance tasks with observation tool and self/peer ratings

Performance tasks are those that require a student or groups of students to perform an activity to demonstrate their knowledge, understanding and proficiency. This will lead to a tangible product

from the task and are rated based on observation tools and rubrics. Self and peer ratings are often incorporated into these types of tasks.

10. Mapping of competencies

Competencies in this framework have been adapted from Bhutan Education Blueprint, 2014-2024, which are categorized under nine student attributes. Although, the competencies have been customized for Bhutan, they are in alignment with those of the recognized international documents as given in the table below.

Table 1 *Competency Mapping*

Bhutan Education Blueprint 2014-2024, Bhutan	Assessment of Transversal Competencies: Policy and Practice in the Asia-Pacific Region, UNESCO	OECD Future of Education and Skills 2030, OECD	Framework for 21st Century Competencies and Student Outcomes, Singapore	Assessment and Teaching 21st century skills, Melbourne
Knowledge and understanding (acquisition of conceptual and practical knowledge) **Intellectual competence** (application of knowledge, reasoning and innovative thinking)	**Critical and innovative thinking** (Reflective thinking, application skills, resourcefulness, entrepreneurship and creativity)	**Knowledge** (Disciplinary, inter disciplinary, epistemic and procedural) **Skills** (cognitive and metacognitive)	**Critical and Inventive Thinking (CIT)**	**Way of thinking** (creativity and innovation, critical thinking, problem solving, decision making, learning to learn and metacognition)
Communicative competence (language competence and collaborative skills)	**Interpersonal skills** (communication skill, organization skill, team and collaboration, sociability and collegiality, empathy and compassion)	**Skills** (social and emotional)	**Communication collaboration, and information skills (CCI)**	**Way of working** (communication and collaboration)
Enduring habits of lifelong learning (sustained learning habits, personal commitment, motivation to learn and hard work)	**Intrapersonal skills** (self-discipline, ability to learn independently, flexibility and adaptability, self-awareness, perseverance and self-motivation, compassion, integrity and self-respect)		**Social and emotional competencies** (self-awareness, self-management, social awareness, relationship management, and responsible decision-making)	
Family, community and national values (care, kindness, love, gratitude, respect, trust,	**Global citizenship** (awareness and openness, tolerance and respect for	**Values and attitude** (personal, local, societal and global)	**Civic literacy, global awareness, and cross-cultural skills (CGC)**	

Bhutan Education Blueprint 2014-2024, Bhutan	Assessment of Transversal Competencies: Policy and Practice in the Asia-Pacific Region, UNESCO	OECD Future of Education and Skills 2030, OECD	Framework for 21st Century Competencies and Student Outcomes, Singapore	Assessment and Teaching 21st century skills, Melbourne
equality, fairness, harmony, loyalty, patriotism, national identity and respect for environment)	diversity, responsibility and ability to resolve conflict, ethical and intercultural understanding, democratic participation, respect for the environment, national identity and sense of belonging)			**Living in the world** (citizenship-local and global, life and career, personal and social responsibility-cultural awareness)
Spirituality and character (compassion, patience, tolerance, empathy, forgiveness, contentment, generosity, mindfulness, self-awareness, emotional wellbeing, moral values, ethical values, dignity of labour, honesty and integrity)	Others (healthy lifestyle and religious values)		**Core Values** (respect, responsibility, integrity, care, resilience and harmony)	
Physical wellbeing (Physical fitness, self-esteem, self-discipline, self-responsibility, healthy eating habits and nurturing positive attitude)		**Skills** (physical and practical skills)	-	
Leadership competence (confidence, inspiring, commitment, enterprising, resilience, good communication, decision making, accountability, delegation, empowerment, integrity, collaboration and volunteerism)	**Interpersonal skills** (communication skill, organization skill, team and collaboration, sociability and collegiality, empathy and compassion)	**Skills** (social and emotional)	**Social and emotional competencies** (self-awareness, self-management, social awareness, relationship management and responsible decision-making)	
World readiness (realizing ones potential, productive use of ICT, respect environment in relation to sustainability, adapt intelligently to challenges of life, master	**Media and information literacy** (ethical use of ICT, ability to critically evaluate information and media content, ability to obtain and	**Skills** (physical and practical skills)	**Communication collaboration, and information skills (CCI)**	**Tools for working** (ICT literacy and information literacy)

Bhutan Education Blueprint 2014-2024, Bhutan	Assessment of Transversal Competencies: Policy and Practice in the Asia-Pacific Region, UNESCO	OECD Future of Education and Skills 2030, OECD	Framework for 21st Century Competencies and Student Outcomes, Singapore	Assessment and Teaching 21st century skills, Melbourne
language competence and respect diversity)	analyse information through ICT)			

11. Competencies identified in this guideline

The competencies for the assessment are built on knowledge, skills and values and attitude and incorporate within the nine student attributes and the five extraordinary qualities of Bhutanese.

Table 2 *Competencies identified*

Components of Competencies	Strands	Student Attributes
Knowledge	Knowledge (factual, conceptual, procedural, metacognitive and epistemic)	Knowledge and understanding
Skills	Cognitive skill (critical thinking, problem solving and creativity and innovation)	Intellectual competence
	Social and emotional skills (collaboration and communication)	Communicative competence
		Leadership competence
		Enduring habits of lifelong learning
	Physical and practical skills (health, arts, ICT, tools, neuromuscular coordination, operations and functions)	World readiness
		Physical wellbeing
Values and Attitudes	5 core values (compassion integrity, respect, responsibility and loyalty)	Spirituality and character
		Family, community and national values

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