

MALAWI PRIMARY AND TEACHER EDUCATION



**CRITICAL THINKING SOURCEBOOK FOR
LANGUAGE AND
LITERACY**



Malawi Government



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PREFACE

In 2010, the Ministry of Education, Science and Technology (MoEST) and Malawi Institute of Education (MIE) embarked on activities to introduce critical thinking in schools across the country. Both institutions believe that critical thinking skills are essential for sound decision making by learners and citizens alike. In 2013, the *Critical Thinking Sourcebook for Malawi* (CTSM) was published, and it has been used by teachers and teacher educators to develop methods and strategies for the promotion of critical thinking in the classroom. The rationale for the initiative is to improve the quality of education in Malawi.

Through critical thinking, the Ministry of Education, Science and Technology expects that learners will be exposed to survival strategies and skills which will be applied to their daily lives, thereby improving their livelihoods as well as developing Malawi. The MoEST and MIE have taken the next step in the advancement of critical thinking in Malawi through the development of critical thinking sourcebooks in four of the key subject areas in primary schools: humanities, language and literacy, mathematics and sciences.

The sourcebooks share some common sections and chapters, but they also contain subject-specific methods and strategies because critical thinking cannot be promoted in exactly the same way in every subject. In the case of mathematics, for example, learners need to learn how to analyse problems that resemble the real-life purposes to which mathematics can be put and to solve such problems in the most rational way possible. In humanities, learners must develop skills to evaluate claims about healthy living in life skills and environmental conservation.

In sciences, learners should be able to analyse natural phenomena and use scientific knowledge, skills, attitudes and values to solve everyday problems. In languages and literacy classes, it is essential that learners cultivate their creativity through the reading and writing of poems and stories, and develop their ability to analyse information as they improve their listening and speaking skills. Although critical thinking skills can be developed in each of these areas, they are somewhat different by virtue of the subjects themselves. We believe these subject-specific sourcebooks will make an important contribution to the advancement of quality education in the country.

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CHAPTER ONE

Understanding Critical Thinking

Introduction

The term *critical thinking* combines the concepts of clarity and rationality in our reasoning with judgement, discernment and critique in our intellectual endeavors. Although thinking is an activity in which we are engaged during most of our waking hours, *critical thinking* indicates a more active process by which we evaluate knowledge and produce it ourselves. This chapter introduces the meaning and features of critical thinking that will be used throughout the sourcebook. The chapter further discusses the relationship between critical thinking and constructivism as well as the relationship between critical thinking and active learning.

Meaning and features of critical thinking

There are many definitions of critical thinking. For the purposes of the subject-specific sourcebooks, we will use the definition in the Critical Thinking Sourcebook for Malawi (CTSM). It states that critical thinking is “thinking that aims at reaching a well-founded judgment and hence, utilizes appropriate evaluative standards in an attempt to determine the true worth or merit of information” (CTSM,2013; p. 1). In other words, critical thinking is the process by which we make defensible decisions based on thorough evaluation of information to decide upon its trustworthiness and its merit.

This definition suggests several key features of critical thinking that should be kept in mind as teachers and teacher educators. These include:

- i. problem identification;
- ii. the gathering of sufficient data to form an opinion on a topic;
- iii. creative questioning;
- iv. reasoned arguments;
- v. active consideration of alternative explanations and opinions;
- vi. evidence testing;
- vii. thoughtful judgment;
- viii. development of an independent opinion; and
- ix. the sharing of results or opinions in a respectful manner (CTSM, 2013).

Figure 1.1 presents some of the most important features of critical thinking. These features demand different kinds of cognitive skills. Benjamin Bloom, a well-known educational psychologist, helped to develop a taxonomy, or classification scheme, of different domains of learning that included the affective (emotions and feelings), the psychomotor (physical skills) and the cognitive (intellectual skills). The cognitive domain is often the focus of educators; however, affective and psychomotor learning are also important for children and adults alike (Vanderbilt University Center for Teaching, 2016). In recent years, Bloom’s original model (Table 1) of the cognitive domain has been expanded to include additional intellectual skills that develop as we move from lower-order to higher-order thinking skills (Table 2).

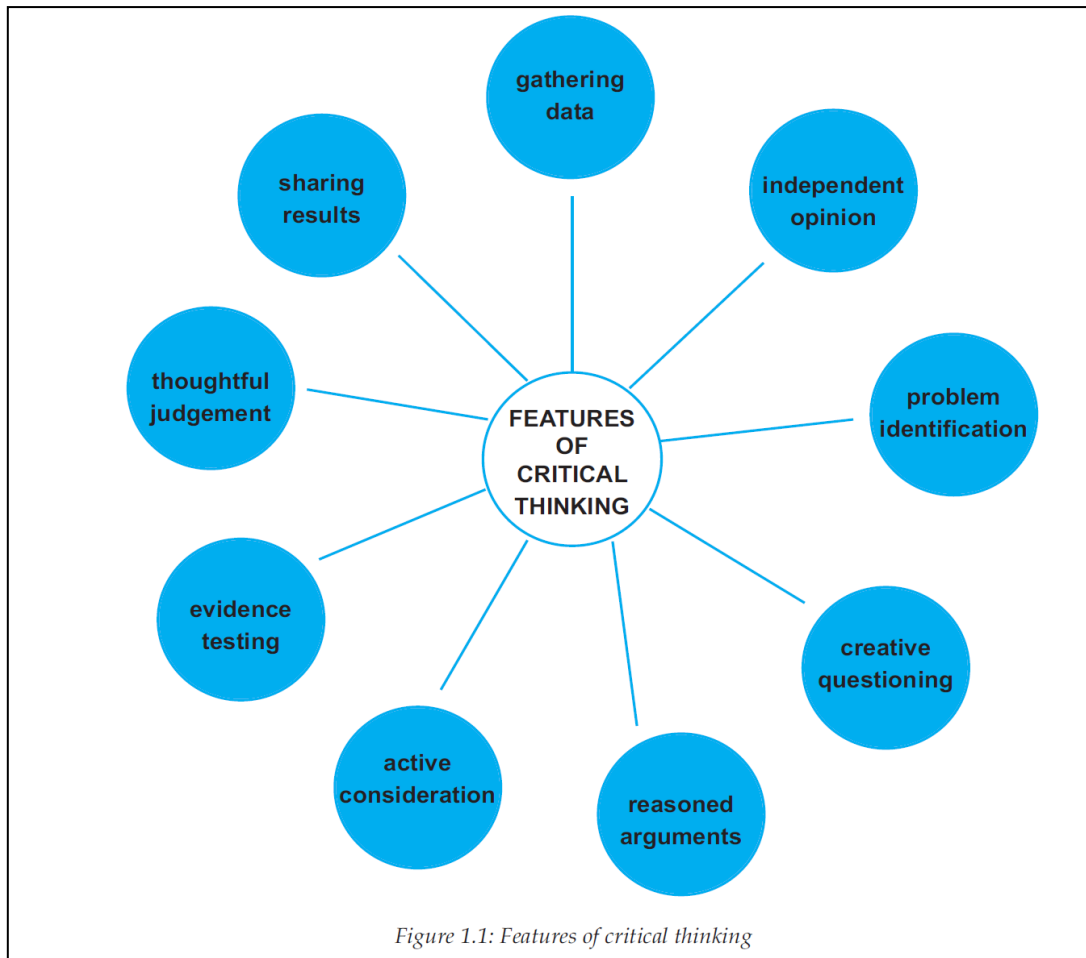


Figure 1.1: Features of critical thinking

Figure 1.1 Some of the most important features of critical thinking.

Table 1: Bloom's original taxonomy of cognitive domains

Lower order thinking skills		Higher order thinking skills			
Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
define repeat list recall name relate underline	translate restate explain describe recognise express identify locate report review tell	interpret apply use demonstrate dramatise practice illustrate operate schedule shop sketch	distinguish analyse differentiate appraise calculate experiment test compare contrast criticise inspect question relate solve examine categorise	compose plan propose design formulate arrange assemble collect construct create set up organise manage prepare	judge appraise evaluate rate compare value score select assess estimate measure

Table 2: Bloom’s revised taxonomy of cognitive processes: Categories, processes and alternative names

Lower order thinking skills					Higher order thinking skills
Remember	Understand	Apply	Analyse	Evaluate	Create
recognizing • identifying recalling • retrieving	interpreting • clarifying • paraphrasing • representing • translating exemplifying • illustrating • instantiating classifying • categorizing • subsuming summarizing • abstracting • generalising inferring • concluding • extrapolating • interpolating • predicting comparing • contrasting • mapping • matching explaining • constructing models	executing • carrying out implementing • using	differentiating • discriminating • distinguishing • focusing • selecting organizing • finding coherence • integrating • outlining • parsing • structuring attributing • deconstructing	checking • coordinating • detecting • monitoring • testing critiquing • judging	generating • hypothesizing planning • designing producing • constructing

Source: Iowa State University Center for Excellence in Learning and Teaching (2012)

It is important to note that not all of these levels of the cognitive processes promote critical thinking. For instance, the lower-order skills of remembering, understanding and applying are more basic forms of thinking, while the ability to analyse, evaluate and create are considered central to critical thinking. This sourcebook has a variety of methods and strategies for developing higher-order thinking skills that promote critical thinking.

Benefits of critical thinking

Benefits of critical thinking identified in the CTSM that affect the individual, family/workplace and society as a whole include the following abilities:

- to make complex decisions regarding what to do or believe
- to anticipate the consequences of one’s decisions
- to settle disputes by using such attributes as being well-informed, trustful of reason, open-minded, flexible, fair-minded in evaluation, honest in facing personal biases and prudent in making judgments (CTSM, 2013; p. 6).

We can see how these abilities would lead to a fairer and more democratic society by virtue of people's ability to analyse problems, evaluate the consequences of their actions and create solutions that promote equity and justice.

Critical thinking and constructivism

In many countries, educational teaching methods are changing from the traditional teacher-centred approach where knowledge is transmitted to the learners who passively listen and acquire new knowledge, to a constructivist approach where knowledge is constructed or generated by learners. The constructivist approach to teaching and learning entails an active, mental process of development where the learners are actively involved in their learning. Constructivist teaching is based on the belief that learners are the makers of meaning and knowledge. Constructivist teaching fosters critical thinking and creates motivated and independent learners. Therefore, a constructivist teacher sees critical thinking at the heart of the teaching and learning process.

A constructivist approach challenges teachers to create environments in which they and their learners are encouraged to think and explore. Young learners learn by resolving cognitive conflicts through experiences, reflection and metacognition (Seaver et al., 2000). For young learners, in particular, direct experiences are vital to the critical thinking process. Teachers present problems that are relevant to the learners and thereafter they give them time to discuss the problem, challenge each other's answers to questions and suggest possible solutions. Such an approach does not develop critical thinking in isolation but as an integral part of the curriculum.

Learning to think critically is a process that takes time and sufficient opportunities to do so.

The constructivist teacher must give learners opportunities to explore ideas, to question and to take risks in order to create a rich environment for critical thinking. It is evident when observing children that even those aged five to seven are capable of thinking critically. Not only do they talk about their thinking, but they also demonstrate emergent reasoning skills. By the time children reach the upper grades in primary school, they should be comfortable and capable in using cognitive skills from lower- to higher-order thinking.

Critical thinking and active learning

Constructivism is based on the premise that teaching and learning are active processes in which existing knowledge is analysed and evaluated, and new knowledge is created through interactions between teacher and learners in the classroom. Thus, we can think of active learning as informed by constructivism and as central to the critical thinking process. According to the CTSM, active learning "encourages learners to make sense of information by engaging in the learning process through participation in a structured learning activity to obtain desired learning outcomes" (CTSM, 2013; p. 35). One of the key words in this definition is *participation*. Participation can also include active methods that simultaneously promote psychomotor development, such as role playing and experiments. There are many ways to promote active learning, and the chapters in this sourcebook will provide suitable examples for specific subject areas.

The principles of active learning are closely linked with the broader principles of critical thinking. Five of the most important linkages are:

- i. Meaning-making occurs when learners link their existing knowledge and new knowledge.
- ii. Learning by doing is more powerful than only learning facts.
- iii. Learning includes transferring knowledge from one domain to another.
- iv. Learning involves the co-construction of meaning through interactions with others.
- v. Speaking and writing are important ways for learners to articulate their understanding. (CTSM, 2013; p. 36)

These linkages apply to all learning areas or subjects, and we demonstrate how to make these linkages visible in Chapter 5, where we suggest ways to promote critical thinking across the curriculum.

Conclusion

This chapter has laid out the rationale for its use in Malawian schools. It has also introduced the concept of critical thinking. It has gone further to explain the relationship of critical thinking to cognitive domains and higher-order thinking skills, constructivism and active learning. The next chapter will discuss in greater detail on how to teach for critical thinking and characteristics of critical thinkers in the subject of science.

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CHAPTER TWO

Becoming a Critical Thinker in the Teaching of Language and Literacy

Introduction

Literacy is a human right, which if developed fully, can lead to personal empowerment and a means to improve social and human development. By becoming literate, people can enhance their quality of life and have strong voices of reason and transformation in their communities. Hence every child should be provided with access to effective language and early literacy instruction. Literate communities enable effective social and human development.

This chapter will demonstrate what it means to become a critical thinker and how it is possible and practical to integrate instruction in critical thinking into the teaching of language and literacy. It will also discuss what will be required of language and literacy teachers, especially teachers working with young learners, to think critically and to become knowledgeable about the different dimensions of critical thinking in order to teach critical thinking effectively to learners.

Critical thinking and literacy learning

Thinking is a complex cognitive process which is closely linked with language, and with specific language skills such as reading, writing, speaking and listening. According to Gelder (2005) and Willingham (2007), learners who think more critically are more successful in language learning. It is, therefore, important to pay attention to the learners' way of thinking and attempt to enhance their critical thinking ability.

As young learners develop, their ability to think critically grows as well. Critical thinking allows their language to expand as they use complex language to reason, predict and think on a higher level. In order for young learners to interact with texts, they are required to do more than sounding out letters to recognize words. They are also expected to make meaning of the text and to read deeper into the text. This will require that they have to apply critical thinking skills such as explaining, problem-solving and predicting.

Critical thinking allows young learners to go about language and early literacy learning in a manner that will empower them to effectively apply their language and literacy skills in their daily lives. When teaching for critical thinking, teachers must teach in such a way that allows learners to develop into independent learners and to become responsible for their own learning. They must, therefore, use tools which can stimulate learners to inquire deeply and manage their own mental processes, insights and think things out and to act upon these thoughts.

The communicative approach emphasizes that learners become proficient language users by using the language, and not by just merely learning about the language. The approach invites learners to be more critical when they learn and when they use the

language for communication. Learners do not become efficient communicators by only using and knowing the meaning of language, but by also being able to think critically and creatively through the language. This means that the learners must be creative in coming up with new ideas and be able to think critically by supporting their new ideas with logical explanation, details and examples. Communicative language tasks require critical thinking.

At beginning levels in language and literacy learning, the focus should be on acquiring basic vocabulary. However, as soon as learners' language and literacy levels improve and they are confronted with tasks using language that contains elements such as investigation and problem solving, then they must think critically. In language and literacy classrooms, teachers expose the learners to authentic or real texts that contain facts and opinion; they are then expected to make meaning of the text. As the learners' language and literacy improve, they are expected to read texts, not only to make meaning but also to distinguish fact from opinion, match the argument to the supporting evidence, and then to give their own view in response to the text. These critical literacy skills will include asking critical questions, comparing the text sources and discussing the origin of the information in the texts.

It is important for learners to keep asking questions in the learning process, and they agree that "to learn well is to question well" (Paul and Elder, 2003; p. 36). During the questioning process, different critical thinking processes such as comparison, inference, explanation and analysis are applied. The way a teacher asks questions can make a difference in provoking critical thinking. Thinking routines help incorporate thinking language into the classroom because they both promote a thinking disposition in children and create the language to do so.

It is important for language and literacy teachers to use routines. The routines do not only give learners a sense of security and confidence, but they also create habits of mind as learners develop a culture of thinking. It is the teacher's task to assist learners in becoming effective critical thinkers to enable them to apply their critical thinking skills and critical attitudes to deal with the changes and challenges of the twenty-first century.

Characteristics of critical thinkers

Critical thinkers possess certain distinct qualities that differentiate them from ordinary thinkers. These qualities are acquired over time through practice. There are different characteristics of critical thinkers on different levels and in different roles. These are briefly outlined in Table 2.1 below.

Table 2.1: Characteristics of critical thinkers at different levels and in different roles

Characteristics of a cultivated critical thinker		
General characteristics	Specific characteristics of language and literacy teacher	Specific characteristics of learners' critical thinking
1) Raises vital questions and problems by formulating them clearly and precisely.	a) Utilizes a variety of question types with the aim of encouraging learners' higher-order thinking ability (analysis, evaluation,	<ul style="list-style-type: none"> • Curiosity • Keeness to learn • Having their own ideas • Making links

<p>2) Gathers and assesses relevant information using abstract ideas to interpret it effectively.</p> <p>3) Arrives at well-reasoned conclusions and solutions.</p> <p>4) Thinks open-mindedly within alternative systems of thought, recognizing and assessing their assumptions, implications and practical consequences.</p> <p>5) Communicates effectively with others to find solutions to complex problems (CTSM, 2013; p. 8).</p>	<p>synthesis and creating new knowledge).</p> <p>b) Brings to the classroom information relevant to learners’ lives and encourages learners—at all levels of language learning—to interpret it.</p> <p>c) Facilitates learners’ ability to reach well-reasoned conclusions and solutions, and to express their views in spoken and written forms.</p> <p>d) Creates activities using all four language skills that help learners to think open-mindedly about the views of others, to assess these views, and to assess their own assumptions and the practical consequences of them.</p> <p>e) Guides learners to communicate effectively with others in their spoken and written work, and to interact with others in their family, workplace and society to find solutions to complex problems.</p> <p>f) Dedication to include reasoning and thinking in language and literacy lessons.</p> <p>g) Eagerness to promote the provision of reliable information.</p>	<ul style="list-style-type: none"> • Choosing ways of doing • Demonstrating caring – taking responsibility for their thinking • Being collaborative – learning to cooperate with others and being considerate to what others think • Persistence– sticking to doing something • Questioning • Seriating (putting things in order to form a series) • Classification (sorting objects into sets) • Time sequencing (placing a set of events in order) • Spatial perception (viewing an image/scene from a different perspective) • Causality (identifying the links between cause and effect) • Logical thinking • Learning from one’s mistakes
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Moving towards critical thinking in the teaching of language and literacy

According to Duron, Limbach and Waugh (2006), there are five steps that can be followed to move learners towards critical thinking (CTSM, 2013). These steps are described below briefly:

Step 1: Determine learning objectives (intended learning behaviour that learners should demonstrate for each of the four key language skills of listening, speaking, reading and writing). These objectives, activities and assessment should be linked to the higher levels of thinking, which include analysis, synthesis and evaluation.

Step 2: Teach through questioning to develop the four language skills that seek one or two specific correct answers (Bloom’s lower-order thinking of Knowledge, Comprehension and Application) and divergent answers (Bloom’s higher-order thinking of Analysis, Synthesis and Evaluation), which allow for a wide variety of possible answers.

Step 3: Make practice and consolidation a key aspect of the learning process using strategies such as active learning, providing different kinds of information and ideas, experiential learning opportunities and reflective dialogue before doing. Involve learners in active learning that will allow them to think and reflect on what they are doing.

Step 4: Review, refine and improve language lessons by monitoring learner engagement in instructional activities to ensure they are developing critical thinking skills. Get feedback from the learners to improve better teaching and learning.

Step 5: Provide feedback and assessment frequently to improve the quality of learners' listening, speaking, reading and writing skills, and to help them distinguish between acceptable and unacceptable levels of comprehension and production. Assessment is an important step as it provides information with regards to the effectiveness of teaching and learning and what instruction needs to be adapted to improve the learning process.

The role of teachers in the development of critical thinking in language and literacy

The role of teachers in developing critical thinking in language and literacy includes the following:

- a) Examining beliefs about critical thinking to see whether they are serving the intended purpose in our teaching of language and early literacy.
- b) Familiarizing oneself with teaching and learning approaches that aim to promote critical thinking.
- c) Moving from being an information keeper and knowledge transmitter to being a director and mediator of learning where knowledge is co-constructed with the learners.
- d) Planning and implementing themes to organise new knowledge and develop language skills. Teachers should include problem-solving and analysis as part of the learning process. Such an approach gives the learners opportunities to think critically while they learn.
- e) Guiding young learners in the development of their critical thinking skills with culturally-relevant and appropriate activities and challenges. Teachers should give clear instructions and expectations on how to think critically, using critical thinking techniques such as discussion, considering alternatives, comparison and evaluation. They should also take time in class to model effective critical thinking by applying these methodologies in the development of language and early literacy skills. As their role model, the learners will be able to see effective critical thinking in action.
- f) Continuing to illustrate and demonstrate good examples of critical thinking relevant to language and early literacy teaching in their classrooms. Young children follow routines and learn through imitation, which makes everyday practice in critical thinking an acceptable and natural way of learning for them.
- g) Giving learners as many opportunities as possible to practice their developing critical thinking skills, including classroom discussions and practical and written tasks and assignments.

h) Creating a stimulating and conducive literacy learning environment for critical thinking which includes the following conditions:

1. using a variety of question types with the aim of encouraging learners' higher-order thinking ability (analysis, evaluation, synthesis and creating new knowledge);
2. creating culturally-relevant and appropriate learning experiences with information relevant to learners' lives and encouraging learners at all levels of language learning to interpret this information;
3. facilitating learners' ability to reach well-reasoned conclusions and solutions, and to express their views in spoken and written forms;
4. allowing enough time for critical thinking activities using all four language skills, including listening, speaking, reading and writing to assist learners to think open-mindedly about the views of others and their own views;
5. promoting the acceptance of a diversity of opinions;
6. guiding learners to communicate effectively with others in their spoken and written work;
7. guiding learners to interact with others in their family, school and society to cooperate and collaborate in finding appropriate solutions to complex problems;
8. encouraging children to think independently and not to be judged for their opinions; and
9. creating opportunities to speculate, to wonder and to be actively involved in the sharing of ideas.

Conclusion

This chapter has highlighted the relationship between critical thinking and language and literacy development. Thinking critically while developing the language skills of listening, speaking, reading and writing empowers learners to eventually become active citizens who are able to make good and rational judgments about issues in life.

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CHAPTER THREE

Specific Critical Thinking Methods and Strategies for the Teaching of Languages and Literacy

Introduction

The traditional approach to teaching is structured around knowledge-building, learning and teaching. The element of thinking and the motivation to think is often not what teachers focus on. The traditional teaching style entails the teacher doing most of the teaching while the learners listen passively.

A critical thinking approach, on the other hand, offers young learners quality learning opportunities to do their own thinking and to develop their own views. They are challenged to think and understand more deeply by being asked a range of questions during the learning experience. This chapter will focus on how to infuse effective critical thinking into language and literacy instruction with an emphasis on kindergarten and lower primary school but with methods that are relevant to other levels as well.

Factors to consider when using critical thinking methods and strategies

In lessons oriented toward critical thinking, the methods and strategies that teachers use should take into consideration certain conditions to ensure optimal learning. The first aspect that plays a role in the development of critical thinking skills is the child's actions; the second are the teacher's teaching strategies that support the child's learning; and the third is the learning environment (Walsh and Gardner, 2005). Therefore, a quality optimal learning experience using a critical thinking approach needs to consider what the children bring to the school that will help them to develop good critical thinking skills, what the teachers should do to facilitate the development of critical thinking skills and how the physical setting will encourage and enhance the development of critical thinking.

General considerations for critical thinking instruction in the language and literacy classroom

Address the objective of the subject and the current lesson

The outcome of any lessons planned in the classrooms will be determined by the quality of the interaction between the teacher, the learner and the learning environment provided for learning (Sparling, 2007). In the early learning phase, a theme-based approach is used to present new content knowledge and skills to the young learners. Knowledge relevant to the specific theme is introduced in lessons to address the learning objectives to be reached in each subject area. Young children do not learn new knowledge in isolation, and a theme-based approach allows for the integration of thematic knowledge in all the subject areas. Culturally-responsive instruction is recommended to accommodate the diverse abilities, culture, perspectives, strengths, interests and learning styles of each child (Arthur et al., 2008). Such a differentiated environment provides for each child's learning needs.

Children are perceptual learners, which means that they benefit greatly from opportunities to use all of their senses. To reach their learning outcomes, a play-based approach to teaching and learning is the preferred instructional approach for children to the age of five or six, while a more formal, structured approach to teaching is used for children aged seven to nine. A play-based approach includes the use of rhymes, songs, games, picture books and different types of play to enhance children's critical thinking skills. A more formal approach for older learners could include explicit teaching, direct teaching, experimentation, active learning strategies and the use of technology and other modes of learning. These approaches will be discussed in more detail later in the chapter.

Match methods with the characteristics of learners

Having high expectations for every learner means that teachers acknowledge that learners have different learning styles, cultural belief systems and personal interests. Each learner enters school with different learning needs, for which teachers need to provide. Planning will include varied and stimulating experiences that will accommodate the individual needs of the learners. To ensure the most positive learning outcomes, teachers need to use learners' interests and previous knowledge as a foundation for their pedagogical planning. Thereafter, enough time should be allocated to deepen the learner's knowledge, skills, concepts and experience to take them to the next level of competency. Young children, in particular, need practical, hands-on and active learning experiences based on their interests and individual developmental level. A high level of teacher-child interaction in a stimulating, enriched learning environment should improve the quality of learning.

Match with particular school and community settings

An integrated teaching and learning approach means that teachers need to create opportunities for learners to interact with their environment, both indoors and outdoors because they are curious to know how the world works. In their interaction with other learners and adults, such as their teachers and people from the community, their learning is extended. A school environment that intends to provide the most optimal learning outcomes for learners, uses learner-centred methods, is engaging, caring, stimulating and responds to learners' individual learning needs and interests and learning styles. Learning environments should support a range of opportunities for cognitive learning and physical activity.

Match with the space and size of the class

Smaller class numbers in early learning classrooms allow for greater interaction between teachers and learners, more opportunities for stimulating conversations, responsive teaching, supportive interactions and better engagement with the learners. Smaller learner numbers give more opportunities for learners to be actively involved in thinking, answering questions and problem-solving during lessons. Teachers also have more time to observe each learner's individual learning needs, interests, activities and progress.

Show that knowledge is neither static nor inert

Instruction should emphasize that knowledge building is a complex achievement produced by a range of thought processes, which include thinking, analysis, comprehension, evaluation and refinement. Learners, should understand and experience the learning process thoroughly in every lesson. First, the teacher should

provide relevant information and then learners should use the information to start thinking themselves about the knowledge that the lesson makes possible. It is important that learners develop a deep understanding of what they have learnt and not only be able to recall what they have learnt. To ensure optimal learning, our teaching approaches should acknowledge knowledge as critical thought by creating opportunities during lessons for learners to understand, reason and evaluate new knowledge through the use of different levels of questions and critical reflection. Critical thinking methods allow for rational thought and deeper learning conversations, which in turn make alternative ways of thinking possible in our classrooms.

Specific considerations for critical thinking instruction in language and early literacy classrooms

Consider the practical insights and real-world utility for language use that learners can take away from each lesson

In the lower primary classrooms, the use of the thematic approach allows teachers the freedom to select themes that are relevant to learners' community, home and personal contexts. Bronfenbrenner's ecological model (1979) emphasizes the different contexts or spheres that influence the life and learning of learners. They can relate better to certain thematic content if they have had prior experience about the topic. They can understand what the knowledge entails, and they can answer questions and join in critical conversations about the topic. Teachers can add new vocabulary, concepts and content knowledge to learners' prior knowledge and in that way advance learning in every grade.

Pay particular attention to the level of language proficiency, age and gender of learners in choosing methods that will encourage and not inhibit language use

Language proficiency is a key factor in the development of critical thinking. Children have a more expanded vocabulary and conceptual understanding when they are being taught in their mother tongue or first language. Age-appropriate and culturally-responsive use of language take cognizance of children's linguistic backgrounds and their socio-economic backgrounds as these are factors that could inhibit children's development of critical thinking. More exposure to a language allows for greater vocabulary for meaning-making, more confident language usage and increases the children's ability to integrate the different language skills in the process of becoming functionally literate.

Think creatively about how to use locally-available resources to create teaching aids and how to bring local experts into the classroom as a way to link the school and community

The language and literacy learning impact on young children can be more positive and effective if teachers can select teaching and learning materials to which learners can relate. Stories and other learning texts that are related to the theme of the week make for more learning sense than teaching texts that are unrelated to children's new knowledge and vocabulary. Meaning-making is one of the key aims of emergent and formal reading. Therefore, teachers' selection of stories and reading texts, songs, poems and rhymes should take into consideration where children come from, what their interests and preferences are and what their preferred learning styles are. Visual learners will be more interested in visual resources, and auditory learners will prefer to

listen to stories being told, be it by the teacher, other learners or members of the community. Kinesthetic learners will prefer to be actively involved in learning activities indoors and outdoors, while tactile learners will appreciate the opportunity to experiment with any resources that they can touch and manipulate. When teachers plan critical thinking opportunities, their choice of resources could enhance or inhibit learner participation in the lessons.

Methods/strategies used for the infusion of critical thinking skills in the teaching of language and early literacy

Critical thinking is not a skill that is taught in isolation or as an “add on” to the school curriculum. Critical thinking is infused into every subject, which forms part of the curriculum at a specific level of schooling. This means that critical thinking skills and processes are directly taught and integrated into all the subjects, including the content subjects. This is done to allow children to improve the way they think in every subject that is taught in the classroom. In the lower primary, there should be a strong emphasis on the infusion and integration of skills and knowledge as stated in the curriculum.

This section of the sourcebook will be divided into the following two sub-sections:

- Section A: Kindergarten to Junior Primary School Methods and Strategies
- Section B: Senior Primary Methods and Strategies

The reason for this division is that the Kindergarten to junior primary curriculum, especially the kindergarten curriculum, can be described as an integrated, balanced and language-rich programme. Children are provided time throughout the day programme to explore and experiment with language and develop emergent literacy skills. Although we have grouped kindergarten and Standards 1-4 together, teachers should remember that the methods and strategies used in kindergarten differ from those used in infant and junior primary. The nature of language and literacy instruction in infant and junior classes is more formal, with specific time allocated to the explicit teaching of language and literacy skills, which include listening, speaking, reading and writing.

In addition, teachers should use their own critical thinking skills to decide how they might adapt some of the methods and strategies described under kindergarten to junior primary classes for older learners, and how they could alter some methods/strategies in Section B for younger learners. The examples provided in each section are most suitable for younger or older learners, but in many cases they can be adapted using age-appropriate readings, topics, and questions.

Section A: Kindergarten to junior primary methods and strategies

The methods and strategies appropriate for young learners seek to prepare them for more structured literacy acquisition as they move from kindergarten/Standard 1 to Standard 4, and beyond. The purpose of the kindergarten curriculum, in particular, is to provide a holistic, balanced programme that emphasizes the centrality of play in young children’s learning. During the kindergarten year, children’s interests and engagement in learning is stimulated in a language-rich environment that is conducive to the development of positive attitudes to learning. A play-based approach for younger learners offers them the opportunity to provide literacy experiences that replicate how literacy is used in everyday activities. Through play the children can experience typical

literate behaviour, which includes listening, picture reading, role-playing and conversations. Young children's language and literacy development is supported through the different types of play to which they are exposed.

The integrated kindergarten day programme

Kindergarten teachers organise their day programme with well-balanced activities, which are appropriate for young learners' learning progress. The kindergarten curriculum can be described as practical and play-based, and focuses on young children's needs and interests. The activities allow for flexibility and a degree of choice of learning activities in an indoor and outdoor environment. The kindergarten curriculum includes different types of activities, which include the following:

- indoor and outdoor activities;
- gross and fine motor activities;
- quiet and active activities;
- individual, group and class activities; and
- child-initiated and teacher-directed activities.

The kindergarten day programme provides an appropriate balance between child-initiated and teacher-directed activities to reach the outcomes in all the dimensions of holistic development, including cognitive skills, physical skills, social skills, emotional skills and normative skills. A play-based approach to the development of the wide range of skills mentioned above creates an appropriate level of challenge and opportunities to extend children's thinking, without limiting their spontaneity and enthusiasm. As children explore sounds and babble, play games and interact with adults; listen to and enjoy songs, rhymes and stories; and engage in conversations in the context of everyday social and cultural experiences in the classroom, they build language skills. These skills provide a foundation for effective language and literacy learning, which will be required to eventually develop the young learners as critical thinkers.

A critical thinking environment for Kindergarten to junior primary learners

The physical indoor and outdoor environment should be bright, stimulating, colourful, purposefully and functionally designed and, most importantly, freely open for exploration by the children. Enthusiastic and supportive teachers should provide a learning space where children feel valued and accepted. In this learning environment, children should be provided with challenging activities and be allowed to explore, experiment and to make mistakes. Teachers should assess young learners' progress by observing them in action and listening to them. To ensure effective development of children's thinking, teachers should allow opportunities for problem-solving, challenges, connecting with children's prior learning, promoting reflection, providing alternative solutions and time for reflective thinking. The learning environment should be a place where critical thinking permeates all the learning activities being offered to the learners.

The following table outlines a few of the daily indoor and outdoor activities that allow for the development of critical thinking skills. Although some are appropriate primarily for the kindergarten day programme, such as toilet time, most of them could be adapted for standard 1-4 as well.

Table 3.1: Activities that allow for the development of critical thinking skills in grades

Kindergarten to Standard 4

School-based activities	Critical thinking opportunities
<i>Planning of activities and tasks during the daily programme.</i>	Making choices; logical thinking, decision-making, problem-solving
<i>Discussion circles</i> Discussion about a topic and learning new vocabulary.	Questioning to enhance and deepen thinking; problem-solving; reasoning and debating
<i>Show and tell</i> A learner brings something from home and tells the rest of the class what it is.	Children’s narratives; questioning; deep thinking
<i>Story time</i> Storytelling for enjoyment and language development.	Listening; asking questions; reasoning; logical thinking; critical literacy
<i>Daily routines - toilet time, meals, tidying up, getting ready to go home.</i>	Logical thinking; sequencing; problem-solving
<i>Creative arts</i> Learners work in groups and complete activities such as arts and crafts, imaginative play, dough, water play and sand play.	Planning; logical thinking; critical thinking and discussion; evaluation
<i>Quiet play in fantasy corner/ dress-up corner</i> The learners are allowed to select what they want to do in the fantasy corner/ dress-up corner with dress-up clothing and other artefacts.	Questioning by teacher; decision-making; selection; critical discussion; evaluation
<i>Music lesson/music time</i> Listen to, discuss and dramatize the songs	Listening; critical discussion; creative thinking
<i>Visits and talks from people with different occupations - an optician, policeman and actors</i>	Sharing of ideas; thinking; problem-solving; critical discussion; evaluation
<i>Planned visits outside the school with the teacher to different destinations – zoo, farm yard, garden</i>	Stimulating thinking and discussion; recall and recap that provides a stimulus for literacy-related tasks

Teachers who believe that knowledge-building is a process of critical thought will ensure that critical thinking permeates the curriculum and is included in every teaching method/strategy that is applied in the classroom. A few recommended methods/strategies are outlined below:

The use of thinking language

While teachers direct or facilitate learners’ learning, they use language that draws attention to the importance of thinking. Phrases such as the following are emphasized and used frequently: “Let’s think”; “Think carefully”; “That is very good thinking”; “Think

differently”; “I am going to give you some time to think”; “I am looking out for the best thinkers today”. To keep the learners in deep-thinking mode, they could discuss the daily weather or what they have learned about a topic.

Difficult conversations

Very often teachers are compelled to introduce difficult or sensitive topics, even in the kindergarten or lower primary classes. The story approach is usually used to introduce the topic in an appropriate way to the young children. The information shared during the stories could lead to difficult conversations leaving the children with many questions, which they want answered. These difficult conversations and questions about sad or scary family news like illness, death or divorce allow opportunity for deeper thinking and reasoning in children as they grapple with the information.

The use of questioning

Ample opportunity is offered for questioning during the different activities of the daily kindergarten programme. Children are naturally curious, and teachers should listen to the questions that children put forward and not ignore their inquiring minds. Thought-provoking questions provide excellent opportunity for critical and creative thinking. The following are a few thought-provoking questions:

- What is the difference between summer and winter season?
- What could happen if it never rains?
- What clothing will you wear if it rains very hard?

Such questions can also be initiated by the teacher if learners are reluctant to ask them. However, teachers should encourage them to ask questions instead of expecting young learners to sit quietly and listen. Open-ended questions are excellent tools to get learners to think more deeply. If the topic under discussion is something to which the learners can relate, different types of questions will facilitate the expansion of ideas and understanding, whilst moving their thinking to a more advanced level. For example, here are a few thought-provoking questions based on the story *The Little Red Hen*:

- Look at the cover illustration and title. What do you think the story will be about?
- What do you think is going to happen if the little red hen plants the seeds?
- How did the little red hen feel when nobody wanted to help her plant the seeds?

Scaffolding

Teachers use scaffolding to encourage and support children’s critical thinking. Initially, teachers will guide their thinking by modeling thinking behaviour. Sometimes when learners are struggling to apply creative thinking, the teacher will move beyond modeling and use further questioning strategies to encourage them to extend their thinking. This is done through the use of thinking language or actions, such as the following:

- **5 Ws and H**

The teacher models simple exploratory questions to gather information. She models the use of Who; What; Where; When; Why and How to encourage the

learners to think and to gather information based on the original information given to the learners.

- **Staging or sequencing**

The teacher uses questions with increasing levels of difficulty. She increases the level of difficulty with each question, moving from low to higher-order questioning.

Storytelling

The kindergarten curriculum offers sufficient opportunities for storytelling using a range of storytelling techniques, but teachers can also use storytelling in standards 1-4. Story content offers learners opportunities to gain new knowledge and to make connections to their own lives. The story text also offers information, messages and ideas for young learners, which they should freely reflect on and think about critically. During storytelling the following critical thinking strategies could emerge:

- Using open, thought-provoking questions
- Identifying and discussing the key messages of the stories
- Making connections to children's prior knowledge and experiences
- Organizing peer discussion
- Modelling thinking aloud

Learners who do not agree with the story content should be encouraged to raise their concerns, and this can develop their critical reading skills, as well as increase their self-esteem as critical thinkers and learners. Learners should be able to demonstrate basic levels of critical thinking, which could include answering simple questions, making connections to their experiences and justifying their ideas with evidence from the story or pictures. Kindergarten, and certainly older learners, should be made aware that story texts are not neutral and that there are assumptions and values that should be explored and questioned. The discussion of assumptions and values in story texts can eventually lead learners to engage in higher levels of critical thinking, such as critical analysis and the transformation of text.

Picture books

The words and pictures in picture books are flexible teaching tools which enable teachers to stimulate children's thinking for other learning areas and to stimulate ideas for drawing and emergent writing. Children can also learn to make predictions and learn to justify their claims by using the features in picture books. In addition, the story offers ideas or problems for young learners to think critically about as they listen to the story. The nature of picture book reading provides opportunities for children to develop reading, listening, visual and oral language skills. All of these skills act as a foundation for the children to develop their critical thinking. While reading picture books, children are able to link to their own experiences, draw inferences and make new information based on their interpretations of images in the books. The visual features are not only enjoyable to the children but also carry particular meanings and concepts which are worth analysing. Picture books are therefore seen as a suitable teaching tool to foster young learners' critical thinking skills.

Shared reading and read-alouds

A vital part of literacy instruction in kindergarten classrooms is the reading aloud of children’s books, and this can also be done with older learners who are still developing their early literacy skills. Teachers can use read-aloud to develop learners’ background knowledge, stimulate their interest in high-quality literature, increase their comprehension skills and foster critical thinking. While reading, teachers model strategies that children can use during their own independent reading. Good children’s literature consists of high-quality story texts that prompt children to think and talk about social issues that impact their daily lives. Reading high-quality books increases learners’ overall language competence in listening, speaking and reading. Questioning and responding to stories offer opportunities for reflective and critical thinking.

Teachers initiate critical conversations through the questions they pose. Such questions move beyond traditional who, what, when, and where questions to a deeper understanding that goes beyond the print on the page. Through reading aloud of children’s literature, teachers can create a critical thinking milieu, which is grounded in critical reflection. The teacher’s critical stance is important, because by modeling respect for differences, thoughtful problem solving and effective engagement with difficult issues, a critical environment can be established in the classroom. When teachers take seriously the questions and concerns that their learners raise, they encourage learners’ voices to be heard within the classroom. This critical thinking approach gives credence to the importance of identity development as well as meaningful language and literacy development, which supports literacy as a social practice and as a tool for social change.

In Table 3.2 below, typical examples of specific activities that could be included in a theme-based kindergarten day programme are described, and these activities could be adapted for Standards 1-4 with the selection of age-appropriate themes. This example is intended to show how critical thinking skills are developed through the process of infusion and integration.

Table 3.2: Weekly theme-based activities that promote critical thinking

Theme: Animals		
Learning tasks relevant to the theme	Description of the activities	Infused critical thinking skills
Discussion of animals using pictures or plastic replicas of animals	An assortment of small cards with pictures of animals (farm, domestic and wild animals) is given to the learners working in groups. Instructions to the learners: <ul style="list-style-type: none"> • Look at each picture and name the animal. • Describe the animal in the picture. • Choose two pictures of different animals and discuss the differences. • Sort the pictures of 	The following critical thinking skills were practiced during the learning experiences: <ul style="list-style-type: none"> • Listen • Discuss • Select • Compare • Sorting • Categorization • Classification • Ranking • Sequencing

	<p>animals that are the same.</p> <ul style="list-style-type: none"> • Give the collection of pictures a name. • Arrange different plastic animals in a row. Choose the one that does not belong and give reasons for your choice. 	
Creative work	<p>The teacher puts up pictures of the different animals and gives the following instructions:</p> <ul style="list-style-type: none"> • Choose any farm animal and draw it as part of your farmyard drawing. • Design a barn for the animals and use different shapes of paper for your design. • Use different colours of play dough to model different farm animals and tell your friend about your play dough models. 	<p>The following critical thinking skills were practiced during the learning experiences:</p> <ul style="list-style-type: none"> • Listen • Select • Decision-making • Plan • Problem-solve • Recall information • Discussion • Evaluation
Quiet play with educational toys and games	<p>Provide a few educational toys for the group and give the following instructions:</p> <ul style="list-style-type: none"> • Choose an animal puzzle and build the puzzle all by yourself. • Match the animal cards that are the same. • Match the correct animal baby card, name the animals and discuss them. • Arrange plastic animals from the smallest to the biggest animal and tell your friend about each animal. 	<p>The following critical thinking skills were practiced during the learning experiences:</p> <ul style="list-style-type: none"> • Listen and select • Think • Match • Synthesis • Matching • Discuss • Rank the animals according to size • Compare • Evaluate
Storytelling using big pictures	<p>Tell the learners a story and display the pictures as you tell the story. Give the following instructions:</p> <ul style="list-style-type: none"> • Listen carefully to the story and view the pictures. • Afterwards try to 	<p>The following critical thinking skills were practiced during the learning experiences:</p> <ul style="list-style-type: none"> • Listen and discuss • Think • Select picture

	<p>arrange the pictures in sequence and described what happened in each picture.</p> <ul style="list-style-type: none"> • Encourage the learners to tell the story in their own words. • Provide alternative endings to the story. 	<ul style="list-style-type: none"> • Make meaning • Sequencing of the pictures • Compare • Evaluate pictures
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Section B: Senior primary methods and strategies

The primary school language and literacy curriculum focuses on the development of the following language skills, and the development of them becomes more structured as children mature from kindergarten through primary school:

- Listening
- Speaking
- Reading
- Writing

Each language skill has its own learning objectives/outcomes stated in the curriculum. These are the outcomes which the learners need to demonstrate to show that learning has been accomplished. Very often these objectives/outcomes are stated in a vague manner in the curriculum, and they do not explicitly mention that critical thinking should permeate the language curriculum. Yet all four language skills are essential to the development of critical thinking. During the teaching of these four skills, young learners should be provided with opportunities to clarify their thoughts by having broader and deeper discussions to make sense of what they say, read or write. Learners learn more effectively if they are allowed to ask questions, give reasons and explanations and consider implications and consequences during lessons. They learn important cognitive skills if the instructional approaches that teachers use emphasize the critical thinking element.

Refer to the CTSM (2013) for a summary of all the different categories of strategies that can be applied to promote critical thinking. The tables below give an outline of suggested strategies that can be used to promote critical thinking in listening, speaking, reading and writing in senior primary.

Table 3.3: Listening

Teaching strategy/ method	Description of the activity	Critical thinking skills
Brainstorming Learners generate ideas on a topic individually and share them in pairs before presenting them to the whole class.	The teacher gives the learners a topic such as "Holidays". The learners will think of relevant ideas, share them with a friend and then present it to the class. This activity can be done verbally or ideas could be written down on paper.	Listen and understand the content Predicting Organise information Think logically Synthesise the information
Directed reading-	The teacher reads and the learners	Listen and understand the

<p>thinking activity This is a method in which learners make predictions about what will happen next in a text read by the teacher.</p>	<p>listen to an age-appropriate story. At significant stages of the story, the teacher stops reading and asks the learners to predict what will happen next in the story.</p>	<p>content Think logically Select ideas Sequence ideas Present ideas</p>
<p>Jigsaw Each group member is assigned a different piece of information. Group members then join with members of other groups assigned the same piece of information, and share ideas about the information.</p>	<p>The teacher divides the class in smaller groups and gives each group member a different piece of information about a topic such as “Weather Around the World” to discuss. After they discuss, they join other groups and share the learning that happened in the previous group. Later they return to their home group to fit all the information pieces on the topic together.</p>	<p>Discussion Identify the problem or issue. Understand new knowledge. Analyse the new knowledge. Provide a summary of the new knowledge</p>
<p>Article/Text analysis The teacher asks learners to listen as s/he reads a newspaper article about a specific topic. The teacher then asks the learners to identify the key ideas and the supporting facts.</p>	<p>The teacher asks learners to listen to a newspaper article about a topic of interest, such as “Homework”. The teacher then asks the learners to identify the key ideas and the supporting facts.</p>	<p>New knowledge Understanding Analyse and identify key ideas Select and categories the facts</p>

Table 3.4: Speaking

Teaching strategy/ method	Description of the activity	Critical thinking skills
<p>Think-pair-share Think through a question and follow using three steps: 1. Think alone. 2. Pair with another learner and share. 3. Now pair with another group and share the answers.</p>	<p>The teacher should allow learners to participate in a discussion to highlight important facts related to a topic such as “What are the benefits of reading texts/ stories every day?” After the discussion, the teacher puts some questions to groups of learners and allows the learners to think about their answers individually, then in pairs and then to share with the rest of their group. This activity encourages individual and group participation.</p>	<p>Listen and understand Speak and understand Understand the questions Organise ideas Present logical answers</p>
<p>Debate Debate is a method in</p>	<p>The learners listen to the news on the radio/television during class</p>	<p>Listen and understand Speak and understand</p>

<p>which learners defend their position on a question or an issue. The teacher asks a question or states an issue. Learners are assigned to a group to participate in the debate. Learners from each side try to justify their response. Groups can also be allowed to alternate and change perspectives.</p>	<p>and identify the main issue under discussion. The teacher allows the learners to divide into two groups or assigns them to one of two groups. The learners have a debate about the topic. This is a group activity where each group will defend their stance on the issue.</p>	<p>Identify the key message Identify negative and positive ideas Present one's own ideas Argue one's own point</p>
<p>Academic controversy This is a method in which learners argue an issue from both a positive and negative perspective before passing a judgment. The teacher assigns a question that has a yes or no answer to the home group. Members in each home group form pairs and each pair is randomly assigned to either argue for or against the issue.</p>	<p>The teacher makes a statement about a specific issue, e.g. "Boys and girls should perform the same chores in the home". Learners are instructed to argue the statement and to work in pairs. Each pair will either argue for or against the statement. In the end the whole group will come to a conclusive decision and share it with the rest of the class.</p>	<p>Read and understand Interpret the statement Discuss and understand Argue your point Evaluate the points made by the different groups Synthesize the information</p>
<p>Role play method This is a method in which learners assume particular personalities depicted in a situation and act accordingly. The teacher assigns roles to learners. The learners prepare an activity and present it to the class. This is followed by discussion and debriefing.</p>	<p>Learners listen to an age-appropriate story that has different characters and actions in the story line. They then role play the different characters using their own words.</p>	<p>Listen and understand Interpret the content Speak and understand Analyse the character Think creatively</p>

Table 3.5: Reading

Teaching strategy/ method	Description of the activity	Critical thinking skills
<p>Pre-teaching vocabulary Pre-teaching vocabulary is a method in which a teacher chooses words from a text.</p>	<p>During a class lesson in reading, the teacher will select a suitable short text, such as a poem, an informational text, a</p>	<p>Listen and understand Discuss the content Understand the words Interpret the text</p>

<p>These are key words needed for learners to understand the text. The teacher gives the meaning of each word and asks learners to find synonyms for each word.</p>	<p>recipe etc., as the reading text. Difficult words will be selected from the text and discussed with the learners before they start to read the text. The learners will be encouraged to find synonyms for each of the selected words.</p>	
<p>Know-Want to know- Learn (K-W-L) K – what do you know about the topic? W – what do you want to know about the topic? L – what did you learn about the topic?</p>	<p>The teacher will select an information text on a topic such as “The water cycle” with important facts to share with the class. Firstly, s/he will discuss what the learners already know about the topic. Then the teacher will ask them what more they would like to know about the topic. The text will then be read to the class a few more times. Afterwards, the teacher will ask the learners to describe what new knowledge they have learnt from reading the text.</p>	<p>Listen and understand Speak and understand Read and understand Interpret the text Analyse information Reason to give answers</p>
<p>Choral reading Choral reading is a method in which learners read a text, a poem or any other suitable text together. The teacher guides learners on how to read the text. The method helps to familiarize learners with many words since the text is read several times.</p>	<p>The teacher selects a suitable reading text, e.g., a poem. Firstly, the teacher will read the text and model good reading habits, such as pronouncing the words correctly and clearly, reading in phrases, not word for word, read at a suitable pace and think while you read. The learners will listen and become familiar with the pronunciation of the words, tone and pace of reading. The texts will then be read a few times, together with the teacher, as a class group and later in smaller groups until the learners can read more fluently.</p>	<p>Listen and understand Discuss and understand new words Interpret the text Make sense of the whole text</p>
<p>Reading and questioning This method is similar to the request procedure since learners read, ask and answer questions in pairs.</p>	<p>The teacher will select an age-appropriate text for reading development in smaller groups. Pairs of readers and later individual learners will</p>	<p>Listen and understand Read and understand Interpret the text Analyse information Reason to give answers</p>

	read a section of the text, while the others listen and formulate questions on the text. The readers will then answer the questions in pairs and later individually.	Evaluate information
Reciprocal teaching Learners exchange the roles of teacher and learners in groups of four.	The teacher divides the learners in groups of four for reading. In every group, one learner will act as the “teacher” while the others will act as the learners. The “teacher” will read a paragraph from a suitable reading text, explain difficult words and concepts, summarize it and ask questions to the rest of the group. Each learner will get a chance to be the “teacher”.	Listen and understand Read and understand Identify new words Interpret the text Synthesise the text Analyse the text Reason to give answers

Table 3.6: Writing

Teaching strategy/ method	Description of the activity	Critical thinking skills
Article analysis using concept-mapping Concept mapping is a specific strategy for teaching concepts. Concept maps begin with a main idea (or concept) and then branch out to show how that main idea can be broken down into specific subordinate ideas. A diagram consists of the key concept and its critical features as well as lines that are drawn to show its relationships to other subordinate concepts.	The teacher selects a suitable, age-appropriate article from a newspaper. The teacher first reads the article and then allows the learners to do shared reading with her. The learners are then asked to identify the key concept in the article. Other related subordinate concepts are then identified. The concept map is completed interactively by the teacher and the learners, showing how the subordinate concepts stem from the main concept or idea.	Read the article Understand the content Analyse the content Plan Decision-making to select a key concept Order the steps Identify relevant subordinate concepts Connect the main concept to the subordinate concepts using lines.
Mind-mapping Mind-mapping or graphic organisers may provide a nice beginning framework for conceptual mapping. Learners should develop the habit of mind-mapping all the key concepts after completing a passage or chapter.	The learners read a paragraph and then a chapter or the entire story. The teacher guides the learners to identify the main topic and to write it down and circle it in the middle of a page. They then think of the first idea that comes to mind when they think of the topic. They now draw a line (straight	Read a chapter Understand the content Analyse the content Plan Decision-making Logical thinking Map relevant concepts

	ocurred) from the central topic and write down that idea.	
<p>Problem-based learning Real-life problems connect to the learners' world, and they organise information about the problem, give own ideas and present results in a specific format, such as a table, chart or other graphic representation.</p>	<p>The teacher poses a real-life problem such as: How can we fight pollution? Learners are divided into groups, and each group is asked to think critically about the issue of pollution. They analyse the issue and present ideas to the other group. Ideas are later selected for the graphic representation that the learners decide on, be it a table, a chart or a diagram. Each group then presents and explains the information on their graphic representation of choice.</p>	<p>Listen to the problem Think deeply about the problem Analyse the problem, Evaluate the ideas Select ideas for the chart Organise the content on the chart Explain the information</p>

Conclusion

In this chapter, we have explored why critical thinking should be instituted as an acceptable goal of education in the 21st century. It is clear that all learners, even young children in kindergarten and lower primary can develop critical thinking skills, irrespective of their socio-economic status, culture or learning level. Young children, as well as older ones at the senior primary level, do a great deal of thinking when they make decisions, while they play, when they are at home and when at school. The school curriculum can extend the quality of thinking by creating a culture of critical thinking throughout the school and valuing learners who demonstrate critical thinking in all their subjects. The listening, speaking, reading and writing methods/strategies described in this chapter provide many ideas for teachers to develop language and literacy skills while also building learners' ability to think critically.

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CHAPTER FOUR

Language and Literacy Assessments that Stimulate Critical Thinking

Introduction

Assessment is an essential part of the learning-teaching-assessment cycle. Assessment, teaching and learning are inseparable, as each informs the other. The purpose of assessment is to provide information about learners, progress and achievements in relation to the learning objectives. Ongoing assessment embedded into the learning process has a positive effect on learners learning. It allows teachers to identify the learners' strengths and weaknesses and plan for further improvement. Assessment is a powerful process that can either enhance or inhibit learning, depending on how it is utilised. Assessments can serve formative or summative purposes. The purpose of summative assessment is to give a summary of the learners' achievements at a particular point of time using a test as an assessment tool. The purpose of formative assessment is to continuously look for specific information about learners' progress while learning is in process.

Skills that are required for the 21st century have changed because the world is constantly changing. Today's learners need to know not only basic reading and writing skills, but also skills that will allow them to face this constantly changing world and its challenges. Learners must be able to think critically, to analyse, to problem solve and to make inferences. Changes in the skills base and knowledge that learners need require new learning goals. These new learning goals change the relationship between assessment and instruction. This means that teachers need to rethink their role in making decisions about the purpose of assessment and what is being assessed.

When teachers' classroom assessments become an integral part of the instructional process in the classroom, the information gathered from the assessments can help to enhance learners' learning. This means that day-to-day assessments will become important tools to improve the learning process of young learners. Guskey (2003) recommends the following three ways in which teachers can use assessments that will improve instruction and learning in classrooms:

1. Use assessments as sources of information for both teachers and learners. Teachers can use assessment information to improve their instructional practices, and learners can use it to identify their strengths and weaknesses.
2. Use follow-up assessments coupled with supportive instruction or interventions.
3. Provide the learners with another chance to demonstrate improvement in learning.

This chapter will focus on formative and summative language and literacy assessments and how they can be used to stimulate critical thinking. The focus will be on early literacy assessments, but many of the examples can be modified for the senior primary level as we saw in the previous chapter on methods and strategies of instruction.

Assessment for learning (Formative assessment)

Assessment for learning is best described as a process by which assessment information is used by teachers to adjust their teaching strategies, and by learners to adjust their learning strategies. Assessment for learning is aimed at classroom assessments that support ongoing teaching and learning. Classroom-based formative assessments conserve a vital role in the improvement of the education system.

Classroom-based assessments strategies can play an effective role in encouraging learner-centred teaching practices. The traditional teacher-designed tests try to assess recall and content questions to test memory. Research has shown that a change in the type of classroom assessments can play an important role in supporting more effective learning and improving the nature of classroom practice (Price et al, 2011). As teachers plan classroom assessment differently, three considerations should be kept in mind:

1. Assessment should provide insight/information on learners' learning, so teachers can adapt and modify their instruction. Information can be used to inform teachers' instructional decisions, to discuss the learners' needs with them, to structure follow-up lessons and to become more aware of the learners' interests, needs, strengths and weaknesses to modify instructional strategies for optimal learning.
2. Assessment should assess a broad range of skills, which include communication, reflection and collaboration, and not only content. Rubrics should be used to measure different skills instead of only content knowledge.
3. Assessment should provide learners with new roles to enable them to see assessment as a learning experience and as a way of keeping learners' needs, strengths and weaknesses at the centre of the learning process. In the redesign of assessment tasks, the focus of instruction and assessment moves more toward the learners, with peer and self-assessment suggested as alternate types of assessment. The goal is for learners to become evaluators and to give feedback on how to improve their classmates' work and their own work.

The benefits of assessment for learning

For teachers

Assessment for learning helps teachers gather information to:

- plan and modify teaching and learning programmes for individual learners, groups of learners and the class as a whole;
- pinpoint learners' strengths so that both teachers and learners can build on them;
- identify learners' learning needs in a clear and constructive way so they can be addressed; and
- involve parents in their children's learning.

For learners

Assessment for learning:

- provides learners with information and guidance so they can plan and manage the next steps in their learning;
- uses information to inform the learners about what they have learned and needs to be learned next;

- is an ongoing process that arises out of the interaction between teaching and learning; and
- focuses on the opportunities to develop learners' ability to evaluate themselves, to make judgements about their own performance and improve upon it. (Guskey, 2003)

The relationship between assessment for learning and teaching critical thinking skills

The nature of assessment in language and literacy classrooms influences what and how the learners learn. Both assessment for learning and critical thinking skills share concerns about the quality of learning and aim to help children take greater responsibility for their learning and become more independent learners and thinkers. In assessments of learning, the focus is on integrating language and thinking skills. Through well-designed and carefully planned assessment practices, critical thinking among language learners can be enhanced. Assessment practices that promote critical thinking skills are those which require learners to think, to cooperate and to ask questions. Assessments for the improvement of critical thinking skills prepare the groundwork for teachers to start teaching content subjects more effectively. Assessments that target critical thinking skills can lead teachers to teach content with a greater focus on higher-order thinking skills and, in that way, improve the quality of teaching and learning.

Specific principles for the assessment of languages and literacy that stimulate critical thinking

The following are sound assessment principles that have been developed specifically for kindergarten and lower primary classes, but they are also relevant for learners in senior primary school:

- (a) Assessment of learner's language and literacy progress and achievements is ongoing, strategic, functional and purposeful.
- (b) Knowledge of the learner is vital to ensure assessment is appropriate and fit for purpose.
- (c) Assessment for learning must be underpinned by the utmost confidence that every learner can improve.
- (d) Assessment for learning should enable reciprocal learning where teachers and learners can gain information on how to improve the quality of learning.
- (e) The results of assessment are used to inform the planning and implementing of experiences, to communicate with the learner's family and to evaluate and improve teachers' instructional practice.
- (f) Assessment focuses on learners' progress toward language and literacy outcomes that are developmentally appropriate, culturally sensitive and educationally significant.
- (g) Assessment includes a balanced approach to instruction of the four language skills to ensure a range of learning experiences for assessment.
- (h) Assessment provides opportunities for language, literacy and critical thinking skills to be improved.
- (i) Assessment uses a variety of suitable text types, such as stories, posters, advertisements, poems, recipes, menus and weather reports with

appropriate language so that learners can develop and assess appropriate language skills.

- (j) Assessment needs to be planned and designed to include appropriate and purposeful language and literacy learning content, materials, activities, tasks, skills, strategies and attitudes to enhance the learning and assessment experience.
- (k) Assessment should utilize different methods and modes (role-play, discussion, practical projects, presentations and performances) to determine the different language skills appropriately.
- (l) The methods of assessment must be developmentally appropriate, age appropriate and culturally sensitive to allow learners to demonstrate their linguistic competence in different ways. Methods that are appropriate to the classroom assessment of young children, for example, include teachers' observations of children, interviews, collections of children's work samples and their performance on authentic activities. More formal oral and written assessments are appropriate for older learners in senior primary.
- (m) Assessment looks not only at what learners can do independently but also at what they can do with assistance from other children or adults.
- (n) Teachers may want to assess learners individually or in groups and utilize peer assessment and self-assessment.
- (o) Teachers need to design a system to collect, analyse and record the assessment information to report what goes on in the classroom.
- (p) Teachers should use the information report to plan follow-up learning experiences to correct literacy learning and to further engage learners in assessment for improved learning.
- (q) Valid and reliable literacy assessments can include assessment done by the teacher, the family, peers and the learners' own assessments of their work.
- (r) A central goal is to produce reliable and valid information assessments that are designed for a specific purpose and are used only for that purpose for which they have been designed.

Assessment to enhance critical thinking in language and literacy classrooms

Assessment needs to address the curriculum objectives and learners' developmental needs. Assessment should not be conducted solely for its own sake. Observation, recording and analysis should be adopted for assessing learners' performance in an authentic learning environment, especially for younger learners. For all learners, continuous assessment throughout the whole school year is recommended. Teachers should show recognition and appreciation of learners' achievements, as well as identify areas in which their potential is yet to be developed, and render guidance and support accordingly. Teachers should inform parents of the assessment results in a systematic and positive manner, to enhance parents' understanding of their children's progress.

Teachers cannot be intentional about helping their learners to progress unless they know where each child is with respect to learning goals. Sound assessment of young children is especially challenging because they develop and learn in ways that are characteristically uneven and embedded within the specific cultural and linguistic contexts in which they live. For example, sound assessment takes into consideration

such factors as a child's competence and stage of linguistic development in the home language. Assessment that is not reliable or valid, or that is used to label, track, or otherwise harm children, is not seen as developmentally appropriate practice.

The questions asked and the activities selected to engage the learners in learning determine the direction of their thinking. Critical thinking questions drive the learners to deeper learning and show them how to deal with complexity, rather than just search through text to find an answer. By engaging the learners in a variety of questions that relate to the content, learners are challenged to apply critical thinking skills. Learners should not sit passively waiting for information. They should be active in applying thinking skills to come to their own understanding of a particular topic as they construct knowledge. Teachers need to develop a climate conducive to critical and creative thinking. Assessment should ensure the integration of communication skills, problem-solving and critical thinking, and should assess all of them.

As learners learn to think more critically, they become more effective readers, writers, speakers and listeners because each ability requires well-reasoned thought. Self-confidence increases with the intellectual empowerment that critical thinking stimulates. Over time, learners develop skills, abilities and traits of mind (intellectual discipline, intellectual perseverance, intellectual humility, intellectual empathy and intellectual integrity), which are crucial to success in the educational, professional and everyday life. When learners learn to think critically, they learn to transfer what they have learnt about the logic of questions in one field to logically similar questions in other fields. In learning to think critically, learners can learn to take charge of their minds as an instrument of learning in reading, writing, speaking and listening with greater discipline and skill. All of these intellectual abilities are crucial to higher order reading, writing, speaking and listening. To read, we must analyse the text and re-create its logic in our own minds. To write, we must construct a logic that our readers can translate into the logic of their thought. To speak, we must articulate our thoughts in such a way that our audience can translate our thoughts into their experiences. To listen, we must analyse the logic of the thinking of the speaker.

Each of the dimensions identified in the learning objectives of language and literacy instruction is either a critical thinking skill or depends on a critical thinking ability. The writer or speaker's purposes, implications and points of view are all elements of thought. The ability to construct in one's mind a good interpretation is simply thinking by listening or thinking by reading. A similar reliance on elements of thought is central to writing or speaking effectively at any educational level. All forms of communication rely on critical thinking skills.

Examples of how assessment of language and literacy skills can stimulate critical thinking

All four of the following forms of communication are affected by critical thinking:

- i. *Listening*– learners should be able to listen attentively, understand the content of what they have heard, and express themselves in appropriate language; assessments should include a variety of questions based on unseen texts like stories, poems, posters, notices, advertisements, etc., as well as questions based on seen texts.

- ii. *Speaking*—learners need to know how to use language to communicate with others and share life experiences and feelings; how to answer questions; how to participate in role-play and dialogues and poem recitation; how to use greetings and polite expressions; how to talk about self, family and friends; and how to discuss one’s own likes and dislikes.
- iii. *Reading*—learners should have a grasp of reading skills, enjoy reading, and understand simple books, general words and symbols; assessments should include a variety of questions and should become more complex as learners move from lower/junior primary to senior primary.
- iv. *Writing*—learners ought to know how to use different writing media to express and record personal thoughts and life experiences in drawings and completion exercises; how to use sequencing; how to describe persons, places and objects; how to write short compositions and notices; how to make effective posters, etc. These, too, should become more challenging and focus on higher-order thinking skills as learners grow and mature throughout the primary school years.

Examples of formative language and literacy assessment tasks: Focus on kindergarten and infant primary levels

In the kindergarten and infant primary levels, language and literacy skills should not be taught in isolation. In a theme-based approach these skills are integrated into logical and developmentally appropriate learning experiences. Kindergarten teachers, in particular, assess these learning outcomes through the process of observation. The learners are observed while they are participating in learning experiences in literacy-rich learning and teaching contexts. Educators continually and purposefully observe their children as they go about their daily routines and learning experiences, as they enter the classroom, participate in whole-class circle time, make their choices during individual and group activities at learning centres and work stations, eat their snacks, engage in purposeful play and prepare to leave at the end of the school day.

The examples below can be adapted for use at the kindergarten and infant primary school level but with age- and developmentally-appropriate modifications that account for learners’ increasing language and literacy skills. In some cases, the most appropriate level for use of the assessment has been indicated in parentheses.

Listening and speaking skills

Assessment standard: Listen, comprehend and respond verbally to oral, literary and media texts.	
Assessment context: Emergent literacy learners experience listening and speaking throughout the day, when they listen to stories, have discussions, participate in read aloud, shared reading, and make their own choices of texts to explore, make connections, and share with others.	
Outcome of the learning to be demonstrated by the learner	Description of the assessment task/tasks
Consistently demonstrates active listening to instructions, rhymes, sounds, songs and stories.	After participation in theme discussions, listening to rhymes, listening to sounds and stories, the learners could be instructed to: <ul style="list-style-type: none"> • listen to instructions and follow the actions; • identify all the words that rhyme; • identify the sounds that they heard;

	<ul style="list-style-type: none"> • listen to the first sounds in words; • listen to and answer questions related to the content.
Verbally participates in group discussions appropriately and spontaneously using relevant theme vocabulary in sentences and conversations.	During thematic discussions, the learners will be instructed and encouraged to interact by making comments and by sharing related experiences, or they will be asked to use new vocabulary in sentences.
Listens and verbally responds to oral stories/ read-aloud.	After participation in listening to story read-aloud or shared reading, the learners will be instructed to answer questions related to the story to determine whether they understood the content of the story.
Tells a complete story that makes sense.	Learners will be instructed to tell their own stories in their own words that make sense with relevant actions and enthusiasm.

Emergent reading skills

Assessment standard: View, interact and respond to a variety of visual and written texts.	
Assessment context: Emergent readers experience reading when they read texts in the classroom, view pictures in picture books and magazines, when stories are read aloud to them, when they participate in shared reading and when they select their own texts to explore and make connections.	
Outcome of the learning to be demonstrated by the learner	Description of the assessment task/tasks
The learner should be able to read and understand story texts at an appropriate level. The learner should be able to answer lower and higher order questions as set by the teacher.	After participating in individual or group reading period, the teacher will ask questions related to the story to determine the learners' understanding. The learners will respond verbally or through other relevant actions.
The learner will be able to ask questions, reason and offer critical comments about certain aspects that they have read about in the story.	After participating in reading activities, learners will be instructed to formulate their own questions to ask to other learners or the teacher. They can also be instructed to comment on the story or retell the story in their own words.
The learner will be able to respond critically and share their feelings and emotions that have been evoked by the stories or other types of texts that they have read.	After participating in individual or shared reading, the learners will be instructed to identify what they liked or disliked about the story and give reasons why.

Writing skills

Assessment standard: View, respond and produce a variety of visual and written texts.	
Assessment context: Emergent writers experience writing when they use drawings and labels to express ideas, feelings and information during creative arts, and when they copy their names or words from texts in the kindergarten classroom. As learners at the infant primary level develop their writing skills, they are able to move beyond copying words and pictures to producing their own meaningful written text.	
Outcome of the learning to be demonstrated by the learner	Description of the assessment task/tasks
Copies own name from a name card (kindergarten)	Learners are instructed to write their names on every written task they do. Each table will have an example name card that the learners can copy until they can eventually write their names independently.
Completes patterns in writing (kindergarten)	During creative work, the learners are instructed to complete specific patterns. During pattern-making, the learners practice control over the formation of patterns in preparation for the formation of letters.
Uses drawings and labels to express ideas, feelings and information (kindergarten to Standard 3)	The teacher will give instruction as part of creative work, e.g., 'Draw a picture of your family.' After the completion of the drawing the teacher will ask learners to 'tell' him or her about the picture in their own words.
Copies and recognizes words and texts on paper (kindergarten to Standard 3)	After participating in theme discussions, story read-alouds or shared reading, the learners are instructed to draw anything about the story and to write a word or sentence under their drawing. Flash cards with words are arranged on the word wall to assist learners in writing their texts.
Produces written texts to express ideas, feelings, and information	Kindergarten learners can begin to produce their own meaningful texts using words they are learning to recognize, and older learners can be instructed to write sentence-and paragraph length texts that reflect critical thinking about a topic or theme.
Produces written texts in the form of illustrated posters, advertisements, reports or short books	As learners develop more extensive written language skills, they can be asked to use these skills for creative expression to produce posters, advertisements, reports or short books that can be shared with the classmates, teacher and parents.

Examples of formative language and literacy assessment tasks: Focus on senior primary level

Although a theme-based approach is used to teach all the subjects of the curriculum, the different language skills are taught more explicitly as learners move from infant to senior primary levels. This means that there is a specific focus on the teaching of the skills of listening, speaking, reading and writing. Time is allocated to teach, practice and assess each of the skills of listening, speaking, reading and writing. Critical thinking skills are infused in the teaching of all the language skills. Regular assessment of learners' literacy learning is necessary to ensure that learning is taking place as intended. Continuous assessment is done in the classroom as part of the on-going teaching and learning experience. During the teaching of meaningful listening, speaking, reading and writing activities, different methods of assessment are used to assess learning in the different grades. During assessment for learning the learners can be assessed while working in groups, in pairs or individually. A constructivist approach to learning acknowledges that learning is a process. The learners need time and support to acquire new knowledge and skills before they will be able to demonstrate independent learning.

Listening skills

<p>Assessment standards: Listen and respond to text from different sources</p> <ul style="list-style-type: none"> Listen for information Listen for the key message Listen to and respect the views of others 	
<p>Assessment context: Listening happens throughout primary schooling, but specific listening skills are taught and assessed during literacy time. Individual learners' ability to listen attentively is assessed through observation. Individual learners respond to listening by doing actions and verbal or non-verbal responses.</p>	
<p>Outcome of the learning to be demonstrated by the learner</p>	<p>Description of the assessment task/tasks</p>
<p>Listens and shows respect for other learners' views and opinions.</p>	<p>Listen to a story, newspaper article, or other age-appropriate text and express opinions about it in an acceptable manner.</p>
<p>Listens to, reads and responds to texts about and from many cultures and time periods.</p>	<p>Index cards - 3 questions: At the end of a text reading, learners answer questions pertaining to the reading and presented on index cards.</p> <ul style="list-style-type: none"> • What did I learn about the topic? • What questions do I have about this culture and time period? • Who could I speak to if I want to learn more about this topic?
<p>Listens for specific information and responds to the instruction.</p>	<p>Teacher selects a topic that will be discussed later in the year in another subject, such as the life cycle of the butterfly in science class. The learner listens to the clues about the life cycle and arranges photos the teacher provides to show the order of the life cycle. This is followed by writing a caption under each photo.</p>

Listen and identify key information.	Learners take turns reading from class readers while classmates listen for key ideas and information about major and minor characters. The teacher asks learners to analyse this information to make predictions about the remainder of the story as a way to promote critical thinking.
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Speaking skills

<p>Assessment standards: Develop specific vocabulary relevant to the topic/ theme and make meaning of the words</p> <p>Communicate effectively using a range of texts</p> <p>Communicate effectively in a range of situations</p> <p>Communicate by using acceptable language usage and structure</p>	
<p>Assessment context: Speaking happens throughout primary schooling, but specific speaking skills are taught and assessed during literacy time. Individual learners' ability to communicate effectively is assessed through observation. Individual learners respond verbally and in the target language.</p>	
Outcome of the learning to be demonstrated by the learner	Description of the assessment task/tasks
Develops vocabulary through listening, speaking, reading and writing	<p><i>Topic discussion:</i></p> <p>The teacher poses an age-appropriate question related to a topic of interest to the learners, and learners contribute to the discussion. During the discussion, the teacher can assess how well learners are able to utilize the vocabulary they are developing related to the topic. Suggested topics for senior primary include gender roles, rights and responsibilities of children and adults, and environmental conservation.</p>
Uses oral language with clarity to communicate a message.	<p><i>Debate:</i></p> <p>The teacher divides the class into two groups to have a debate on a hot topic or issue appropriate to senior primary learners, such as who is responsible for cleaning up polluted lands and waterways. Learners present their views orally and can follow up the activity by writing a list of their key contributions to present to the other group or to the teacher.</p>
Uses strategies to generate and develop ideas for speaking (can also be used as part of writing and other visual activities)	<p><i>Concept map:</i></p> <p>Learners work in pairs to complete a concept map with concepts and vocabulary relevant to the topic about which they have been asked to speak. They then use the concept map to make a short speech or long presentation.</p>
Uses acceptable language usage and	<p><i>Recitation:</i></p>

structure.	Learners memorize and recite an age-appropriate poem. This activity can be enhanced to promote critical thinking by asking learners to analyse the meaning of particular lines or stanzas in the poem and to discuss who might disagree with the views or feelings expressed in the poem.
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Reading skills

<p>Assessment standard: Read and make meaning of a range of texts Read fluently with understanding Read and summarize the key message Read and respond critically to a range of texts</p>	
<p>Assessment context: Reading happens throughout the primary school curriculum, but specific reading skills are taught and assessed during literacy time. Individual learners' ability to read effectively is assessed through oral questions/answers and by writing about the reading texts using a suitable rubric. Learners are assessed as they read in groups, in pairs and individually.</p>	
<p>Outcome of the learning to be demonstrated by the learner</p>	<p>Description of the assessment task/tasks</p>
<p>Reads and understands the text.</p>	<p><i>Drawings and concept maps:</i> Ask learners to read a text and create a drawing or a series of drawings to demonstrate understanding. At more advanced levels, learners can be asked to make concept maps showing relationships among characters, places, and themes in the texts.</p>
<p>Reads and identifies the different structure elements.</p>	<p><i>Cloze exercise:</i> (An assessment consisting of the removal of a section of a text, one word or more words and the learners have to replace the missing words).</p> <p>The teacher should first decide whether to eliminate key vocabulary words or eliminate a set of words, e.g., every 7th word. The teacher should be sure to leave the first and last sentences intact to assist with learners' understanding. The cloze task can become progressively more difficult at each grade level.</p>
<p>Recognizes values and beliefs included in a text.</p>	<p><i>Values chart:</i> Learners read a book that has explicit cultural values expressed in it. They can produce a values chart on the blackboard or on a large piece of paper to convey the different values and beliefs in the text. Learners can also be asked to write a paragraph or a long essay in which they discuss the character in the text whose values are most similar or dissimilar to their own.</p>

Identifies purpose, point of view and audience	<i>Agree/ Disagree:</i> Learners read a text about a critical issue and then complete an Agree/Disagree chart. They write down the aspects that they agree or disagree with in the two columns. As above, they can then be asked to write about their responses and explain their viewpoint.
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Writing skills

Assessment standard: Write and make meaning of a range of words Write correctly with understanding at a certain pace Summarize the key message in a paragraph Respond in writing for a range of purposes	
Assessment context: Writing happens throughout primary school, especially in the years following kindergarten, but specific writing skills are taught and assessed during literacy time. Individual learners' ability to write effectively is assessed using suitable rubrics that focus on specific writing skills being developed at a particular grade level. Learners should be able to respond by writing as part of a group and individually.	
Outcome of the learning to be demonstrated by the learner	Description of the assessment task/tasks
Writes and makes meaning of a range of words.	<i>Chart:</i> Learners design posters with pictures and appropriate captions and longer segments of written text. The charts should demonstrate more sophisticated vocabulary and writing skills as learners move through the senior primary level.
Summarizes the key message of a text or discussion	<i>Write a tweet:</i> Learners summarize what they have learned in a lesson using only 140 characters. The teacher should help them to identify the main ideas and the meaning they seek to convey to their audience.
Writes with an understanding of how a paragraph should be organised.	<i>Key words on a topic:</i> The teacher gives learners 5 key words based on a topic they have been discussing and asks them to write a paragraph using these words. Learners should be able to demonstrate an understanding of how the words are related to a larger theme that they identify in the topic sentence and final sentence of the paragraph.
Writes appropriately for a range of purposes.	<i>Write-about:</i> The teacher gives learners a topic related to a book or story they have been discussing and asks them to write about it using different genres, such as a letter to a friend, a poem or a letter to the editor of a newspaper. The

	teacher should emphasise the importance of thinking about audience when writing and how the audience affects the formality of the text.
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Assessment of learning (Summative assessment)

Traditionally, teachers and educational systems as a whole have used summative assessment at the end of a unit, term, or school year to determine learning rather than using ongoing formative assessment aimed at developing critical thinkers. Summative assessments tend to serve as judgements on learners’ abilities as though these abilities were fixed, and they typically do not make interventions in the learning process in a timely manner as formative assessments do. However, summative assessment can play an important role in the development of critical thinking skills as it should involve the review of a range of materials gathered over time in order to understand and document the learner’s progress. From this perspective, reflection becomes very important as the teacher considers what she knows of the child, analyses the information collected and reflects on what it tells her about the learner’s learning compared to the intended outcome.

In the language and literacy classroom, summative assessment can take the form of integrated assessment tasks. An integrated summative assessment task is planned very carefully and may include a range of instructions that incorporate several of the language skills of listening, speaking, reading and writing. The task instructions should, as far as possible, include the application of critical thinking skills. These tasks could be given to the learners to assess their progress towards selected outcomes at a specific stage of the year, e.g., at the completion of a theme or at the end of a term. Whatever method is used summative assessment should:

- Focus on highlighting learners’ strengths and illuminating their learning;
- Be communicated in clear, appropriate language and make sense to the learners;
- Only be administered to complete the decision-making process or to summarize the learner’s progress; and
- Be free from bias and sensitive to cultural and linguistic differences.

The examples below illustrate integrated assessment tasks for different levels.

An example of an integrated kindergarten summative literacy assessment task

Description of the task	Skills targeted for assessment
<p>Picture categories Provide the learners with pictures of different types of food that have been discussed during this theme. The learners are instructed to arrange the pictures according to the following different categories:</p> <ul style="list-style-type: none"> • Fruit • Vegetables • Other food 	<p>While completing the assessment task, the learners must apply the following skills:</p> <ul style="list-style-type: none"> • Listen to the instruction • Look and interpret pictures • Distinguish one type of food from the other • Explain the reasons for matching the pictures with the correct category • Summarize orally what they have done to complete the task

Examples of integrated Standards 1 – 3 summative literacy assessment tasks

Description of the tasks	Skills targeted for assessment
<p>Story worksheet Teacher develops her own short story about the different animals that roam the earth. This is at the end of a unit on animals because she wants to assess how well the learners have understood the distinctions among the different animals.</p> <p>As she tells the story, the teacher displays pictures and the flash cards with the names of the animals. The learners listen to the story and follow the instructions on the worksheet to arrange the names of the animals according to the following categories:</p> <ul style="list-style-type: none"> • Animals we find in the zoo • Animals we find in water • Animals we find on land • Animals that can swim • Animals that can fly • Animals that have four legs 	<p>While completing the assessment task, the learners must apply the following skills:</p> <ul style="list-style-type: none"> • Listen to the story as the teacher reads it • Read the instructions and categories on the worksheet • Look at and interpret pictures • Distinguish between the different animal pictures and names for them • Use reasoning to match the pictures to the names of the animals • Categorize the different animals according to the characteristics given on the worksheet • Summarize orally what they have done to complete the task

Example of integrated senior primary summative literacy assessment tasks

Description of the tasks	Skills targeted for assessment
<p>Reading and interpreting an original story The teacher selects a new reading text but removes the title. This happens at the end of a unit in which the class has been discussing the importance of titles as a means of summarizing the main idea in a text.</p> <p>The learners are instructed to read the text independently and to write down several possible titles for the story, with a short paragraph explaining why each title might be suitable. The learners are told that the paragraphs should summarize one or more of the main ideas in the text.</p> <p>The teacher reads and assesses the paragraphs based on a suitable rubric, and he chooses several learners with good titles to read their paragraphs to their peers as part of a class discussion about the text and about the importance of titles.</p>	<p>While completing the assessment task the learners had to apply the following skills:</p> <ul style="list-style-type: none"> • Read the text independently • Synthesise the story content and compose suitable titles based on the content • Compose several titles that capture the main ideas in the text • Write persuasive paragraphs explaining the learners' choice of titles • Present and discuss orally some of the learners' titles

Conclusion

Critical thinking needs to be enhanced among language learners due to its significance in developing effective language learning. This chapter emphasized that assessments in language and literacy can be a vital component in teachers' efforts to improve critical thinking skills. It also provided numerous examples of how teachers can use formative and summative assessment tasks in kindergarten, Standards 1-3, and senior primary to develop learners' listening, speaking, reading, writing and structure and use of language whilst integrating critical thinking skills in each of these four domains.

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CHAPTER FIVE

Integrating Critical Thinking Across the Curriculum

Introduction

The development of critical thinking is an important goal of primary education in Malawi. According to Beyer (1985), "critical thinking has two important dimensions. It is both a frame of mind and a number of specific mental operations" (p. 271). Having a critical spirit is as important as thinking critically. The critical spirit requires one to think critically about all aspects of life, to think critically about one's own thinking and to act on the basis of what one has considered when using critical thinking skills (Norris, 1985). Being a critical thinker also requires developing particular attitudes or dispositions such as respect, cooperation, ability to listen and to deliberate.

A very powerful environment for promoting critical thinking is created when teachers are able to integrate it across the curriculum by thinking about how to connect their particular subject-humanities, languages, mathematics or science—with other subjects. Such connections are useful for developing learners' higher-order cognitive skills, such as analysis, evaluation, and synthesis. When one subject area reinforces content in the others, learners begin to identify and understand relationships between concepts and develop new understandings across the curriculum.

This chapter will discuss ways for integrating critical thinking across the curriculum and provide examples of how teachers in humanities, languages, mathematics and science can support the learning of content and critical thinking skills in each of their subject areas.

School-based support for integration of critical thinking across the curriculum

It can be a challenging experience for teachers to design lessons that create opportunities for critical thinking *and* to find ways of supporting learning of other content areas. However, learners who experience such integration learn to synthesise information from multiple sources and evaluate it in a more sophisticated manner. For instance, learners may learn in their life skills class about how to prevent malaria, but their learning moves to a higher order when this information is connected to a language activity in which learners write about a time when they were sick and to mathematics lesson in which learners learn to multiply numbers using the reproduction of malarial parasites in the bloodstream as an example. When content and critical thinking skills are infused throughout the curriculum, there is continual reinforcement of core content throughout the school day and opportunity to think about it from different perspectives.

School leaders, such as head teachers, play a critical role in creating the conditions that allow teachers to integrate critical thinking across the curriculum. Teachers need to work together and determine the following:

- How best to prompt learners to use different strategies to think about the content they are learning in each of their classes.

- How to encourage learners' development of higher-order thinking skills that can be used in every subject area.
- How to relate the content in one class to the content of others to stimulate greater interest by learners in what they are learning.

The following strategies can be used to create a holistic, school-wide approach to teaching critical thinking:

- Teachers work with school heads to develop a system by which teachers who teach the same learners (all Standard 3 teachers, for example) are allocated time every two-three weeks to share with their fellow teachers the content (topics) they are working on in their humanities, languages, mathematics or science classes and how they are trying to promote critical thinking during these lessons.
- Teachers identify vocabulary, stories, experiments, field trips and other activities that would reinforce the learning of content across two or more subjects, and they share with one another the specific critical thinking skills they seek to develop in carrying out these activities.
- Teachers visit their fellow teachers' classes whenever this is feasible and provide peer feedback in a supportive, non-evaluative manner on how their colleagues could continue to improve their use of critical thinking methods and strategies to teach content across the curriculum.
- School heads allocate time each month when teachers can share with one another a particularly effective method for promoting critical thinking they have recently used in the classroom. They can also use this time to discuss how the school can promote curriculum integration through the development of themes that are relevant to more than one subject and that promote critical thinking. If time is limited, two teachers could be selected each month to share examples of how they are working to integrate a common theme in their classes and the critical thinking skills they are building into this theme. As teachers become more comfortable with this form of school-based professional development, they can also be encouraged to discuss efforts at integration that did not work as well as planned or critical thinking methods that did not seem effective. Their colleagues can provide feedback on how to make their efforts more successful.

Classroom-based strategies for critical thinking integration across the curriculum

Teachers can do a great deal to encourage critical thinking and curriculum integration. It can be done in many different ways using simple strategies, such as, on a Friday, asking different learners during the humanities class to mention something they learned in their language class that relates to their learning in humanities that week. This strategy builds oral proficiency and can be used to develop summarizing skills. Critical thinking and curriculum integration can also be much more elaborate, as when an accountant from the community is invited to come to class and talk about how s/he uses mathematics, and the language and literacy teacher, later the same day or the next day, asks learners to role play being an accountant and client or to write a story about an accountant who does not know how to multiply numbers.

In preparing to use an integrated approach, teachers should:

- share their plans with their fellow teachers to make sure important content has been covered or activities (such as a guest speaker) have occurred as scheduled;
- identify the concepts and skills in their content areas that they seek to reinforce by drawing on content in other classes;
- asks reflective questions to guide learners toward analysis, evaluation and synthesis of concepts or facts learned in two or more subject areas; and
- reinforce critical thinking by providing ample opportunities for learners to engage in thinking independently.

In integrating critical thinking across the curriculum, it is important for teachers to consider the following points about learning:

- The interdependence between content and thinking means that teachers should strive to incorporate critical thinking skills into a wide variety of subjects, situations, contexts and educational levels. Learning a subject means learning the terminology, understanding the concepts, being able to discuss and write about it critically and to transfer this subject knowledge to other contexts.
- Critical thinking can and should contribute to achieving learning outcomes through assessment. This can include content understanding, recall and communication skills as well as skillfulness in thinking.
- Interaction during instruction should be encouraged because it allows learners to share ideas, confront different and even conflicting perspectives, challenge views of other people or to be challenged and defend their own perspectives. They learn from each other by collaborating and deliberating, all of which ultimately contributes to their critical thinking. Such interaction creates a constructive avenue for learners to learn and experience a democratic way of living.
- Classroom conditions that stimulate critical, creative thinking are necessary so that learners are encouraged to make inferences, think intuitively and spontaneously and use inquiry-discovery teaching techniques. Learners need to feel free to suggest and experiment with new ideas and approaches.

Specific strategies: Integrating humanities, languages, mathematics and science

- (a) *Word walls*: Teachers can identify a space on one wall in the classroom where important vocabulary can be recorded. The word wall can be specific to one subject (Figures 5.1a and 5.1b) or, if teachers share a classroom, the word wall can have key terms from different subjects on it (Picture 5.2) This kind of visual reinforcement of key words helps to build language and literacy skills, and it encourages learners to synthesise vocabulary learned in different subject areas if teachers develop questions and other activities that require them to do so.



Figure 5.1a: Science word walls

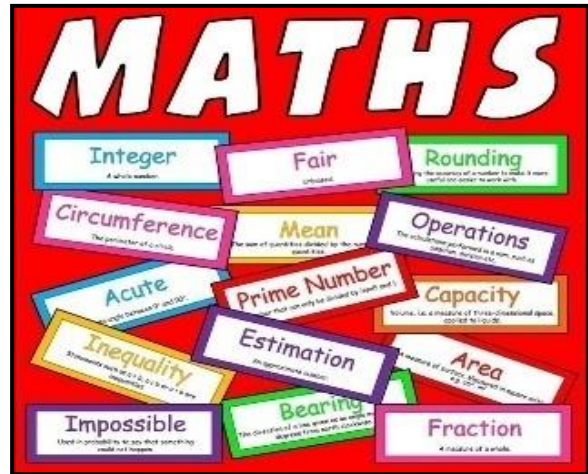


Figure 5.1b: Mathematics word wall



Figure 5.2: Multi-subject word wall

(b) *Word tree*: A word tree can also be used to stimulate lower order and higher order questioning in the humanities, languages, mathematics and science (Figure 5.3). This word tree can be exhibited on the classroom wall and a conversation or a questions session to stimulate critical thinking on any topic could be guided by these questions. This strategy is suitable for use in Kinder or lower primary and senior primary.

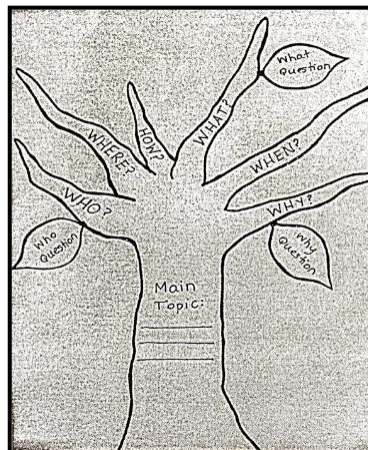


Figure 5.3: Multi-subject word tree

- (c) *Drama*: There are many ways that drama in the form of role-playing and plays can be used to develop content knowledge in the humanities while also reinforcing listening, speaking, reading and writing skills in the language classroom. Religious education has stories that can be retold in the form of a full-length play or as a short role play, and the learners could be required to use certain word forms or grammatical structures that they are studying in their languages class. A play could also be developed that addresses the topic of gender and entrepreneurship from the life skills component of the humanities curriculum. In the play, learners could have some of the characters doing the mathematical calculations they have been studying in their mathematics class. By developing their own script, learners would have to synthesise information from life skills and mathematics classes and analyse the kind of mathematics problems an entrepreneur in a particular field might need to do.
- (d) *Stories and story problems*: Every subject in the curriculum requires some degree of reading, and the creative use of stories can lead to curriculum integration and critical thinking. For instance, reading passages in language classes can be based on historical narratives related to a topic in religious education or life skills, and story problems in mathematics can be connected to content in life skills classes. Teachers in each subject could use these texts as prompts for learners to think more deeply about their particular subject and the complementary subject area through the use of questions that promote critical thinking.
- (e) *Analysis of charts and graphs*: Many topics in the curriculum require learners to analyse charts or graphs, such as topics related to population size, economic growth and languages spoken in different countries. Learning how to make sense of these visual representations requires mathematics, and this can serve as an important connection between mathematics and other subjects, and between mathematics and the daily lives of learners. When learners understand how to analyse charts and graphs, they will be able to think more critically about how these visuals are used in the media and whether they are being used properly.
- (f) *Experiments and field trips*: As mentioned earlier in this chapter, teachers can work together in many creative ways. This helps to integrate and reinforce the curriculum and it also saves time, money, and teachers' energy when they do so. For example, the science teacher and the humanities teacher could work together to create an experiment or an outdoor observation that addresses a topic that is in the Social Studies curriculum. The same could be done with the mathematics teacher who might want to teach learners about graphing what they observe during an experiment. Field trips are also desirable when organised well and involve critical thinking on the part of learners, but they can also be costly; however, when two or three teachers work together to develop a field trip, the field trip would reinforce content in all of their subjects. Teachers can think creatively about what such sites might be (hospitals, manufacturing plants, national parks, etc.) and how a trip to the site could serve as the basis for activities in humanities, languages, mathematics and science.

Conclusion

This chapter has introduced the importance of reinforcement of content and critical thinking across the curriculum. Strategies that school leaders and teachers can use to support such work have been provided. The chapter also described a number of specific ways that teachers in the humanities, languages, and mathematics can integrate key content from their particular subject areas with content in other subjects. This demonstration of how information can be synthesised and analysed from different perspectives will help learners to do the same, thereby strengthening their critical thinking skills.

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