

Changing Teaching Practices

*using curriculum differentiation
to respond to students' diversity*



Changing Teaching Practices

*using curriculum differentiation
to respond to students' diversity*



United Nations Educational, Scientific, and Cultural Organization

Acknowledgments

UNESCO wishes to thank all the following persons for their contribution to the development of 'Changing Teacher Practices, using curriculum differentiation to respond to students' diversity':

Most importantly, this material would not have been developed without the efforts of Darlene Perner, USA, who has been working on it since its inception. Darlene Perner has led the project, modified and coordinated all changes and collaborated closely with several reviewers. Some of these individuals have contributed substantially to the development of the material over multiple phases, whereas others have provided general and valuable feedback:

Anupam Ahuja, Jill Balescut, Maria Luisa Barros de Sousa, Rosa Blanco, Vinayagum Chinapah, Diariatou Coulibaly, Nancy Edwards, Kenneth Eklindh, Windyz Ferreira, Rima J. Hatoum, Hala Ibrahim, Hegazi Idris, Gwo Jih Lee, Ragnhild Meisfjord, Lois Ndegwa, Sithabile Ntombela, Hildegunn Olsen, Sue Robinson, Olof Sandkull, Martha Speelman, David Stephens, Julie Stone, Sai Väyrynen, Traian Vrasmas, Roselyn Wabuge Mwangi.

In addition, we wish to mention that Sai Väyrynen field-tested and brought substantial input to the material when using the material in two provinces in South Africa via SCOPE (South African – Finnish Co-operation Programme in the Education Sector) over a two year period.

Published in 2004
by the United Nations Educational,
Scientific and Cultural Organization
7, place de Fontenoy, 75352 PARIS 07 SP

Composed and printed in the workshops of UNESCO

© UNESCO 2004
Printed in France
(ED-2004/WS/40 cld 16711)

Table of contents

Introduction	5
Unit 1: Curriculum Differentiation and Our Students	11
Unit 2: Environmental Strategies	39
Unit 3: Instructional Learning Strategies	55
Unit 4: Assessment Strategies	71
Unit 5: Curriculum Differentiation: Putting It Together	87
Sample Lessons	95
Glossary of Terms	109
Venn Diagram Template	111
References	112

Key:



Learning Strategy



Example

Introduction

One of the most urgent challenges facing the world today is the growing number of persons who are excluded from meaningful participation in the economic, social, political and cultural life of their communities. Such a society is neither efficient nor safe. Education is seen as key to enhancing people's capabilities and widening their choices in order to enjoy the freedoms that make life meaningful and worthwhile. Firstly, the skills provided by basic education, such as being able to read and write, are valuable in their own right. Secondly, education can ameliorate other more negative features of life. For example, free and compulsory primary education reduces child labour. Thirdly, education has a powerful role in empowering those who suffer from social and economic devaluation. Universal education, attained by all, has a unique and fundamental impact in addressing social and economic barriers within a society and is therefore central to realising human freedoms.

Teachers the world over are in a key position to make the goals of *The Dakar Framework for Action, Education for All: Meeting our Collective Commitments* as expressed at the Dakar World Education Forum in 2000 happen. Although the grassroots work might sometimes appear 'small' or 'of limited interest', the success of achieving those goals is built in the classroom. Particularly relevant goals for any teacher are:

- ensuring that all children have access to and complete free and compulsory primary education of good quality (Goal 2)
- ensuring that the learning needs of all young people and adults are met through equitable access to appropriate learning (Goal 3)
- improving all aspects of the quality of education (Goal 6).

Why are these Goals important for teachers?

With respect to the rights of children, whatever prevents children from education is teachers' social and professional responsibility. Teaching and education should not be seen only as a technical exercise within a classroom but every teacher should make efforts to reach out to all children in the community as part of their responsibility as adults and citizens. Furthermore, there is evidence from all over the world that many children do not achieve according to their potential because they find learning to be 'boring'. It is indeed a challenge for teachers to ensure that the work that is being done in the classroom is relevant to the children and their contexts, that it respects their world and responds to their particular needs. Many children attend school at the primary level but soon drop out or are 'pushed out' due to uninteresting teaching and methodology, and/or an assessment system that labels them as poor achievers. Home conditions, long distances to school, and lack of safety, especially for girls, pose further barriers to an effective learning experience. Many children also attend school without any previous exposure to formal learning. Many children come to school accompanied by their younger siblings as there is nobody to care for them at home. Childhood is

often burdened by responsibilities of cleaning, washing, cooking, looking after cattle, caring for their siblings, collecting firewood, earning additional income for the family and so on. Taking these challenges into account, it becomes clear that traditional frontal teaching and rote learning do not enhance many children's motivation for school. When the Education for All movement talks about 'all children' this means being cognisant of the needs of all children in the classroom – not only those who seem to adjust themselves to the usual tradition of teaching and learning.

UNESCO recognises that teachers all over the world are open to trying out new teaching strategies. We know of and have observed dedicated and committed teachers who make a difference in the lives of their students and in their communities through providing important learning opportunities. We do recognise that many teachers are also demoralised, discouraged and unmotivated due to the lack of support from the education authorities, harsh living and working conditions and many other reasons. Yet, teachers are doing hard work and they need the support and encouragement that will enable them to grow, develop and use new methods.

Research has clearly shown that teacher education as such is not sufficient for effective teaching and learning. Teachers need support in order to develop in their profession. In many countries, teachers benefit from continuous in-service training but in other countries there is very little if any support available for professional development in the schools. **This document is an effort to support teachers in developing and expanding their own capacities.**

UNESCO has been working on developing inclusive education worldwide. The Salamanca World Conference on Special Needs Education (1994) stated that:

... regular schools with this inclusive orientation are the most effective means of combating discriminatory attitudes, creating welcoming communities, building an inclusive society and achieving education for all; moreover, they provide an effective education to the majority of children and improve the efficiency and ultimately the cost-effectiveness of the entire system.

In order to contribute towards this goal, UNESCO has produced a number of resource materials over the years. An important training material has been the UNESCO Teacher Education Resource Pack: Special Needs in the Classroom. It set out the basis for inclusion in classrooms through more effective use of resources, team work and collaborative learning, and curriculum considerations. *Changing Teaching Practices, using curriculum differentiation to respond to students' diversity* continues to support this by emphasising strategies that teachers can use with a view of providing meaningful learning experiences for all students in their classes, and bringing to the forefront the importance of getting to know one's students.

The need for this material has come from teachers working in a range of conditions in classrooms around the world. Many of these teachers recognise that they have to adapt, modify and differentiate their teaching so as to ensure that all students in their classes learn to their potential. However, they have also felt that they lack skills and knowledge as to how this can be done, especially where there are low resources and large class sizes.

Development of this material is based on experiences of teachers and other education professionals from different regions working together. While you read this document, you will notice that all examples come from schools. This is what teachers do. Some of it they might have discovered by themselves. Some of it is a result of various development activities both in countries of the North and South. A lot of it is about good teaching and common sense...



What is learning and teaching?

Education for All goals talk about all children but who are the *all*? It is clear that the recent benefits of educational development have not reached all uniformly especially those belonging to marginalised groups. The exclusion often has a social, financial, ethnic and lingual base. Groups remaining ignored in education are often children from ethnic and linguistic minorities, girls, children with severe social stigma (e.g., sex-workers' children, children from slums), working children, street children, domestic helpers, children who are physically and intellectually challenged and many others. Reaching out to all the marginalised groups of children is not about addressing the needs of certain students to the disadvantage of others.

We have already mentioned some of the barriers to learning that children may face. These obstacles are due to economic and social conditions more than factors 'within' the children. It is beyond the capabilities of the education system to address all the issues within the schools but education can make a contribution to alleviate economic and social disadvantage. We believe that the education system at all levels has the responsibility and possibility to make changes despite the challenges and pressures that are faced at different levels. We need support and we need to facilitate positive development.

Working within the context of syllabi or ministerial curriculum guidelines, the main impact that teachers have is through what is happening in the classroom. By increasing awareness of different learning styles, backgrounds, experiences and learning needs, teaching becomes a more reflective practice. By reflective practice we mean that the teacher observes his or her own teaching, what is happening in the learning process and makes a critical assessment as to what is working and what is not.

Often bureaucratic and insensitive daily practices create barriers to learning. For example, in many contexts, children who take care of their siblings are not allowed to come to school with their siblings – thus effectively denying their opportunity to learn. Research shows that many children who experience learning difficulties become frustrated when they are not effectively supported and eventually drop out. Teachers can also help retain children in classrooms by making their teaching more interesting, appealing and motivating, as well as providing opportunities for learning success. Many children find learning irrelevant and boring, and again, teachers are in a key position to include useful skills and knowledge in their teaching that truly reflect children's realities.

Another way of developing interest in learning is to support students' sense of responsibility for their own learning. This includes aspects such as providing opportunities for autonomy, independent and critical thinking, as well as participating in decision-making in the classroom and the school. Sometimes this is not easy. We have to critically analyse the relationship between teachers and students. It is a question of power, collaboration and negotiation.

We recognise that education systems have a complex and interactive relationship with what is happening in society as a whole. The system reflects and influences what is happening in society and trends from society influence educational policy and commitment. Education systems change slowly but classrooms are constantly changing. Flexibility in attitudes and practices can help teachers in addressing the changing needs of children, their families and society as a whole.

How can you get started?

Throughout this document, you will find practical examples of how the ideas introduced can be put into practice in ordinary classrooms. Most of these examples are

from contexts where there are very few resources. If you have more resources available for teaching and learning, you may have a wider choice in your approaches.

Professional development – becoming a better teacher – is chiefly about learning to know what we are doing in the classrooms and how to improve our teaching. Here you do not need a lot of resources but perhaps a different approach to the work. Teaching and learning are effectively about collaboration, working together. It is about the personal growth of teachers of all ages and experiences. It requires courage to be confronted with, share and receive criticism. Teaching is learning and accepting that we cannot succeed all the time. When you start using a new strategy or a new way of relating to your students, it is important to create a safe environment for this experimentation. School principals and other administrators are in a key position to facilitate this. You will soon realise that when you start to collaborate you develop openness and the courage to accept change. Schools that create an environment where experimentation and sharing is encouraged can begin to change. Experiences show that even a single teacher or a small group of teachers can start the process and then it gradually spreads over the school through collaboration and sharing. Developing teaching and learning is not an easy task. It is a learning experience that unfolds over a period of time. There are no ready-made recipes. Schools and teachers have to work these out for themselves and in their own context. To conclude, a deputy principal from a primary school summarises what schools are likely to experience, “We don’t know everything but we can be creative in solving our problems.”

What is the purpose of this material?

This material was developed to facilitate and support inclusive education. It is meant to help us become better at teaching all students together regardless of their abilities, disabilities or background of experiences. The suggestions, strategies, and learning activities are here for you to choose what you might like to try in your classroom.

What is this material about?

This material is about strategies and learning activities to facilitate curriculum differentiation. What does this mean? Carol Ann Tomlinson (1996) says it best, “In a way, it’s just shaking up the classroom so it’s a better fit for more kids.” Differentiated curriculum is a way of thinking. It is a way of thinking about our students. It is a way of thinking about what our students really need to learn in school. It is a way of thinking about how we teach students and how they learn. It is a way of providing instruction that meets the needs, abilities and interests of our students. It is a way of thinking how each of our students is going to successfully learn the skills and concepts we want them to learn. It is a way of thinking about what our students like, what they are curious about, and what motivates them to be self-starters in the learning process. It is thinking about teaching and learning in new and different ways. There is no beginning or end. It is a process, and as such it continually develops. Therefore, there is no one correct way to do it. There is no cookbook, recipe, and ingredient that will work all the time. What there is, however, is a philosophy about students, teaching and learning. Supporting this are effective teaching and learning strategies that contribute to curriculum differentiation. The focus of this material is to embrace the philosophy of curriculum differentiation (also identified as differentiated instruction by Carol Ann Tomlinson [1999, 2001] and multi-level instruction by Jean Collicott and Julie Stone [Campbell, Campbell, Collicott, Perner & Stone, 1988; Collicott, 1991; Perner, 1994, 1997; Perner & Stone 1995]).



How is the material presented?

The material is divided into five units; each unit introduces different suggestions, strategies and activities. Strategies within each unit may be tried and used separately. The last unit brings together various components and strategies from the other units. This is done just to show how the various components and strategies can work together. The five units of this material are:

1. Curriculum Differentiation and Our Students
2. Environmental Strategies
3. Instructional Learning Strategies
4. Assessment Strategies
5. Curriculum Differentiation: Putting It Together

For Facilitation is a practical tool, following each unit, which offers some suggestions for teachers to use in the classroom. Even though the material is set up for individual teachers to read and use, we hope that teachers will have the opportunity to work together.

At the end of this book, there are three sections:

1. Sample Lessons
2. Glossary of Terms
3. References

In the *Sample Lessons* section, five example lessons are provided. These lessons demonstrate various methods and activities used to differentiate the curriculum.

Important Note:

There are many components and strategies in curriculum differentiation. Learning to use curriculum differentiation involves developing a repertoire of skills. Each skill contributes to one's professional development and each one builds upon the others. Over time, these skills can become an integral part of any classroom. However, learning any new teaching method takes time to understand, practice and master. We learn what works for us in teaching by what works and does not work for our students (i.e., whether our students acquire the skills, concepts and behaviours we are teaching). Even though all this can be overwhelming at first, it is important to take the first step and try just one strategy at a time. Adapt the strategy to be workable for you, your culture and your teaching style. Then add on more strategies and create your own...soon you will feel comfortable with curriculum differentiation and you will see the benefits in your students' academic success. Also as you become more skilled you will be able to integrate additional components of curriculum differentiation. You will come to understand that curriculum differentiation is not "a variety of activities." It is a way of planning, assessing and teaching a heterogeneous group of students in one classroom where all students are learning at their optimal level.

Curriculum Differentiation and our Students

How do we differentiate our lessons and get to know our students better?

Mrs. Kichwa, plans to conduct a reading lesson in her class. She walks into her classroom and meets her 80 students. Some of them are shouting at each other; others are breaking pieces of chalk and throwing them; and others are quietly waiting for the lesson to begin. She claps her hands and the students take out their readers. Mrs. Kichwa asks the students what they read yesterday. When they tell her, she asks them to go to the next story, Priscilla and the Butterflies. One of the students who is the regular reader in her class, stands up and begins to read this story. While the boy is reading, some students are still trying to find their book, and others are still talking; many of the students have not brought their reader. A few students are paying attention to the page of the reader and listening to the boy read.

While this is happening, Mrs. Kichwa is engaged in completing the attendance register and, occasionally looks up and shouts at one or more students, "Hey, look at your readers. I am going to ask some questions. All of those who do not answer the questions correctly will have to stand out in the hall." Soon the head teacher walks in to the classroom and beckons Mrs. Kichwa to come talk to her in the hall regarding completing her attendance register.

In many parts of the world, this is a typical teaching lesson for reading. The teacher meets her class and gets the lesson going by selecting one student, who is capable of reading, to start the reading of the text. The other students are expected to follow along in the text. At the end of the story, the teacher assesses students' reading comprehension by asking a few questions. Those who know the answers raise their hand and the teacher calls on them. Once the questions are answered, the reading lesson usually ends.

Let's look at Mrs. Kichwa a year later with a new class. She is teaching her students using the same reading text.

Mrs. Kichwa plans to conduct a reading lesson in her class. She walks into her classroom and meets her 80 students. She spends some time talking to children informally encouraging them to relax, interact, smile and laugh. The students see she is carrying a book, *Priscilla and the Butterflies* and Mrs. Kichwa holds the book up so all the students can see it. Then Mrs. Kichwa introduces the book by asking them questions about the book. For example, she asks, "What colours are on the cover of this book?" "What is on the cover of this book?" "Who do you think are the main characters in this book?" "What is the name of the book?" "Who is the author?" Once a student answers, Mrs. Kichwa asks other students to explain what is meant by the term, author? Then she proceeds to ask if any students know what a butterfly is? She encourages working in pairs, each student discussing the question with a neighbour. She continues to ask questions to gain the students' interest such as, "Does anyone want to predict what this story is about?" "How do you think the story might begin?" "How might it end?" Mrs. Kichwa helps to facilitate some of the responses by prompting the students with such questions as, "Who do you think Priscilla is?" "What do you think happens to her and the butterfly?"

While doing so, the head teacher walks in and joins the discussion. The head teacher predicts what she thinks the story is about. Before the head teacher leaves, she reminds Mrs. Kichwa that three days from today, she along with the other teachers must stay back for fifteen minutes to complete their attendance register. Mrs. Kichwa thanks the head teacher for the reminder. Finally, Mrs. Kichwa reads part of the story.

For the next day, she asks her students to bring information on butterflies such as stories from their family, community members or elder peers. Mrs. Kichwa also reminds them that they will be in groups to share readings to complete the story of *Priscilla and the Butterflies*.

These two brief accounts of Mrs. Kichwa's reading lesson help us to ask the following questions. Which of the two lessons do you think is more effective in terms of:

- ☑ drawing students' attention to the lesson?
- ☑ facilitating the learning of all students?
- ☑ meeting different students' learning styles?
- ☑ students' participation and engagement?
- ☑ using existing material and human resources?
- ☑ assessing students' learning?

As teachers reflect on their practice, they find they have answers to many of these questions. Teachers realise they have the ability to use many strategies to help all students learn at their own pace and level. To do this successfully and within a limited time period, sometimes requires that we work together, teaming up with teachers and students to generate discussions which lead to new ideas and ways of teaching. We strengthen our skills when we use collaboration as we will see in Unit 2. By asking questions, planning, problem-solving, preparing and sharing information and materials, and evaluating with our colleagues and students, we can expand our own ways of teaching and learning methods.

In this unit...

...we will focus on describing and providing examples and activities on some important features of curriculum and curriculum differentiation. We will look at teacher and student similarities, differences and assessment, and how they relate to teaching and learning. Included will be how various components of curriculum can be modified for different students and groups of students. A number of strategies will be identified that will help us to get to know our students better.





For example, one curriculum modification that Mrs. Kichwa used with her new class was that she presented a variety of questions about the book. By doing this, all students could answer at least one question, could ask each other questions and thus, be involved in her reading lesson.

What is curriculum?

Curriculum is what is learned and what is taught (context); how it is delivered (teaching-learning methods); how it is assessed (exams, for example); and the resources used (e.g., books used to deliver and support teaching and learning).

Often we, as teachers base our curriculum content, the “formal curriculum,” on a prescribed set of educational outcomes or goals. Because this formal curriculum may be prescribed by authority, teachers feel constrained and often implement it rigidly. Teachers feel that they cannot make changes to or decisions about this type of prescribed curriculum including the predetermined textbook selection. As a result teachers are bound to teaching from the textbook and to the “average” group of students. In many countries teachers do this because the system has content-loaded examinations that students must pass and teacher success is measured by students’ performance on these examinations.

We will also consider the informal or ‘hidden’ curriculum – the ‘unplanned’ learning that occurs in classrooms, in the school compound or when the students interact together with or without the teacher present. It is important that we are aware of the informal curriculum as it can be used to reinforce formal learning; for example with students being encouraged to extend their learning out of class through extra curricular activities and homework. It is important that students are encouraged to see this as ‘their’ work and not a chore to be done because the teacher says so.



Let’s take a look at what curriculum may mean in Mrs. Kichwa’s first class. We can speculate that Mrs. Kichwa is bound to get the book read because it is prescribed as a beginning of the year story for year six. She feels she has had to sacrifice student participation, interest and students’ reading levels during this reading lesson. She has done so all in the interest and good intent of “covering” the curriculum. A year later in Mrs. Kichwa’s new class she continues to feel bound to get the book read; however, there is a difference. In this new class, Mrs. Kichwa uses student participation, interest and background knowledge about her students and their reading levels to “get her job done!” Mrs. Kichwa engages students at their own level to participate in the reading lesson. She also allows students to discover their own meaning of the story. Mrs. Kichwa is helping students build a positive disposition towards reading, and learning.

As you think about curriculum, let’s consider some questions and reflect upon them.

- ☒ What is curriculum?
- ☒ What are you expected to cover in the curriculum?
- ☒ Why is curriculum one of the biggest challenges to inclusion?
- ☒ Why is it that some learners are not considered able enough to be using the same curriculum?
- ☒ Is it appropriate to reduce the curriculum?
- ☒ How do you perceive curriculum and its transaction in the classroom?
- ☒ What factors influence curriculum?

What is differentiation?

In a way, it's just shaking up the classroom so it's a better fit for more kids.

Carol Ann Tomlinson (From an interview with Leslie J. Kiernan, 1996)

In order to be fair to our students and facilitate learning of all students, we need to adapt or modify the curriculum so it “fits” the students’ learning needs. Teachers differentiate the curriculum so they do not discriminate and teach to only a select group of students (i.e., only those students who are at, or near, year (grade) or age level ability in the prescribed curriculum). Teachers offer students a variety of learning experiences to meet their different learning needs.

Curriculum differentiation, then, is the process of modifying or adapting the curriculum according to the different ability levels of the students in one class. Teachers can adapt or differentiate the curriculum by changing: the content, methods for teaching and learning content (sometimes referred to as the process), and, the methods of assessment (sometimes referred to as the products). *It might mean, for example, dividing the class into four ability groups or dividing them into mixed-ability groups in which the students with more experience help the students with less experience.*

What is the content of the curriculum and how can we modify it?

The Content. Before we make decisions on how we are going to teach, and what we need to modify, we first need to identify the content. Content is what we teach. Content is what the student is expected to learn, that is, to know, understand or be able to do. It includes facts, concepts, and skills that students will acquire within their learning environment. Sometimes teachers are able to select the content to suit the students’ needs. Sometimes it is the authority of the school that has prescribed the content of the curriculum; sometimes it is a combination of teacher and authority. Because of curriculum demands and time constraints, it is often a challenge for the teachers to select content which is based on:

- ☒ being meaningful,
- ☒ students needs and interests,
- ☒ the environment, and
- ☒ more than just learning facts.

We know that for many teachers, content is simply what is prescribed by the ministry of education.

In curriculum differentiation, teachers are encouraged to modify the content to some extent to help students reach the outcomes.



For example, in Mrs. Kichwa's new class, she is working on the skill of reading and understanding the text. Mrs. Kichwa has planned her lesson so that most of the students in her class will be able to answer the questions, “What is the title of the book?” “Who is the author?” She also asks, “What is the colour of the book cover?” “What do you see on the cover of this book?” and, after a student gives the title of the book, Mrs. Kichwa asks, “Who do you think is the main character in this book?” She has modified the content by asking these additional questions so that all the students can participate in the lesson and begin to gain an understanding of “reading the text.”



What other components of the curriculum can we modify?

With content selected, and changed as necessary, we can consider other components that we may want to modify for any individual student or for a group of students.

Curricular Components—Teachers Can modify the:

Methods of Presentation ▷▷▷ How new information is presented to students. For example, does the teacher introduce the topic or do the students introduce it to each other in pair work?

Methods of Practice and Performance ▷▷▷ What methods and/or activities are used by students in order for them to understand the content in their own terms.

Methods of Assessment ▷▷▷ How students show understanding of what they are learning or have learned.

Methods of presentation. This component takes into account a variety of techniques for gathering and presenting information. It may mean that the teacher provides materials and the students gather the information for themselves.



For example, Mrs. Kichwa could have brought in library books, articles, or write-ups by senior students or herself about butterflies for the students to share and to get information. If Mrs. Kichwa had no access to these resources, she might have asked certain students to stand up and talk about their knowledge of butterflies.

It may also mean that the teacher forms links with others in the school or community who will provide information to students.



For example, in Mrs. Kichwa's new class, she has asked the students to bring in information about butterflies and has suggested that they ask their family, community members and their peers to tell stories about butterflies. Also they may go to the library to seek additional information.

In other words, the teacher facilitates the means for gathering the information, but the students perform the act. There are numerous ways to present or include a concept or skill in a lesson. These are often referred to as *input modes*. They include modes used to gather information such as observing, reading, listening and doing. Teachers can apply input modes by using various techniques such as having students form pairs (two students working together) and listen to each other read pages from a butterfly book, or she can show students various images depicting butterflies. In addition, we can use our imaginations or abilities to vary our input modes.



For example, Mrs. Kichwa enjoys story telling and she is very expressive in the arts. She will use these special characteristics by utilizing the theme of butterflies and acting out a number of short stories about butterflies. She will encourage students to make up their own stories working individually, in pairs and in groups.

Methods of practice and performance. This component focuses on the methods and activities that are used to help students gain understanding of the information presented. The students take in the information, give it meaning, and then use it. There are numerous ways to practice a skill or give meaning to a concept. These are often referred to as *output modes*. They include modes such as writing, speaking, drawing, and making. Teachers can apply output modes by using various techniques.



For example, after the students have gathered more information about butterflies and have completed reading the story of Priscilla and the Butterflies, Mrs. Kichwa can have her students work in smaller groups and have them perform various activities based on their interests. Some groups may write their own summary of the story or make up their own story about butterflies. Some students may form a group and create a butterfly poster or a new book cover for the story. Some students can create their own play about the story and as a group act it out for the class. In this way, Mrs. Kichwa can include all students actively in the lesson.

Methods of assessment. This component focuses on the methods used to assess whether the students have learned the concept or skill being taught. The methods of assessment include the observation of students as they use various methods to practice and perform, and assessment of “products” the students develop to show their understanding.



Mrs. Kichwa uses various methods in assessing her students. For example, Mrs. Kichwa observes the students during their group work, she listens as they talk to each other about the story, she asks each group various questions about the story, and uses their products (e.g., posters, pictures, presentations) as part of the evaluation. Using these methods, Mrs. Kichwa assesses whether the students understand the story and its content.

What do we need to know to differentiate the curriculum?

In curriculum differentiation all these components can be modified. But realistically, teachers, like Mrs. Kichwa, usually modify only one or two of these components. There are many factors that influence how teachers will differentiate the curriculum for their class of students. In curriculum differentiation it is important to realise that ultimately, the following factors influence the teacher and how his/her students learn.



**The Students' Individual
&
The Teachers' Individual**



- needs
- abilities
- interests
- backgrounds of experience
- learning/teaching modalities and styles

We all know that human beings have similarities and differences that shape our preferences, interests, abilities, ambitions, wishes, dreams... Patterns of similarities and differences may have their origins in ethnicity, religion, gender orientation, race, or belief systems. An awareness of culture and its patterns is important in our teaching and learning. (See Table 1 page 10 for questions to consider for thinking and reflecting on issues related to culture).

We acquire different languages, cultures, and customs and have different experiences in life depending on where we are born—our continent, country, city, region or family. Each of us is indeed unique, but we are also aware that, as humans, we have ‘commonalities’ such as speaking shared language, being of the same gender, sharing the same interests, tall or short, active or passive... Such a rich human diversity is present in society and every human group. Its presence influences our educational settings. But often, in schools, students are expected to be the same in the way they learn. They are expected to learn the same curriculum content in the same way and at the same time but, we cannot forget that students are also different and have different needs, abilities, interests, backgrounds or experience and, most of all, have different ways of learning. This ‘way’ of learning that is personal and unique is also referred to as learning *modalities* or *styles of learning*.

All over the world, teachers teach a large number of students at one time; how full their classrooms are, is a common place issue when talking to teachers. Besides this, teachers often lack time and appropriate teaching materials to be creative or to prepare detailed and interesting lessons. They are often overburdened with many other duties. Teachers only have time to teach each lesson one way as was seen with Mrs. Kichwa in Scenario 1. In such a difficult context, one can argue that it is a daily challenge for teachers to accomplish the ‘curriculum topic’ that they are supposed to, and on time. In other words, it is hard to be innovative when working in a difficult teaching-learning environment.

It is, therefore, understandable that teachers, sometimes, just ‘hope’ that the whole group of students in their classroom has learned what they have taught. However, at the same time, teachers are also aware that their ‘hope’ is not at all fulfilled by their efforts and struggle to teach every student. Academic failure is a worldwide reality, and the need for new ways of dealing with increasing numbers of students failing in school or abandoning schools is a fact that no one can overlook... particularly teachers themselves!

Table 1: Cultural Considerations

The following are some examples of cultural considerations (Vaughn, Bos & Schumm, 2003) that influence how students learn:

Time: How do students perceive time? How is timeliness regarded in their cultures?

Space: What personal distance do students use in interactions with other students and with adults? How does the culture determine the space allotted to boys and girls?

Dress and Food: How does dress differ for age, gender, and social class? What clothing and accessories are considered acceptable? What foods are typical?

Rituals and Ceremonies: What rituals do students use to show respect? What celebrations do students observe, and for what reasons? How and where do parents expect to be greeted when visiting the class?

Work: What types of work are students expected to perform, and at what age, in the home and community? To what extent are students expected to work together?

Leisure: What are the purposes for play? What typical activities are done for enjoyment in the home and community?

Gender Roles: What tasks are performed by boys? By girls? What expectations do parents and students hold for boys' and girls' achievements, and how does this differ by subject areas?

Status: What resources (e.g., study area and materials, study assistance from parents and siblings) are available at home and in the community? What power do parents have to obtain information about the school and to influence educational choices? **Goals:** What kinds of work are considered prestigious or desirable? What role does education play in achieving occupational goals? What education level do the family and student desire for the student?

Education: What methods for teaching and learning are used in the home (e.g., modelling and imitation, didactic stories and proverbs, direct verbal instruction)?

Communication: What roles do verbal and nonverbal language play in learning and teaching? What roles do conventions such as silence, questions, rhetorical questions, and discourse style play in communication? What types of literature (e.g., newspapers, books) are used in the home and in what language(s) are they written? How is writing used in the home (e.g., letters, lists, notes) and in what language(s)?

Interaction: What roles do cooperation and competition play in learning? How are children expected to interact with teachers? (pp. 273-274) (copyright pending)

© 'Teaching Exceptional, Diverse, And At-risk Students In The General Education Classroom', 3e, by Vaughn, Bos, & Schumm, used by permission.

What can we do? We can get to know our students better and use information about their similarities and differences (e.g. what they know about already, what they are interested in), and our own characteristics in planning our lessons. For example, some teachers may use their strength of story telling to teach a lesson; whereas, others may use their artistic abilities in helping students to express the concept or skill that the students are learning. When we use strategies or activities to help us differentiate the curriculum we then can have *different learning experiences and objectives* for individual students and/or groups of students within our classroom while still teaching one lesson! (Some of these strategies will be provided in the next sections and in the following units.)



What do we know about our students?

Let's see how we can get to know our students. We usually start with assessing our students. It is important to know each student—to know what each student already knows and can do, and to know what each student still needs to know and do. This is called *formative assessment*. Assessment helps us to learn about student characteristics—to determine students' interests, and their individual needs and abilities. In curriculum differentiation we use informal means to assess our students. We can observe them, listen to them, and allow them to talk, look at their work, talk to them about their work, ask them questions and use many other means to find out about the students. (See Unit 4 for information about these and other informal means of assessment.) Once we collect this information about our students, we can plan varied learning experiences.

In assessing students, we collect information:

- ▣ about what students already know and can do
- ▣ about what they do not know and cannot do
- ▣ about what interests them
- ▣ about what related experiences they have had
- ▣ about what learning styles work best for them.

Students	Already know
	Already can do
	Do not know
	Cannot do
	Interests them
	Related Experiences
	Learning styles

At the beginning of the school year, some teachers spend the first week on this sort of 'formative assessment' asking students – individually, in pairs and in groups, about their learning up to now. It can be a fun and useful way to start the year!

Because barriers for successful learning may appear at any time, we must continually assess students. These barriers may occur within or outside of school but either way they can affect students' well-being and learning. Some of the ways we assess students informally are described in Unit 4.

As assessment information is gathered, we use it to guide us in making decisions on what and how we teach—in other words—how we plan our daily teaching, how we prepare our lessons for the class as a whole with consideration of the different students in the classroom. Teachers use this information to differentiate various components of the curriculum so that they can take into account student characteristics, for instance differences in abilities, interests and learning styles. Assessment information on student characteristics guides teachers in deciding how and when they are going to differentiate curriculum for the diverse group of students in their class.

Think about your classroom and reflect on these questions:

Who are your students? For example, do you know the ‘quiet’ students as well as those who seek your attention?

Are there some who do what you tell them and progress through the curriculum? Are there some who cause concern to you? Some who cannot stay in one place for two minutes and have to be attended to all the time? Some who are excellent in mathematics: some who have difficulties in spelling? Some who are misbehaving?

But do you really know who they are and what they like? Do you know what your student who cannot spell is good at? Do you know what your students like and what they dislike? Do you know the student who has a hidden talent in your classroom? Do you know in what ways your students like to learn? Is it by listening, observing, doing, exploring, discussing?

How do we get to know our students better?

Assessing and knowing more about our students and their individual characteristics will help us to know what part of the curriculum we may need to be differentiated in a given lesson. The need for modification is based primarily on the student characteristics of:

- ▣ background of experience,
- ▣ interests, and
- ▣ learning profile.

Let’s first look again at Mrs. Kichwa and her new class.

It is the beginning of a new school year. In Mrs. Kichwa’s class there are many students working at different levels. In the past, Mrs. Kichwa mainly talked to and directed her students. She remembers her last year students. She knows she did not “reach” many of her students because some of them did not progress. These students just did not get it! She also knows she used the same teaching style throughout the year. Mrs. Kichwa decides to assess the situation for this year. She knows what her curriculum is. She knows she has many different strategies to use. She knows she wants to teach all of her students.

Mrs. Kichwa wants to meet each student’s needs and help them to progress. In order to do this Mrs. Kichwa decides to:

1) determine each student’s entry level, the starting point, where she will begin to introduce the particular concept or skill to be taught.

2) determine each student’s strengths based on the student’s learning style(s).

3) develop a respectful classroom with a positive learning environment for all learners.

In order to do this, Mrs. Kichwa structures some activities to address these three specific areas. The students, guided by her, move through some of the following learning experiences throughout the beginning of the year...

There are many ways for us to get to know our students better. Many teachers select some strategies to help identify specific student characteristics in order to get to know their students better. The ones described below, used by Mrs. Kichwa and many other teachers, are related to the students’ background of experiences, interests, and learning profiles.



1. Background of Experience

The first aspect of getting to know students is learning about their prior knowledge and experiences. A student's experience of new information is based on related concepts or skills that the student already knows. This does not refer only to learning that takes place in the school setting. For example, a student might have a wide range of knowledge of agriculture because he lives on a farm and participates in various farming activities. Background of experience does not refer only to knowledge but to a student's various experiences – some students might be traumatised by a family tragedy, some might have a multicultural identity because they have grown up in such an environment, or a student might appear very mature because she has been responsible for taking care of her siblings as the head of the household. Knowing the student's background of experience helps us to decide where we can begin with teaching the student. Sometimes teachers are able to have all students begin at the same starting point but sometimes students vary in their background of experience.



For example, in Mrs. Kichwa's class children were provided an opportunity to express their previous knowledge about butterflies by her questioning the students. From their answers, she had a better idea of which students had prior knowledge and the depth of that knowledge prior to their reading the story.

Sometimes we can use a student or students' prior knowledge to help other students learn new skills and concepts.



For example, in Mrs. Kichwa's class some students already knew about butterflies. Mrs. Kichwa allowed these students to share what they already knew about butterflies with the class. This helped the students who didn't have this background knowledge understand more about butterflies before they read the story. This helped them make connections between what they had learned from their peers and the story itself. It had meaning for all of them.

When a student or students come to a lesson with different starting points in a lesson then some modification for the student or students may need to be made. In many parts of the world, these types of modifications can include providing students with more practice, sharing experiences with each other in the class, asking questions, giving information, taking up the role of a group leader, and seeking information in the community and from family members.

What strategies can we use to assess our students' background of experience?

Teachers using curriculum differentiation employ a number of strategies to identify and build upon students' backgrounds of experience. Five of the strategies teachers have used and found useful are "KWL," observation and recording, "word sort," "brainstorming," and summarising a text. Initially, like many new things, it may take time for some children to react positively to these types of learning and sharing activities. Perhaps, students can get started by doing these activities in groups.



K-W-L

A useful way of assessing the prior knowledge and experiences of students is to use 'KWL'. KWL stands for three questions students ask themselves when they are learning new concepts or knowledge:

Question 1.—“K”: “What do I know?”

Question 2. —“W”: “What do I want to know?” (“What do I wonder?”)

Question 3. —“L”: “What did I learn?”

The first two questions are asked before the activity. The third is asked after carrying out the learning activity.



Examples of a KWL: Theme – Birds (Lower Primary, Class 4)
Prompt: What do you know about birds?

K	W	L
Birds can fly. Birds lay eggs. Birds have feathers. Birds build nests. Birds eat bugs and worms. Birds migrate.	Do all birds eat bugs and worms? Do all birds fly? Do all birds migrate? How do birds build nests? How do birds fly? What is the smallest and largest bird? How do birds communicate with each other?	(This section is filled in after the informational text is read, viewed, or listened to and various activities are completed. It acts as a summary.)

Theme – Air pollution (Secondary School)
Prompt: What do you know about air pollution?

K: <i>What do I know?</i>	W: <i>What I want to know?</i>	L: <i>What did I learn?</i>
factories and traffic contribute to air pollution when it is cold air pollution is worse air pollution worsens asthma and other allergies USA is one of the major air polluters globally air pollution increases the “greenhouse effect”	What is the contribution of different air polluters (in %)? Why does cold weather makes air pollution worse? How many people in Pretoria suffer from symptoms caused by air pollution? Who are the biggest air polluters globally? Why does air pollution increase the greenhouse effect? What can be done to reduce air pollution? What is Tshwane municipality's policy in reducing air pollution?	(This section is filled in after the informational text is read, viewed, or listened to and various activities are completed. It acts as a summary.)



By asking students to reflect on their prior knowledge and what they would like to know, the teacher can also use their interests (What would I like to learn?) to design activities that can address their curiosity. After the learning activities, students reflect again about their own learning by filling in the third column.



Observing and Recording

Observing and recording are a good means for gathering information about what students know and need to learn. Teachers can watch students as they perform skills and share information with each other. This can help determine what the students already know about performing a skill or knowing about a topic or a concept prior to and during the learning activity. In a similar way, teachers and students can record information about what they already know about a topic or concept prior to and during the learning activity.



For example, the day before reading, *Priscilla and the Butterflies*, Mrs. Kichwa could have had her students record all they knew about butterflies by just asking them to write what they knew on their exercise books or journals. On the other hand, Mrs. Kichwa could have recorded what the students knew as they answered questions and discussed butterflies. She then could have students raise their hands if they agreed with the information that was being shared.



Word Sorts

A word sort is a strategy that gives the teacher an indication of students' knowledge and experience related to the words and ideas within a text. For a word sort activity the teacher selects about 20 words and/or phrases from the text selection that students will read. After preparing a set of word/phrase cards, the teacher distributes the cards to pairs or small groups of students. The students are asked to sort the cards into groups that make sense to them. To establish and agree on categories for groupings, the students discuss and share information. When the pairs or groups have completed sorting the words/phrases, they are invited to share their groupings and reasoning with the rest of the class.



An example of a Word Sort from one of Mrs. Kichwa's lessons

Word Sort: Words Related to Priscilla and the Butterflies

Please look at the following list of words. You must decide which words fall into the same groups or categories and give each of the groups a name. Please place the words into as few groups as possible. Look for things these words have in common.

wings	Matthew	butterflies	plants	Priscilla	graceful
happy	leaves	tall	legs	mouth	excited
insects	eyes	beautiful	long	wonderful	Mrs. Grant
small	speckled	head	colourful	eat	grass

Many students had the following groupings:

Characters	Butterflies' Body Parts	Feelings	Food
Mrs. Grant	wings	beautiful	eat
Priscilla	legs	excited	plants
Matthew	head	wonderful	leaves
insects	eyes	happy	grass
butterflies	mouth		
		Butterfly Descriptors	
Size		colourful	
long		speckled	
tall		graceful	
small			



Brainstorming

In a "brainstorming" activity students generate information they already know about a specific topic. The teacher provides a keyword, phrase, or topic to the students. The students are then asked, either individually or in small groups, to share and record all the words that come to mind when they think about the given keyword, phrase, or topic. Students generate words quickly and do not stop, analyse, or evaluate their list. This brainstorming activity helps the teacher to assess the prior knowledge a student or group of students has about a particular subject or topic. This information is useful for the teacher in planning and implementing future lessons on the topic. Knowing the prior knowledge of students also helps the teacher in making necessary modifications for individual students. As students study and learn about the topic, they continue to come back to their list(s), add to it, discuss and share it. This brainstorming process can continue for two or three sessions. Students can use large paper, notebooks or chalkboard to record their information.



For example, Mrs. Kichwa asked her students to generate words quickly about what they already know of butterflies. Some of the words and questions generated by different groups of students were: small insects, beautiful, colourful, flying, small hand, long legs, why do they fly? what do they eat? Through this brainstorming activity, Mrs. Kichwa noted that some students had some background information about butterflies; whereas, others did not contribute. She realised that some students needed basic information; whereas, others might explore butterflies in more detail.



Summarising a Topic

After reading a short self-selected article, the student will be able to write a summary adhering to the following criteria:

- ☒ The summary will be brief and to the point.
- ☒ The summary will be in proper sequence (beginning, middle and end).
- ☒ The summary will be written in the student's own words.
- ☒ The student will not change the author's ideas in the summary.
- ☒ The summary will contain main ideas and supporting details.



Meaningful Summation of a Topic

Students will bring in or select from the teacher a variety of one to two page articles that have varying topics of interest. Students will be asked to choose one article they would like to read. After reading the article, students will be invited to write a BRIEF summary about the material they read.

Please choose a topic you would like to read from one of these articles. Please select a topic that is of interest to you. Use the following material to write a summary of the article.

Be sure the summary:

- is brief and to the point;
- is described in sequence;
- is written in your own words;
- does not change the author's ideas;
- contains main ideas and supporting details.



For example, students in Upper Primary Level (Class 7) were studying about animals and comparing and contrasting the different types of living habits (e.g., habitats, patterns of eating, sleeping, raising their young and diet). The teacher had invited the class to bring in articles about various types of animals. She also had a collection that she maintained in the classroom. The articles submitted and collected varied in reading and in interest level; some were interesting facts and stories about specific animals and some were more scientific in nature. The teacher invited the students to select one article of their choice, to read it and to summarise it. Before she did this however, she demonstrated by reading a summary of the article she had chosen and that had interested her. She followed the same format in her summarisation as she expected the students to follow (see list in box above.) She also asked them to write one sentence that told which main idea interested them the most in the article that they had read. Upon completion, students shared their summations and while presenting the teacher listed each student's name on the chalkboard and the one piece of information which interested that student the most.

2. Student Interests

The second aspect of getting to know students is finding out about their interests. If we think of ourselves as learners or students, consider what is it that you like to be engaged in? Usually, it is something that you are interested in for whatever reason. It might be by furthering one's studies, engaging in sport or community activities, socialising, or reading a good book. We are usually interested in activities that we are good at because it is satisfying to succeed. The same applies to students. One good way to do this is to write a topic (e.g., 'water') on the chalk board and ask students in groups to write a list of twenty questions about the topic while another group will try another topic. This can be done orally with one or two words written down.

Students learn more effectively when they are interested in their learning. They should be engaged in the lesson for learning to take place rather than just being present. Interest refers to how receptive and engaged the student is in learning more about the topic, concept or skill. Usually students are interested in areas where they have strengths or expertise.

Interest will be maintained if the topic or skill is stimulating to the students. In some countries teachers are able to do this by allowing students to have some control over their learning. Teachers may be able to do this by providing a few choices to students based on interests. In this way students will have some control over

what they need to and would like to learn. This may sometimes be the only modification needed within a lesson.

What strategies can we use to assess our students' interests?

Teachers in many countries use a variety of strategies to assess student interests and strengths. Two example strategies are provided below, interviewing using a Venn Diagram and interest inventory.



Partner Interviews Using a Venn Diagram

Students like to talk. Let's use this strategy to find out more about our students and what interests them. In this strategy, students are asked to interview a partner. (These pairs may consist of students who know each other. Then on other occasions using this strategy, the pairs can consist of children who are unfamiliar with each other.) As they interview each other they are requested to write the responses from their partner down in a Venn Diagram.

A Venn Diagram consists of two or more overlapping circles (see example below). This recording format helps students to organize characteristics that are common and not common to each other.

A good time to start this activity is at the beginning of the school year and then it can continue to be used periodically throughout the school year. To start, the teacher (or each pair of students) develops a list of 8-10 questions to use for the interview. The questions should not be able to be answered with "yes" or "no" responses.



For example some good questions might be:

"What do you like to do after school?"

"What jobs or duties do you do after school and which ones do you like?"

"What jobs or duties do you not like to do?"

"What is your favourite outdoor activity?"

As the interviews are carried out, students make notes about each other. When the interview is finished, the characteristics that are similar are listed in the overlapping part of the two-circles of the Venn Diagram. The characteristics that are different are listed in the outer circles.

Then the students together, in pairs and as a large group with the teacher, share their similar characteristics and interests and ones that are different.

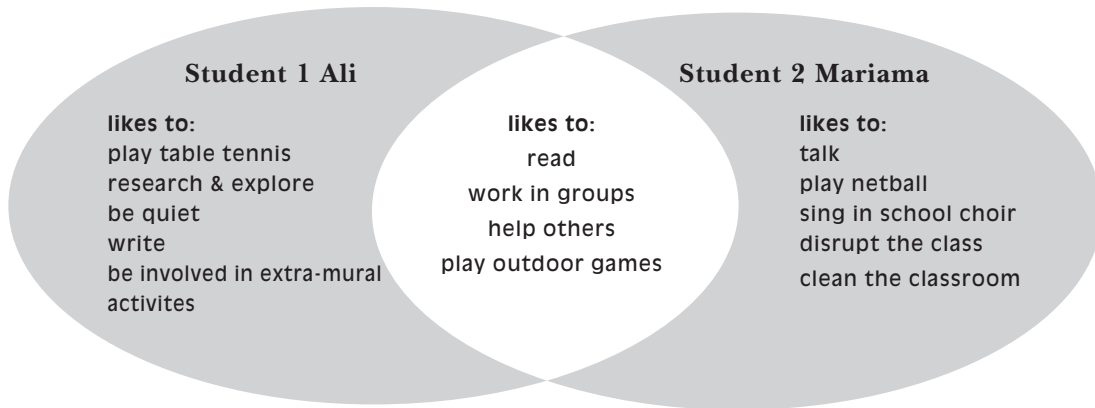
Example: As Ali and Mariama interview each other, they list the answers to the questions. Then Ali and Mariama complete the two-overlapping circles to discover what interests they have in common and what they do not have in common.

An example of their Venn Diagram is as follows.

Student 1—Ali: likes to play table tennis, read, play outdoor games, write, be involved in extra-mural activities, to work in groups and help others, do research and explore new things and ideas, be quiet and well-behaved



Student 2--Mariama: likes to talk, read, clean the classroom, disrupt the class, sing in the school choir, play netball, work in groups and help others, play outdoor games



Ali's and Mariama's Venn Diagram

Some pairs produced 'articles' about their findings (like in magazines), some pairs made posters, and some tape recorded their interviews.

For older students, they can organise the information that they have gathered on their Venn Diagram to write five sentences or five paragraphs (depending on their ability level) about their partner. If you use English as a second language in your class, think about using English for some work and the first language for other work.

Paragraph 1 – Introduction

Paragraph 2 – Similarities

Paragraph 3 – Differences

Paragraph 4 – Other interesting information

Paragraph 5 – Conclusions

The paragraphs are shared to introduce students to the class, to discuss similarities and differences, and to share areas of interest and strengths.

Note: Similar Venn Diagram activities can be developed to help students in visualizing and later writing about various items including specific topics, events, books and people. For example, students can compare and contrast the characters within a book. They can compare and contrast elements of multiplication and division problems. In using a Venn Diagram it is helpful to focus students by asking questions such as: What do we know about this item (topic, person and problem)? What are some of the important elements of this item? What characteristics or attributes of each element are similar? What characteristics or attributes of each element are different? These questions will help guide students in listing descriptions and in organizing them in their Venn Diagram.



Interest Inventories

Student interests can be easily surveyed through interviews and inventories. Teachers can create their own inventories by using open-ended statements or with “yes” and “no” answers. For example, “My favourite sport is _____;” “My favourite subject in school is _____.” I like to work quietly at my desk. “Yes” or “No” I like maths better than science. “Yes” or “No” I like to sit in the front row. “Yes” or “No”

(Note: If there is access to a computer, interest inventories for students are available on web sites.)



Student Search

The Student Search is a strategy used by many teachers to help identify students’ common interests or areas of strengths. To create a Student Search, the teacher and students develop any number of statements that require the students to interact. In this case the teacher may want to develop a Student Search based on various hobbies or interests. Students also help create the statements. The main idea of the Student Search is to have the students interact, meet each other and identify some common areas of interest. This information can be used by both the teacher and students to get to know each others’ interests and strengths.



For example, statements for 12 year olds may include:

- Find someone who likes to run. _____
- Find someone who likes to sing. _____
- Find someone whose favourite subject in school is maths. _____
- Find someone who likes to read books. _____
- Find someone who likes to recite poems. _____
- Find someone who likes to play volleyball. _____
- Find someone who can dance well. _____
- Find someone who likes to cook. _____
- Find someone who likes to look after his/her siblings. _____
- Find someone who needs some help. _____

Once the statements are developed, they are given to the students. The students then go around and ask other students to write their name next to the statement that best describes what they like. Each student may only write his/her name one time on each peer’s sheet. (The rules may be changed depending on the number of students in the class.) The teacher may use the papers to call on the students to share information about themselves. The students can work together to make a graph of all the responses to see who likes what.

Many teachers use the Student Search activities to help identify various strengths of students. They use this information to develop lessons based on the strengths of the students in the class.



Baggy Books – “Say Something About...”

The “Say Something About...” strategy is a way for students to provide or gather information about their interests and strengths. To initiate this activity, have students “interview” themselves (or they may have a partner and interview each other). They gather information for creating a book about themselves or their partner. If small clear plastic bags are available, one bag can be used to house each page of the book before collating the pages into a book. If clear bags are used they are called, “Baggy Books.”



Note: The books can be made without using any materials to protect the pages.

The students write and illustrate between 8 and 10 pages about themselves (or their partner). The copy is short and concise (i.e., a phrase or a line or two), but shares a great deal of information. Each page begins with the phrase: “Say something about...”



For example:

“Say something about Martha’s family...”



Martha’s sister loves to run.

She runs 2 miles a day.

“Say something about Martha’s favourite school subject...”



Martha loves science.

She can name fifty plants.

To start this project, students develop a series of between 8 and 10 questions. (The teacher may need to help students get started in developing their questions or may need to develop them.) These questions will be used to gather information about themselves or their partner. For example, one question might be, “What is your favourite subject in school?” The question is then made into a “Say something about...” statement. For example, “What is your favourite subject in school?” would be stated as “Say something about what Martha’s favourite subject in school is... and then Martha would provide the information she wants to share in her book about her favourite subject. For example, “Martha loves science. She can name fifty plants.”

Any number of pages can be used to make these books. The information on each page should be short and concise. The illustrations may be of various types such as hand-drawings, photos, and pictures from magazines. As the pages are completed they are put in order. Also the students can make a cover for their book. (If available, each page can be inserted into a plastic bag or plastic page protector.) Each page can be bound with tape or other types of binding to make the book.

These books or “baggy” books are shared among the teachers, the students and their families. They tell about what individual students like, their interests and their experiences.

3. Learning Profile

The third aspect of getting to know students is developing learning profiles. A learning profile helps to identify how the student learns and more about their strengths. It can include many important aspects that affect teaching and student learning such as gender, culture, learning style, linguistic preferences, and abilities. It also can include other information on students such as their background, interests, strengths and preferences as described above. We can use a variety of strategies to identify a student's learning profile. We can use one or more aspects of a student's learning profile to modify the lesson.

If we accept that all students are different, then we need to recognise that their styles of learning are also different. These learning styles can relate to different areas such as linguistic, logical-mathematical, bodily/kinaesthetic, musical, spatial, intrapersonal, interpersonal or environmental (referred to as Multiple Intelligences). Furthermore, some students prefer concrete learning while others feel more comfortable with abstractions. Many students learn best through reading and writing, whereas others learn by listening, speaking, visualizing or "learning by doing."

What strategies can we use to assess our students' learning styles?

There are many styles of learning that can be used to obtain information on students. The following is a number of examples that can be used to characterise students' learning styles.



Visual, Auditory and Tactile Learning Styles

<i>Visual style</i>	<i>Auditory style</i>	<i>Tactile style ('Doer')</i>
Likes to see text, pictures, illustrations, charts, maps	Likes to listen, hear and discuss	Likes hands-on experiences, working with peers and going outside the classroom to investigate
Likes to read notes and write summaries	Learns well when the presenter is interesting and clear	Enjoys physical exercise, hand-crafts, gardening, etc.
Enjoys reading	Reviews notes by reading aloud and talking with peers	Likes to 'do' things, scribble and draw
Could be meditative	Enjoys telling stories and jokes	Eager to participate in various activities
Learns and remembers things by writing them down	Plans the work by talking it through with somebody	Likes to study in a group and use models and charts
Benefits from writing formulas and instructions on cards and reviewing them	Memorises formulas and instructions or talk aloud	Likes to draw plans for projects and activities on large sheets of paper
Makes lists and keeps detailed calendar	Recognises faces and places but not names	Enjoys using blocks, marbles, and other three-dimensional models
Has a good visual memory for faces, places, instructions	Repeats instructions	Has a good memory of events, but not for faces or names
Has a good sense of directions	Enjoys rhyming, likes to talk	Likes to try things out, doesn't worry about errors
		Enjoys exploring





Self-Knowledge

A number of teacher-made forms can be readily developed to identify students' preferences in learning styles. Simple statements rated "yes" or "no" can be devised for student responses.

Some example questions are:

"I prefer a quiet classroom rather than a noisy one."

"I would rather work with a partner than work alone."

"I prefer to work with three students in a group rather than four or five students."

"I am more attentive in the afternoon than I am in the morning."

"I prefer to speak about a topic instead of writing about it."

"I learn better if I can use concrete materials to solve a problem."

Another example is to ask students to complete these open-ended statements.

Please complete these statements:

Good learners are _____

I learn best when _____

If a teacher wants me to learn s/he will _____



Learning Modalities

Learning Styles Inventory

Directions: Place a check mark beside each statement that strongly describes your preferences. Total the check marks for each group. Your strongest preference (the way you prefer to learn) is the group(s) with the highest total number of check marks.

Group 1—Reading

- 1. I like to read when I have free time.
- 2. I like to read a report rather than be told what's in it.
- 3. I understand something best when I read it.
- 4. I remember what I read better than I remember what I hear.
- 5. I would rather read a newspaper than watch the news on TV.
- Total number of check marks in Group 1

Group 2—Writing

- 1. I take notes when I read to better understand the material
- 2. I take lecture notes to help me remember the material.
- 3. I like to recopy my lecture notes as a way of better understanding the material.
- 4. I make fewer mistakes when I write than when I speak.
- 5. I find the best way to keep track of my schedule is to write it down.
- Total number of check marks in Group 2

Group 3—Listening

- 1. I like to listen to people discuss things.
- 2. I learn more when I watch the news than when I read about it.
- 3. I usually remember what I hear.
- 4. I would rather watch a TV show or movie based on a book than read the book itself.
- 5. I learn better by listening to a lecture than by taking notes from a textbook on the same subject.
- Total number of check marks in Group 3

Group 4—Speaking

- 1. I remember things better when I say them out loud.
- 2. I talk to myself when I try to solve problems.
- 3. I communicate better on the telephone than I do in writing.
- 4. I learn best when I study with other people.
- 5. I understand material better when I read it out loud.
- Total number of check marks in Group 4

Group 5—Visualizing

- 1. I can «see» words in my mind's eye when I need to spell them.
- 2. I picture what I read.
- 3. I can remember something by «seeing» it in my mind.
- 4. I remember what the pages look like in the books I have read.
- 5. I remember people's faces better than I remember their names.
- Total number of check marks in Group 5

Group 6—Manipulating

- 1. I like to make models of things.
- 2. I would rather do experiments than read about them.
- 3. I learn better by handling objects.
- 4. I find it hard to sit still when I study
- 5. I pace and move around a lot when I am trying to think through a problem.
- Total number of check marks in Group 6

© 'Help yourself: How to take advantage of your learning styles, Sonbuchner, G.M. October 2004, New Readers Press, Division of ProLiteracy Worldwide, used by permission.





Multiple Intelligences

In the following, the different aspects of learning (Multiple Intelligences) have been noted with some ideas of kinds of activities that stimulate the use of these areas:



Note: A word of caution is required. Characterisations should not be used to categorise students, for example, as ‘visual’ or ‘tactile’ learners. Knowing a student’s learning style(s) helps to enhance the range of possibilities for providing appropriate teaching and learning activities. Most teachers and students use various styles and no one style is better than the others. The wider range of learning activities and stimuli that is available in any given lesson, the better is the chance of increasing access to curriculum and success for all students. Therefore, the more variety of activities available (e.g., reading and writing/looking at pictures/discussing pictures/physical activity/‘doing’ with hands) in a teaching session, the more likely students will be able to participate in the learning.

Important Note:

There are many components and strategies in curriculum differentiation. Over time, these can become an integral part of any classroom. However, it takes time to understand, practice and master changing any teaching or learning style or strategy and developing new professional skills. Even though learning the components and strategies of curriculum differentiation can be overwhelming at first, it is important to take the first step. This may mean learning one component and using one strategy at a time. Don't hesitate to adapt the strategy to be workable for your students and their culture, and for you and your teaching style. Then add on one more strategy at a time and then one more component. Over time, you will be using many strategies and creating your own. Before long you and your students will feel comfortable with curriculum differentiation. You will become more of a facilitator of learning instead of a director. You will "see" how curriculum differentiation is more than "a bunch of activities." You will see how and when you need to use a specific strategy or adapt a component. You will see many benefits for you and your students including academic success.

Also, when learning about the components and reading about various strategies and activities, keep in mind that the examples and activities included in this material may not be the right "fit" for you or your students. For example, they may not be relevant to your students' interests, culture or background of experience or take into account the types of resources available to you. In these cases, adapt the example, strategy or activity to reflect your style and working environment and your students' characteristics.



Suggestions for facilitation – Unit 1. Curriculum Differentiation and Our Students

Summary of the unit

- ❑ Curriculum has many meanings. Formal curriculum is often referred to as *planned learning experiences* and can include the content to be learned as prescribed by authority. Informal curriculum is *unplanned* curriculum, the interactions and experiences that happen daily in our classrooms. Hidden curriculum is about attitudes and beliefs that are attached to what we learn and teach.
- ❑ We differentiate the curriculum in order to provide a variety of learning experiences to meet our students' different learning needs. In this way, all students in the class can be included, participate and learn.
- ❑ The primary way a teacher can include all students in his/her class lessons is by adapting: the curriculum content; how the teacher presents information to the students; how the students practice and use the newly taught information; and how the students show that they have learned the information.
- ❑ Providing meaningful and appropriate learning experiences within the classroom requires that teachers consider student similarities, differences and cultures. Teachers can get to know their students by finding out about their students' characteristics such as interests, background of experience, abilities, culture, and learning style.
- ❑ In curriculum differentiation it is important to use information about students' characteristics in order to plan appropriate learning activities.
- ❑ Through various strategies we can assess our students to find out more about their individual characteristics.
- ❑ To assess the prior knowledge and experiences of students, teachers can use a number of strategies such as a K-W-L chart (finding out what students already know, what they would like to know and then what they have learned), observation and recording, and brainstorming.
- ❑ To assess student interests, teachers can have students: interview each other, make books telling about themselves and complete interest inventories.
- ❑ To assess students' preferred style of learning, a number of strategies can be used. These include asking students to complete questions about how they like to learn, using learning styles inventories and surveying and observing students' 'multiple intelligences'.

Workshop activity 1

Objective: Learning about similarities and differences

Warm up

Give the teachers 3 minutes to individually write down words to describe attributes about themselves (e.g., tall and thin; considerate and humorous). Tell them to keep each descriptor to one word or a short phrase (i.e., two-four words). Ask them to do this quickly and write as many attributes as possible. When the 3 minutes are up, have each teacher share one of his/her attributes with the group.

Activity

Materials: Have teachers divide up in pairs. Provide each group (partners) with a sheet of paper that has two overlapping circles drawn on it.

Strategies:

- 1) Have teachers in their partnership make a list of 8-10 questions to use for interviewing each other. (*Have partners use their list of attributes from the warm up activity to help them develop some questions. If need be, provide some example questions here to get teachers started such as “What subject do you like to teach most?” “What type of book do you like best when you have ‘free-time’ to read?”*)
- 2) Inform the teachers that the interview questions should provide useful information about each other and should not be able to be answered with “yes” or “no” responses.
- 3) When the partners have finished developing their questions, have them take turns interviewing each other and recording the responses.
- 4) Then have the teachers complete the Venn Diagram handout to compare and contrast their responses to the interview questions (comparing and contrasting partners’ responses; if time permits, also can add list of attributes to the diagram).
- 5) After the interview is completed and the Venn Diagram is filled out with information regarding partners’ similarities and differences, have each teacher organize his/her partner’s information from the Venn Diagram into five sentences or a paragraph. By partners, have the teachers introduce each other to the group.

For example, if your interview questions provided the following information, your introduction would describe the following characteristics about your partner.

Sentence 1—Introduction: Introduce your partner (e.g., name, school, subjects and/or ages of students in your partner’s class)

Sentence 2—Similarities: Describe areas of interests and strengths of your partner that you have in common.

Sentence 3—Differences: Describe areas of interests and strengths of your partner that are not in common with you.



Sentence 4—Other Information: Provide other interesting information about your partner that you may have noted during your interview.

Sentence 5—Conclusions: Add an ending statement about your partner.

6) As a group, have teachers reflect on how they are similar and how they are different. Have them think about two of the students in their class and describe how these students are similar and different. Discuss some benefits and some difficulties with having students who have similar and non similar characteristics.

7) Have participants put their names on their Venn Diagrams and then hang them on the wall.

Workshop activity 2

Objective: Learning about different learning style(s)

Warm-up

In the whole group, have the teachers share information about how they learn best. Ask questions such as “When did you learn something new?” “How did you learn it?” “Do you know your best learning style?” “When someone is going to teach you new information, how do you want them to present it to you?” Have one or two teachers record on the chalkboard or on chart paper what the others share. After the sharing and recording is completed, ask participants to identify the different and similar ways the participants like to learn new information.

Activity

Materials: *Learning Style Inventory* (see Unit 1)

Strategies:

- 1) On their own, have teachers complete the *Learning Style Inventory* or choose another one for them to complete.
- 2) When the teachers are finished, have them exchange their learning style’s inventory with a partner and identify that partner’s learning style as defined by the inventory. Have partners share.
- 3) With their partners, have the teachers discuss if they feel the inventory has correctly assessed what they feel is their best learning style(s). Have them discuss why they feel that this style is or isn’t their best style for learning.
- 4) If possible, have the participants break into small groups (3-4 persons per group) by class level and/or subject area. Ask each group to define a topic that would be appropriate to teach at their particular grade level or in their subject area. Have the groups develop a short lesson to teach to their students. Then have them select at least two learning styles and modify their lesson to accommodate these two styles of learning.
- 5) When finished, have groups share how they modified their lesson using the two different learning styles.
- 6) Upon completion of the activity, have the whole group reflect on this activity and record some of the participants’ reflections.

Environmental Strategies

In what ways can we make our students feel welcome and work co-operatively?

Ona, a 10 year old girl is a recent immigrant from Korea who is starting school in a new environment. Although she speaks the language of the new environment fairly well, she has some difficulties learning to read and write. She is quiet in class; she rarely interacts with her peers. During the lessons Ona appears to listen to the teacher but she does not participate.

In the school, teachers believe that Ona's difficulties are a consequence of her lack of abilities and that she is inattentive. Mrs. Bomboté, her teacher, thinks that Ona needs some help in order to be part of the class and gradually, of the school as a whole. Differently from other teachers, Mrs. Bomboté thinks that Ona's difficulties are due to her cultural and linguistic background rather than academic problems. Mrs. Bomboté realises that she needs to know more about Ona and her culture and change some of the practices in the classroom to make Ona feel like a member of the group...

In today's world it is common that families move from one country to another or from one region to another and children may find themselves in completely foreign environments. They might not know the language; they might not know the structure or rules of the school. They might not be able to interact with other children or teachers, as in Ona's case. In this example, most teachers tend to think that Ona has to learn the language and adapt to the new school. However, Mrs. Bomboté, Ona's teacher seems to realise that she has to take the responsibility to create a welcoming learning environment for Ona. Indeed, it is a challenge to teachers to reduce these kinds of barriers to learning.

In this unit...

...we will describe some strategies that help to create a positive learning environment. We will reflect on how teachers can create a welcoming classroom that will allow all students to have a sense of their classroom as a community to which they belong. With the strategies introduced in this unit, we intend to show the importance of sharing, living together, and respecting and valuing each student equally.



That is what Mrs. Bomboté is aiming for in order to create a more conducive learning environment for Ona.

How can a teacher ensure that every student is made to feel welcome?

How can teachers support students' friendships?

How can teachers use a welcoming environment to support academic success?

Within the context of any classroom, there are a number of factors that directly affect both teaching and learning, such as values, beliefs, and the way in which teachers and students interact with each other. The development of an inclusive environment does not 'just happen.' It requires continuous efforts from the teacher as well as the students to value each individual and help others to do the same. We acknowledge that it is not easy to create such an environment where everybody feels comfortable. Teachers are pressed for time and need to deliver the curriculum. However, experiences from all over the world show that there are a number of strategies and choices in how teachers can plan their lessons in order to increase the participation of students and members of the school community. This is done with the view of creating a sense of community.

Let us now look back to our questions and try to reflect on practices in schools.

How can we ensure that every student is made to feel welcome?

Within any school or classroom, all students and teachers need to feel accepted by their peers. Each student needs to be included as an equal member within school life and its community. Both teachers and students should have a sense of comfort and belonging within any classroom. Teachers have a key role to play in creating such a welcoming environment for the students. It is their responsibility to value equally each student in the classroom and promote mutual respect amongst the members of the school community, helping them to overcome prejudice and discrimination.

In teachers' day-to-day work they seldom stop to think about the importance of making students feel welcome in the classroom.



Like our example illustrated above, we saw that in Ona's new school most teachers thought that she had a 'problem.' Therefore, if Ona was one of their students, they would not likely attempt any change in their classroom in order to respond to Ona's temporary needs. Mrs. Bomboté, on the other hand, believed that she had a role to play in helping Ona settle in. She started to think about some ways of fostering the sense of belonging in her classroom in order to ensure that every child – and particularly Ona - felt welcomed and part of the group. Mrs. Bomboté sensitive attitude towards Ona's new experiences is a consequence of the fact that she has different beliefs from her colleagues at the school, and what one believes is fundamental to what one does.

Each organization has a culture that impacts upon the way people feel, believe and behave. All human beings are part of a particular culture whose features are always expressed in the context of a social group. For instance, the attitude of the members of any school community will be influenced by the culture of each particular school.



School culture

It is important for the teachers to learn about their own understanding of diversity, their assumptions and beliefs, and to be aware of the impact caused by the culture of their schools on their own behaviour towards students. Sometimes our assumptions do not reflect the facts because we have not been able to really reflect on the reality of the situation from a different standpoint. Mrs. Bomboté has clearly reflected on Ona's experience without any bias.

When working with groups of people that are perceived as having similar characteristics, for instance, students in a classroom, we tend to think that 'all of them' belong to the same culture, and therefore, share the same assumptions and beliefs. However, culture is not like a stone. It is more like a stream, and although most people in the same community share the main stream of thinking and seeing their reality, there are side-streams that bring new dimensions to the culture. Factors such as a family's socio-economic status, educational background, life experiences, exposure to other cultures, individual characteristics, work and religion influence the way in which a student might perceive cultural considerations such as time, space, dress, food, work, communication and gender roles despite the fact that they might come from the 'same' community. A teacher who aims to develop inclusive practice has to be sensitive to cultural diversity. Let's have a look in another classroom:



In a Grade 2 classroom, the teacher has divided her class in groups according to their perceived level of achievement. She allocates different tasks to the groups to engage in. The group of 'slower learners' is supposed to draw pictures of what they eat in the morning. Learners start to work. After some time, the teacher goes around and looks at the learners' work. She asks them to explain what they have drawn. One boy says: "I eat porridge, bread and banana." The teacher shouts at him: "Banana!! You DON'T eat banana in the morning! Porridge and bread yes but NOT banana!"

The teacher assumes that a student cannot eat bananas for the breakfast because her own understanding of a breakfast is different. This teacher was not able to understand diversity amongst families, and that shaped her behaviour and thus made the environment not welcoming for the child. Regardless of what the child ate in the morning, the teacher should respect him and value his contribution to the classroom.

In order for teachers to be more sensitive to the reality of children, many schools have developed relationships with children's families as well as with communities. Since parents and other care givers have important experiences with their children, it is essential that they are invited to schools and classrooms as equal partners. Many teachers have stated that when parents have become volunteers in their classroom to assist, there has been an increasing interest towards the school in general. Many cultural considerations are difficult to understand for somebody who is not from the same cultural context, and therefore, it is important to nurture links to the cultural background of children. Parents again, as well as various community-based organizations are a rich source of information and inspiration in this respect.

Respecting others and diversity

One of the major components in having a sense of belonging is that teachers and students are respected and valued as individuals in the school community. We have to remember that schools themselves are a part of the wider community, with all its diversity. In schools, therefore, where there is a sense of community, teachers and

students learn to live together with their differences. They contribute to the development of school cultures through their different abilities, ethnicity, languages, gender and so on. Once we understand how important culture is in the teaching and learning processes, it becomes clear that the role of the teacher is to promote respect for diversity.

How can teachers support students' friendships?

When looking back to Ona's situation, she might have not experienced the feeling of not belonging if she had been in a classroom where children's friendships were encouraged and nurtured. Friendships are not always appreciated as a learning resource. Friendships and interaction between peers is crucial in order to understand and respect differences in others. Friendships are not important only from the point of view of developing a sense of belonging, but also fostering a culture of co-operation and collaboration which characterises inclusive practice. Collaboration is about working together in creating something new through the work; whereas, co-operation is about sharing the tasks, information, etc.

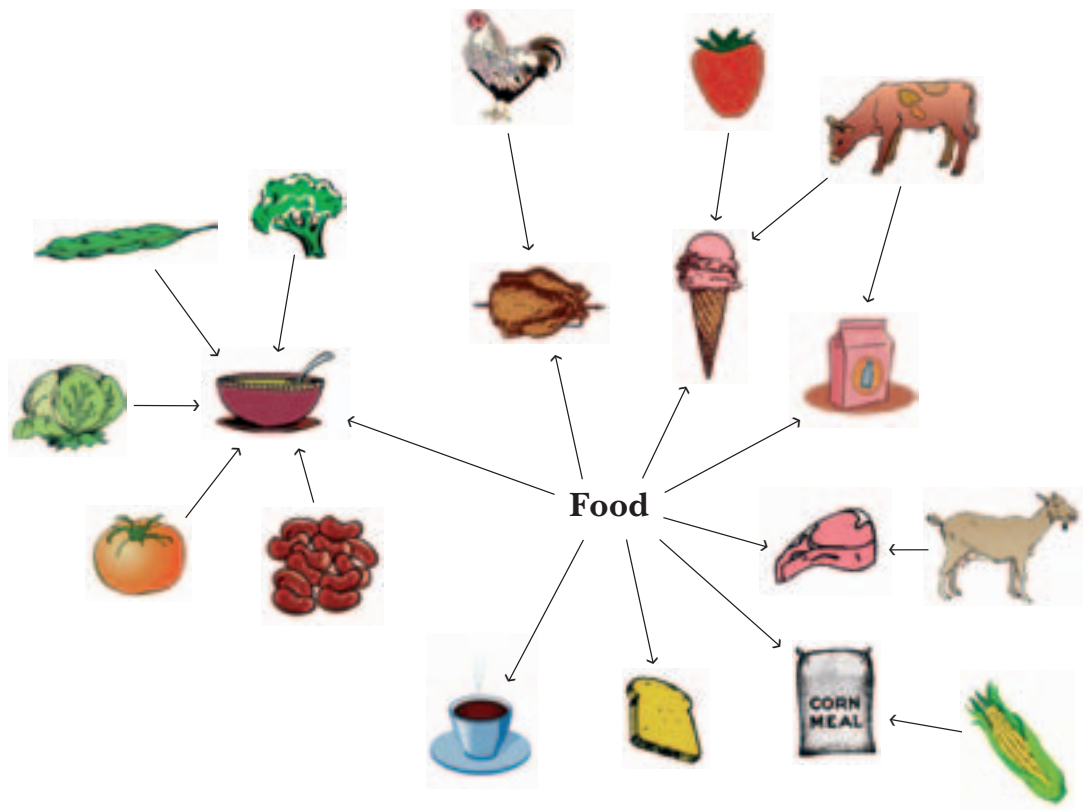
Collaboration and co-operation are more than using collaborative learning activities or group work. It is an attitude of tolerance, acceptance and integrated effort between those who are members of the school or classroom community. It is about developing a culture that encourages learners and teachers to work together towards ensuring educational success and personal development. It is based on learning collaboratively, not competitively. This ethos has clear implications to the ways in which we deliver the curriculum and ways in which we learn. For example, traditionally teachers have been working alone, and have learnt that students should also work alone. In order to develop a culture of co-operation and collaboration, it means that teachers should learn to work together: to plan, problem-solve, prepare and share learning materials and evaluate together. This involves professional and personal growth.

To encourage students to work collaboratively, teachers should invite them to participate in planning and implementing collaborative strategies in order to commit them in their own learning. If a teacher has very large class, say of more than fifty students, it is still possible for children to work collaboratively in groups. Students' participation in the planning can help teachers in coming up with interesting and meaningful learning activities, as the mind map illustrates in the figure below. Joint planning is also highly motivational for students as they can see that their contribution has been used as the basis of their learning. (Note: A mind map consists of a main word or concept. The teacher presents the main word or concept. Then the teacher asks students to give 5 to 10 related words. The words given by the students are drawn around the main word. The words given become the main words and then 5 to 10 related words are drawn around those words. A number of related words and ideas are produced quickly and can be used for discussion and writing.)



The teacher asked the students to name different types of food. They named milk, meat, bread, tea, soup, chicken and ice cream. Then they named where the food came from or what it was made of. The teacher drew pictures on the chalkboard.





She then asked the students to look at the mind-map and think what was it that they wanted to know.

These were some of the questions:

- ☑ What happens between the time when the milk comes from the cow and gets in the milk box?
- ☑ What parts of the goat are being used for food?
- ☑ How is ice cream made of cream and strawberries?
- ☑ How can we make soup?
- ☑ What do you need to do for the chicken before you can eat it?
- ☑ How do you make bread?
- ☑ Where does tea come from?
- ☑ How is maize turned to maize meal?

Based on the mind map and students' questions, the teacher came up with a project that involved a number of community members. This exercise was very useful to promote collaboration because it drew on students' contributions and was based on local community resources. For instance, a local dairy farmer came to the class to tell about the route the milk took from the cow to the milk box, and how ice cream is made. Then the class visited the family of one of the students where the mother showed how she made the bread. The soup was made at school in a huge pot, and all students were involved in chopping the vegetables which they had brought from home (each student contributed something). One of the students had chickens at home, so the whole class observed how the chicken was killed, and prepared for the soup.

Students recorded all the information in an ‘extended mind map’ in drawings and/or writing, i.e. they continued the mind map which was placed on the classroom wall. After the ‘project’ was completed, the class reviewed their questions and verified if they had all been answered and whether there were still questions that had not been answered.

We can see that the teacher in this example was aware of the relevance of the local resources. Also, he knew an environmental strategy that allowed him to bring this local knowledge to his lessons. For students this project was great fun because they were the major ‘actors’ in the construction of the collective knowledge. In this classroom, all students were expected to participate at their own level and the opportunity to contribute made them more motivated to give their best.

What are high expectations?

Most education systems place high expectations on students who are the ‘high achievers’ and reward these students who are able to perform at a high level. So, expectations are often based on ability level or other individual characteristics. The consequence of this practice is that those students perceived as having less ability are more likely to have fewer opportunities because teachers might have lower expectations for their contribution. This might lead to poor self-esteem, learned helplessness, or disinterest in school-related work, and ultimately, failure.

Having high expectations for students, does not mean that we have the same expectations for all students. It does mean that for each student however, the teacher, along with the student, set learning goals at a level that is appropriate for that individual. It also means that students will be assisted in setting high expectations for themselves and learn to support their classmates and teacher in working toward these goals. As one principal, Brian Cullen stated, “I’d rather my students shoot for the stars and miss once in awhile than not shoot for them at all” (Forest & Pearpoint, 1992).

The more teachers know about their students, the better able they will be in helping set realistic but high expectations. Therefore the more information teachers can gather about a student’s characteristics the better able they will be able to work with the student.

After having an overview of the factors that can facilitate the creation of a welcoming environment that is conducive to learning, we will now look at some strategies for teachers to enhance their classroom practices with a view of ensuring academic success.

How can teachers use a welcoming environment to support academic success?

In Unit 1 we recognised how relevant it is for teachers and students to reflect on their own individual background, experiences and cultural customs. This is the very first step in learning to work and live together. Now we will look at how teachers can use collaboration in their planning, lessons and assessment to support academic success.



Collaborative learning

Collaborative learning refers to a range of teaching and learning approaches and strategies to match the needs of students in particular learning contexts. It is common to see teachers that attempt to use group work in the classroom. They often arrange students in groups but ask them to work on individual tasks and instruct them not to communicate with each other. How can students work collaboratively if they cannot talk to one another? How can they help one another to accomplish the task?

Collaborative learning is a challenge because teachers assume that it ‘just happens’. However, there is a need to implement strategies that lead students to work collaboratively. Collaborative learning requires a lot of planning, support and effort from both teachers and students, and it will require time to learn. Sometimes we may also be afraid that collaborative learning takes more time than we have available for the curriculum delivery. It is true that working together takes more time because there are several players, but it is also true that it can be more effective for learning. Therefore, we may need to review our assumptions about the advantages and disadvantages of the use of collaboration in the lesson, as well as to learn to manage time accordingly.

Schools and classrooms that are committed to promoting academic success for all students have to plan their educational practices based on the characteristics of cooperative learning (Putnam, 1998):

- ▣ Positive interdependence – Students and the teacher work together.
- ▣ Individual accountability – Students take responsibility of their own work.
- ▣ Co-operative skills – Students learn ways to work together.
- ▣ Face-to-face interaction – Students and teacher work in relation to each other.
- ▣ Student reflection and goal setting – Students think about their work and set targets for themselves to achieve.

Positive interdependence

It is important that teacher and students are concerned about the performance of every one of the group members. Each member of the group should not feel successful until they know that everyone has reached the group goals as well as their individual goals. Therefore, the accomplishment of the group goal depends on ALL members of the group.



Teachers can support the development of positive interdependence in their classroom several ways. Some examples are:

Positive Interdependence

Types	Way to Do This	Examples
<i>Goal interdependence</i>	Setting a mutual goal for the whole team— <ul style="list-style-type: none"> • completion of a task • coming up with a solution to a problem • demonstrating a certain behaviour 	<ul style="list-style-type: none"> • Learn how to spell twenty given words and make sure all members in your group can spell them. • Read a given story and create and act out a different ending to the story.
<i>Task interdependence</i>	Dividing the work amongst the team members— each student has to learn his/her part of the text and contribute to the group sub-groups work on a certain part of the common task	<ul style="list-style-type: none"> • Each student learns five words and then helps the other members spell them. • Each member must take on the role of one of the characters in creating and acting out a different ending for the story.
<i>Resource interdependence</i>	Dividing and/or sharing materials, resources and information	<ul style="list-style-type: none"> • Each student is given five words on a piece of paper. • The group is given one book to read, and one paper and notebook to use to create their story.
<i>Role interdependence</i>	giving various roles to students	Each student in the group has one role from the following: <ul style="list-style-type: none"> • reads the spelling words or story to the group (reader); • checks to make sure everyone knows the spelling words or knows their part to act out in the story (checker); • writes the story as created by the group (recorder); • encourages the others by giving praise (encourager).
<i>Reward interdependence</i>	giving a group reward for achieving the goal	Each member of the group will receive 5 bonus points when they all: <ul style="list-style-type: none"> • learn the 20 spelling words; • participate in a role and act out the story with a different ending.

Individual accountability

It is very important that all students are responsible for the task that they have to carry out in a group, and each member is responsible for learning the materials and contributing to the goal of the group. Teachers need to be aware that insisting on individual accountability will help them and the group as a whole to discourage non-participatory behaviour.

In order to ensure that each student is responsible for the task, teachers should plan carefully the task that is to be carried out collaboratively. The task needs to be appealing, engaging, meaningful and complex enough to make all group members feel positively challenged to contribute.



In the beginning, teachers might have to think about the different steps or tasks of the assignment. In addition they should know how tasks would be distributed among the group members and then carried out. In the beginning this kind of work might also require more time. Later, when students become skilled in collaborative learning, they may define the needed steps required by the task, share the individual responsibilities among themselves and manage time effectively.

Co-operative skills

Co-operative skills need to be learnt and practiced by students, teachers and other school community members. In order to develop students' co-operative skills, teachers have to consider the age-level of their students because these skills are different from infant to adolescent students. Teachers should make it clear to the students, what specific co-operative skills (e.g., listening, sharing materials, helping each other, taking turns) need to be addressed by the group, why the skills are important and demonstrate using them. For instance, a teacher may say "Listening to your peers' views is important because they will enrich the quality of our work." "Please share your learning materials in order to help your friend." The skills need to be practiced in real situations. In this way, a teacher can give immediate feedback to students on how they are using the skills.

Face-to-face interaction

Direct communication and interaction is a rich resource for learning. Teachers can foster this by direct interaction with their students and by allowing students to interact with one another by talking, chatting, debating, as well as smiling, gesturing, and using body language. Interaction here is among and between people, not between students and learning materials or students and machines (e.g., computers).

When students are asked to work independently on a set of problems and then share their answers in class, they are not engaged in collaborative learning but in individualistic learning.

Student reflection and goal setting

When students learn to work collaboratively, they also develop skills in evaluating their learning and achievements. The evaluation can be done after the conclusion of the collaborative learning activity and it can involve small groups or the class as a whole. Either the teacher, students or a group of students can coordinate the evaluation process.

Students can benefit greatly from engaging in reflective discussions and individual goal setting to improve their personal academic and social behaviours and those of the group. For instance, a student can volunteer or be assigned to support collaboration in the group by observing that all members are participating and contributing to the task. It is also important for students to celebrate those things that they achieved in their group.

Given these examples, students can play a significant role in facilitating participation. We see that they are crucial in supporting the development of a learning environment where each and every student can make their personal contribution.

How can we effect positive learning environment arrangements?

The physical arrangements of the classroom environment can promote or hinder teaching, learning or the development of a sense of community. The classroom should be comfortable and teachers should look into matters such as seating, noise level and space, and have a sense of order such as storing materials and students' work. This is particularly challenging in many classrooms which are crowded due to large numbers of students, and lack of appropriate furniture. However, teachers could also consider whether all the activities need to be carried out at the desks.



In a upper primary (Year 4) classroom, students were seated in pairs facing the chalkboard. One student was seated next to the teacher's desk, facing the whole class. The teacher explained that this student needed to use some special equipment. Therefore, she needs to sit there. The teacher continued, "It's good for my routine. I first give instructions for the whole class and then I work with her."

Let's look at changing this learning environment. All other students were seated in pairs. Is there any justification for placing one student alone at the front, facing other students? How might the seating arrangement influence her classmates' perception about her? Reflecting on this example, we can see that the arrangement that the teacher set up excluded this student from her classmates. The teacher said that this student is 'special' and needs special support, therefore, she has to be separated from others. If we look at the same situation from this student's perspective, we may argue that she does not feel comfortable because she is not treated equally. Of course we know that the teacher was trying to do her best, she believed that this was the right thing to do. However, she did not collaborate with this student in deciding what the best arrangement would have been.

There are different ways of arranging the classrooms. We know the traditional rows of desks where students all face the blackboard rather than their peers. Learning environments that seek to encourage participation should be flexible both in terms of seating and grouping. This means that we have to be able to identify what kind of arrangement is best for the particular day or activity. Let's look at some possible groupings.

Flexible groupings

Although heterogeneous groups are recommended for collaborative work, there are times when it is appropriate to group students in homogeneous groups. All teachers use different groupings, and they all have their advantages and disadvantages. Flexibility and variety in groupings should be encouraged. Students should also have a choice from time to time to choose and change their groups. Classroom arrangements that are flexible and can easily be modified are necessary when using curriculum differentiation. Some teaching and learning activities are designed for various settings within the classroom. When making modifications, consideration of the learning environment arrangements becomes essential. These arrangements should provide for various instructional groupings such as whole group, small group and individual work.

There are a number of strategies that teachers can use for grouping students for instruction, learning activities and working on final products. Different groupings can serve different students' needs and interests. To use groupings effectively, teachers need to carefully select the type of work to be carried out within the classroom.





The following table summarises some of the possible ways of grouping students for collaborative activities, their possible uses and some considerations.

Flexible Groupings

<i>Types</i>	<i>Definition and Possible Uses</i>	<i>Points to Consider</i>
Whole class – large group	<p>Whole class teaching which can promote belonging and reduce isolation</p> <p>Discussions and sharing information and experiences</p> <p>Introducing new topics, themes, units</p> <p>Developing new concepts, skills and understandings</p> <p>Developing and refining classroom expectations, rules and procedures</p>	<p>Physical inclusion does not guarantee instructional inclusion!</p>
Small group instruction	<p>Students are placed in small, usually equal sized groups which can be facilitated by the teacher, a student or the group itself</p> <p>Same ability/skill group can help the teacher to focus on developing a particular skill; students with a specific disability could also work around certain skills in a 'same disability' group (e.g., Braille, sign language, mobility, life skills instruction)</p> <p>Mixed ability/skill group useful for project work, learning a new skill or practicing one recently learned, discussing an assignment, problem solving – different objectives and sub-tasks can be assigned to different students; it promotes co-operation, peer-support and valuing individual contributions</p>	<p>Same ability/skill group should only be used to learn a particular skill. Same ability/skill groups should only be used on a temporary basis. They should not be composed of the same students all the time. This will avoid labelling and isolation.</p> <p>Whenever possible, mixed-ability groups should be used.</p>
Paired groups	<p>Two students work together: offer opportunities to enhance social and communication skills and friendships; can provide direct instruction and build self-esteem</p> <p>Can be formed on the basis of same/mixed skill/ability, interest, etc. Can also pair a student with a disability and a student without a disability</p> <p>Can be same age classmates or cross-age mates</p>	<p>If the class is very large students can be asked to work with their neighbour some of the time.</p> <p>If this is used for tutoring then 'tutors' will need to practice not just passing on the 'correct answers.'</p> <p>Pairing needs to be based on learning for both members even in a tutoring situation.</p>

Types	Definition and Possible Uses	Points to Consider
Paired groups	Can used for tutoring : one student is assigned as a 'tutor' based on the skill, ability or experience	
Interest group	<p>Paired or small groups where students share the same interest.</p> <p>Interest can be a topic, a learning area, a specific skill.</p> <p>Encourage students to learn more about their specific interest – at their own level</p>	<p>Usually highly motivational</p> <p>Learning outcome should be shared with other students to increase learning of all students</p>
Co-operative expert groups (jigsaw)	<p>Small groups are given the same topic but each student in the group is given one part of the topic to learn (according to his level, interest, etc.)</p> <p>It is the responsibility of each member to learn his/ her part, thus becoming an 'expert'</p> <p>After studying individual parts, the group comes together and each student presents his part to complete the whole task</p> <p>Another possibility: A topic and its sub-topics are identified. In each group ('home group'), each member is assigned a sub-topic. New groups ('expert groups') get together according to sub-topics. These groups are now 'experts'. In the expert groups students study about the sub-topic. Then they get back to their original group (their home group) and share what they have learned in the expert group.</p>	<p>It is important to ensure that each member gets his/ her work done – support might be needed here</p> <p>Allows for individual and group activity</p> <p>Feedback – sharing in the groups is essential. This might require support.</p>
Cluster groups	<p>All students within a class are placed in small instructional groups, based on one or more student characteristics.</p> <p>Usually students stay in the cluster group for a longer period for a specific instructional reason (e.g. accelerated math, community project, second/ third language tutoring)</p>	<p>Cluster groups should not be used for anything else than for an instructional purpose.</p> <p>Grouping should not encourage negative labelling.</p> <p>Students can belong to several clusters in different learning areas</p>

Managing Time in the learning environment

We have already discussed that time is an important issue for teachers. We acknowledge that there is never enough of time. Therefore, teachers need to learn skills to



manage time in the teaching and learning processes. There are a number of essential components related to time that teachers must be aware of when planning for and teaching a lesson. These include the utilization of instructional time in terms of selecting and limiting content, providing engaging learning activities and pacing of instruction.

Selecting and limiting content. Teachers make decisions about how to best utilize instructional time. This requires focusing on what is essential for the students to learn in a given lesson, unit and school year. What is going to be taught - the content has to be identified. Once the content is selected, key concepts, understandings, and skills are identified, as well. Teachers make decisions about how time will be used for instruction of content. In doing so, teachers are guided by the syllabus provided by the ministry of education or the examination for older students. In some cases, students can contribute to this process and help determine how their time can best be used. This should help students to learn to manage time. Once the delivery of the content is established in terms of time, teachers and students may adapt, modify and extend instruction (teaching/learning) to suit different learning styles and paces.

Engaging in learning activities. When students are engaged in teaching and learning, time is used efficiently and productively. There are a variety of ways teachers, as we have seen, can stimulate students to participate in classroom activities. For example, within any one lesson a teacher may need to use varying questions, simplify some of the materials, include problem solving skills within the group activity and break the task down into more manageable parts in order to accommodate the diversity in the classroom. These instructional strategies will be further discussed in Unit 3. Teachers also have to ensure that there is continuously positive and supportive feedback to students to facilitate their engagement in and completion of the task or activity. As we have seen in the Unit 1, knowing about students' background will help teachers to design interesting and motivating learning activities.

Pacing of instruction. Not every student learns at the same rate or at the same level. During the lesson, the teacher has to pace the instruction. It is important for teachers to keep an active pace throughout instruction. However, some groups of students or individual students may be quicker or slower than others in the class in completing their tasks. In these cases the pacing needs to be readjusted accordingly. The examples below give us some ideas about what can be done:

- ▣ having individual students or a group of students use the information or practice the skill at different times during the day such as during free periods, with a peer before or after school, and at home;
- ▣ forming same-ability or cluster grouping where the teacher can work with the students at a slower pace to facilitate their acquisition of the information or at a quicker pace with more in-depth instruction to facilitate acceleration of their learning;
- ▣ pairing students or forming small mixed-ability groupings so partners and individual students can assist others in learning the information.

In this unit we learned that the learning environment is as important as the curriculum content. For effective curriculum delivery, the teacher needs to pay attention to the learning environment. In order to learn, the classroom members have to feel happy, safe, comfortable and welcomed. This means knowing you have friends you can learn from and be supported by. We know that this is not an easy, quickly accomplished task. It is a long-term process of learning to live together, work together, overcome barriers, and celebrate achievements. Learning to collaborate is a challenge for anybody

in education. However, many experiences from all over the world have shown that it is possible and desirable. It is possible for teachers to work together with colleagues, students and their families. It is possible for students to work in collaborative groups and make decisions about their learning. It is also possible for any community to make a meaningful contribution to education. All these elements together can create a welcoming learning environment that will support the academic success of children and ensure that they will have maximized the future opportunities in their lives as well.

Mrs. Bomboté's sensitivity to Ona may seem a tiny detail but in fact, her attitude will make a difference in Ona's education and in her life

Suggestions for facilitation – Unit 2: Environmental Strategies

Summary of the unit

- An essential part of creating of a welcoming, inclusive school is the development of a welcoming culture in the school. A school culture that provides opportunities for the participation of all students while respecting, valuing and celebrating their diversity.
- In any school, there are several cultures based on its members' background, ethnicity, religion, age, position, etc. Even if we think that all school community members belong to the same culture, they exhibit differences in their behaviour, beliefs and attitudes. Teachers should not assume that all students are the 'same' but use whatever differences there are as a resource for learning and development.
- Respect is the first step towards the creation of a welcoming learning environment. Respect should be shown between the administration and staff, among the staff, between teachers and students and among students.
- Collaboration and co-operation are essential in developing a community where everybody belongs. Without working, learning and living together it is difficult to develop the sense of community. All community members can make their contribution. Some make a big contribution, some more modest but all contributions should be equally valued.
- Collaboration and co-operation apply both to teachers and students. Teachers should learn to work together, plan together, share and support one another. Students should participate in the planning of the learning activities as well as in different aspects of developing the school community such as agreeing on rules. Students need to take responsibility for their learning and one way of supporting this is to provide them with opportunities for independence.



- ▣ A welcoming community has high expectations for all its members. This means that each community member is expected to contribute at his/her level and is supported to pursue his/her best.
- ▣ Collaborative learning is a useful strategy to develop a sense of community. It does not just happen by seating students in groups but it has to be planned, supported and practiced.
- ▣ Without effective time management, both teachers and students will feel stressed out or bored. Teachers and students need to learn to monitor the use of time and be responsible for the effective use of time.

Workshop activity 1

Objective: Raising awareness about the concept of culture and the cultural diversity of the participants.

Warm-up

Have each teacher draw a picture of a particular feature of his/her culture on a large sheet of paper (e.g., celebration, food, and dress; see Unit 2, Table on Cultural Considerations for more examples). Give 5 minutes to complete. Hang the pictures on the wall.

Activity

1) Divide the group into pairs and ask the teachers to look for somebody that they do not know well. Have each teacher discuss the drawing that he/she drew with his/her partner. Have the partners ask these questions of each other: “Why did you choose this particular feature of the culture?” “What do you perceive as the most dominant feature of that culture?”

2) Ask the participants the following:

- ▣ Choose an example of a tradition practiced in your childhood home that reflects your drawing.
- ▣ Share this experience and reflect with your partner on how this culture/practice impacts your current family.

Workshop activity 2

Objective: Creating welcoming environments in schools and classrooms

Warm-up

Ask teachers to look around in their vicinity and identify:

- Something that makes them feel good, welcomed or comfortable (2 min)
- Something that makes them feel uncomfortable or uneasy (2 min)
- Something that would improve the venue for all (5 min).

Activity

- 1) Divide the group into groups of fours
- 2) Ask them to think individually about a student that they perceive as not 'fitting in' in the classroom context. Discuss:
 - What did they do at the time?
 - Choose one student and come up with ideas how to change the classroom environment so that it would become more welcoming to that child.



Instructional Learning Strategies

What teaching and learning strategies can help us to differentiate the curriculum?

Mr. Rahim, a Class 1 (Year 1) teacher wanted to engage his students in a learning activity where they would need to use their knowledge of mathematics. He intended to design an activity motivated by the students' curiosity while ensuring that all students could participate fully.

He brought a big bowl of bottle tops for a small group of students. When the students in his class saw the bowl they said: "Oh, I wonder how many bottle tops there are?" One of the students placed the bowl in the middle of the classroom and said to another student, "Hey, touch, feel how many bottle tops!" Mr. Rahim responded to the group, "Yes... I also wonder how many bottle tops are there... What do you think?" Students started to guess: 43, 79, 135. Then the teacher moved on: "How could you find out the number of the bottle tops?" One of the students knew that they would need to count. The teacher left the group, and students started to count. The students first started to line up the bottle tops in long rows and then count. All students were very much engaged in the activity but they realised that they got messed up with the figures and they never reached an agreement about the number of bottle tops. Then one of them suggested that if they grouped the bottle tops in tens, it would be easier to count. This they did and when the teacher came back to the group, they had their answer ready. The teacher asked them to explain how they had come to their conclusion; the students took turns in describing their steps.



Mr Rahim knew that he had students who were at different levels of development in their mathematical skills; some were at the level of mechanical counting while others had already progressed towards grouping and counting in tens. He posed a problem for students to solve and encouraged them to find the solution. Students supported one another in the process and shared their knowledge.

In this part...

we will present some strategies that can be effectively used in order to better support diversity in the classroom. They can be used in large classrooms as well as small ones. These strategies help teachers to include all students

in lessons and activities while taking into consideration student differences in learning objectives. The goals of education remain the same. Modifications are made to facilitate individual achievement of these goals.

As we have already discussed, diversity among students is related to individual differences in abilities, skills and knowledge, as well as personality, background and socio-economic or environmental factors. A teacher who aims to reach out to all students has to be sensitive to considerations such as the following:

How can a teacher manage classrooms where students are working at different levels of knowledge?

How can teachers ensure that all students are engaged in meaningful activities?

How can we create learning activities to differentiate our instruction?

The learning strategies and activities described in this unit are based on modifying the methods of presentation, student's practice and performance, and assessment. These strategies and activities provide students with choices on how they seek information (using various input modes), on how they practice what they learn (using various output modes), and on how they demonstrate what they have learned. One way of thinking about this is that learning activities need to vary in terms of level of complexity as well as in kinds of activities. Let's look at some examples from classrooms:



There are about 45 students seated in mixed ability groups in the Class 3 (Year 3) classroom. Individually the students are doing a reading exercise but they are encouraged to help each other and share their work as they go along. Each student has a 'pile' of individually cut-out letters of the alphabet. (The day before, students wrote the letters of the alphabet on paper and cut them out. They made additional letters of the more frequently used ones such as "e", "t", "r".)

Because the students are at different levels of reading skills the teacher has designed the following tasks using the cut-out letters:

- Flashcards with words: The students have to write sentences using the given word. They use the cut out letters to make their sentences. (On the other side of the flashcard, there is an example of a sentence which uses the word to help any student who has difficulty in creating his or her own sentence.)
- Readers: There are a number of readers available for students. Students read the books alone or together with a peer. As they find a new word, they write it down. When they are finished reading they use their letters to make the new words and read them to each other.
- Word lists: The teacher has copied a sheet of paper for students to practice sound/letter discrimination (e.g., at hat, bat, sat). The students use their letters to make these words and then sound them out.
- Alphabet: Students use their letters and put them in alphabetical order, then they say the alphabet.

Some 10 students work with the flashcards, about 10 students read the books, 15 students go through the word lists and 10 students work with the alphabet. In each group, students are working on different tasks. The teacher moves around the groups and checks to see that each student is on task. She stops to listen and observe each



student, and gives some extra attention to those students who are working on the alphabet. Students also help and listen to each other.

In the above example the teacher designs activities to be carried out individually, according to students' reading ability. She is providing a range of activities for students using similar materials so they can develop their reading skills from the level where they are at the moment.



In another community, there is a school providing education for adults who are illiterate and have 'dropped-out' of school. The students range in age from 15 years to elders. One of the classes is packed with students. The teacher wants the students to explore some important issues that impact the community. She has collected materials – posters, leaflets, brochures, newsletters – that are available in the community. On the blackboard she lists a number of topics such as HIV/AIDS, drugs, and nutrition, and reads the names of these topics. Each student chooses the topic she or he wants to study. They form into groups based on their chosen topic and go through the materials. The groups are asked to come up with an idea of how they will present their study. Each group comes up with a different way of presenting information on the group's topic. For example, one group asks if they can cut the letters from the posters that they have as they are not very good at writing. They ask the teacher to write the key words on the blackboard according to their dictation so that they can then identify the letters to be cut out and pasted on their poster. Another group decides to present a debate on drugs using the background materials as their source of information, and a third group decides to interview their colleagues to explore issues around nutrition.

In the adult education classroom, the teacher skillfully uses what is available in the community. She lets the students to decide how they can study the materials and produce knowledge with the skills they have. She facilitates the process and supports her students, starting from where the students are in their abilities. Students themselves tap into the skill level within their group. They engage in activities of their choice and come up with their own solutions to overcome the barriers they face in their learning.

Now let's look at how these teachers developed their lessons. The following strategies and activities can be used to help teach diverse groups of students and to include them in the lesson activities.



Varying the level of complexity of questions and tasks

A useful tool for thinking about learning is Bloom's Taxonomy on cognitive development (1956). According to Bloom's original theory, thinking develops from simple information acquisition to more complex processes. In practice, thinking is not straight forward, and people use different cognitive processes in parallel. However, his taxonomy gives teachers a framework that can be easily used in designing tasks and questions based on each student's background of experience, interests and learning profile. On any given topic, teachers can vary the questions and tasks from asking for information (recall) to requesting that students synthesize or analyse information which requires the use of higher order thinking skills. Varying questions can be used anytime throughout the teaching and learning process. Simply by using Bloom's taxonomy as a guide, the difficulty of the questions may be arranged appropriately.

Look at the next example and think of how you could use this idea in your classroom.



Bloom's Taxonomy with Example Questions and Tasks

Area	Definition	Examples of questions and tasks	
Knowledge	Recalling information	What does 'recycling' mean?	What grammatical elements make up a sentence?
Comprehension	Understanding information	Explain 'recycling' in your own words.	What are the minimum grammatical elements required for a full sentence?
Application	Using information	How can you 'recycle'?	Formulate two sentences: one with the minimum grammatical elements, and one with the same content but including other elements.
Analysis	Breaking down information into parts	Give reasons why recycling is important in our country.	What are the purposes of the highlighted grammatical elements? A fat cat scared my mother while she was washing clothes.
Synthesis	Putting information together to form a new whole	Design a programme on improving recycling at school and at home.	Use a text of your choice. Indicate in the text the different grammatical choices made to express time, means, consequence, and actor.
Evaluation	Judging the value of the information	Evaluate the benefits of the recycling programme at school and at home.	Use different texts of your choice. Discuss how grammatical choices impact on the style of the text.

Varying questions is a method that can be also used to evaluate what a student has learned. It also can show how well a student has transferred learned information to a new situation.

The teacher does not need to use all the levels in all lessons – but there should always be possibilities for several levels of cognitive skills. The next example combines some of the levels.



The students in Year 5 wanted to find out how many students in each Year visited a large town during the school holidays. They took a survey and tallied the results shown in the table below.

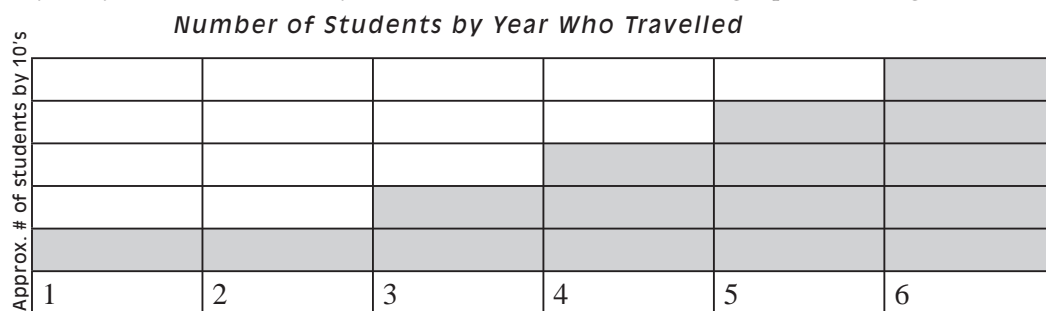


Year	Travelled	Numbers
1	HHH IIII	8
2	HHH HHH II	12
3	HHH HHH HHH HHH III	23
4	HHH HHH HHH HHH HHH IIII	29
5	HHH HHH HHH HHH HHH HHH HHH I	36
6	HHH HHH HHH HHH HHH HHH HHH HHH II	42

Knowledge level activity: Mark the tally in numbers

Comprehension/application level activity: Explain the result in your own words to a peer.

Analysis/synthesis level activity: Use the data to construct a graph on the grid below.



Evaluation level activity: Write one or two sentences that tell what you have learnt from the bar graph.

Example adapted from: Darling-Hammond, L. & Falk, B. (1997). Supporting teaching and learning for all students: Policies for authentic assessment systems. In A. Lin Goodwin (Ed.), Assessment for Equity and Inclusion: Embracing All Our Children (51-76). New York: Routledge.

A word of caution is needed. The teacher should not use the taxonomy to categorise students at one level of thinking. All students can engage in activities and answer questions at all levels of thinking provided that the teacher designs activities that allow the students to show their skills in different ways. The taxonomy is meant to be used to help teachers in developing a variety of questions and activities at different levels of difficulty. For example, taking the question of evaluating the benefits of recycling, one student could read articles and write an essay while another student could interview community members about recycling and then tell the class what he/she feels are the benefits.

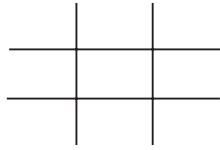
The last example is a game that uses varying questions. It is easy to make and students can help write the questions.



Varying Questions: A Game Called Tic-Tac-Toe (Noughts and Crosses)

After reading a novel, passage or selected text, comprehension questions are used to check student understanding. The questions are developed using varying degrees of difficulty based on Bloom's (1956) taxonomy. The questions are placed in different baskets or are on different coloured paper according to their level of difficulty. In this way, questions are selected for students based on individual student characteristics (e.g., background knowledge, interest) and everyone has an equal chance of answering his or her question correctly.

Tic-Tac-Toe (Noughts and Crosses) is a game that uses a grid of nine squares. It is usually drawn on a piece of paper and looks like this:



To play human Tic-Tac-Toe (Noughts and Crosses), the grid is “drawn” on the floor or walkway. Tape or chalk is used to make the grid. The squares should be large enough to allow a student to sit in one of the grid “squares.” A set of Xs and Os (nine of each) are generated. The class is divided into two teams. One team is designated the X team, the other the O team. After reading a story or some form of printed material, students choose a question from the appropriate grouping. If the student answers correctly, he chooses a spot on the grid and sits down in the grid holding his/her team symbol (X or O) so all the other students are able to see it. The object of the game is to get three symbols that are the same in a row, or the majority of the squares on the board. The game continues until one team gets Tic-Tac-Toe (Noughts and Crosses). The board is cleared and the process begins again. The game aids in checking comprehension, building teams, and cooperative learning.

Note: The game can be played by drawing the grid on the chalkboard and using chalk to mark the grid. Other games based on cultural familiarity can be used. Make adaptations as needed.

How can we accommodate the idea of different abilities?

As already discussed in Units 1 and 2, children have different abilities and inclinations. For some students it is easy to think logically; some students are interested in working with other people; other students prefer to ‘play’ with words, and so on. How can we use students’ abilities and preferences in our teaching?



Look at the following example, and the various activities listed. Think about what kind of interests, ‘inclinations’ and abilities would be suitable for each activity.

Theme: Recycling, Year 9

The students have collected discarded items from the vicinity of the school. Each student shows his/her piece of found item and describes it to his/her classmates. The students then proceed to work through various activities according to their interests.

<i>Learning Area</i>	<i>Activities</i>
Technology	<p>Examine the composition of your ‘item’. What has it been used for? Write a report.</p> <p>Brainstorm with your peer new uses for your ‘item’. Record all your ideas, select one to be worked on. Explain why you rejected or accepted each idea.</p> <p>What new uses could the object be put to? Construct/modify/adapt/build your ‘item’ for its new use. Make a presentation of the process you undertook.</p>



Mathematics, Natural Sciences, 'Language, Literacy and Culture'	Find out how much discarded material your school is producing over a month and a year. What types of items are discarded? What could be recycled? Pair with your peer and design a recycling awareness campaign at school. Prepare an oral presentation for the campaign to be shared with your classmates.
'Language, Literacy and Culture'	Come up with a business idea for recycling Write your business plan on a poster or using the computer. Design an advertising poster for your business.

It is noticeable that the various activities integrate different learning styles (e.g., visual, auditory, kinaesthetic) as well as different abilities (e.g., interpersonal, mathematical/logical, verbal/linguistic, visual/spatial). In a classroom, some students might work on a few activities while others might work on most activities. With this kind of variety of possible 'products' that students can produce, it is likely that all students can contribute something meaningful drawing on their strengths and interests. It is also likely that they feel more motivated when they have a say in their end-product, as well as in the ways they work. The activities also include individual, peer and group work.



Multi-level Activities

Multi-level activities blend assessment and instruction and allow students to work at their own level of experience. In multi-level activities, the focus is on a key concept but the teacher can use varied approaches, teaching and learning modes (i.e., input and output modes), and levels within a lesson(s). Multi-level activities bring together the two ideas presented previously, namely varying the level of complexity of tasks and questions and providing a range of activities that are responsive to a variety of abilities and interests. The variations can be for the input of content (information acquisition), for methods of presentation, for the methods and activities used for student's practice and performance, and for assessment (student products).

The purpose of multi-level activities is to provide various learning activities to ensure that all students will understand the essential content being taught.

A multi-level activity is developed by first identifying a concept or skill to be learned, or the outcome of the learning activity. The various learning activities are then developed:

- ☑ at different levels of difficulty or complexity;
- ☑ with different numbers of steps;
- ☑ with different ways for students to practice learning about the concept;
- ☑ with a choice of products that allow students to show how well they understand the concept.

A number of multi-level activities have been described in this unit.



For example on page 3, the adult education teacher let her students choose their topic of interest, learn about it in different ways and at different levels of complexity, and show that they understood the topic by choosing the way they wanted to present their learning to the class. In this way, students used their varying abilities and different interests to contribute to the task and to develop and expand upon their knowledge about the topics. On page 6, Year 9 students were invited to choose different learning activities at various levels of complexity to learn about re-cycling.

Another example of a multi-level activity is provided below.



The Class 4 teacher introduces bar graphs from different newspapers. Her objective is to demonstrate that data can be illustrated and interpreted in the form of bar graphs. As she shows various bar graphs, she asks her students to explain what they understand from the graphs. For some examples, she asks students varying questions to help in interpreting some of the graphs. She then explains how data can be gathered, illustrated and interpreted using a bar graph. The teacher presents an activity that has varying levels of difficulty, and gives students choices (e.g., if they want to work with a partner and how they want to present their final product, a bar graph). She invites her students to collect data from 10 people or classmates, make their own graph, and present it to the class using any format or materials they want (e.g., a poster bar graph, computer generated bar graph, a two or three dimensional bar graph). Some of the students create their own survey topics; others use a list that the teacher has prepared in advance to choose from. Some of the students chose the same topic and decide to work together. The teacher helps to pair a few students knowing that one of the partners in each of the pairs can use some assistance. For example, a particular student and his partner are asked to do a graph on colour preferences. One of student's educational objectives is to learn colours. With his pair, he practices the question, "Which colour do you like best?" He and his partner survey ten peers and give each of them a choice of five colours. The student records the data placing a mark by the colour each respondent picks. He then counts the marks, and with assistance, draws the bar graph. He colours each bar the colour it represents. Then this student helps his partner present their graph. The other students present a variety of graphs using different formats and materials. In evaluating the students' products, that is, their bar graphs, the teacher checks the graphs for accuracy. The teacher also asks varying questions about the students' graphs eliciting responses to ensure that the students understand what each bar graph illustrates.



Multi-level Learning Centres or Stations

Learning centres or stations are organized areas ('corners') within a classroom that provide materials for a variety of tasks at different levels for students to accomplish. The multi-level activities can be modified to accommodate student differences in background of experience, interests, and learning profiles. The tasks within each learning centre can be focused on a specific topic, theme, or learning area (subject(s)); they can be used to introduce new concepts or to practice skills.

Learning centres help the students participate in activities that are aligned with their entry levels, interests and needs, and can be carried out individually or in small groups. Different colours for activities can help students identify the level of difficulty of the task, and understand what section of the learning centre they are expected to complete. Students rotate through the centres and visit a centre more than once depending on need. There are a number of simultaneous activities taking place. Also, students can be assigned to centres based on what they need to learn; therefore, some students may not have to visit all centres.

Prior to beginning centre work, directions for each centre are reviewed with the whole class. While students are working at their assigned centres, the teacher circulates around the classroom acting as a facilitator. Learning centres have some common characteristics. These are listed below.



Characteristics of Learning Centres

Learning centres should include:

- *easy to understand directions; (Since the students are working independently or with a small group, directions are written in short, clear understandable terms.);*
- *all the materials necessary to complete the centre;*
- *work that is directly related to the learning objective;*
- *a statement of purpose for completion of the task;*
- *colour and graphics that catch the eye, but are also related to the centre;*
- *assessment criteria for the work being completed.*

The advantage of learning centres is that they will ‘liberate’ the teacher from the chalkboard to engage in activities with individual students or with groups. As the centres have clear instructions for the work, as well as materials available, students will be independent in their work. The disadvantage of the centre is that it requires a lot of preparation from the teacher – and perhaps time adjustments in terms of time available for lessons. In schools where there is a lack of reference materials, learning centres might be more challenging to arrange. However, it is not impossible and teachers can share centres thus easing the preparation time. A good way to start, particularly if the teacher is working in a school with few resources or with a large class, or is new to this type of teaching-learning strategy, is to make one or two learning centres. For example, one centre could be a ‘reading centre’ where individual students could go to read.



The following is an example of a number of learning centres developed to accompany a thematic unit on the Greeks for Years 6-8.

Learning Centres on Ancient Greece

Centre 1: Name that Ruin.

Using pictures displayed in a notebook, students take a tour of Grecian ruins. There is certain information students must discover about the ruins. The information to be found is multi-levelled and colour-coded based on student abilities.

Centre 2: Myths in the Modern World

Students choose a Greek mythology to read and then write their own modern day one based on the mythology they read. Students can work in pairs.

Centre 3: It's Greek to Me

Students write and decorate name cards for themselves. Using the Greek alphabet, students write their names and decorate the cards with Grecian designs.

Centre 4: Etymology Tree

Students learn about the origins of words by “picking” apples from a tree. One word (e.g., bizarre, decoy) is written on each apple. The students find the etymology of each word in the dictionary. They describe what the word originally meant, where it originated and what it means today. The students also use the word in a sentence.

Centre 5: Design a Dress

From various readings and pictures, students design an article of clothing or jewelry to depict ancient Grecian wardrobes. Students write a short summary of what influenced clothing and design during that time period.

Designs are presented with the short summary. Students may work with a partner.



Learning Agreements

This strategy is used as an agreement between the teacher and student to provide the student with some choices about the tasks he or she completes. The tasks can be varied from simple to complex and can be differentiated based on student background of experience, interests and learning style.

There is no one way of using the idea of learning agreements. They can be designed for one lesson or for a longer period. They can cover only one learning area (subject) or contain activities across learning areas (or subjects), and contain both skills and knowledge. They come in a variety of styles addressing various learning needs. They can be designed for individual students or for groups of students. Learning agreements work well in differentiated classrooms because all the agreed tasks are aimed at achieving the same objective or outcome, but the tasks themselves are varied according to students' individual needs. They also encourage students' participation as they need to think and negotiate with the teacher concerning the tasks in which they will be engaged. Learning agreements can help students to take responsibility for their own learning.

Teachers and students may agree, but not exclusively, on the following aspects:

The skills

- ✔ based on tasks to be completed (e.g., a research skill: finding out about the Olympics Games);
- ✔ developed and chosen based on pre-assessment information (see Unit 4);
- ✔ incorporated into activities that are developmentally appropriate for the students and completed at their own pace.

The curriculum connection (learning activities)

- ✔ assignments based on background of experience, interests and/or learning profile (see Unit 1);
- ✔ the requirement that students create meaning from their completed tasks by finishing a product or products that demonstrates what has been learned;
- ✔ extension, enrichment and/or reinforcement of key concepts.

The time

- ✔ discussions between the teacher and each student (e.g., about homework);
- ✔ completion dates set by the teacher.

As well as:

- ✔ choice—the teacher agrees that the student may choose the order to complete each task;
- ✔ responsibility—the teacher is responsible for checking work as it progresses and is completed while the student is responsible to complete work and use time correctly;
- ✔ criteria—the contract specifically “spells out” what the student is expected to do for each aspect of the contract (e.g., work for ten minutes each day on multiplication tables);
- ✔ consequences—students understand what will happen if they do not use their time responsibly or do not complete work within the agreed upon time periods.

In the following we introduce two examples of learning agreements that have been used in classrooms. While reading through these examples think about the kind of agreements that could be made with your students.



'Chalkboard' Agreement for Year 3

Teacher has written the following tasks on the chalkboard. By the end of the day:

- Read the story about Windyz in the textbook. Write the story in your own words/ Draw the events of the story.
- Review your times tables. Choose at least 3 and ask your peer to check.
- Give instructions for healthy food for Windyz. You can write/make a poster/use clay or play-dough to show the healthy food.

The teacher asks students to think and decide in which order they want to complete the tasks and how they want to carry them out. After students have reflected on this, the teacher moves around the class and asks students to tell her what they plan to do. They agree on the plan. She then allocates three different periods for the work – in each period the students work on different tasks according to their plan.

If the student has not completed the assigned tasks by the end of the day, the teacher discusses with him/her why this happened. For example, it may be poor planning of time or using one's time for 'messaging around.' Then the teacher and student come up with some ideas on how to improve on completing the tasks for the next 'Chalkboard Agreement Day.'

In this agreement, the teacher wants her students to learn to become more responsible in their learning. She starts with a very simple agreement, by designing activities that should be completed by all students. She gives students the freedom to decide the order of the tasks to be completed as well as choices of activities or materials for some tasks. Throughout the work, she moves around in the classroom, observes students carrying out the tasks, and helps them where needed.

In the next example, the teacher has designed a set of activities across three learning areas (subjects) for the all the students in the Year 7 class. The teacher has written the activities in the form of a table, and for each student, he marks some of the tasks with an X. The number of tasks selected for each student may vary depending on individual needs and abilities of the student. When the teacher hands out the contracts, he asks students to go through their individual tasks and see if they agree with his choices. He then asks them to choose two others. He then moves around the class and discusses the tasks with the students. Sometimes the choice of tasks is reviewed further, as some students may want to undertake more tasks than assigned. Students then began to carry out the tasks assigned and chosen in their learning agreement. If students do not complete their tasks in the given time period, they are not be allowed to choose or negotiate tasks in the next agreement. They are required to accept the teacher's assigned tasks.



Learning Agreement for Year 7

Theme: My Community Learning areas: Languages, mathematics, arts and culture

Name: _____

You are expected to carry out tasks marked with X before end November.

Name of the community

Interview your elders about the name of the community. Make a poster of your findings.

Locations

Draw a map of the community. Indicate all important places.

Past

Find out about the history of the community. Who lived in the community first? How did it change? What have been the important events? Share your information through a medium of your choice.

<p>Ordinary day</p> <p>Select one person in the community that you will interview about his /her day. Produce a poster/write a story/tape the interview.</p>	<p>Economics</p> <p>Use materials from the district office and try to investigate: What is the main income of the community? How many people are employed, how many unemployed? How much does the district spend on education and health? Show your findings in charts.</p>	<p>Culture</p> <p>What are the customs of the community? Choose one and find more about it. You can present your findings in posters, writing, performing, etc.</p>
<p>My ordinary day</p> <p>Describe one of your ordinary days: What do you do? Why you do what you do? What makes your ordinary day a special day? You can write /draw/make a collage or come up with another way of presentation.</p>	<p>Important people</p> <p>Who are the important people in your community? Why are they important? What do they do? Make a presentation of one of the important people in your community.</p>	<p>Most beautiful place</p> <p>What is the most beautiful place in your community? Draw or paint a picture on a large sheet of paper. You can also write why you think this place is beautiful and reflect on how it makes you to feel.</p>

In this learning agreement, the teacher gives students a variety of tasks. The tasks vary in the use of “multiple intelligences” (see Unit 1) and students can demonstrate their understandings using a variety of learning styles and output modes. This type of learning agreement works well in large classes. Sometime the teacher can ask students to choose a certain minimum amount of work and then verify with each student that their choices are appropriate.

Learning agreements can be designed at different levels of difficulty – and students can be asked to choose a certain minimum number of tasks. The teacher’s responsibility is to verify that students choose tasks that are challenging enough and to provide support for those students who want to try more difficult tasks.

The advantage of the learning agreement is that it liberates the teachers from the chalkboard to facilitate learning. Learning agreements are highly motivational to students as they feel that it is really their responsibility to fulfill the agreement. The teacher’s responsibility relates to facilitating the learning – helping students to plan their work, set reasonable timelines and make sure that all the materials are available for the students. The teacher also needs to set aside time for the work (i.e., allocate some lessons every day or over a period of time for students to work on the chosen tasks).

Some teachers find learning agreements rather stressful at the beginning as they feel that these agreements give ‘control’ to the students. Over time, however, students and teachers learn to work together sharing in the responsibility for learning. Students need to feel responsible and make some choices as to how they are going to use their time for completing a number of tasks. At the beginning it may be

a bit hectic because students are working on different tasks during the same period. This can cause some chaos at first but over time both students and teachers adjust. They also get excited about seeing the completion of multiple work. In the beginning it is probably a good idea to introduce the concept of learning agreement slowly and to explain to students that it will be a trial idea. If it works – and both students and teacher like the idea – it can be increased or used more regularly.

How do I get started?

The most difficult part of trying out new things is getting started. But unless you take the first step, nothing will change.

The first step can vary: some teachers like to take one step at a time; some prefer to take small steps and then reflect upon their experiences and others like to take it all at once. Because we are all different, it is impossible to say which is the right way of doing things. We have different preferences and we have to find our own way of developing our teaching practices.

Here are some things that teachers all over the world have used and found useful:

- ▣ Plan what you want to do and how you want to do it. Maybe you want to plan a truly collaborative activity for one period and try that out first. Or maybe you want to try out the idea of giving students a choice of activities during one lesson. Perhaps you want to structure your maths activity around the idea of multi-level instruction. Whatever you want to try out, put it into action, reflect on your experiences with it and develop it further.
- ▣ Work with a colleague. Discuss your ideas together, plan something new and do it together. It is usually not as frightening to try out something new when you are doing it with a colleague. After implementing your plan, discuss it with your colleague – what was easy, what was difficult, what went alright, what did not work out?
- ▣ Ask for help – this is not a sign of incompetence but a sign of your willingness to learn more. The head teacher will be interested in any new ideas a teacher has!
- ▣ Don't be afraid of making mistakes – we all make mistakes and we learn from our mistakes and from those of others.
- ▣ Don't be discouraged if something does not work out immediately. When you are learning a new skill, it takes some time to practice and for it to become a part of your repertoire. If it doesn't work today, try it again next week.
- ▣ Students need time to learn new ways of working. If students have been used to learning according to a certain routine for years, it takes time to learn to do things differently.
- ▣ Ask for feedback from students – what did they like about the new ways of doing things and what did they dislike? Most of the time students seem to like things which are not 'done every day' – use this as your encouragement.

- Think that teaching is about learning. No teacher can have all the answers – the more we teach and interact with our students, the more we learn. It would be a sad day when we stop learning.
- Celebrate the work that you are doing in your classroom. When you have carried out an interesting project with your students, used a new strategy or managed to engage students in truly independent work, make room for a celebration – whatever it is: dancing, singing, having soda and biscuits, etc.
- Appreciate the work you do. You are working for the future!

Suggestions for facilitation – Unit 3: Instructional Learning Strategies

Summary of the unit

- In order to provide quality education for all students, teachers need to differentiate their teaching to suit the needs of the students rather than assuming that children will fit into what they offer.
- Effective curriculum delivery requires thorough planning and sensitivity to student diversity.
- Teachers can differentiate their curriculum delivery by:
 - adjusting the pace
 - using different learning styles (e.g., visual, auditory, kinaesthetic)
 - providing tasks and questions at different levels of complexity
 - varying the number of steps in the practice
 - providing opportunities to practice and learn in a variety of ways such as writing, reasoning, making plays, using music, and listening.
- Good strategies to manage the classroom when working with the differentiated approach are to use multi-level activities, learning centres or stations and learning agreements.
- In inclusive classrooms, students work often on different activities, at different levels, and at different paces. There should be plenty of interaction, peer support and fun.

Workshop activity 1

Objective: Planning classroom activities that include different teaching strategies to increase students' participation in learning

Warm-up activity

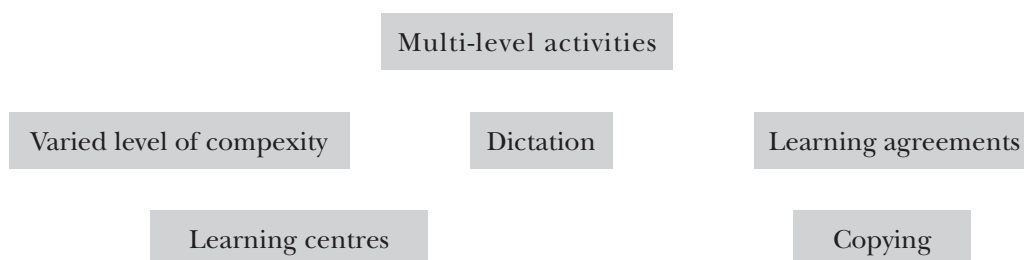
Ask teachers to align themselves into a row according to their birthday. After accomplishing the task, invite teachers to share their ideas about the level of participation in the activity.

- ☒ Who took the lead in organizing the activity?
- ☒ Who took awhile to understand what to do?
- ☒ Who was 'fitted in'?
- ☒ What kind of difficulties were met in organizing each other?
- ☒ If the task was easily accomplished, why did this happen?

Activity

1) Divide the group into groups of threes using cards to indicate the names of the groups with the names of the strategies introduced in the Unit 3, as well as others used in your context.

For example:



2) Give the teachers five curricular subjects or topics and ask them to choose only one of the subjects or topics. Give them 5 minutes to reach an agreement.

3) Give each group a Year (Grade) for which they should design a learning activity. The Years (Grades) should vary from pre-school to higher education regardless of where the teachers work.

4) Ask the groups to plan a learning activity on the subject or topic which is compatible with the Year (Grade) of the group.

5) Have each group present their group's plan and then have the whole group reflect on the instructional strategy presented. It is important that through discussion and/or the facilitator the following elements are highlighted:

- ☒ Level of complexity (across Year [Grade] levels)
- ☒ Variety of activities
- ☒ Variety of learning styles/methods/materials used, etc.

Workshop activity 2

Objective: Planning classroom activities that incorporate the different ‘multiple intelligences’ and levels of complexity to increase students’ participation in learning

Activity

- 1) Divide the group into 8 smaller groups.
- 2) Identify a current topic in your country or locality that the teachers are familiar with and interested in (or have the teachers identify one). Have each group use one of the multiple intelligences and activities related to those intelligences (see Unit 1) to demonstrate the topic (30 min).

For example, if the topic identified was ‘Elections’ then the following might be some of the activities suggested by the groups related to their assigned type of ‘intelligence’:

Group 1: *Verbal/linguistic intelligence* –write an election declaration/ organize a debate

Group 2: *Mathematical/logical intelligence* –make an analysis of the election results and present it

Group 3: *Kinaesthetic intelligence* – act out mock interviews with the election candidates

Group 4: *Intrapersonal intelligence* – discuss how the election candidates deal with their pressures

Group 5: and so on...

- 3) When groups are finished have them present their work and discuss the ideas. Concentrate on positive and constructive feedback.
- 4) As a whole group, have the teachers use each activity presented and identify some multi-level activities that could be embedded in that activity to facilitate students’ participation.



Assessment

How can we use assessment to help us in the teaching and learning process?

Silvana is 9 year old student who just started year four. Her new teacher, Professora Lucia notices that Silvana is quite verbal and appears to get along with the other students. However, she also observes that when the students are working in pairs or groups, Silvana tends to withdraw and work on her own. This is particularly noticeable in the Maths lesson. Since Professora Lucia notices that Silvana is having difficulties with multiplication, she asks Silvana about it. Silvana tells Professora Lucia that she has learned multiplication and division and knows her multiplication tables from 0-12.

Professora Lucia continues to wonder why Silvana is not working with her peers... In order to find out more, Professora Lucia decides that she needs some background information about Silvana. She reviews the report from Silvana's previous school. It indicates that she did very well in Maths and Science. Based on this information, Professora Lucia wants to know more about Silvana's current difficulty with Maths and working in Maths groups. Professora Lucia decides to observe Silvana's behaviour for a few days while she is working in different subjects as well as in Maths. Professora Lucia wants to compare her behaviour in the different groups. From Professora Lucia observations, she notes that every other day the students complete some Maths problems and check their own work to monitor their progress. On these problems, Silvana only does well on some of the single- and double-digit multiplication problems. Although this information is useful, Professora Lucia is not able to see, at a glance, where Silvana is having problems with her learning. She wants to know why Silvana can solve some of the multiplication problems but not all of them correctly.

Professora Lucia decides to use an 'error analysis'. She hopes that by using this assessment method she will be able to see some patterns in the errors Silvana is making. First, Professora Lucia collects some of Silvana's Maths problem worksheets from her work folder. Then she divides the incorrect problems into categories of errors to identify any patterns of frequent errors that Silvana makes. After carefully looking at the errors, Professora Lucia notes that Silvana does know most of her multiplication tables except when she multiplies 7 by 7, 8 or 9; 8 by 7, 8, or 9; and 9 by 7, 8, or 9. Now Professora Lucia knows Silvana's needs in multiplication and how to teach and support her during Maths.

All over the world teachers identify students who encounter barriers to learning at some point during their 'academic' life. Some students may have difficulty learning a particular topic of the curricular content, or understanding a specific procedure

to solve a problem. Others, like Silvana in Professora Lucia's classroom, may have difficulty behaving in an appropriate way when asked to participate in a group task. Whatever the student's difficulty is, it most likely will be noticed by the teacher at some point during the academic year. Some teachers are challenged by this and persevere in trying to figure out the barrier that is preventing the student from learning or participating fully in order to help her – as Professora Lucia did.

Assessment is an integral part of the curriculum, and of teaching and learning. Traditionally, academic exams have been the predominant instrument used for student assessment. The majority of teachers learn to assess students' needs and strengths by giving their students exams at specific times during the school year. For the most part, students are not allowed to participate in assessing their own progress or accomplishments. Over the years, some schools and teachers have realised that 'academic exams' are a limited type of assessment; they do not thoroughly or accurately give a view of the students' academic development, performance and capabilities. These academic exams do not take into account students' various learning styles, their personal backgrounds, their interests and their needs. Because of limitations in traditional assessment, teachers have begun to use other types of assessment that are more responsive to human diversity.

Diversity in the schools increases as people migrate all over the world and as more children from different social and economic backgrounds access schooling. Ona (in Unit 2) and the student who eats bananas for breakfast (in Unit 3) are good examples of the kind of diversity that teachers may find in their classrooms. Teachers, now more than ever before, need to learn more about their students and their students' needs. Assessments that will help in this process and support students in overcoming barriers to learning are a means of helping both teachers and students. For example, Professora Lucia used error analysis as a strategy to assess Silvana's difficulties in Maths. There are others instruments that are very effective to support teachers to assess students.

In this unit...

...we focus on clarifying the concept of assessment. We also describe and provide examples of and activities on assessment as it relates to instruction and curriculum differentiation. The assessment methods can provide teachers and students with useful information on what the students have learned and how they are progressing in the curriculum. We will address the following questions:

- ▣ What is assessment?
- ▣ What kind of assessments can the teacher integrate in the teaching and learning process to assess students?
- ▣ How does this way of assessing students support inclusive classrooms?

What is assessment?

Assessment is an integral part of curriculum and instruction; they are on-going processes that go hand-in-hand. Students are traditionally assessed when they have completed a piece of work (often by means of a test or examination) – this is called *summative assessment*. But students can also be assessed at the beginning of an assign-



ment or piece of work with a view to planning the most appropriate learning for that individual – this is called *formative assessment*. Assessment, therefore, is a necessary component used for planning, implementing, and evaluating instruction, and it is a fundamental tool for teaching and learning. It is important that teachers start the assessment of their students' individual characteristics at the beginning of the academic year. Learning about students' background, interests, needs, abilities and learning styles is crucial to being able to differentiate the curriculum accordingly. By continuously assessing individual differences, we are able to acquire more knowledge about our students which contributes to their learning profiles. This information then can assist teachers in knowing when and how to modify the curriculum content, activities and products for the students.

Assessment is a continuous process that is shared by the teacher and student. It helps teachers and students in the process of identifying entry levels or starting points for learning particular concepts, understandings and skills. Once these starting points are identified, they provide the benchmarks needed to measure continuous progress.


What kind of assessments can be integrated by the teacher in order to assess students?

There are many types of assessment that can be used by teachers and students to assess learning. We will describe and provide examples of some of the major types of assessments used to help teachers differentiate the curriculum in response to the particular learning characteristics and needs of the students. It is important to stress though that these kinds of assessment can be used as a single tool or combined with other assessment strategies. Although this is the teacher's decision, experiences have demonstrated that students are an excellent source of information when it comes to their personal style of learning and needs. Therefore, it is suggested that to obtain the best results when learning about students' profiles, teachers should invite students to collaborate in their own assessment. The types of assessment we will look at are: observing students, entry level indicators, error analysis, record keeping (anecdotal records, portfolios/folders, and journaling), performance assessments, and student-led conferences. These are briefly defined as follows.

Some of the Major Types of Informal Assessments Used

in Curriculum Differentiation

- *observing students*—watching students and recording relevant information to answer questions about students such as who they are and how they are learning.
- *entry-level indicator*—a point where a student should start in learning a particular concept or skill. This point is identified based on student's previous learning and knowledge of the content.
- *error analysis*—a systematic way to identify and analyse patterns of errors that a student makes in his/her work.
- *record keeping*—systematic ways for the student and teacher to keep records of the student's entry levels and progress.
- *performance assessments*—a set of tasks performed by students to show that students understand a concept, skill or behaviour.
- *portfolios*—systematic ways to contain a collection of student's work to help the student and teacher monitor student progress.

- 
- ▣ *student-led conferences—conferences that are led by students who take responsibility for assessing their own progress through teacher feedback and student self-assessment. Self assessment forms the important aspect of this type of assessment.*

Observing Students

Observation has been used by teachers in their classroom as a kind of ‘intuitive tool’ to learn and know about their students. The importance of observation for teaching and learning has become clearer in the field of education. Today, observation is one of the most utilized assessment strategies found in classrooms whereby teachers watch and listen to their students day in and day out to monitor and document progress.

Formally, teachers make observations based on identified questions and objectives. Teachers focus on these while watching and listening to the students’ performance to help determine each student’s entry level or progress. Gathering information about students through systematic observation and interaction allows teachers to monitor progress that students make in the curriculum and their development of student characteristics such as interests and learning styles.

Questions that can help us focus on assessing student performance and characteristics are as follows.

Progress with the curriculum

- ▣ are students learning what they were taught?
- ▣ are they at the right entry point to ‘grasp’ the content worked on in the classroom?
- ▣ are they practicing and performing as expected?
- ▣ are they applying the facts, concepts and/or skills being learned?

Interests

- ▣ are students engaged in the lessons and activities?
- ▣ are they showing interest in a new topic or area of study?
- ▣ are they sharing their interests with others?

Characteristics

- ▣ what are their preferred learning styles (e.g., whole class teaching or pair work)?
- ▣ what are their responses to the materials?
- ▣ what are their responses to the difficulty level of instruction?
- ▣ what are their responses to the pacing of instruction?
- ▣ what are their responses to the environment?

Observing a student with a focus

Observing a student’s behaviour, acquisition of a skill or accomplishment of a task in the classroom requires a clear focus. Observation is a fairly simple tool used to learn about students’ individual characteristics but it demands from the teacher clarity of purpose and focus. When teachers observe students they usually aim to gather infor-



mation about what students can and cannot do, what their interests and preferences are. The observation, thus, should be done in a systematic way by using essential steps including:

1. Define the behaviours/skill/activity to observe
2. Record the behaviours/skill/activity observed
3. Analyse and use the recorded observations

Step 1: Define the behaviour/skill/activity to watch

When observing students, teachers have to ensure that they are focusing on watching and gathering relevant information and important details. The observation should help to answer questions that they are raising about their students, for instance, *who they are and how they are learning*. A clear focus on what we are going to observe is crucial. We observe for different reasons as the following example demonstrates. It also shows how two teachers can work together obtaining different information which can be complementary and contribute to learning more about student characteristics, progress and needs.

Deciding the focus is the very first step of a systematic observation. Mrs. Smith and Mr. Jones, in the example below, help provide us with a sense of what this means.



Mrs. Smith and Mr. Jones co-teach a multi-age primary class. These two teachers decided to observe the *same lesson*, but for very different reasons. Their focus for the observation is different.

Mrs. Smith focus:

Observation of the engagement of students during their Maths group work

Reason:

The teacher aims to identify:

- who is on-task and who is not,
- who looks interested and appears to be totally absorbed in their work and who does not.

Once she has observed this, Mrs. Smith wants to interact with students to find out more information such as why they are (or are not) engaged in the activity.

Mr. Jones focus:

Observation of the same group of students during their group work

Reason:

The teacher aims to ensure that:

- all students are performing all the steps of the task correctly.

As Mr. Jones observes students' performance he is going to reinforce them and ask questions to help his students re-focus on correct performance.

Prior to their observation of the students, Mrs. Smith and Mr. Jones had a meeting and agreed that after the classroom activity they would share the information gathered in order to compare their observation notes. Being clear in what they were going to observe helped them in their collaboration and in gathering a variety of important information about their students.

Step 2. Recording the behaviours/skill/activity watched.

To obtain clear and accurate documentation of an observation, student behaviours and/or performance need to be recorded in a systematic way. In this way, the recorded information made by the teacher(s) and/or student(s) can be reviewed and analysed after the observation. Recording keeping can be done in a variety of ways. Two common ways to record observations are *anecdotal records and checklists*. Both of these methods were used during the observations made by Mrs. Smith and Mr. Jones.



For example, Mrs. Smith used a checklist to note if students were on-task or not, but also, used *anecdotal recording* to note student responses when she asked why they were or were not engaged in the activity. Mr. Jones preferred to use a *checklist*. In the classroom, he circulated from group to group quickly checking off if a student was able to perform the required skill or not during the Maths activity. This also gave him time to give reinforcement to individual students as he observed and interacted with the class. He used correction and reinforcement when necessary.

Mrs. Smith focus:

Observation of the engagement of students during their Maths group work

Anecdotal record

The teacher aims to identify:

'Jerry was not engaged in the activity because he already knew the solution to the problem and he felt he had already contributed enough to the group.'

'Melissa was engaged because she enjoyed measurement problems and felt her contributions were an integral part in finding the solution.'

Mr. Jones focus:

Observation of the same group of students during their group work

Record: Checklist

'... one student was not able to convert the measurement to its lowest fraction when recorded on the group work sheet. Mr. Jones checked this on his list and then assisted the student in corrective feedback as they worked through the problem together.'

A few comments should be made at this point on the relevancy of collaborative work among teachers. Traditionally, education systems do not encourage teachers to work in collaboration, let alone teachers sharing activities in the same classroom or lesson. As discussed in Unit 2, however, collaboration is an integral part of curriculum differentiation and, consequently, it should be included at all levels of activity and aspects of the school and classroom life. As well, in schools where teachers and administrators are committed to curriculum differentiation, co-operation and collaboration is a natural component of professional development. By working collaboratively, Mrs. Smith and Mr. Jones have learned from each other, supported the tasks of one another, and obtained effective outcomes from their observation. Who would you enjoy working with in your school?



Step 3. Analysing and using the recorded observations.

Once teachers have observed their students and recorded information about behaviours, skills, or activities, they analyse this information to determine its relevance to the assessment process. By analysing the recorded information, we then determine if the observation has served the purpose we originally planned. For instance, in order to assess information obtained in their classroom, Mrs Smith and Mr Jones could ask the questions as follows.

Does the information recorded show that a student acquired the skills intended by the teacher?
What does the student already know?
What does the student still need to know?
Does the recorded information provide an understanding about why the student is engaged in learning or not?
Does the recorded information add to knowledge about the student's progress or his/her learning profile?

Once teachers analyse the information gathered, then they use it to help them to plan further instruction.



In the given example, Mrs. Smith found out that Jerry already knew the solution to a problem and did not want to contribute anymore to the group process. This information helps her to differentiate Jerry's curriculum in a number of ways. She decides that she can make a number of changes. She can change the difficulty level of the problems given to Jerry during Maths class, change his role within the group, and/or spend time working with Jerry and other members of his group on cooperative skill development. In other words by observing Jerry, Mrs. Smith has learned more about Jerry and about his behaviour. She can use this information to differentiate Jerry's learning experiences and thus support his development.

Entry Level (Starting Point) Indicators

We can assess students in a variety of ways to obtain information about the knowledge, skills, and concepts they already have. *Entry level assessment* is one method that helps us identify students' previous learning and knowledge of the content of the curriculum. Teachers use this assessment with new students, with students who they suspect may be experiencing an emerging barrier to learning, or when teachers introduce a new topic or theme. This assessment is most important at the beginning of a unit of study as it guides teachers in planning exactly:

- ▣ What information will be initially presented
- ▣ How it will be presented to students
- ▣ How it will be practised by the students.

Before planning and delivering the lessons, teachers develop a series of activities that will provide them with relevant information of students' knowledge of the content. The *pre-assessment* activities help us to determine students' entry points within a given learning activity. The information obtained from the pre-assessment activities helps us to modify the content or differentiate student activities and products to accommodate the varying ability levels within the classroom.

The following is an example of how a teacher used a pre-assessment activity to give her an indication of her students' prior knowledge of a particular concept, in this case the concept of 'systems'. After this activity, she was better able to differentiate her lessons knowing the students' various entry-levels for learning this concept. She knew where to begin ...



Maestra Guadalupe is introducing students to the concept of systems. She is preparing them to study photosynthesis. She knows that she needs to learn more about her students' background and skills so she initiates a pre-assessment activity. She divides students into multi-ability groups and invites them to volunteer for the role of group recorder. The recorder then receives a list with the name of each member of the group. Maestra Guadalupe asks students to think of as many words or phrases they can about plants and photosynthesis. As each member in the group supplies a word or phrase, the recorder writes the response under the respective student's name. When the groups have completed their responses, words and phrases are shared and Maestra Guadalupe requests that one member from each group write them on the chalkboard. Some of the responses are: green, chlorophyll, light, food, lettuce, rabbit, water, carbon dioxide, system, change, nutrients, light source, air, chemical change, and ecosystem. She asks students to use the list on the chalkboard and to categorise the words and phrases collaboratively. After this activity, Maestra Guadalupe requests that some of the students collect the lists and then she begins to assess students' background knowledge about photosynthesis and ecosystems.



Mrs. O'Brian alternatively, decides to undertake a short pre-assessment of her students on the same subject by asking students to answer various questions.

She invites students to spend two minutes thinking about plants and what they know about them. Mrs. O'Brian gives them a small piece of paper and asks them to write two or three pieces of information they know on the subject. Mrs. O'Brian then distributes a series of questions to her students as follows:

What is needed for plants to grow?

Where do plants get their energy?

What is photosynthesis?

What kind of plants produce flowers?

What plant(s) do I have in my home?

Do plants have the same texture?

What happens to plants when they are not watered?

After providing these questions, Mrs. O'Brien asks students to gather into groups of five and share their individual knowledge on photosynthesis and based on this knowledge to try to answer the given questions. While students are working together, Mrs. O'Brien visits each group and supports them or challenges them to go a step further in their thinking and learning. She records some of the knowledge shared by each group. When the groups finish the activity, Mrs. O'Brien asks her students to



collaboratively make a drawing or write a piece of work that represents their knowledge on the topic. At the end of the activity, each question is answered by all groups and added to with more accurate information as each group presents its results. From Mrs. O'Brien's observations and interactions with the groups and individual students, she has a good idea of what knowledge the students have and do not have. She can now further plan multi-level activities for her students based on this pre-assessment information. Also, Mrs. O'Brien has used this activity to have the whole class contribute to produce relevant information about photosynthesis. In this instance assessment and learning have taken place simultaneously.

Teachers should be creative and not feel they are bound to a particular strategy. Another teacher, for instance, may find it more useful to interview students by asking the questions directly. The questions can be written and audio-recorded so students can answer them independently or in a group. Students can record their answers in writing, using an audio-recording device or dictating their responses to a partner or at home to their parent. The teacher can then review their answers to determine what they know and do not know about a topic or concept.

Record Keeping

There are various strategies that can be used for record keeping. Teachers and students can share in the process of keeping track of student entry levels and progress during the academic year. Three simple forms include: anecdotal records, portfolios and journaling.

Anecdotal records

Anecdotal records are a simple and fast way of making brief notes of students' progress and other aspects of their social and academic life in the school. The notes can be written and/or recorded anytime and used by the teacher and the student to review progress. These notes can be written on sheets of paper, in a notebook or on cards. This type of record is accessible to students and can be used as a regular tool in the classroom. In order to ensure the relevance of the information, the teacher should provide some guidelines to prepare students for keeping their own anecdotal records.

Portfolios

Portfolios are 'folders' where students collect their work which is to be assessed. Some teachers use shoeboxes for this purpose, some use plastic bags, some use large sheets of paper folded in half and some use coloured or decorated folders. The format is not important, but its contents and the value given to each student's piece of work is! There are numerous types of portfolios which can be used to assess a student's progress based on a varied collection of the student's work. The items in a work portfolio can include work samples, homework assignments, final products and classroom test results. The collection of the student's work is done over time. Portfolios should include student self-assessment and reflection as well as teacher written feedback on some or all of the collected work. The pieces of work in the portfolio should reflect

student progress and student achievement. The portfolio helps teachers, students and parents to verify the academic progress of the student. It also serves for celebrating students' achievements during an activity, period of the year or the year. Keeping students' work in portfolios is a very common practice in schools. Its purpose is for teachers and students to keep a collection of students' work and use it to continually record and evaluate progress – students and teachers can readily see improvements and learning if the collection of works is maintained. It is also important to stress that this material is a rich resource for fostering learning within the school as whole because students can share what they have produced with other groups of students and with the school community.

Journaling

Although pre-assessment or assessment is a major part of the teachers' work, it can and should involve students on a regular basis. Students are always able to provide quality information on their own learning and academic needs. So, another form of student self-assessment is journaling which refers to having students reflect and write briefly on their learning usually at the end of the day or after a particular lesson.

The end of the school day should become a moment for celebrating achievement and sharing learning as well as having a good time by freely interacting with each other. This moment should be appealing, relaxing and enjoyable for both teachers and students. A moment to be with, to feel part of, to learn from each other and to be quiet if one wishes... It is important to stress though that in this record keeping, the writing is fundamental and should be part of the activity. However, sharing what one has learned with peers should be optional and no student should be forced to share their private assessment.

Error Analysis

Error analysis is an assessment technique that helps teachers to identify patterns of errors that a student makes in his or her work, as Professora Lucia used to assess Silvana's needs. A pattern of errors is a regular occurrence of one or more types of errors. By gathering a few work samples, the teacher together with the student can analyse the student's work and become aware of these errors and any patterns that may exist. This procedure helps the student recognise the kind of errors he or she makes and deal with them. The main purpose of the error analysis for the teacher is to identify patterns of error so that re-teaching, corrective practice or alternative instruction can be planned and implemented in order to help the student overcome making these errors.



Manuel is a class 5 student. He is a very good reader but when writing he makes punctuation mistakes. His teacher, Professora Ana Maria decides to use error analysis and asks him to write for five days a piece of work on issues that are appealing to him. Manuel chooses as themes for his writing: football, cars, UFOs, the zoo and his dog (named Beckam). For a week, Professora Ana Maria gives him some time to write a page on these themes and afterwards they sit down together and mark with a circle his mistakes in writing. On the third day Manuel already shows some awareness about the pattern of his mistakes and he helps the teacher mark them. They find out that he does not properly use commas but uses periods correctly. Professora Ana Maria also



notices that Manuel does not use capital letters for the days of the week but does use them for proper names. After a week they are very clear on the kind of punctuation mistakes that Manuel makes in his writing. Professora Ana Maria prepares a set of punctuation and capitalisation rules for Manuel to refer to when he is writing. She also gives him exercises to help him practice punctuation and capitalisation rules.

Performance Assessments

Performance assessments when properly used can tell teachers and students more than tests or exams. This type of assessment is very effective to show what the student has internalised and can use, not what they memorised and can lose. In this sense, teachers find performance assessments to be a natural type of assessment to help in differentiating the curriculum which in turn helps teachers assess the results of their teaching strategies.

Although performance tasks are not particularly easy to construct, they give us a clear picture of the learning that has occurred and how much and what kind of instruction might still be needed. Performance assessments are used to help us find out what students do know as well as what they do not know. Performance assessments require the mindful engagement of the assessor. We see ourselves just as much a part of the assessment as the student.

In order to develop a performance assessment, the objective(s) to be met for the students is determined, as the examples below show.



In mathematics, Mr. Shi-Kim wants to determine if his students understand how to use percentages. He devises various performance tasks that may be used to demonstrate that this objective has been met. The tasks are differentiated based on student needs including levels of difficulty and student learning styles. Next, Mr. Shi-Kim gathers materials to be used for his performance tasks. The materials used are differentiated representing various levels of difficulty. The tasks to be completed are designed so time is used efficiently and is equally engaging for all students.

By coincidence, at the same period of the academic year, the principal of Mr. Shi-Kim school needs to collect some school data. She requests Mr. Shi-Kim's help. Since Mr. Shi-Kim's class is working on percentages he decides to engage his class in this project. He realizes that this will be a relevant way to determine whether his students understand the concept of percentages. He uses this as his means to assess his students instead of giving them the usual "paper-and pencil test" on percentages. He decides he can have groups of students doing various tasks in this project. Some of these tasks can be directed to varying levels of ability.

Mr. Shi-Kim decides to have students work in groups and also to observe them while engaged in the activity. Mr. Shi-Kim divides his students. Those who are at the advanced level collect the data and solve various problems (e.g., compute percent of girls and boys in school and in each class in comparison to the community); students who are at the readiness level do the counting (e.g., count the girls in class; count the boys in class) and other students are assigned to perform the various mathematical operations such as adding and multiplying to compute the percentages (e.g., given the data, apply the formula for computing percentages).

Mr. Shi-Kim checks his students' results to determine if they understand the concept of percentages and how they compute them. He assesses the other students as they contribute to the project at their own level (e.g., counting, recognizing numbers, adding, multiplying, using a calculator). All students contribute to the performance assessment project and Mr. Shi-Kim is able to use the performance assessment



Below we provide some more examples of performance assessment.

Other Examples of Performance Assessments

- ▣ *Contributing a piece of work for the school or community newspaper such as writing an article, drawing a cartoon or picture, finding some quotes, or creating a computer design.*
- ▣ *Building a set based on the novel being read in class, creating a collage depicting the setting or making an audio recording describing the setting.*
- ▣ *Making a book poster, writing an advertisement or review for a book or designing a book cover.*

Student-led Conferences

Throughout this material we have been reinforcing the importance of having students committed to participate in their own learning and assessment. Students need to take responsibility for their own progress and be held accountable. This is a crucial part of their personal human development and students' participation should not be disregarded by school policy or teachers.

One way students can be involved in assessment is by taking the lead in the periodic assessment of their progress. In student-led conferencing, for instance, the students are responsible for assessing their own progress. They do this based on both feedback from the teacher and their own reflections on works that demonstrate their learning. At the student-led conference, the students relay this information to both their teacher and their parent(s). Usually students use their portfolios as a means to demonstrate to their teacher and parent(s) the progress they have made. Teachers play an active role in preparing students for these conferences (Little & Allan, 1988). Also, this is a rich activity for developing self-confidence and boosting self-esteem because students will learn how to deal with their own strengths and failures as a natural part of their academic life.

Below we provide a set of steps that help teachers to prepare students for leading conferences:

Teachers' Help with Student-led Conferences

- ▣ *sending invitation letters to their parent(s) for the conference;*
- ▣ *choosing pieces of work that the students feel best demonstrate their learning (across and within subject areas);*
- ▣ *reflecting on these pieces of work using teacher feedback and their own analysis;*
- ▣ *showing how these pieces demonstrate progress—identifying strengths and areas that may still need to be developed;*
- ▣ *preparing and practicing the presentation for the student-led conference;*
- ▣ *practicing meeting and greeting parent(s) including using proper ways to introduce parent(s) to peers, teachers, other parent(s) and the principal;*
- ▣ *learning how to answer questions that may be asked by parent(s) and teacher during the presentation;*
- ▣ *thanking parent(s) at the end of the conference and with thank you notes/letters;*
- ▣ *evaluating the student-led conference.*



Suggestions for facilitation – Unit 4: Assessment

Summary of the unit

- ❑ Assessment of students and their learning is integral to the teaching and learning process.
- ❑ Assessment is an integral part of curriculum differentiation. It helps us identify what students need so that we can appropriately adapt the content, and our teaching methods and activities.
- ❑ Information from various assessments helps teachers get to know their students. Through assessment teachers find out what their students know and can do and what their students do not know and cannot do. Assessments of students' characteristics such as interests, prior knowledge, and learning styles help teachers to provide learning activities that engage and encourage student learning.
- ❑ We need to assess the academic performance of students, their characteristics, their performance of skills and their performance on tasks using a variety of techniques.
- ❑ Teachers can assess students by: observing them, reviewing their work, using pre-assessment strategies to find out what the students already know and can do, and having students' self-reflect and respond to questions and inventories.
- ❑ Assessment techniques most useful for differentiating the curriculum include: observation, entry-level indicators, error analysis, record keeping (e.g., anecdotal records, work portfolios/folders and journaling), performance assessments and student-led conferences.
- ❑ All of these assessment techniques can be used by both the teachers and the students. Teachers should invite students to be involved with them in the assessment process.

Workshop Activity 1

Objective: Using different assessment methods for teaching and learning and understanding differences, advantages and disadvantages

Warm up activity

The facilitator prepares the following or equivalent sentences separately on large sheets of paper and spreads them out on the wall:

- ❑ A good assessment is obtained through an exam.

- ☒ I assess my students by monitoring their homework.
- ☒ I reject any kind of structured assessment.
- ☒ During assessment students are not allowed to interact.
- ☒ Students' own assessment of their work is as important as the teacher's.

Ask the teachers to pick any of the sentences that reflect or relate to their thinking of assessment. Request each teacher to develop an argument for his/her statement. Have each teacher write it down on a card or a piece of paper (coloured paper 1).

Activity

- 1) Ask the teachers to write a self-assessment of their argumentation of the sentence they chose (coloured paper 2).
- 2) Ask teachers to pair with a colleague and present their arguments to each other. Proceed to a peer assessment of the argumentation, i.e. the pair assesses how his or her partner argued and defended for the sentence he or she had chosen (coloured paper 3).
- 3) As a facilitator, give the teachers a test on assessment that you have prepared in advance. Ask teachers to fill in the test (coloured paper 4).
- 4) Collect all the cards produced so far by colour and by group and place them in a portfolio.
- 5) As a whole, agree on how to organize on the wall the materials collected in the portfolio in order to make sense/assess.
- 6) When all the cards have been organized as a 'brick wall' on the wall, each group will carry out a diagnostic assessment (e.g., identify gaps in understanding, address the questions raised) and present a final conclusion to the whole group orally or on large sheets of paper.

Note: If coloured paper is not available, use whatany paper and mark each sheet with a different symbol, colour or letter.

Workshop Activity 2

Objective: Using and analysing observation as an assessment method

Warm-up activity

- 1) The facilitator informs the group that she will count up to 5 and on the count of 5 the group has to 'freeze'. The facilitator has a set of instructions:
 - ☒ Tell participants to close their eyes and be aware of their physical posture and mood.
 - ☒ Tell them to open their eyes.
 - ☒ 'Unfreeze' half of the participants.
 - ☒ Tell the 'unfrozen' participants to stand up and observe the person next to them.
- 2) Have each observer and observed become a pair and request that they discuss the following questions which are listed on a poster:



- ▣ What is your perception of the person you observed?
 - ▣ What positive or negative feelings did you have?
 - ▣ How did you feel as the observed person?
- 3) As a group, collectively reflect on the question, “How difficult is it to observe and reach conclusions?”

Activity

- 1) Divide the group into groups of 3.
- 2) Each group receives a different task to perform (e.g., a copy of a text, a dictation, a set of questions – all tasks should focus on observation in schools, classrooms and students as introduced in the materials).
- 3) Each member of the group is then assigned a role:
 - ▣ teacher – co-ordinates the task
 - ▣ student – performs the task
 - ▣ observer – observes.
- 4) Analyse the observation by asking, “How can you improve the performance and task?”

Differentiated Curriculum: Putting It Together

In this unit...

...important components and understandings of curriculum differentiation are highlighted and summarized. Putting it together means incorporating various components and strategies that have helped teachers in personalizing instruction for all students in their class.

Putting it together means incorporating various components and strategies that have been used in the past as *multi-level* instruction and that currently are being used and continue to be developed as differentiated instruction. As indicated in the introduction of this material, there is no one precise way to plan and implement curriculum differentiation. What this material contributes is a variety of techniques for us as teachers to use to differentiate curriculum for all students. It is expected that over time we will begin to develop our own strategies and techniques to help differentiate the methods of presentation (*input* of content), the methods and processes used for practice and performance (*outputs*), and the methods for evaluation of the objectives by the assessment of a final product or various products. Additionally this material is intended to encourage us to begin to use and create different strategies to assess student characteristics such as students' backgrounds of experience, their interests and their learning profiles. By doing so, and *putting it together*, we and our students will learn and flourish.

More About...Curriculum Differentiation and the Multi-level Instruction Process

In curriculum differentiation the premise is that one lesson will be taught to a diverse group of learners. Within that single lesson we can modify, accelerate or change the expectations for individual students or groups of students, thus limiting the need for

separate programs or for our learners to be doing non-meaningful activities or not participating in the lesson at all.

In a classroom using curriculum differentiation, we determine the aim or objective(s) of the lesson or unit. The focus is on involving every student at his/her own level so that realistic and meaningful student outcomes can be achieved. We include a variety of teaching and learning methods which will help facilitate meeting students' learning needs and outcomes.

Teacher's Role

As Jean Collicott (1991) stated, to implement this process effectively, the teacher:

1. considers individual past experiences, learning styles, and preferences;
2. develops questions and activities that are aimed at different levels of ability;
3. modifies expectations for some students including different objectives or outcomes;
4. provides opportunities for a variety of participation levels such as individual, pairs and small group activities;
5. gives students choices in determining what methods they use for gathering and synthesizing information and in demonstrating their understanding of a concept or performance of a skill or task;
6. accepts that the individual methods are of equal value;
7. evaluates students based on individual objectives and progress.

(pp. 192-193)

In developing instructional lessons and units that are differentiated for students, a four step planning process can be used. This multi-level instructional process is described below.

Multi-level Instructional Process

The multi-level instructional process consists of:

1. identifying the underlying concepts to be taught;
2. determining the methods of presentation;
3. establishing the methods of practice/performance;
4. deciding on the methods of assessment.

Underlying Concepts. We start this process by identifying the *underlying concepts(s) or skill(s)* to be taught within a unit or a particular lesson. Even though students may have different objectives, the concept or skill is one that is shared by the class. For example, a class of students who are thirteen years old may be studying the novel or short story. Some of the underlying concepts that can be taught to all students are character, plot and setting.

Sometimes, the syllabus will tell the teacher what concepts or skills are to be taught at a particular time, and the sequence of those concepts and skills.

When identifying the underlying concept or skill, it might be helpful to ask the following questions:

- Why is it important to teach the students this lesson?
- What are the basic elements, ideas, or skills that the students should know?
- What concepts or skills will the student bring to the lesson?

Methods of Presentation. The second step is determining the *methods of presentation*. Within this planning phase, we determine how the concept or skill is to be



presented. In assessing, this we can consider variations in factors such as student learning style, questioning techniques and level of participation. Some of the questions we need to answer are:

- ▣ How are the concepts going to be presented to the students?
- ▣ Are the concepts or skills to be presented relevant to students' needs, interests and experiences?
- ▣ How can the concepts or skills be made relevant to students?

The second step in this process takes into account a variety of techniques for gathering and presenting information. The methods of presentation do not mean that we as teachers impart all information. It may mean that we provide materials and the students gather the information for themselves.

There are numerous ways to present or include a concept or skill in a lesson. Smith and Bentley as cited in Schulz and Turnbull (1984) identified a variety of methods for presentation which are referred to as input modes. They identified five major modes used to gather information. These are: view/observe; read; listen; smell/taste/touch; and try/do/use. Each of these has a number of techniques. For example, under the input mode of view/observe, some methods include visuals, bulletin boards, transparencies, posters, field trips and television. Taking the view/observe mode and applying this to introducing the concept of setting, a variety of approaches can be used. For example, students can view a video or familiar television programme that depicts one setting or various settings, read a play where each act depicts a new setting and listen to an audio-recording of a short story where the setting is described.

A variety of teaching modes can be used to differentiate the methods of presentation. For example, teachers can present information to their students in a number of ways such as through lectures, discussions, asking questions and demonstrations. Using a variety of teaching modes can help meet individual student needs and engage the child. For example, teachers can structure "asking questions" from simple to complex, thus, facilitating students' participation in lessons at their own levels of thinking.

Different modes and techniques assist us in selecting a variety of methods for presentation which are appropriate for teaching a particular concept or skill. These different approaches are used to meet the diverse interests, learning styles, and abilities of students within one class. In assessing the various modes and techniques for presenting a concept, it is essential to recognize differences in student learning styles and the factors that affect them. For example, when concepts are being taught, they can be presented using visual, auditory and kinaesthetic/tactile modes simultaneously or consecutively within one lesson or a number of lessons.

When teaching the concepts of setting, we can focus on presenting information in each perceptual mode. For example, in presenting one of the lessons on setting, we can introduce the concept using the auditory mode. Students can be asked to listen to part of a sound track from a movie. Pairs of students can be requested to walk through a store, or particular sections of their school or other building. Within each group, one of the students can do this with his/her eyes closed; the other acts as the guide. Then, the students can present the settings which they experienced auditorily. They can depict their "findings" in an oral, written or pictorial format. Creating a setting for something heard and not viewed might require considerable skill for some students. For other students who prefer the auditory mode, it may help them perceive information and be more descriptive than when using the other perceptual styles.

Student participation and group size are important components used in accommodating variations in learning style and ability. Students may partake partially or fully in presenting or in gathering information for further study. Students may participate partially by being paired with another student (partners) or doing only a

segment of the presentation based on their skill level. For example, one student may make a short presentation based on a personal experience or an interview; whereas, others in the class may be doing longer presentations based on investigations, experiments or other types of research.

Students can be presented with information or gather it as individuals, pairs or groups. Some students are self-directed and motivated, and consequently may prefer to seek information independently of us and other students. Others are more receptive to presenting and working in pairs or small groups. As stated above, the needs and background experiences of individual students will help us in making decisions about methods of presentation that involve pairs and group work. Large classes present a real challenge to the teacher; but it should still be possible to do some pair or group work.

Methods of Practice. The third step in the process of curriculum differentiation is the *methods of practice and performance*. It takes into account a variety of techniques and other considerations for students to process the information presented. Smith and Bentley as cited in Schulz and Turnbull (1984) identified five ways information is synthesized by the learners (referred to as output modes). These are make/construct, verbalize, write, solve and perform. A few techniques offered in the make/construct mode are dioramas, graphs, maps, pictographs, and timelines. It can be seen that many different strategies can be used to teach and practice the same concept or skill. For example, if students are learning the concept of setting, then activities under make/construct might include making a diorama, model, picture, and bulletin board of a setting.

As in the methods of presentation, changing the level of complexity can be applied to the methods of practice. For example, some students may give an oral report using factual information by describing a setting from a story they have read. Other students may give their report based on synthesizing information (a higher level of thinking) by describing a setting they have created or evaluating the effectiveness of a setting as depicted in a novel.

If the concept of setting is being taught, then some methods of practice at the middle school level may include those depicted below. In this example, the teacher selects one activity for each student to complete and allows students to make choices for the other assignments. A number of students focus on the enrichment activities.



Methods of Practice for the Concept of Setting

<i>Individual</i>	<i>Pairs</i>	<i>Small Groups</i>
<p>Draws or finds a picture to depict a described setting (e.g., rural setting)</p> <p>Briefly describes a setting of a television program or rock video.</p> <p>Writes a paragraph describing a setting from an oral reading or a narrated story.</p> <p>Presents a description of a setting orally.</p>	<p>Discuss home setting.</p> <p>Find a picture similar to one's home setting.</p> <p>Design a setting for a traditional dance.</p> <p>One describes setting; the other determines plot.</p>	<p>Develop the relation of setting and atmosphere.</p> <p>Construct a diorama of a setting to match a story.</p> <p>Paint a wall mural with a setting that welcomes visitors to the school.</p> <p>Construct a setting for a class or school play, concert or other event.</p>



Related Activities For Enrichment

Develop a time-line of change of settings in life.
Compare own home setting with setting of story.
In relation to the story, evaluate the effectiveness of the setting as depicted in the movie.
Write a short story which includes a well-developed setting.

Methods of Assessment. The last step in the process is determining the *methods of assessment*. It consists of identifying methods to assess whether each student has learned the underlying concept or skill being taught. Various methods are used for assessment including having students select one or more of their “best” completed assignment that demonstrates their understanding of the concept or acquisition of the skill being taught. For example, assessment assignments for setting can include presenting an oral report, identifying an illustration, constructing a diorama and creating an illustration of a particular setting within the story. The point is that we are not going to measure oral or manual skills but whether the underlying concept, the setting in this case, is understood.

More About...Student Characteristics and Diversity

Although curriculum differentiation has many assessment and instructional strategies, the importance of every student and their student characteristics (e.g., diversity, culture, learning profile, interests and background of experience) cannot be overstated. It is by focusing on these student characteristics and adjusting the curricular components accordingly that instruction for each individual student becomes respectful and meaningful. Students and teachers become learners. We discover new ways and means to modify various components of the curriculum to provide new learning experiences for students—for all students. We learn to discover new strengths in students. We learn how to accommodate for diverse groups of students and use that diversity to provide learning experiences for others. We truly develop a sense of community and being for our students.

More About...Assessment

Within classrooms that are differentiated, students work toward the same educational goals or standards but some students need to be assessed using varied objectives, that is, their individual objectives need to be different. The rate at which these individual students meet their objectives is going to vary as well. Students should be measured based on their entry points where they are going to begin with learning a particular concept, topic or skill. From there, individual development is expected and objectives for learning are established. Individual student progress is “graded” based on the individual’s growth or accomplishment of those objectives. Teachers continually monitor student progress to help ensure that prescribed educational goals are met. Even though curriculum differentiation does not stress competition or comparisons to peers, it does stress student responsibility for learning. As a result, students who are required to meet strict assessment procedures and pass standard exams, progress as well. It is student-centred and as a result focuses on the individual’s own growth.

Making it Work

With curriculum differentiation, it is important to start “small.” “A journey of a thousand miles begins with a single footstep.” Take one strategy at a time and incorporate it in your instruction. The basis to start is with your own characteristics, using your own background and experiences and building on those.

Teachers need to identify their own entry points with curriculum differentiation. Some of us may start with modifying just one curricular component such as the final product. An example would be a change to allow students three different choices of how they might display their culminating product after learning about a topic or concept. For other teachers, it may be assessing their students’ learning styles and then using this information for a grouping activity. From modest beginnings, it is a “one step at a time” process in developing curriculum modifications that are based on student characteristics and learning needs.

Note: In a following section, *Sample Lessons*, five examples are provided which demonstrate the use of curriculum differentiation. As you and your colleagues begin to use curriculum differentiation, work together, share and add your own examples. Your examples will help you and other teachers understand and use curriculum differentiation.

Suggestions for facilitation – Unit 5: Curriculum Differentiation: Putting It Together

The last unit is a summary of the material. It includes a classroom example of curriculum differentiation using a variety of methods and activities.

To conclude facilitation, choose one or more of the activities below. You may prefer to have the teachers decide on some concluding questions and reflections for discussion and activities.

1. Have the teachers write down on a sheet of paper what they already do to modify curriculum in their classroom. Ask them to think about one or two students in their class and list and explain some of the strategies they use to help these students learn the curriculum. Have them focus on how they address acquiring knowledge about these students’ background and learning characteristics and how they apply this knowledge to differentiate the curriculum for them. When all the teachers are finished writing, ask them to share and discuss this information within a small group (i.e., no larger than four persons per group).

2. Ask teachers to identify some strategies in this material that are different from what they typically use. Invite them to think about one or two that they feel might be useful in their own classroom. Have each teacher choose one or two of the ones they



identified and indicate how they would start to use this strategy. Where appropriate, use these questions to guide them:

- ▣ What more do you need to know about the strategy?
- ▣ How can you find out more about the strategy?
- ▣ What do you need to do to get started?
- ▣ What information do you need to gather, to assess?
- ▣ How are you going to plan for and implement this strategy?
- ▣ How are you going to involve the students in planning, implementing and evaluating this strategy?

In small groups have them share their plans for implementing the strategy they identified. Encourage the teachers to help each other by giving feedback and suggestions.

3. Have the teachers make two lists answering the following questions,

- ▣ “What have you learned about curriculum differentiation?”
- ▣ “What would you like to learn more about?”

Have teachers form pairs and then evaluate their lists with their partner. Ask them to come up with ideas and strategies of how they can get more information on any one topic listed. Then have the pairs join another group and share some more.

4. Have the teachers write an action plan for their classroom: When you return to your classroom, what will you do to put into practice the ideas you have learned:

- a) In the short term: What can you do immediately?
- b) In the medium term: What can you plan to do this school year? Who can help you? Will you need permission? From whom?
- c) In the long term: What changes do you need to make in three years time?

Sample Lessons

Putting It Together—Sample lessons using curriculum differentiation strategies



1. The Concept of Totem

Planning procedures for the concept of totem are identified below as part of a social studies unit. Strategies used in curriculum differentiation were applied to this unit (Perner & Stone, 1995).

The study of First Nations' people in Canada was selected as a unit for Grade 8 Social Studies. The following is a description of how a plan was developed on one of the concepts to be studied in this unit. The plan was based on some curriculum differentiation strategies and the multi-level instruction process. Methods of presentation and practice are discussed in relation to the selected concept. The method of assessment is described for the selected concept and the unit.

Sample Plan

Underlying Concept. One of the underlying concepts to be studied in a unit on First Nations' people is the concept of totem. This is to be taught over a number of days.

Method of Presentation and Method of Practice. When beginning to create lessons, the teacher first thinks about possible activities that can be used to explore and expand the concept of totem. For example, the teacher can have the students:

1. Find pictures of totems in books and/or through resources (e.g., postcards, photographs, Internet). Discuss the ways in which the totems are similar and different. What are some common symbols used as totems. Which are used most often?
2. Invite members of the First Nations' community to speak, and if possible, to show slides and pictures of totems. Have the students design questions to ask the guests. The questions should be relevant to the topic and should provide information that they have not collected yet.
3. Design a totem of their own and be ready to explain what the symbol(s) means to them. Have the students answer classmates' questions regarding their design.
4. Construct a totem from materials found at home or in the school. (This can become a school totem.) Display the totem in a prominent place in the school (or community). During free time, have students talk about the totem(s) to teachers, students and other community members who visit the display.
5. Interview some First Nation elders about the meaning of totems, then and now. Is there a difference in the way totems are thought of today? Has the use of the totem become more or less prevalent in contemporary aboriginal society? What are the reasons for changes? How does the totem assist people as individuals in their self-identification?
6. Survey available resources to determine the universality and extent of totems in North American and other cultures?

After the teacher has compiled a list of activities, s/he then decides which of these would be best for introducing the topic and concept, and which would be best for student work and assignments. The teacher also determines which activities are best done as a whole class, in small groups or individually. The teacher assesses whether the activities use a variety of teaching modes including ones that involve less lecturing and teacher direction. The teacher also determines whether the activities are inclusive of a variety of learning styles and levels of complexity, and engaging and challenging to students. In this case the teacher uses a planning matrix to ensure that activities are not all of the same type. As well, they are reviewed to ascertain that they meet student characteristics or can be easily modified if necessary. These matrices are illustrated below. They are a simple way for the teacher to keep an inventory of planned activities.

Matrix for Individual and Group Activities on Totem

Activity	Individual	Small Group	Whole Class
Find pictures of totems	X		
Invite First Nations' community members			X
Design own totem	X		
Construct a totem		X	
Interview First Nations' members			X
Survey to determine universality of totem		X	

Matrix for Teaching Modes on Totem

Totem Activity	Expository	Enquiry	Demonstration	Activity
Find pictures of totems				X
Invite First Nations' community members	X	X		
Design own totem				X
Construct a totem			X	X
Interview First Nations' members		X		
Survey to determine universality of totem		X		



The teacher assesses the completed matrices. Then the teacher decides which of the listed activities are to be used for presentation and which for practice.

Method of Assessment. The teacher chooses the method of assessment for the unit and for individual lessons. A variety of assessment methods are employed in order to accommodate the diverse learning styles, as well as varying abilities, backgrounds of experience, and interests of students in the class.

Many teachers use folders for assessment purposes. For each unit of study, the student puts all work in progress and completed assignments in their own labelled file folder. The work in each student's file folder varies. For example, some students might submit photographs, pictorial assignments, written responses recorded by the teacher and peers, and audio-recorded presentations; whereas, other students might include survey data, written reports, diagrams and sketches. The students self-assess their own work as it progresses and at the end of the unit. The teacher continuously monitors the students' progress as well and adjusts modes of presentation, practice and performance as needed. Assessment includes the observation of student participation and practice in addition to the review of students' progress based on assignments (products) in their work folders. It is not based on "pencil-and-paper" tests.

Summary of the Plan. In the sample plan described above, some suggestions have been given for managing and selecting activities for curriculum differentiation using the multi-level instruction process. The matrices provided are only two of many that can be developed for planning. These procedures help teachers assess whether student characteristics and other considerations for instruction are being accommodated within a lesson or unit of study.

In other cultural contexts, teachers might select more culturally familiar concepts to teach (e.g., the concept the national flag; the village chief).



2. Mary's Third Year Class and Learning Profiles

Mary is preparing for the beginning of a new school year. She will be teaching third year class in a mixed-ability classroom. There will be 28 students in the room. Mary has familiarized herself with all of the material available in regard to her students. She has noted the different levels of ability at which the students function. She obtained this data by reviewing each student's records. These school records contain test scores and anecdotal data from teachers from the previous school years. In addition, Mary has looked at each student's work portfolio from last year when the students were in second grade.

Having taught third year class for five years, Mary is very comfortable with the curriculum. This year she feels she will have time to differentiate the curriculum when she needs to. She has developed a variety of strategies to use in order to meet the varying needs in her class. Above all else, it is important to Mary to make sure she is reaching all of her students and helping them learn and grow.

In order to understand her students better, Mary decides to develop a learning profile for each student during the first few days of school. A learning profile is a summary of each student's strengths, weaknesses, best mode(s) of learning, and accommodations that might help students to learn. Mary will determine the students' strengths by:

- ▣ observing students;
- ▣ administering a learning styles inventory that will help determine the modality through which each student learns best;
- ▣ determining the students' strongest multiple intelligence(s).

Mary plans to develop a respectful classroom within a positive, enriching learning environment that encourages risk taking, cooperation, and collaborative learning. In order to achieve this goal, Mary will structure activities to address these

various areas. As the children are guided through these student-friendly exercises, Mary will be able to develop a learning profile that, when coupled with the previously collected data, will lead to a deeper understanding of where each student is and how they will continue to develop and learn.

Mary decides that she will use flexible grouping when she is structuring the various activities the students will complete. Some of the activities will be completed individually, some as a large group, and some in small groups.

She decides that she will begin by administering a Learning Styles Inventory to determine what each student sees as his or her strongest method of learning (reading, writing, listening, speaking, visualizing or manipulating). Mary reads each statement in the Learning Styles Inventory (see Unit 2) to the class. Each student checks the statements s/he feels best describes him/her when it comes to learning. After completing the inventory, Mary is able to determine various strengths and weaknesses. For example, the results from the learning styles inventory given to the students indicate that:

- ☑ Kevin's strongest method of learning is reading;
- ☑ Muriel's strength lies in the area of speaking;
- ☑ Pat shows equal strength in areas of reading and writing.

This information is recorded on each of the student's individual learning profile.

Mary now decides to assess students' strengths in regard to multiple intelligences. Instead of doing a large group activity, Mary sets up eight different stations in the classroom. All students will perform the task(s) at each station. While the students are waiting, they will be working independently on anchoring activities that are available throughout the room. These activities will be self-directed and will help to obtain more learning profile information as well as academic skill performance.

Next, Mary is ready to determine each student's multiple intelligences. Multiple intelligences help students to see that everyone has a strength or is "smart" in at least one area of multiple intelligences. Mary starts by getting the children comfortable during an activity on one of the first days of school. An "Intelligences' Hunt" is a good opening activity for the school year. In addition, Mary uses this activity as a way to introduce the children to the different kinds of "smarts" there are. A sample of the activity that Mary asks her students to complete is:

Taking the task sheet that I have given you and a pencil, move about the room and find other students who can do the listed task. There are three basic rules you must follow:

1. The student you find must actually perform the task. The student may not just say s/he can do it.
2. Once the student has performed the task, s/he must initial the "Hunter's" sheet on the appropriate line;
3. A student may perform only one task on another student's list.

Hunter's Sheet _____ Student's Name _____
What Kind of "Smarts" Are in Our Class This Year?
_____ whistles a few notes from _____
_____ stands on one foot with his/her eyes closed for at least five
seconds
_____ recites at least four lines from a nursery rhyme, song or poem
_____ draws a quick diagram explaining how a key helps open a
door
_____ briefly shares a dream
_____ completes the following number sequence: 2,4,8, ____, ____, ____
_____ honestly says s/he feels good about being in school on the first
day

After students are finished with this task, Mary facilitates a discussion showing how all the students were able to perform at least one task and most likely all students would feel more comfortable doing some tasks over other tasks that were listed. This task helps to lead into the next activity that Mary will use to collect information for the students' learning profiles,



Mary sets up a variety of stations around the room. She decides to set up seven stations, each one reflecting a different multiple intelligence. She includes a task for each of the following multiple intelligences: linguistic, logical/mathematical, musical, spatial, bodily/kinaesthetic, interpersonal, and intrapersonal. In order to make this a non-threatening activity, Mary decides to use the theme “Favourite Games” to create these stations. Mary will explain what task will be completed at each station before the students begin. The students will participate by deciding the order in which they will complete the stations. This information will be marked on their sheets before they begin. They must label the order in which the tasks are completed on their individual sheets.

The stations and tasks for each one include:

1. Linguistic: Create a poem about one or more of your Favourite Games.
2. Logical/Mathematical: Explain how one of your Favourite Games work.
3. Spatial: Show what it would look like to be inside of one of your Favourite Games.
4. Bodily/Kinaesthetic: Act out a part of one of your Favourite Games.
5. Musical: Make up a song about one or more of your Favourite Games.
6. Interpersonal: Discuss, in a small group, why you like one or more of your Favourite Games.
7. Intrapersonal: Think about these questions: What is your Favourite Game? What are your reasons for liking this one the most? Decide how you will respond to these questions (e.g., drawing, writing).

Mary will observe her students as they move to each learning station. She will take notes stating how they work at each station and which children find what tasks easy or difficult. She will note which students prefer to complete the tasks on their own, or are comfortable when others are present. This information will be added to the student’s learning profile.

After the students complete this activity, she finds that:

- ☒ Kevin is very skilled with the Intrapersonal and Musical tasks.
- ☒ Muriel is very adept at the Bodily/Kinaesthetic and Spatial tasks.
- ☒ Pat is very proficient in the Logical-Mathematical tasks.

This information is added to each of the student’s learning profiles. All the data Mary has obtained are used to give a clearer picture of what her students’ strengths are. They also help Mary to identify areas that the students are not adept in or not preferred.

Through these various activities and through observation, Mary will determine the strengths and needs of each one of her students. The students’ learning profiles will be used when Mary plans her units of study and lessons. These profiles will help her to determine when she needs to provide curriculum differentiation for a particular unit or lesson.

If Mary worked in a classroom with many students and little space, could she create two stations? What would be the two stations you would choose first?



3. Renee’s Year 2—Maths (adapted from Gartin, Murdick, Imbeau, & Perner, 2002)

Renee teaches second year (seven and eight year old students). This year she has an inclusive education class with 45 students enrolled. She has a diverse group of students; the class representing the natural proportions of the surrounding community. Two students have entered her class from special schools; one student, Jacqui has moderate mental retardation with mild physical disabilities; and the other student, Jon has severe learning problems and difficulties attending to tasks. Both students live in the school neighbourhood but this is their first year in Government school.

Renee has taught her class using traditional teaching methods. For the most part, she lectures the whole class and when students do their individual seatwork she expects students to help each other. She relies a great deal on her higher-ability students to help the others.

Jacqui and Jon have been in her class for six weeks now and Renee struggles with what she should do to include them in her lessons and with her class. As Renee examines some of the strategies related to curriculum differentiation she realises that her students can no longer be taught the same curriculum, in the same way, at the same level and learn concepts with the same understandings and within the same amount of time.

Renee needs to start somewhere.

1. How should Renee incorporate curriculum differentiation in her classroom? And what type should be included?
2. How should the content be «adapted» in order to address all of the students in her class?

Examining the physical environment

Renee first examines the current physical arrangement of her room.

Background. Her students sit at tables in rows except for two tables on the side of the class near her own desk. These two tables are assigned to Jacqui and Jon. For most of the day, Jacqui and Jon sit at one or both of these tables where they receive help from parent volunteers (parent assistants) and older students (student assistants) when available. Jacqui leaves the classroom for physical therapy. The speech assistant comes in once a month to help assess Jacqui's progress with her picture communication board. For the most part Jon sits at the table away from the other students because he is easily distracted and needs redirection by his assistants. Occasionally he displays some oppositional behaviours.

Social and leadership development. Since Renee has decided that she wants to focus on the social and leadership development of all her students in the classroom, she begins to assess her classroom arrangement with this in mind. For most of her lessons, she uses "whole group" instruction followed by independent seatwork and sometimes paired-group work. Renee quickly realises that her class arrangement facilitates independence but not social or leadership interactions. In fact, she notes that two of her students, Jacqui and Jon, are not even part of her "whole group" and therefore, have limited, if any, peer interactions during the school day.

Group seating arrangement. The first thing Renee decides is that she would like to have the students' tables be arranged so the students are sitting in groups of five. Also, since her class has multi-abilities she will plan mixed-ability groupings for her seating arrangement. Having done a learning profile for each student she knows her class well. Renee is confident on how she will carefully select students for each group. She plans to group students using different student characteristics such as common interests, varying social and leadership skills, and varying abilities and background of knowledge and experiences.

Renee also decides that she will try to keep this seating arrangement for at least three or more months. She would like each group of students to get to know each other well and to have a stable "home" group to go back to when she first tries other types of grouping arrangements for classroom instruction. She also knows that she will place Jacqui next to and across from her peers; whereas, she will place Jon on the end-side of one of the tables so that he is not sitting too close to other students. She will try a table divider which she will make out of cardboard or wood to use when



he is too distracted by an activity and/or other students. His “old” table by the side-wall will be right behind him so that he can turn his chair around and use the table when needed.

Up until this time, Renee has not grouped her students except for reading instruction. She has a reading corner so she has placed students together for reading. This has been based on their reading ability. Renee is not quite ready to “let go” of her ability groupings for reading. She decides to keep this grouping the same for a few months but will focus instead on trying various types of flexible groupings for maths focusing on such things as different-sized and mixed-ability groupings for maths.

If Renee worked in a classroom with benches that could not be moved, she could ask students to work with neighbours.

Differentiated instructional processes

After reviewing her physical arrangement, Renee realises that her focus on differentiated instruction in maths begins with her need to use flexible grouping arrangements within and outside her classroom setting. She would like to start using cooperative learning because of her interest in helping to develop social and leadership skills within her class. Renee decides to start with learning cooperative social skills such as how to give positive feedback to each other, to take turns, and to listen to and encourage/cue for peer responses. She will start slowly with one social skill at a time. She plans to develop activities to help emphasize the particular social or leadership development skill she is working on for that particular time period.

Since Renee has not had much familiarity with grouping she will start small and begin with groups of three. Renee will form fifteen maths groups consisting of three students each. When she and her students become comfortable with working in groups of three, she then will introduce larger member grouping arrangements.

Content Modifications. In maths, Renee has been working on one of her school’s outcomes for second year “understanding the concept of time.” Her lessons have addressed goals and objectives related to telling time to the hour, minute and second and solving time-related problems. Even though the majority of her students have been part of these whole group lessons, many of them have not been successful, even on her time-related maths facts. Renee decides to assess the content related to the concept of telling time and determine how she will include all students in her maths lessons on time. She plans to change her method of whole-class instruction and individual seatwork activities to differentiated instructional activities based on their readiness. Renee will use “anchoring activities.” Anchoring activities are pre-made tasks such as games, puzzles, worksheets, activity cards with questions, notebook exercises, and board work) that students can do independently and/or in groups once they have finished any assigned tasks. These activities will also be available to reinforce as well extend concepts.

Renee will assess her students with a pre-assessment checklist to determine what time-telling skills each student has mastered and which skills each student needs to develop. Since Jacqui, her student with moderate mental retardation, does not have the background of experience yet to tell time, Renee is prepared to implement alternative curriculum for Jacqui. Jacqui has a number of personalized objectives which can be incorporated in the telling time maths lessons. For example, she is learning to match numbers from one to five, to take turns, to use turning motions such as turning doorknobs and keys in doors, and to initiate requests using her picture communication board. Another student, Brian, who has been identified as having specific

difficulties in maths, is learning to count by fives and recognize numbers from 1–50. His content will be simplified to accommodate his number skills and readiness to tell time. Renee expects that after all students are assessed, a few other students may need the content adapted for them.

Process Modifications. After assessing her students, Renee decides to use learning centres and multi-level instruction. Her maths learning centre on telling time will include a variety of materials and tasks at different levels of ability. Activities will be colour-coded and numbered to reflect the knowledge and experience required for completing each activity. Also, Renee will set up learning centre contracts with each student or for groups of students where she will choose some activities that students will complete and allow students to choose some activities for themselves. A time line will be developed for each student to keep track of his/her own activities and schedules for completion.

Renee will also plan a number of multi-level instructional activities. She will incorporate these in her group activities. For example, Jacqui will be placed with two other students. Each student within the group will have his or her own colour cards. They will be mixed-up and as the student's colour card comes up on the pile that student will perform the task requested on the card. One student will be checker, one student will be facilitator and one student will be the encourager. Jacqui's cards will be read by another student in her group. Some of her tasks are based on her personalized objectives. For example, Jacqui will be requested to turn the hands of the clock and when she stops another student in the group must tell the time to the hour, minute and/or second. Jacqui will also be requested to point to the correct number: 1, 2 or 3 on her table when another student in her group points to one of the numbers on the clock. Also, before receiving the clock for her turn, Jacqui will initiate or be requested to point to the clock on her picture communication board.

Brian will also need similar changes to his tasks cards and activities during these group lessons and practice sessions. His tasks will reflect his entry point in the instruction. Some students within the group will have entry points which require higher level skills. Their tasks in the groups will be more advanced where they will be expected to perform such tasks as indicating what time it will be in 3 minutes, 35 minutes, and 1 hour and 20 minutes, giving the correct time using pictures of clocks without numbers, and solving word problems using various time terminology such as "quarter past the hour."

Product Modifications/Assessment. Renee plans to use three types of assessment to check students' understanding of the concept of time. First, she will devise checklists for the checker in each group to record data. Each student's checklist will reflect the tasks that individual performs in the group and at the learning centre. Renee will move from group to group to give individual and group instruction and also to listen to the students' verbal responses and randomly to monitor their performance as indicated on their checklists.

Second, Renee will request that each student select one activity completed from the learning centre to demonstrate a time concept that they have learned to the class. Therefore, the products will vary from student to student and may include such products as drawings, demonstrations, oral reports, practice worksheets with answer keys, and "time" games.

Third, Renee will use performance assessment. She will check each student on time-related problems in real life situations throughout the unit on time to assess generalization and application of the time concepts that each student is learning. She will use varying levels of questions to elicit responses. Jacqui will be allowed to use her picture communication board to provide her answers.





4. Rolando's Middle School Science Class (adapted from Gartin, Murdick, Imbeau, & Perner, 2002)

Rolando teaches Science in an urban middle school. His school has decided to require all students to take science. Rolando has 40 students in his science class and limited materials. Fifteen of these students are new due to the change in school policy. Rolando conducts a few science experiments but he must ensure that his experiments will work with the use of old equipment and that they require few resources. To this point, Rolando has not had difficulty engaging his students in learning. His students, for the most part, have been interested in finishing school and like science. Now Rolando is overwhelmed with having a large number of students in his class who have varying abilities and who are not always interested in attending school. He also realises that he has some students who need to be challenged with problem-solving skills and other students with mild and moderate learning disabilities who need adapted objectives and materials.

Rolando has not always been flexible. He does realise, however, that he will have to differentiate his teaching for this mixed-ability classroom. His focus is first on the process involved, that is, the teaching strategies and activities that will need to be adapted. He knows that he will have to focus on safety issues and incorporate the use of manipulatives to enhance learning.

He begins by focusing on the following two questions.

1. How should the environment in the classroom be adapted in order to assure successful learning for all students?
2. How should the content be adapted in order to address all students in his class?

Instructional considerations

Although this is Rolando's first year of having a student with severe disabilities included in his class, he has thought about some of the ways he can adapt the curriculum for the other new students. Since he had taught upper-level science years ago, he has made a number of modifications to the curriculum now that he teaches middle school students. But, he often feels overwhelmed in trying to teach "the content" to all the students. This year his goal is to focus on reasonable objectives for each of the new students and to include Danny, his student with severe disabilities in as many science activities as possible.

Planning. Before Rolando plans his lessons for his next unit in life science, he needs to focus on adapting the content. The theme of the next unit is introducing cells. Rolando decides that at the end of this unit all of his 40 students will know the three parts of cell theory, and know and label the two types of cells, prokaryotic and eukaryotic cells. Most of his new students will be able to describe the function of each component of these types of cells and they will be able to compare and contrast the two types of cells and animal and plant cells. All of his original 25 students will meet the two former objectives and will also be able to distinguish between an organism and a community.

Safety issues. Since this is the beginning unit on cells, many students in Rolando's class have not used a microscope or handled glass slides. Introductory lessons and practice sessions using the microscope and related materials will be part of

this unit. Rolando decides that for these lessons and practice sessions, he will partner students and set up learning stations based on microscope-use and safety procedures. He will carefully select students as pairs based on a “buddy” system where one student who is more familiar with these procedures will be paired to help another student who is less familiar.

He also decides that he will have the students work together using a worksheet. On this worksheet, the procedures for using a microscope safely will be outlined step-by-step. Pictures will be used to depict these procedures for Danny, who has severe disabilities and Maria, another one of Rolando’s new students who has a severe reading disability. (Note: The following description is of use only for schools with technology. Since Maria responds well to using the computer, Rolando decides to have students from one of the middle school technology classes come in before the unit starts and take pictures of a student demonstration of these procedures using the digital camera. These step-by-step shorts with verbal directions will be placed on the computer at one of the learning stations. The still photographs will be used for a chart and for Danny’s and Maria’s reference.)

Content. Rolando will give his students a brief pre-assessment on cells. This assessment will address the original and adapted objectives he has identified for this unit. He will also use students’ learning profiles to identify a number of student characteristics such as interests, learning styles, strengths, and abilities. From the results of his data collection, he will begin to adapt the content for individual or small groups of students as necessary. For this unit however, he plans to provide students with a number of ways to learn and process the content and to demonstrate their understanding. Rolando will simplify the content for a number of students by using an alternate text, providing study guides and practice sheets, and allowing students to use a self-study program with practice exercises on the computer. (He will ask the special education teacher, parents, volunteers and other students to help him adapt the materials as needed.)

Although Danny will be provided with an adapted curriculum, he will participate with the other students. Danny is interested in science materials and has had experience observing through a telescope and a microscope. (Danny’s older brother, who is now in university majoring in chemistry, was in Rolando’s class seven years ago. Danny’s brother and parents help to reinforce activities done in school.) Rolando will work primarily on Danny’s individualized objectives most of which are not based on learning the science content per se. Example objectives for Danny are taking turns, learning the name of his partner and group members as depicted on his picture/symbol communication board, and initiating requests for assistance using the sign for help. Rolando feels that using the microscope and other learning stations in the classroom will help to provide opportunities for Danny to work on his individualized objectives. Danny will not be required to master the cell unit objectives identified for all the new students. Rolando will identify some adapted objectives which he believes that Danny will be able to learn such as using a microscope safely, distinguishing a plant cell from an animal cell based on colour, and placing a label on the nucleus in plant and animal cells depicted in various formats for Danny.

The content for Maria and some of the other students will be adapted by simplifying the text, or using alternative materials and having a study guide for them both in written text and in a computer text file (if technology is available in the classroom). The study guide on the computer will be linked to drill and practice exercises. This will be one of the learning centres set up in the classroom.

Process. Rolando plans to use pairs of students (partners) for most activities. For some activities, however he will use “jigsaw” (“expert”) groupings in which case he will put pairs of partners together making six groups of four students each. He plans to have students work in jigsaw groups to learn new vocabulary words and to



study more about certain topics. For each expert group, he will ensure that students vary in abilities so that each group will have one student who can explain, demonstrate and help others with the content or problem.

Rolando also plans to provide whole group instruction for short periods of time during each science class. This instruction will include demonstrations at some of the learning stations that will be set up throughout the classroom. For the rest of the science period, students will work at these stations in pairs to perform an activity or activities. Each individual in the pair will have some activities that are the same and some activities that are different. The stations will provide students with the opportunity to learn and demonstrate understanding using a variety of modes and at varying levels. Rolando has set up activities that are tiered at three levels (or more) so all students can participate at their own entry level.

The stations are described as follows. One station will have materials to construct varying types of cells. Another station will have a computer for viewing information about cells with varying types of questions to help challenge all students at their ability levels. The third station will have a three-dimensional cell that is labelled and can be taken apart or put together. The next three stations will have microscopes with slides made for viewing cells and with different types of data recording sheets. The seventh station will have clean slides and materials to make and label new slides for viewing. The eighth station will have a tape-recorder for listening to, and for taping questions and/or answers for other students. The ninth station will have activities and games to check knowledge and understanding. The last two stations will be used primarily for research and problem-solving questions/answers. One of these stations will be in the science classroom and the other will be located in the library (if available). Both stations will have computers with internet access (if technology is available).

Products. As with every unit in the study of life science in Rolando's class, students keep a collection of their work assignments in a folder. Most of the assignments are graded and then the students insert them in their work folders. Some students complete their assignments on the computer (if available); others, like Maria often tapes her assignments or another student helps her to record her work in a written format. Danny includes his individualized objectives checklist as well as other assignments that have been recorded for him personally or from group work. Each student's work folder is reviewed with Rolando at least once a month.



5. Sylvia's Secondary School Literature Class (adapted from Gartin, Murdick, Imbeau, & Perner, 2002)

Sylvia is a Secondary School English teacher who has been teaching for 15 years in an urban school. Sylvia teaches the upper level classes in English literature. Her fifth period class is composed of 35 eleventh graders enrolled in a required course in Contemporary Literature. This class is focusing on novels and short stories. Sylvia's school implemented inclusion five years ago. Sylvia enjoys teaching students from diverse backgrounds and with varying abilities. She feels challenged to teach every student in her class and as a result, feels that she continually improves in her use of teaching methods. This year her class has some students with disabilities. One of her students, Delvin has been identified as having mild mental retardation; one student, Ricky has been identified as having an emotional and behavioural disability; one student, Naomi has been identified as having autism with mild disabilities; and two students, Jeremy and Wanetta have been identified as having specific reading disabilities.

As Sylvia reviews areas to be considered when differentiating instruction for a mixed-ability classroom, she decides to focus first on the content. The issues that

must be addressed are accessibility to the written word, the type of response format to be used, and the issue of what should all students learn versus what should some students learn.

Instructional considerations

Like Rolando in the middle school, Sylvia has concerns about trying to teach all the content to all the students. She realises she must delineate the most important content for student learning so that she can differentiate instruction for students with varying interests, background knowledge and learning profiles.

Planning. Sylvia is planning a unit on the novel. In studying the novel, the main concepts to be taught are character, plot, setting, climax, atmosphere, conflict and theme. Sylvia decides that at the end of this unit all her students will demonstrate their understanding of character, plot and setting. Many of her students will be able to demonstrate their understanding of climax and atmosphere. Some students will be able to demonstrate their understanding of conflict and theme.

Response Modes. In assessing her class, Sylvia realises that the diversity of the students in this class will require more than simple adaptations. For example, three of her students, Naomi, Delvin and Jeremy and one of her students, Lacina who speaks English as a second language, will require different modes for obtaining information and for responding. For example, Naomi does not read but does comprehend spoken language. Naomi can communicate. She uses about 20 signs and 30 symbols although this varies from day to day. Sylvia decides that Naomi will need to have information presented to her visually and auditorily. She will need to respond in class and on assignments using her communication systems. Naomi has a teacher aide in class who can help her with various input and response modes. However, Sylvia also wants Naomi to interact more with her peers than with the adults in the classroom. Sylvia believes that with adaptations, Naomi will be able to participate in the assigned group activities as well as whole group instruction. She will also include some of Naomi's individualized objectives within this unit such as working with a peer for ten minutes and using her communication board to initiate a request.

Wanetta and Delvin have some specific learning needs where the mode for inputting information as well as the mode for responding to information and creating a final product will have to be adapted. One of Delvin's individualized objectives that Sylvia would like to address is written productivity. One of Wanetta's objectives is to learn to "voice" her work to another student (for dictation) or in a tape recorder (for a volunteer to write up by the next day.)

With this in mind, Sylvia realises that other students may be interested in and have a need for using a variety of modes to learn the concepts in this unit. Thinking about her students' learning profiles she feels a bit overwhelmed by the wide differences of student characteristics in this particular class. The students in this class have varying interests, abilities, background experience, and preferred learning styles.

Sylvia also feels a sense of challenge as she decides to make adaptations to this unit and to various individual lessons that will have benefits for her entire class. She realises that she will have to change her input mode from primarily lecturing and student readings to other modes that are more visual and tactile. Also, her final product, which in the past has been a written exam demonstrating an understanding of the various concepts of the novel, will need to be changed.

Content. Sylvia will give her students a brief pre-assessment on the novel.



This assessment will address the concepts of the novel that she has identified. Sylvia will assess students on all concepts and then based on the results of her pre-assessment, she will group students according to the three learning goals she identified during her planning (see above).

Sylvia will also review various student characteristics particularly student learning styles and interests. Once Sylvia collects all this information, she will analyse it and then start to modify the content for individuals and for groups of students, if necessary. Since Sylvia plans to use various types of instruction and group work activities, she feels that she can incorporate multi-level instruction.

Since Sylvia plans to use two or three Contemporary novels for the concepts of study, she would like her students to first “read” one novel together. She has selected *The Outsiders* by S. E. Hinton. Sylvia will simplify “reading” the content of this novel for a number of students. She will allow students to choose one or more formats to “read” *The Outsiders*. Most of the students will read the full text of the novel itself. A variety of alternate formats will be used in addition to the full text. These will include various versions of the novel such as condensed, narrated, and movie.

Sylvia will also adapt the content related to the seven concepts that she will be teaching. For example, the first three concepts (character, plot and theme) that all students will learn will be defined and presented at three different levels. Sylvia will use a variety of examples from simple to more complex for each of the concepts. For the most simplified level of information for each concept, she will provide a study guide.

Sylvia will also have a learning resource folder for each of the concepts. For the first three concepts, the materials will be adapted. Sylvia will also provide numerous examples from the text for students to use as a reference. The other four concepts will be presented in similar learning resource folders. Students will be able to use these for initial learning and for reference. The content will be presented in a format that corresponds to three different ability levels. The corresponding activities will consider different student interests and modes of learning. Sylvia plans to have these packets available as part of the multi-level centres on the concepts of the novel.

Process. Sylvia plans to use whole group instruction to introduce the novel and then to present each concept. While students are continuing their learning at the centres and in paired and small group work activities, Sylvia will instruct individual students and small groups of students using flexible groupings. For example, sometimes Sylvia will use same-ability grouping when students need help to develop the understanding of a concept or to review various components of the novel; other times, she will establish mixed-ability grouping when all students can contribute to showing the concept. For example, as students learn about setting, Sylvia will have students working together in small groups to design a setting of their choice from *The Outsiders*. Students will be allowed to create their design using any format such as a diorama, collage, bulletin board, or small stage set. As part of the requirement, students will contribute equally to the design of the set they choose. Upon completion, one student from each group will be selected to present their project. The mode to communicate the presentation of the project will vary based on individual student characteristics and individual or group objectives. For example, Delvin may be asked to write three sentences about his group’s design. Naomi, with the help of members from her group, may be requested to use her picture communication board, or her signs to present her group’s project. Other individual tasks may be assigned as part of the groups’ creation.

Products. For each concept, Sylvia plans to have a variety of methods for students to demonstrate their understanding. For example, with the concept of setting, Sylvia may have Naomi use magazines or newspapers to find pictures to create

a setting similar to a room in her home. Delvin may be requested to watch a scene from the movie of *The Outsiders*. After viewing the scene, he will verbally describe the setting using a tape recorder. From this recording he then will write a description of the scene. Other students may be required to find pictures that represent a setting directly from the novel. Other students may be requested to compare and contrast their home setting to one of the settings in the novel. Some students may research the 1960's and describe how the setting in the *The Outsiders* reflects this time in history, particularly for a specific class of people. These students may also be requested to describe other settings during this time period.

For each concept, Sylvia will have “products” that can be developed and presented in a variety of ways such as through writing, speaking, making and performing. She will also encourage students to work at various levels of difficulty and involvement depending on their interest in a particular concept.



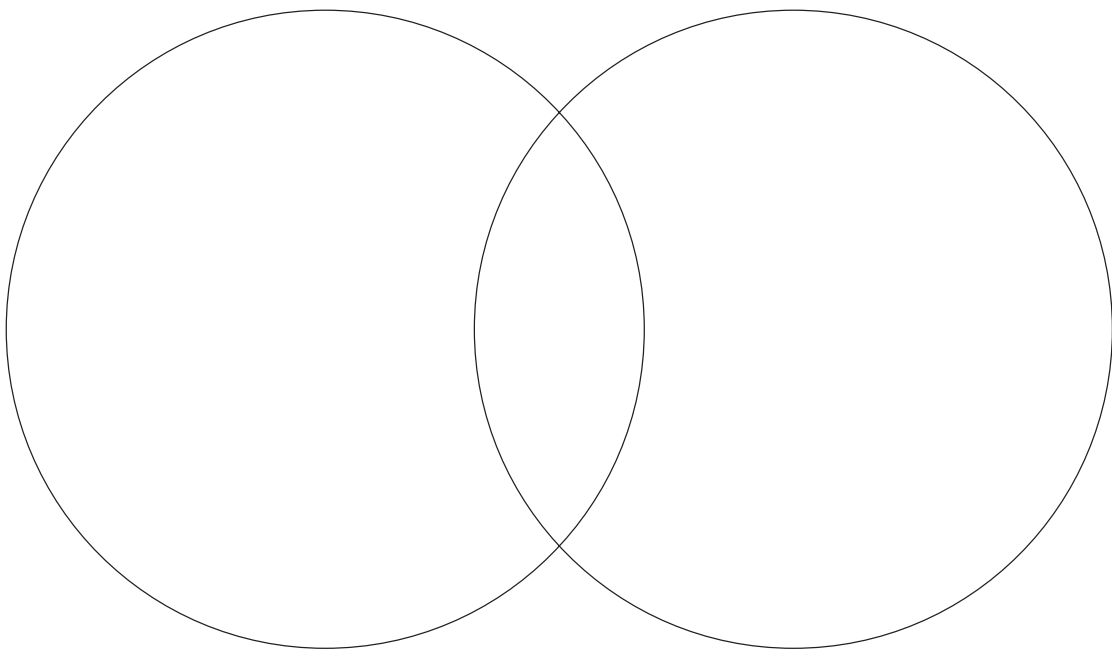
Glossary of terms

Anecdotal Records:	Short descriptions of feedback related to important aspects of student learning.
Assessment:	Systematic collection and synthesis of data to inform instruction and to document student learning and growth.
Background of Experience:	The personal experience a student has related to the learning task.
Baggy Books:	A strategy that allows students to provide or gather information about their interests and strengths.
Bloom's Cognitive Taxonomy:	A way to classify various levels of questions spanning from the knowledge level to the evaluation level.
Brainstorming:	Students generate information they already know about a given topic.
Collaborative Learning & Cooperative Learning:	Students working together in groups. This type of activity has essential elements that includes: positive interdependence, face-to-face interaction, interpersonal and small group skills and processing procedures. Students are heterogeneously grouped to work on a common academic task and to produce a product or outcome.
Content:	What we teach. What students are expected to learn, know, understand, and do.
Curriculum Differentiation:	The process of modifying or adapting the curriculum according to the different ability levels of the students in one class.
Entry Level Indicator:	A point where a student should start in learning a particular concept or skill.
Error Analysis:	A systematic way to identify and analyse patterns of error that a student makes in his/her work.
Folders:	Folders or large sheets of folded paper that can be used to contain students' work.
Input Mode:	Various ways to present or include information in a lesson.
Instruction:	Refers to schooling, education, lesson(s), teaching, or training depending upon the context of its use.
Interest:	Refers to how receptive and engaged the student is in learning more about a topic, concept or skill.
Interest Inventory:	A tool that may be teacher-made, by using open questions, to determine students' areas of interests.
Journaling:	A way students can reflect on their learning by responding to open-ended questions or by writing brief statements.
KWL:	Students brainstorm what they know about a topic and categorize that information (K). Students list questions they want to have answered (W). Students record what they learned (L).
Learning Centre:	An area in the classroom developed to help students explore topics of personal interest focusing on mastery or extension of skills and concepts.
Learning Contracts:	A contract between student and teacher that allows student choice and independence on what is to be learned, when it will be done, and how it will be evaluated.
Learning Modalities:	The method used by the student to take in new information: observing, reading, listening and doing.
Learning Profile:	A means of assessing a student's need based on gender, culture, learning styles, linguistic preferences, interests and abilities.
Method of Presentation:	A variety of techniques for gathering and presenting information.
Multiple Intelligences:	Areas of strength as noted by Howard Gardner including: Verbal/Linguistic, Logical/Mathematical, Visual/Spatial, Bodily/Kinaesthetic, Musical/Rhythmic, Interpersonal, Intrapersonal, and Naturalistic.
Multi-level Activities:	Activities where the focus is on a key concept but the teacher can use varied approaches, teaching and learning modes, and levels within a lesson.
Performance Assessments:	A set of tasks performed by the students to show that they understand a concept, skill or behaviour.

Portfolios or Work Portfolios:	Systematic ways to contain a collection of student's work to help the student and teacher monitor student progress.
Prior Knowledge:	Readers get the most out of reading when they relate information to something they know. Understanding is increased when the reader links the new information with the known information.
Readiness Indicator:	A teacher-developed strategy to determine a student's prior knowledge and background of experience in relation to a lesson.
Record Keeping:	Systematic ways for the student and teacher to keep records of the student's entry levels and progress.
Student Search:	A strategy used by teachers to help identify students' common interests or areas of expertise.
Student-led Conferences:	Conferences that are led by students who take responsibility for assessing their own progress through teacher feedback and student self-evaluation.
Varying Questions:	An instructional strategy in which the teacher varies the levels of questions asked based on a student's background of experience, interests, and learning profile.
Venn Diagram:	A graphic representation of comparison and contrast. Two intersecting circles showing likenesses and differences.
Word Sorts:	This activity is based on principles of induction and discovery learning. Students must study and compare words and determine the features several words have in common. This strategy can be used to help students develop strategies for recognizing words in print and analysing unrecognized words.



Venn Diagram Template



References

- Bloom, B. S. (Ed.) (1956). *Taxonomy of educational objectives: The classification of educational goals. Handbook I. Cognitive Domain*. New York: Longman.
- Campbell, C., Campbell, S., Collicott, J., Perner, D. & Stone, J. (1988). Adapting regular class curriculum for integrated special needs students. *Education New Brunswick Journal*, 3, 17-20.
- Collicott, J. (1991). Implementing multi-level instruction: Strategies for classroom teachers. In G. Porter and D. Richler (Eds.), *Changing Canadian Schools*. North York, Ont.: The Roeher Institute.
- The Dakar Framework for Action, Education for All: Meeting our Collective Commitments, adopted by the World Education Forum (Dakar, Senegal, 26-28 April 2000), Paris, UNESCO, 2000.
- Darling-Hammond, L. & Falk, B. (1997). Supporting teaching and learning for all students: Policies for authentic assessment systems. In A. Lin Goodwin (Ed.), *Assessment for Equity and Inclusion: Embracing All Our Children* (51-76). New York: Routledge.
- Forest, M. & Pearpoint, J. (1992). *With a little help from my friends* [Film]. (Columbus, OH: Merrill/MacMillan).
- Gardner, H. (1983). *Frames of mind: The theory of multiple intelligences*. New York: Basic Books.
- Gardner, H. (1999). *Intelligence reframed: Multiple intelligence for the 21st century*. New York: Basic Books.
- Gartin, B. C., Murdick, N. L., Imbeau, M. & Perner, D. E. (2002). *How to use differentiated instruction with students with mental retardation and developmental disabilities in the general education classroom*. Arlington, VA: The Division on Developmental Disabilities of the Council for Exceptional Children.
- Jarolimek, J. & Foster, C. (1981). *Teaching and learning in the elementary school* (2nd ed.). New York: Macmillan.
- Johnson, D. W. & Johnson, R. T. (1994). *Learning together and alone: Cooperative, competitive, and individualistic learning* (4th ed.). Boston: Allyn and Bacon.
- Little, N. & Allan, J. (1988). *Student-led teacher parent conferences*. Toronto: Lugus Productions Limited.
- Ogle, D. M. (1989). The know, want to know, learn strategy. In K. D. Muth (Ed.), *Children's comprehension of text* (pp.215-223). Newark, DE: International reading Association.
- Perner, D. (1994, June). Multi-level Instruction. In P. Evans (Chair), OECD/CERI: *Active life for disabled youth – integration in the school*. Symposium conducted at the Government of Spain, Ministry of Education and UNESCO World Conference on Special Needs Education: Access and Quality, Salamanca, Spain.
- Perner, D. (1997). Supporting the classroom teacher in New Brunswick. In Organisation for Economic Co-Operation and Development (OECD)/Centre for Educational Research and Innovation (CERI), *Implementing Inclusive Education*. Paris: OECD Publications.
- Perner, D. & Stone, J. (1995). *Multi-level Instruction: A curricular approach for inclusion*. Unpublished manuscript.
- Putnam, J.W. (Ed.) (1998) *Cooperative learning and strategies for Inclusion: Celebrating diversity in the classroom* (2nd ed.). Baltimore, MD: Paul, H. Brookes Publishing Company.
- The Salamanca Statement and Framework for Action on Special Needs Education, adopted by the World Conference on Special Needs Education: Access and Quality (Salamanca, Spain, 7-10 June, 1994), Paris, UNESCO, 1994.
- Schulz, J. & Turnbull, A. (1984). *Mainstreaming handicapped students: A guide for classroom teachers*. Boston: Allyn and Bacon.
- Sonbuchner, G. M. (1991). *Help yourself: How to take advantage of your learning styles*. Syracuse, NY: New Readers Press.
- Tomlinson, C. A. (1996). What is differentiated instruction? From an interview with Leslie J. Kiernan. Retrieved July 24, 2004 from <http://www.ascd.org/pdi/demo/diffinstr/differentiated1.html>
- Tomlinson, C. A. (1999). *The differentiated classroom: Responding to the needs of all learners*. Alexandria, VA: ASCD.
- Tomlinson, C. A. (2001). *How to differentiate instruction in mixed-ability classrooms* (2nd ed.). Alexandria, VA: ASCD.
- Vaughn, S., Bos, C. S. & Schumm, J. S. (2003). *Teaching exceptional, diverse, and at-risk students in the general education classroom* (3rd ed.). Boston: Allyn and Bacon.
- Venn, J. (1880). On the diagrammatic and mechanical representation of propositions and reasonings. *The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science*, 9, 1-18.



‘Changing Teacher Practices using curriculum differentiation to respond to students’ diversity’

Worldwide, teachers need support in order to develop in their profession. In many countries, teachers benefit from continuous in-service training, but in other countries there is very little if any support available for professional development in the schools. *‘Changing Teacher Practices, using curriculum differentiation to respond to students’ diversity’* aims at supporting teachers in developing and expanding their own teaching capacities.

The purpose of this book is to facilitate and support inclusion in education. Methods and examples outlined here can help us become better at teaching all learners together no matter what their abilities, disabilities or background of experiences are. The suggestions, strategies, and learning activities are here for you to choose what you might like to try in your classroom.

Education for All (EFA) means meeting the needs of *ALL LEARNERS* in the classroom, not only those who manage to adopt to the usual tradition of teaching and learning. Teachers, administrators and society at large are in key positions to make the goals of *The Dakar Framework for Action, Education for All: Meeting our Collective Commitments*, as expressed at the Dakar World Education Forum in 2000 happen. The following EFA goals are of particular relevance in relation to teaching:

- ☑ ensuring that all children have access to and complete free and compulsory primary education of good quality (Goal 2)
- ☑ ensuring that the learning needs of all young people and adults are met through equitable access to appropriate learning (Goal 3)
- ☑ improving all aspects of the quality of education (Goal 6).

If these EFA goals are to be met, all kinds of barriers to education need to be removed. *‘Changing Teacher Practices, using curriculum differentiation to respond to students’ diversity’* provides concrete tools on how teachers can modify their methods so that all learners, with their various needs, can benefit at a maximum from their schooling.