Catering for diversity through differentiation.

According to Anderson (2007) Differentiated instruction stems from the beliefs about differences among learners, how students learn, differences in learning preferences and individual interests. According to Arthur and Cremin (2010) catering for diversity involves looking at the qualities and potential of different learners and also at the support provided to build on that potential. Catering for the diversity of the learners in the classroom commences with what the student can already do and what the student already knows DETE (Department of Education and Training, 2011). Loveridge, Rosewarne, Shuker, Barker and Nager (2012) make the point that diversity is about knowing and understanding the individual and adapting your response to them. After identifying the range of learners Arthur and Cremin (2010) believe that the educator should seek to elaborate on the circumstance and prospect for learning, which may be successful and effective

These contexts and opportunities for learning may encompass but are not limited to home, school or the physical setting of the learning environment. Kelly and Lyons (2011) (as cited in Foreman, 2011) appear to agree with the view that the students home life, parents and teachers as well as the students own level of functioning all have an influence on student learning. Kelly and Lyons as cited in Foreman (2011) further point out that although most students will meet syllabus expectations some learners will need some type of variation to meet the syllabus expectations and it is this diversity which the teacher needs to accommodate to meet the needs of the learners. Within the context of my practicum placement there was one learner, which required extensive differentiation as he was working at a year one level. I attempted to differentiate in respect of this learner however he was usually tasked by the classroom teacher to work with the teacher aide for a majority of the learning time. This student did not miss out on the lessons but did have difficulty completing the various task sheets due to attention deficiencies so therefore this student was given the opportunity to demonstrate his learning with extra time or support from the teacher aide. Any work I differentiated for him in the subject area of maths (specifically units of measurement) was usually too difficult for him according to the classroom teacher. I would need to approach this learner and others alike by conducting more extensive pre testing to more accurately gauge their level of learning.

Catering for diversity should start before the teacher or learners walk into the classroom. Arthur and Cremin (2010, p. 282) believe that an excellent place to start when planning to cater for diversity is for the teacher to ask themselves; "What messages does the classroom give about the status or value given to the diversity of the pupils"? Arthur and Cremin (2010) also expect the teacher consider how the whole of school approaches differentiation and diversity. For instance, are the visual learners catered for, is there freedom of movement within the classroom and school grounds and does the school on the whole have a place in the classroom? The teacher grouped the learners and I maintained this grouping as I taught lessons. The room set out provided ease of access to all who were a part of the learning. Given that my mentor required me to introduce new concepts she suggested that differentiation was not practical at this point and that after the concepts were embedded she would set about differentiating, in particular their assessments after my prac was over. I was able to differentiate in other KLA' s through the use of visual aids, ICT's and differentiated worksheets.

The unit of work being considered in this document is focused on the KLA, Mathematics in a mixed classroom consisting of eight year two and seventeen year three students. The majority of students refer to English as their second language and according to the classroom teacher this cohort of learners encompasses the high achieving year two students and the low achieving year three learners. However the student profile composed by me suggests that there are actually some high achieving year three learners, some mid range year two learners and one particularly low achieving learner whom the classroom teacher describes as working at a year one level. No student had difficulty communicating his or her responses in a written format.

During the course of my practicum placement only one adult volunteer, a parent of one child donated their time to assist in the classroom. Kelly and Lyons (2011) accept that adult volunteers are a valuable human resource to support the students. It is a goal of mine to garner as much support from the parents of my learners both inside and outside the classroom because I too accept them as a valuable resource to support student learning.

Whilst introducing the new concept of mass, I discovered that the learners in the classroom had no understanding of this concept. Further to that and more specifically that the concept of ‘unit of measurement’ was only relevant to their prior learning i.e. centimetres and meters. This circumstance led me to believe that differentiation would not be practical at this introductory phase and the same circumstance prevailed during the introduction phase of the lessons following. I therefore introduced the concept to the group as a whole and set about differentiating by offering the students choice and flexibility as to how they might be able to represent the concept of mass in their own terms. Choice and flexibility as well as ongoing assessment are described as the most important elements of differentiated instruction (Anderson, 2007). The learners were given the opportunity to determine how they might prove which object may or may not have the greater mass. According to Westwood (2007) the complex task facing educators of students with disabilities in the mainstream is how to meet the needs of these students in an environment where a standard academic curriculum prevails.

If teachers are to differentiate effectively, then they should determine what their students should know and what each child should be able to do at the conclusion of the lesson or unit (Tomlinson, 2000 as cited in Anderson, 2007).

Teachers that differentiate believe that every child is unique with differing learning styles and preferences. They differentiate based on students; readiness by varying the levels of difficulty of the material covered in class. Teachers may wish to differentiate by aligning with students' abilities or interests. The students were afforded the opportunity to select the majority of concrete real world objects themselves for the comparison and measurement activities. Most of these students had no idea what a kilogram or a gram felt like in the hand or how it may compare to the real world objects in their classroom therefore the first activity had to provide the students an opportunity to use their senses to experience the difference between one kilogram and one gram.

Educators are, according to Westwood (2007) expected to accommodate students with diverse needs by modifying the curriculum in ways that allow all students the same access.

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Using formative assessment strategies to monitor student learning.

Missett, Brunner, Callahan, Moon and Azano (2014) define Formative Assessment as assessment for learning within a unit of study where immediate feedback provides data for teachers to make adjustments to pace of delivery of learning, readiness of the learners and scaffolding needs of students. Formative assessment happens simultaneously with the learning experience and provides information to guide teaching and learning for the purpose of improving learning (Tomlinson & McTighe, 2006). These formative assessments may be formal or informal and may consist of but not limited to oral questioning, observation student constructed concept maps (Tomlinson & McTighe, 2006). Gipps and Pickering (2010) as cited in Arthur and Cremin (2010) propose that teachers share the big picture with the learners from the start. By that they mean sharing the assessment or success criteria with the learners as well as the content of a given unit of work or lesson.

Best practice of formative assessment begins with effective 'planning' of teaching and learning (Gipps & Pickering as cited in Arthur & Cremin, 2010). In my view, whilst reflecting on the unit plan I can accept that from the perspective of planning there is room for improvement. There is not enough detail within the context of the unit plan I developed to agree with the above although the feedback from my teacher mentor gives me the confidence that I do have a sound understanding of formative assessment. "Stephen understands the importance and purpose of providing feedback to the students about their learning. Stephen used formal and informal strategies to assess the students' learning" (Professional experience report, 2014).

According to Tomlinson and McTighe (2006, p. 71) formative assessments differ from summative assessments in that they provide critical "along the way" information to guide instruction in response to the needs of the diverse learners. I had to reteach the initial capacity lesson due to a lack of planning evidenced by the formative assessment within the initial lesson. The learners were unable to grasp the objectives of the lesson due to my organisation of the lesson i.e. the next lesson was more effective due to improved group work planning and the formative assessment provided the learners and me the teacher with evidence of learning.

Tomlinson and McTighe (2006) expect that the students would be assessed for understanding before commencing a unit of work. I assessed the students’ understanding in the introduction phase of the unit of work by either developing a quiz, oral questioning, dress rehearsals for the hands on activities and think-alouds. These following are a sample of the questions designed to focus on the unit’s essential question; What can you tell me about...?; What does it remind you of....?; What do you think will happen when I place these two items on separate sides of the balance scales?

The students were required to predict and then prove or disprove their predictions with respect to the mass and capacity lessons. By checking their predictions and discussing their reasoning I was able to determine the level of understanding the learners had in respect of the concept being taught. In a lesson on graphing the previous afternoon I deliberately left out the unit of measurement (cm) and used that error to draw the students into the relevance of a unit of measurement and how important it is to ensure the text participant knows which unit of measurement is appropriate to a given circumstance. In the second phase of the mass lesson (kg, g) the task sheet required the learners to predict the mass of their chosen objects and test their prediction using standard metric weights and balance scales. By developing and implementing a diagnostic assessment I discovered that some of the learners were unable relate kilograms or grams to their real world and therefore, before testing their predictions I ensured that the learners were able to use their sense of touch and sight to experience the weight of a variety of graduated weights up to one kilogram. Before the lesson commenced, I informed the learners about how they would be assessed and how they would know if their learning had been successful. The learners were expected to record their responses in kg and or g and I am happy to say that not one learner neglected this important element in their responses.

During the course of this unit of work the classroom teacher chose not to implement summative assessment as she relied entirely on the C2C and the iMaths tracker books to do that for her. My understanding, derived from year level curriculum meetings and moderation meetings I attended whilst on practicum placement, was that this was a whole school policy. Although I was permitted to be creative with my lesson planning and delivery, I was required to stay true to the C2C documents. With regard to planning there are deficiencies in my approach and my teacher mentor provided excellent modelling for me to reflect on. This facet of my teaching is in need of improvement.

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When a person is 'thinking' they are trying to manipulate internal symbols in a meaningful way i.e. to make meaning (Jensen, 2014, p.142). Marzano (1993) believes that there are three major categories in which the techniques of critical thinking strategies can be placed. These categories include questioning and writing techniques as well as general information processing strategies. According to Marzano (1993) teachers classify questions as recitation and construction questions.

Recitation requires the student to retrieve previous learning and construction questions call for the students to construct new knowledge (Marzano, 1993). Jensen (2014) accepts as true that a critically thinking person will ask appropriate questions to efficiently gather relevant information and then logically and creatively sort through the information which will lead them to reliable and trustworthy conclusions about the problem.

Wait time according to Marzano (1993) is closely related to questioning and because it is easy and simple to implement it appears to be an effective technique and although it is a necessary system of questioning it is insufficient on its' own. During my prac placement I used this strategy somewhat effectively with the learners and in particular the young boy who was working at a year one level. I would pre warn him that I was going to ask him a question to engage his listening skills, come back to him with a question framed specifically to meet his cognitive ability and then give him the opportunity to think about his answer then provide his response. This strategy was effective for most of the students however this particular more often then not forgot the question. Writing the question down for him next time would be a good strategy. My teacher mentor regularly referred to my questioning technique as very good. She believed that I did an excellent job of drawing previously learned information from the students memory banks, making connections to the new information and making real world sense of it all (Professional experience report, 2014).

One way I could improve my teaching is to implement the THINK framework; *T*alk about the problem; *H*ow can it be solved? *I*dentify a strategy to solve the problem; *N*otice how your strategy helped solve the problem; *K*eep thinking about the problem. Does it make sense? (Van de Walle, Karp, & Bay-Williams, 2013, p. 45). This framework would likely provide a more challenging environment for the students to learn in, which according to Jensen (2014) will activate the students' brains thinking muscles. It is important to note that this challenging environment requires an equal amount of challenge and support if an ideal learning situation is to flourish and it can be expected that a corresponding rise in student motivation will also occur (Jensen, 2014).

Metacognition according to Westwood (2007) is having the capacity to think about your own thought processes. This self-management of thinking empowers the learner to recognise when they are doing well or are having difficulty with their learning (Westwood, 2007). This is a component of my pedagogy, as well as giving thought to the students' metacognitive processes requires attention. Westwood (2007) suggests that as learners we can monitor our own performance with mental activities such as pre-planning, monitoring, regulating, evaluating and modifying our responses to learning. Westwood (2007) espouses the belief that many learning problems are related to inefficient use of metacognition.

Larkin (2010) suggests it is not easy for the teacher to recognise whether or not students are engaged in cognitive or metacognitive processes, so how do I activate the learners thinking processes? Larkin (2010) posits that it is virtually impossible unless learners are encouraged to talk about and discuss their thinking; therefore I need to implement strategies to engage students in metacognitive processes in the planning phase of my pedagogy which will help to enact this strategy.

In order for thoughtful inquiry to transpire Wilks (2005) suggests that we avoid Teacher controlled question answer sessions, which are developed around matter we as Teachers have chosen. Wilks (2005) believes that a cognitive experience, which will involve the learners in responding to their own ideas, is best practice.

In the context of my pedagogy during my practical experience my development of critical thinking skills to engage the students was in my view and the opinion of my Teacher mentor, excellent. I set out to develop an outline of my lesson plan and rarely find that I can stick to it like glue. The reason for this is in my mind clear. Although the objectives of my lesson/ unit of work remain, the direction of the lesson depends almost entirely on the learners and their capacity to make meaning of the intended content. Their questions direct the lesson on the way. The objective of the mass lesson was to introduce new units of measurement and for the learners to understand that kilograms and grams are used to measure mass and that other units of measurement such as centimetres and metres are used to measure distance. For instance, I introduced kilograms and grams as units of measurement and the majority of learners were of the understanding that I could only use meters and centimetres to measure things. We used our rulers to measure the length, width and height of a standard one-kilogram weight and from this unplanned activity the learners determined these measurements did not tell us the mass of an object and therefore we should use an alternative unit of measurement. The lesson progressed and we learned how to use balance scales; we used trouser hangers and plastic bags at first and then purpose built balance scales to compare items of our choice. After our hands on activity the learners were asked what surprised them. This question led to lengthy discussions centred on this aspect of their learning. One of the major issues I have to overcome is time management. I would constantly have to steal time from lessons following because the learners were so interested in sharing their findings and understandings. References for Teaching Critical and Creative Thinking.

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