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Teaching and learning through multiple intelligences in the outcomes-based education classroom

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Abstract

As outcomes-based education forms the foundation of the new school curriculum in South Africa, educators are confronted with the challenge of not only meeting the different needs of individual learners, but also of helping learners (many of them previously disadvantaged) to achieve their maximum potential. One way of realising this ideal is by applying Howard Gardner's theory of multiple intelligences in the classroom. The article provides a discussion on both Gardner's multiple intelligences theory and outcomes-based education in South Africa, as it is believed that together they can contribute to solving some of the present problems in South African education. The article defines the use of MI theory in an OBE classroom and suggests specific ways in which educators worldwide could incorporate the different intelligences in their teaching and learning activities.

Keywords: multiple intelligences; outcomes-based education; teaching; learning; assessment

Introduction

As we move into the 21st century it is apparent that education in South Africa is subject to considerable pressure, caused by issues varying from practical problems such as overcrowded classrooms to paradigm changes in respect of teaching and learning. It would appear, however, that the growing demands in the field of education are not unique to South Africa, but occur throughout the world.

The latest and most significant curriculum reform in South African education has been the implementation of Curriculum 2005 and outcomes-based education (OBE). The aim of the new curriculum is to enable all learners to achieve their maximum potential by specifying the outcomes to be achieved at the end of a specific learning

process. This means that teaching and learning are informed and determined by what learners are expected to achieve (Kramer 1999, 1–5).

Educators are now, more than ever, confronted with the problems of how to accommodate differences or meet needs of individual learners, and how to help them achieve their maximum potential. Dryden and Vos (2005, 91) point out that many educators throughout the world are still teaching in ways similar to the blackboard-and-chalk, desk-in-rows classroom model. Hence teaching and learning strategies have to be adapted to a new conceptual framework that caters for the demands made by the new education system. The biggest demand on educators is to teach beyond the traditional intelligences, namely linguistic and logical-mathematical.

It is believed that by implementing the theory of multiple intelligences (MI) in the classroom, educators will be able to change their teaching and learning strategies and cater for the individual differences of learners. The introduction of the multiple intelligences (MI) theory in 1983 generated much excitement in the educational community, since it formed a marked contrast to the traditional view that individuals possess only one general intelligence (Baum, Viens and Slatin 2005, 3). Gardner (1983; 1999) distinguished nine different intelligences in every individual, each manifesting in varied abilities. This theory allows learners to learn in a way that complies with their particular strengths.

This article provides a brief overview of both Gardner's multiple intelligences theory and outcomes-based education, and a short discussion on the relationship between the two. Why MI theory can be utilised for successful teaching and specific ways of incorporating the respective intelligences into daily lesson planning for practical use in the OBE classroom are suggested. The obvious question underlying this research is: How can the implementation of the MI theory in the OBE classroom help educators to change their teaching and learning strategies so that they will be able to accommodate differences or meet needs of individual learners? This intervention would contribute to the aim of the National Curriculum Statement (NCS), namely the development of a high level of knowledge and skills for all.

In this article the NCS, and in particular the Intermediate and Senior Phase programme (Grades 4–9), is used to illustrate how the theory of MI can be utilised in the OBE classroom.

Overview of Howard Gardner's multiple intelligences (MI) theory

The concept of *multiple intelligences* is the brainchild of Harvard University professor Howard Gardner. He introduced his theory in *Frames of mind: The theory of multiple intelligences* (Gardner 1983). He proposes a revolutionary revision of how people think about intelligence, and defines an intelligence as "a biopsychological potential to process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture" (Gardner 1999, 33–34). This defini-

tion locates intelligence in what people can do and the product they can create in the real world (Baum et al. 2005, 10). Gardner's proposals have profoundly changed the conception of intelligence, because of the way in which he expanded the parameters of intelligent behaviour to include a diversity of human abilities (Bender 2002, 47). According to Baum et al. (2005, 10), the MI theory challenges the notion of the intelligence quotient (IQ) in at least three significant ways: (1) several intelligences are at work, not just one; (2) intelligence is expressed in a person's performance, products and ideas and not by a test score; and (3) how intelligence is expressed is culturally defined. Gardner does not deny the existence of general intelligence (*g*), but he questions its explanatory importance outside the relatively narrow environment of formal schooling, for sample evidence of *g* rests almost entirely on tests pertaining to linguistic or logical-mathematical intelligence (Gardner 1993, 39).

The basic principles of the MI theory are that individuals possess abilities over and above those of a linguistic and logical-mathematical nature which are typically measured by intelligence tests. As stated before, these abilities enable individuals to solve problems, create products or provide services that are valued in the larger society (Gardner 1983).

The following are the most prominent principles on which Gardner's theory is based (Gardner 1983; 1993; Armstrong 1994; Teele 2000):

Intelligences are multiple – not singular.

- Every person is a unique blend of dynamic intelligences.
- Intelligences vary with regard to their development, both within and among individuals.
- All intelligences are dynamic.
- MI can be identified and described.
- Everyone deserves opportunities to recognise and develop the multiplicity of their intelligences.
- The use of one intelligence can enhance another of the intelligences.
- The density and dispersion of personal background are critical to knowledge, beliefs and skills in all intelligences.
- All intelligences provide alternative resources and potential capacities for more human development, regardless of age or circumstance.
- A pure intelligence is rarely seen.
- Developmental theory applies to the theory of MI.

Furthermore, each of Gardner's intelligences is believed to have a different developmental history and is located in different parts of the brain. In other words, Gardner uses an amalgamation of both the biological and the behavioural in his efforts to support his theory of human intelligence (Eisner 2004, 32).

According to Gardner's MI theory (Gardner 1983; 1999) people possess at least nine distinct "intelligences". These intelligences are briefly described in Table 1.

TABLE 1: HOWARD GARDNER'S MULTIPLE INTELLIGENCES

Multiple Intelligences	Description
Verbal-linguistic intelligence	Word smart – ability to use words effectively, abstract reasoning, symbolic thinking, conceptual patterning, reading and writing
Logical-mathematical intelligence	Number smart – the capacity to use numbers effectively and to reason well. Includes sensitivity to logical patterns and relationships, statements and propositions, functions, and other related abstractions
Musical intelligence	Music smart – capacities such as the recognition of and use of rhythmic and tonal patterns and sensitivity to sounds from the environment, the human voice, and musical instruments
Spatial intelligence	Picture smart – ability to perceive the visual-spatial world accurately and to perform transformations upon those perceptions. Includes sensitivity to colour, line, shape, form, space, and the relationships which exist between these elements. Also includes the capacity to visualise, to graphically represent visual and spatial concepts and to orient oneself properly in a special matrix
Bodily-kinaesthetic intelligence	Body smart – the ability to use the body to express emotion, to play a game, and to create a new product
Intrapersonal intelligence	Self-smart – Self-knowledge and the ability to act adaptively on the basis of this knowledge. Includes possessing an accurate self-image, awareness of inner moods, intentions, motivations, temperaments and desires. Also includes the capacity for self-discipline, self-understanding and self-esteem
Interpersonal intelligence	People smart – the ability to work co-operatively with others in a small group, as well as the ability to communicate verbally and nonverbally with other people
Naturalistic intelligence	Nature smart – the ability to recognise patterns in nature and classify objects; the mastery of taxonomy, sensitivity to other features of the natural world, and an understanding of different species
Existential intelligence	Thinking smart – the ability to pose (and ponder) questions about life, death, and ultimate realities like “Who are we?” and “What is the meaning of life?” This is a human response to being alive in all ways

(Adapted from Gardner 1999, 53–77; Armstrong 2000, 127; Stanford 2003, 81)

According to Gardner (1993, 11), each person has capacities in all the abovementioned intelligences. However, the theory suggests that two of the intelligences, namely the verbal-linguistic and logical-mathematical, have dominated the traditional schooling and the measurement of intelligences. The nine intelligences as described in Table 1 function together in ways which are unique to each individual; for example, some people appear to possess extremely high levels of functioning in all or most of the nine intelligences, while others appear to lack all but the most basic of the intelligences (Stanford 2003, 81). Gardner (1993, 12) says the following in this regard:

It is of the utmost importance that we recognize and nurture all the varieties of human intelligences, and all of the combinations of intelligences. We are all so different largely because we all have different combinations of intelligences. If we recognize this, we will at least have a better chance of dealing appropriately with the many problems that we face in the world.

According to Chen (2004, 21–22), not all psychologists agree with Gardner’s theory of MI. However, they agree that MI theory has contributed towards changing people’s perception and understanding of human intelligences. Most of these psychologists agree that intelligence is not a tangible object that can be measured. From Gardner’s view on intelligence we now know that people have a much broader set of intellectual skills than psychological thinkers have traditionally assumed. This has implications for teaching and learning and for classroom practice.

According to Gardner (H Gardner 2005, pers. comm.) there is no “right” way to apply MI theory in the classroom, since it is a descriptive theory of intelligences and not a pedagogical framework. In other words, one application of his theory is not necessarily “right” and another “wrong”; different approaches can be justified and proved to be appropriate for their setting. Due to its high generative power, MI theory has stimulated countless new ideas and practices in the field of education over the past 23 years (Campbell, Campbell and Dickenson 1996; Kornhaber, Veenema and Fierros 2003; Stanford 2003).

One of the main strengths of MI theory, according to Özdemir, Güneysu and Tekkaya (2006, 74), is its capacity to serve as a framework, allowing educators to explore their teaching styles and assisting them in making decisions about ways to structure teaching and learning experiences for a variety of students. They continue to point out that students need to experience learning that allows them to engage all of the nine intelligences, as well as to explore their own intelligences. Learners also need to know how they can impact on their own learning. Gardner’s theory provides direction on how to improve a learner’s ability in any given intelligence. Learners also need to be exposed to a variety of choices relating to how they learn and how they are assessed. MI brings about an awareness of many assessment strategies that allow students to show that they understand and can use information in unique ways (Stanford 2003, 82). By having to tap into different intelligences learners are more likely to experience the curriculum as something that is meaningful, personalised and relevant.

Kagan and Kagan (1998, 23) describe MI theory as a powerful “catalyst” in education: “It is revitalising the search for more authentic, student-centered approaches to the curriculum, instruction and assessment.” From this perspective, MI theory can be used to meet three objectives, namely to match teaching to the ways learners learn, to encourage learners to stretch their abilities and develop their intelligences as fully as possible, and to honour and celebrate diversity (Özdemir et al. 2006, 74).

Stanford (2003, 82) points out that the MI theory also provides an avenue for accomplishing what good educators have always done, namely to provide varied opportunities for learners to learn and to show evidence of learning. In other words, educators have always known that learners have different strengths and weaknesses. The MI theory now creates opportunities for educators and encourages them to think of teaching, learning and assessment in a different way, namely in terms of meeting the needs of a variety of the intelligences.

It is evident that each learner has nine intelligences that work in distinct combinations, and that the respective learners have their own unique set of intellectual strengths. MI theory points out that learners learn best when they work with information that is presented to them in a way that suits their intellectual strengths, and when they can reflect on what they know in a variety of ways that go beyond the traditional test-taking modes of assessment (Kallenbach and Viens 2004, 33). It is clear that MI has a wide application in education, as we shall see in the discussion of OBE.

Overview of outcomes-based education in South Africa

The first major curriculum statement of a democratic South Africa was the National Curriculum Framework (1996) which was informed by principles derived from the White Paper on Education and Training (1995), the South African Qualifications Act (1995) and the National Education Policy Act (1996). All of these emphasised the need for major changes in education and training in South Africa. The change started with the implementation of Curriculum 2005 in 1998 and in 2002 the *Revised National Curriculum Statement (RNCS) for Grades R to 12*, now known as the National Curriculum Statement (NCS). The NCS is informed by the principles of outcomes-based education, and focuses on learner-centred teaching and the critical outcomes specified by the National Qualifications Framework (NQF). These requirements are formulated in terms of the learning outcomes and assessment standards in the curriculum statement, and explain the outcomes of each of the eight learning areas. The critical outcomes as well as the learning outcomes show that definite changes in teaching and learning need to take place in schools. The focus has shifted from content knowledge to the acquisition of skills instead of specific knowledge only.

OBE can be described as an approach that requires educators and learners to focus their attention on the desired end results (outcomes) of each learning process and on the instructive and learning process that guides the learner to these outcomes. OBE is thus a learner-centred, result-oriented approach to learning. According to Spady (1994, 9), the father of OBE, the purpose of OBE is to ensure that all learners will gain the necessary knowledge, skills and attitudes/values to be successful lifelong learners, who will fulfil meaningful roles in life and out of school. He formulates three assumptions on which OBE is based, namely that all learners can learn and succeed, but not on the same day or at the same time, that successful learning promotes even more successful learning and that schools control the conditions that directly affect successful school learning. He also highlights the viewpoint that what and whether learners learn effectively is more important than when and how they learn. In an OBE system learners have to master content, concepts, skills and habits of mind before advancing; if not, they must be guided to try again and again until they succeed (Van der Horst and McDonald 2003, 14).

According to Spady (1994, 11–20), there is no one model for OBE, but the OBE purpose will be achieved if educators apply the four principles of OBE consistently, systematically, creatively and simultaneously. According to the principle *clarity of focus*

the whole curriculum is geared towards what the learners must be able to demonstrate at the end of their education (Maree and Fraser 2004, 5). The focus on syllabus content is now replaced by a concentration on achievement in terms of desired outcomes. In *designing down*, the curriculum in an OBE approach is designed from the outcome one wants to demonstrate, rather than providing objectives for the curriculum that one already has (Spady 1996, 4). The aim of designing towards a specific outcome is to assist learners to understand and succeed at what is required of them (Killen 1996, 1).

The principle of *success orientation* within OBE expects all learners to be successful. Educators are therefore encouraged to “find ways for learners to succeed” (Killen 1996, 2). Much of the OBE philosophy is based on the model of mastery of learning, namely *expanded opportunity*. This approach to learning believes that all learners can succeed if they are given the time and support they need (Gillespie 2004, 49).

From the brief discussion of the principles underlying OBE it seems that Spady and Schlebusch (1999, 39) are correct in stating that “outcomes are the starting point, the centrepiece and the bottom line of all instructional efforts”.

Assessment is a fundamental component of OBE, because only by “measuring” the demonstrated output of the learner does it become possible to determine whether the outcome has been successfully attained. Assessment in the OBE classroom is a relatively new task for educators. Policies and documents provide broad guidelines on assessment. However, policies have underestimated the complexity of assessment. According to evaluation done by Khulisa Management Services (2005, 135), assessment continues to be the most difficult area of OBE for the educator to understand.

The NCS outlines ways in which learning programmes, work schedules and lesson plans should be introduced. The lesson plan gives a concrete and detailed description of each specific lesson activity (teaching, learning and assessment) that needs to take place in a particular class before the identified learning outcomes and assessment standards can be achieved. Educators are now confronted with a whole new approach to planning, teaching, learning and assessment.

The implication for educators is that they remain responsible for creating a positive learning environment that provides learners with sufficient opportunities to practise, using the new knowledge and skills that they have gained. Educators are also responsible to cater for the different intellectual needs of learners. One of the ways in which educators are able to assist their learners is by providing expanded opportunities. Not all learners will learn at the same tempo or will learn equally well from the same experiences; therefore educators in the OBE system are required to consider an array of alternative ways of helping learners to achieve outcomes. Educators also need to cater for the different intelligences of learners. In addition, expanded opportunities imply that all learners are provided with time and assistance to realise their potential.

In the process of designing down, educators need to be aware that standards of performance should not be lowered. Spady (1996, 5) specifies that “high expectations” are an important principle of OBE. Educators are therefore required to establish high, challenging standards of performance for learners, which encourage successful demonstration by the individual learners.

OBE promotes the effective use and integration of various teaching and learning strategies by the educator and the learner respectively (Schlebusch and Thobedi 2004, 35). It is important to note that teaching and learning by educators and learners respectively differ considerably. If we accept this, we need to recognise that this also applies to their respective intelligences. Moreover, intellectual capabilities may not only be different, but most probably also relate to different areas. In this regard the Department of Education in South Africa refers to the nine intelligences of Gardner's MI in their training manuals (Department of Education 2005). No one intelligence is superior to the next. It is obvious that the better the educators know their learners, the better equipped they are to plan the teaching and learning experiences. By identifying learners' MI profiles, educators would be in a better position to accommodate different learners according to their personal orientation to learning. However, these profiles are not fixed and they may change as learners are exposed to situations that require them to employ the different intelligences. Educators can find useful inventories to help learners discover their MI profiles in the literature as well as online. Educators need to be aware of their own intelligence profile and the way it might influence their teaching. In designing lesson plans and in their assessment of learners' achievements, the danger exists that educators could concentrate only on assignments and means of assessment that favour their own intelligence profile (Green and Tanner 2005, 320).

Implementing a new education system requires educators to follow various new approaches in respect of planning, teaching and assessment. Educators are, more than ever before, confronted with the challenge of how to meet the individual differences of learners and how to contribute to the aim of the NCS, namely the development of a high level of knowledge and skills for all.

Relationship between MI and OBE

The overview on MI theory confirms that learners possess a range of intelligences that may be neither acknowledged nor developed in the course of their education. The introduction of OBE in South African schools demands that educators would start teaching beyond the "traditional" intelligences, and more specifically beyond those falling within the linguistic and logical-mathematical parameters.

With regard to the similarities between MI and OBE as discussed in the previous sections, it became clear that both approaches (1) focus on the uniqueness of each learner's ability to learn, (2) expect high academic standards, (3) emphasise the expanded opportunity, (4) believe that all learners can succeed in education, (5) demand a paradigm shift in the implementation of assessment, (6) demand a new approach to teaching, learning and the assessment of outcomes, (7) believe that all learners should be able to work in cooperation with others, (8) believe that all learners should have the opportunity to develop holistically, (9) believe that all learners should achieve, thus preparing them, as achievers, to become responsible and productive members of society, (10) expect learning activities to be organised in such a way that the diversity

of learners is accommodated, (11) focus on real-life application of knowledge and (12) place high value on the ability of learners to solve problems.

It is evident that various benefits could be derived from using the MI theory in the OBE classroom, some of which are as follows. Studies show that learners who perform unsatisfactorily in traditional tests (pencil and paper) are eager to learn when MI theory is incorporated into the classroom experience. The application of MI allows learners to become more actively involved. The MI classroom serves as a microcosm of the “real world”. The learner and the facilitator are equally valuable. Incorporating MI in the classroom increases parent and community involvement. Learners are willing to demonstrate and share their strengths. When educators teach to promote understanding (MI theory), learners accumulate positive educational experiences and develop the capacity for creating solutions to real-life problems (*Concepts to classroom* 2006). It seems that when the MI theory is implemented in the classroom learners are more positive about themselves and parents are more involved with their children.

The above discussion not only points towards a strong relationship between MI and OBE, but also clearly shows that implementing the MI theory in the classroom holds obvious benefits.

Incorporating the theory of MI in the OBE classroom

MI is a theoretical framework for defining, understanding, developing and assessing learners’ different intelligences. Implementing this theory as a framework in the OBE classroom is no simple matter, for educators need to be creative in their teaching, learning and assessment. The next section offers suggestions for the application of MI theory in conjunction with the principles of OBE in the classroom.

The literature offers various strategies on how to apply MI theory in the classroom, and how to cater for the ranges of intelligences as they manifest themselves in individual learners. When incorporating MI in the OBE classroom, educators should take the following into account.

Lesson planning

It is the educator’s responsibility to nurture learners and to help them develop their own intelligences. Each of the intelligences is potentially present in every learner and if lesson planning is structured to challenge different intelligences learners will be exposed to more than one type of learning, which increases the possibility of a successful accomplishment of the desired outcomes. Lesson planning should include activities to incorporate as many of the different intelligences as possible.

A good example of incorporating more than one intelligence in the OBE classroom is seen in the film *Dead Poets’ Society*, where the educator John Keating lets his learners read literary works (linguistic intelligence), while they listen to classical music (musical intelligence) and kick soccer balls around (body-kinaesthetic intelligence) (Armstrong 1994). Another example would be of educators structuring the presentation of material to engage most of the different intelligences. For instance, to enhance the discussion of

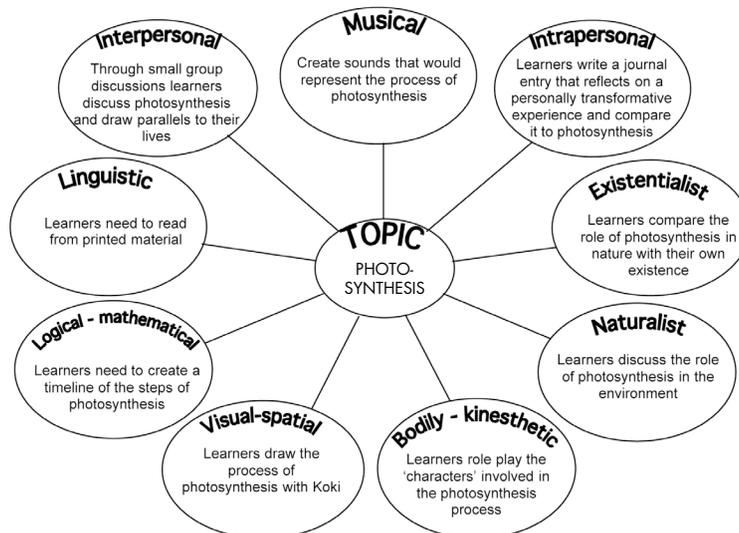
the apartheid system in South Africa, an educator could display a map of the Sharpeville area (spatial intelligence), play freedom songs (musical intelligence), ask learners to act out Mandela's release from jail by means of a role play (body-kinaesthetic intelligence), and have the students read a novel of Mandela's imprisonment (linguistic and social intelligence). This kind of presentation not only excites learners and requires them to integrate information from a variety of sources, but also allows educators to reinforce the same material in a variety of ways. A combination of these learning experiences would facilitate a deeper understanding of the learning material.

Educators can also show learners how to use their more developed intelligences to assist in the understanding of knowledge which normally employs their weaker intelligences (Gardner 2006, 3). For example, the educator could suggest that a learner who is particularly musically intelligent gain insight into the apartheid system by making up a song and writing the words about the realities of the former dispensation.

Educators need to design a lesson plan for each lesson they present. In designing a lesson to incorporate MI, educators could, for example, use the following questions after they have selected their topic:

- Logical mathematical – How can I bring in numbers?
- Linguistic – How can I use the spoken word?
- Spatial – How can I use visual aids?
- Musical – How can I bring in music?
- Bodily-kinaesthetic – How can I use the whole body?
- Interpersonal – How can I engage learners in group work?
- Intrapersonal – How can I evoke personal feelings?
- Naturalistic – How can I bring in nature?
- Existential – How can I bring in philosophical questions?

Figure 1 provides an example of how one can incorporate MI in lesson planning.



Educators will not always find it possible to include all the different intelligences in a single lesson plan. It is important not to force intelligences into the lesson plan. If educators manage to include one or two intelligences that would otherwise not be included in the lesson plan, more learners will enjoy the benefit, as learning is enhanced when learners are allowed to draw upon their particular strengths.

According to Armstrong (2006, 1), “the master code of MI is simple: for whatever you wish to teach, link your instructional objectives (learning outcomes-OBE) to words, numbers or logic, pictures, music, the body, social interaction and personal experience”. If one can create activities that combine these intelligences in unique ways, it increases the benefits derived from the exercise.

It is important for educators to carefully select activities that not only teach to the intelligences, but also realistically include the learning outcomes, because MI should enhance teaching, learning and assessment.

Teaching and learning strategies

If educators introduce MI techniques into the OBE classroom, they will have the opportunity to use varied teaching and learning strategies and assessment techniques which would be conducive to creative and active learning. In this way all learners could be engaged in the construction of their own learning. It is also important that the educator use different teaching techniques to incorporate MI, for example by drawing pictures to illustrate (spatial), making gestures while talking (bodily-kinaesthetic), asking questions (interpersonal), playing music to make a point (musical), pausing to give learners time to reflect (intrapersonal), reading from the textbook (verbal-linguistic), reasoning with learners (logical-mathematical), taking learners on a field trip (naturalistic), and exploring “Who am I?” (existential).

Various examples of teaching and learning strategies, together with assessment tools and techniques that may prove useful in the OBE classroom as they can be linked with a specific MI, are provided in Table 2. The table also includes the names of famous people who excelled in specific areas of intelligence.

TABLE 2: EXAMPLES OF TEACHING AND LEARNING STRATEGIES, AS WELL AS ASSESSMENT TOOLS/TECHNIQUES THAT CAN BE USED IN THE OBE CLASSROOM TO LINK WITH A SPECIFIC MI

Intelligence	Teaching strategies	Learning strategies	Assessment tools/techniques	Evidence of this intelligence
Linguistic	Lectures, discussions, storytelling, journal writing	Read about it, write about it, talk about it, listen to it	Portfolio, reflection sheets, presentation, written tasks	J. R. Tolkien (Lord of the rings)
Logical- mathematical	Problem-solving, science experiments, brain teasers	Think critically about it, conceptualise it, quantify it	Written tasks, action research, rubrics, formal tests	Chris Barnard (performed first heart transplant)

Spatial	Art activities, visual presentations, mind mapping	Draw it, see it, visualise it, colour it, mind-map it	Role-play, observation, mind-maps	Danie de Jager (sculpture – Lost City)
Body- kinaesthetic	Drama, dance, sports, relaxation exercises	Act it out, touch it, build it, dance it	Practical demonstration, observation	Baby Jake Matlala (boxer)
Musical	Super learning, rapping, songs that teach certain truths or beliefs	Listen to it, sing it, rap it	Presentation, observation, practical demonstration	Hugh Masekela (singer)
Interpersonal	Cooperative learning, community involvement, social gatherings	Model it, facilitate it, elaborate on it	Group work, projects, presentations	Nelson Mandela (former president)
Intrapersonal	Individualised instruction, self-esteem building, independent study	Connect it to your personal life, make choices with regard to it	Journal entries, written tasks, reflection sheets	Charlize Theron (film star)
Naturalistic	Hands-on learning, research, survey, practical demonstrations	Experience it, see it, touch it, hear it, think about it critically	Projects, action research, presentations	Mike Horn (conversationalist)
Existential	Independent study	Interact with respect to it	Reflection sheets, role play, presentations	Desmond Tutu (archbishop)

(Adapted and reworked from Department of Education 2005)

The information in Table 2 serves as an example only, to stimulate educators. Educators can add to the above list or create their own examples/lists.

Assessment

The MI philosophy of assessment is closely linked to that of OBE. Both are transparent and objective and learners need to understand what is being assessed, why it is being assessed and how it will be assessed. To facilitate assessment for MI, educators need to rethink how learners can show what they know. For example, in a history lesson the educator could assess cooperative groups (interpersonal intelligence) by means of hands-on activities (bodily/kinaesthetic – earlier intelligence), reflection sheets (intrapersonal intelligences) and written tests (logical-mathematical intelligence). In another example, a learner who shows understanding of mathematical concepts through rubrics, demonstrations and portfolios may experience an authentic understanding of achievement. In this case the learner’s accomplishment is related to demonstrating a skill, rather than passing a test or examination.

According to Baum et al. (2005, 24) assessment should be multi-focal, tapping not only one context but several. It helps to keep the assessment authentic and “intelligence

fair". This implies that it assesses what it is claiming to assess. Table 2 gives an outline of various assessment tools that educators can apply to encourage learners to employ different MIs. The theory of MI implies that any knowledge can be assessed in at least nine different ways. The MI theory also suggests that portfolios, when appropriate, include materials from all nine intelligences

The aim of OBE, namely the development of a high level of knowledge and skills for all, can be met by applying the theory of MI, and could therefore assist educators in transforming classroom practice into multimodal learning opportunities for learners.

Conclusion

While the concept of multiple intelligences is rooted mainly in theory, there are sufficient reasons, as discussed in the previous sections, why this theory can serve as a springboard for successful teaching in an OBE classroom. The practical implementation of MI-related principles in the OBE classroom means that learners are free to explore and learn in a variety of ways, while educators are enabled to help learners understand and appreciate their strengths, identifying real-world activities that will stimulate further learning.

The overview of MI theory and OBE, as well as the examples presented in this article, affirm that educators can in fact change their teaching, learning and assessment strategies to solve the dilemma of meeting the different needs of individual learners, while striving towards the development of a high level of knowledge and skills for all learners.

It is strongly recommended that educators should be made aware of the different intelligences of learners as well as of their different strengths. Educators should understand the theory of MI since this will help them understand why learners are different and they will be able to develop each learner's intelligences. Educators should also design teaching, learning and assessment methods that address the multiple intelligences of learners. The relationship of intelligences to the learning process should be a key point in any discussion about ways to promote higher academic achievement, learner success and lifelong learning.

Using MI theory as a framework for teaching and learning requires creative thinking and a sound understanding of the underlying theory. It is a cause for concern that not all educators in South African schools are adequately trained and/or feel confident enough to incorporate MI in the classroom. In some cases, though, in-service training is provided. The Generic Module of the NCS in-service training, for example, includes a one-hour training session on MI and a one-hour session in the different learning areas on MI. However, educators need more than two hours' training on such an important matter. Ongoing research should keep track of the number of educators who have undergone in-service training, and those who are in fact incorporating MI theory in their classrooms. In addition, there is a real need for research to establish whether initial teacher training does indeed provide student teachers with the knowledge and skills to incorporate MI into the classroom successfully.

In the South African context it has become increasingly important to gear the education system towards creating opportunities for developing learners' ability to think creatively, critically and independently. Not only will the learning fraternity have to learn how to solve problems and envision new ideas or products, but above all they will have to develop their own strengths. One key to facilitating this process is to accommodate our learners' multiple intelligences in all teaching and learning experiences that occur in the OBE classroom.

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