The International Asian Research Journal 02(03): pp.10-16, 2014
ISSN: 2310-337X

www.tiarj.com

Infusing Multiple Intelligences (M I) Theory into Teaching: Opportunities for Meaningful Learning

[1] Pedzisai Goronga , [2]Martha Dozva' [3] Roswitta Gatsi and [4] Douglas Gasva

[1] Lecturer, University of Zimbabwe, Faculty of Education, Department of Educational Foundations.

[2] Lecturer, University of Zimbabwe, Faculty of Education, Department of Teacher Education.

[3]Quality Assuarance Officer, Zimbabwe Open University Matebeleland North Region, Zimbabwe.

[4]Lecturer, University of Zimbabwe, Department of Teacher Education

Abstract: *The purpose of the study was to find out if primary school teachers knew that their curriculum was organised according to Howard Gardner's Multiple Intelligences Theory. The study fell into the qualitative research domain. A case study was used in which only one rural school was purposively selected on the basis of ease of accessibility and convenience to the researchers. All the 11 teachers at the school participated in the study. Interviews and focus groups were used to collect data. The study established that teachers did not know that the primary school curriculum was organised according to multiple intelligences. Teaching concentrated on those subjects that are examined at the end of the seventh year course. Assessment was skewed towards the traditionally valued core subjects like English and Mathematics. Subjects like Art and Design, Music and Physical Education were not assessed at all. However, participants showed their keenness to develop and assess the traditionally neglected subjects if resources, facilities and support were made available.*
Keywords: Curriculum, Multiple Intelligences, Challenges, Assessment, Facilities.

I. INTRODUCTION

This paper discusses the origins of Howard Gardner's multiple Intelligences theory as it relates to the primary school curriculum in Zimbabwe. Issues pertaining to how the theory of multiple intelligences departs from the traditional view of intelligence are highlighted. While other cognitive learning theories find their way into classroom application, it remains to be seen whether teachers teach according to the Multiple Intelligences theory. The paper discusses the significance of the development of the various intelligences which the theory promulgates. The paper goes further to give a detailed description of the multiple intelligences as well as giving pointers as to whether the Zimbabwean primary school curriculum satisfies the demands of this theory. The paper also highlights the opportunities for incorporating multiple intelligences in teaching as well as the challenges inherent with the adoption of such an approach.

II. Howard Gardner's conception of intelligence

Howard Gardner has been described as a paradigm shifter (Smith and Smith, 1994)[1]. He earned this recognition on the basis that he questioned the notion that intelligence is a single entity, that results from a single factor and that it can be measured simply through Intelligence Quotient (IQ) tests. In reaction to the above notion, Gardner defines intelligence as the capacity to solve problems or to fashion products that are valued in one or more cultural settings (Gardner& Hatch, 1989)[2]. In support, Campbell (1997; 197)[3] declares that intelligence ''is the ability to find and solve problems and create products of value in one's own culture." Implicit in these two definitions is the idea that intelligence is culture specific. To highlight the

Corresponding Author: Pedzisai Goronga, Lecturer, University of Zimbabwe, Faculty of Education, Department of Educational Foundations.

importance of culture in the intelligence development discourse, Gardner (1983)[4] vehemently argues that culture plays a critical function in the development of the intelligences. Gardner points out that society values different types of intelligences. The argument advanced is that the cultural value placed upon the ability to perform certain tasks gives the impetus to become skilled in those areas. It is Gardner's contention that, while particular intelligences might be highly evolved in many people of one culture, those same intelligences might not be as developed in the individuals of another culture. The ideas that Gardner advances are in sharp contrast to the traditional education system which typically places a strong emphasis on the development of a few intelligences (Lazear, 1992)[5].Thus, other than just talking about intelligence, the issue of culture stands out prominently in contextualising intelligence.

III. MULTIPLE INTELLIGENCES

Gardner's view of intelligence affects the way we perceive intelligence. He challenges our ideas of what intelligent behaviour is, particularly the emphasis in schools on the development of verbal and mathematical abilities to the exclusion of a broader range of intelligent behaviour. In his book *Frames of Mind*, Gardner identifies seven intelligences which he claims each individual possesses as opposed to the traditional schooling which favoured the verbal-linguistic and logical-mathematical intelligences. Thus, Gardner suggests a more balanced curriculum which incorporates the arts, self-awareness, communication, and physical education. Gardner(1995:208)[6] contends that the theory of multiple intelligences has been embraced by the education community as a wonderful and meaningful way to account for the knowledge that: "we are not all the same, we do not have the same kinds of minds, and education works most effectively for most individuals if human differences are taken seriously." Asked how teachers should implement the theory of multiple intelligences, Gardner said that it is critical that a teacher takes individual differences among learners seriously. This implies that the theory values individual differences among learners. Gardner (1999)[7] suggests that there are at least seven ways that people have of perceiving and understanding the world. Gardner (1983) labels each of these ways a distinct intelligence. In other words, a set of skills permitting individuals to find and resolve genuine problems they face within certain cultural settings. The list of intelligences that he initially formulated was provisional meaning that there was room for the emergence of some more intelligences (Gardner 1999) [7].

The seven intelligences that he initially formulated are: Linguistic intelligence, logical-mathematical intelligence, Musical intelligence, Bodily-kinaesthetic intelligence, spatial intelligence, Interpersonal intelligence and Intrapersonal intelligence. Gardner (1983)[4] points out that, the seven intelligences rarely operate independently. They are used at the same time and tend to complement each other as people develop skills or solve problems. Gardner (1999:44)[7] says, "The theory is an account of human cognition in its fullness. The intelligences provided a 'new definition of human nature, cognitively speaking." Gardner posits that people have a unique combination of these intelligences but argues that the big challenge facing the deployment of human resources "is how best to take advantage of the uniqueness conferred on us as a species exhibiting several intelligences."(ibid: 45).

IV. WHY INCORPORATE MI THEORY INTO TEACHING?

The beauty of incorporating Gardner's intelligences into classroom teaching is that it allows for all the children to learn through their strengths and to share their expertise (Samples, 1992)[8]. The camaraderie that develops among students and the appreciation and respect for each other's strengths are some of the positive aspects of MI inclusion in teaching. It is assumed that when looking at the classroom through the multi lenses of MI theory, classroom practitioners can identify learners' strengths and present instruction to students which take on board the various intelligences into their lessons (Armstrong, 1994)[9]. Gardner (1987)[10] encourages teachers to recognise and nurture all the varied human intelligences, and all the combinations of intelligences. Gardner explains that we are so different, largely because we have different combinations of intelligences. In exalting MI theory, Campbell (1997)[3] posits that MI theory is a way of thinking, an attitude about people which respects and celebrates similarities and differences. It allows for inclusion and enrichment, bolsters self esteem and the development of respect for each individual and the gifts they bring to the learning situation.

Gardner(1987)[10] further says that what is critical is whether, be it in the classroom environment

or a world congress, each individual brings strengths to the situation and if we listen, observe and show appreciation for these gifts and diverse dispositions, we make a better 'whole', for truly we are better together. According to Gardner (1987)[10], each one brings a piece to the puzzle, a piece which adds colour and beauty to the final product. "If education is to give a gift to the future, then that gift must be one of wholeness-wholeness that is inherent in our design and our experience on this planet" (Samples, 1992:66)[8].Thus, we must back away from narrowness and standardised accountability and move towards wholeness, connectedness, and meaningfulness in the learning experience (Armstrong, 1994)[9]. In order to have an appreciation of the multiple intelligences, a description of each one of them is given below. These intelligences capture the diversity of learners we find them in every classroom.

4.1 Verbal-Linguistic intelligence

This has typically been valued in schools. It involves sensitivity to spoken and written language, the ability to learn languages and the capacity to use language to accomplish certain goals. This intelligence allows children to effectively use language for expressive purposes. Learners can use linguistic intelligence to express themselves rhetorically or poetically or as a means to remember information. People who use linguistic intelligence include among others, poets, writers, lawyers, pastors, politicians, and in fact all those people who can manipulate language to solve their problems. Given this description, how then can this form of intelligence be developed in learners in the classroom situation? Classroom activities should allow children to debate issues discuss, recite poems, taking part in impromptu speeches and all those activities that allow children to use language.

4.2 Logical-mathematical intelligence

Like linguistic intelligence, logical mathematical intelligence has traditionally been valued in schools. It consists of the capacity to analyse problems logically, carry out mathematical operations, and investigating issues scientifically. Gardner (1999)[7] says that it entails the ability to detect patterns, reason deductively and think logically. As such, this intelligence is often associated with scientific and mathematical thinking. Giving children problems to solve in the form of puzzles, mathematical problems involving statements and experimentation are ways of enhancing the development of logical-mathematical intelligence in learners in the school system.

4.3 Musical intelligence

This intelligence involves skill in the performance, composition, and appreciation of musical patterns. It encompasses the capacity to recognise and compose musical pitches, tones and rhythms. Gardner thinks that musical intelligence runs in an almost parallel to linguistic intelligence.

4.5 Bodily-kinaesthetic intelligence

It is the ability to use one's mental abilities to coordinate one's own bodily movements. It involves the capacity to use one's whole body-hands, fingers and arms to solve a problem, make something, or put on some kind of production. The most evident examples are people in athletics or the performing arts particularly dance gymnastics and acting. This intelligence challenges the popular belief that mental and physical activities are unrelated. The intelligence can be developed through engaging learners in varied activities that call for body movement.

4.6 Spatial Intelligence

This intelligence gives one the ability to manipulate and create mental images in order to solve problems. Garner and Hatch (1989)[2] note that this intelligence is limited to visual domains but is also formed in blind children. Spatial intelligence can be used in the arts or in the sciences. If one is spatially intelligent and oriented towards the arts, one is more likely to become a painter, sculptor or an architect. It also involves being able to make, build or assemble things.

4.7 Interpersonal intelligence

Gardner (1999)[7] says that this intelligence is concerned with the capacity to understand the intentions, motivations and desires of other people. It allows people to work effectively with others. It is an ability we all need and anyone who deals with people has to be skilled in the interpersonal sphere. In the classroom situation, opportunities must be created where learners have to interact so as to develop the intelligence. Learning strategies that bring pupils to talk provide fertile ground for the development of interpersonal intelligence. Group work, debate, discussion and project work have the capacity to improve children's relational skills with friends or siblings as well as the generality of the populace.

4.7 Intrapersonal intelligence

This intelligence entails the capacity to understand oneself, to appreciate one's feelings, fears and motivations. Gardner (1999)[7] says that it

involves having an effective working model of ourselves, and to be able to use such information to regulate our mental activities and behaviour. It also involves knowing who you are, what you can do, what you want to do, how you react to things, which things to avoid and which things to gravitate towards. The two intelligences (interpersonal and intrapersonal) are separate from each other. Nevertheless, because of their close association in most cultures, they are often linked together (Gardner and Hatch, 1989)[2].

Since Howard Gardner original listing of the intelligences in *Frames of Mind* (1983) there has been a great deal of discussion on the possibility of including or excluding some intelligences. Subsequent research and reflection led Gardner and colleagues at three particular possibilities: a naturalist intelligence, a spiritual intelligence and an existential intelligence. Gardner (1999:52)[7] concluded that the first of these three "merits addition to the list of the original seven intelligences." In light of this argument, there is need to look at what naturalist intelligence entails.

4.8 Naturalist intelligence

Naturalist intelligence designates the human ability to discriminate among living things (plants and animals) as well as sensitivity to other features of the natural world (clouds and rock configurations). This ability was clearly of value in our evolutionary past as hunters, gatherers, and farmers: it continues to be central in such roles as botanist. In the school system, children can be taught how critical the issue of keeping our environment clean is thus, making them aware of their environment. Having made a description of the intelligences is important to look at the primary school curriculum and show how it takes on board multiple intelligences.

V. THE ZIMBABWEAN PRIMARY SCHOOL CURRICULUM

Zimbabwe's curriculum is centralized and is determined by subject panels of teachers, education officers, and representatives from the teachers' association, universities, churches, and other stakeholder groups. The Curriculum Development Unit within the Ministry of Education and Culture coordinates the subject panels. Elementary school curriculum includes Mathematics, English, Environmental science, Physical Education, Social Studies, Religious and Moral Education, Home Economics, Music, Art and Craft and the indigenous languages (IsiNdebele and ChiShona). Indigenous languages of the Kalanga, Tonga, Shangaan, Venda, and Nambya are taught during the first three years of elementary education within their communities and of late Tonga examination has been written since 2011 at Grade 7 level. What is important, in line with our current discourse is to determine the link between MI theory and the primary school curriculum. Does the curriculum reflect aspects of MI theory? In order to do justice to these issues we need to determine which subjects in the primary school curriculum fit into which particular multiple intelligences.

VI. LINK BETWEEN MI THEORY AND THE ZIMBABWEAN PRIMARY CURRICULUM

All languages (English or indigenous) as contained in the primary school curriculum can be described under linguistic intelligence. Children can actually manipulate their languages for expressive purposes. Using their indigenous languages as well as English (a medium of instruction in Zimbabwe), children can be taught poems, writing stories, public speaking and so on. As earlier articulated, these are the people who will become teachers, lawyers, poets and politicians and salespersons because their success in life is dependent on the spoken word. Mathematics and Environmental Science can be linked with logical mathematical intelligence. Mathematics as a subject requires computational skills, a lot of reasoning, substituting formulae and general logical reasoning. On the other hand, Environmental Science would call for some experimentation which is the preserve of logical mathematical intelligence. Primary school pupils do a subject called music and this is well represented by musical intelligence. In this subject pupils are supposed to sing, dance to rhythm, appreciate and play musical instruments. Pupils are also taught to sing in unison with others, singing in tune and along with other people. Bodily kinaesthetic is accommodated in Physical Education where children do a lot of physical activities such as balancing, coordination and sports. Bodily kinaesthetic can actually be accompanied by music (musical intelligence) in gymnastics. Strictly speaking, the two (bodily kinaesthetic and musical intelligences) are mutually inclusive. In teaching and learning, interpersonal intelligence is embedded in the child-centred methodologies teachers use particularly group work, collaborative work and team games where children share ideas. Although interpersonal

and intrapersonal intelligences appear divorced, they are in fact interrelated. These two forms of intelligences find their rationale in Religious and Moral Education, a subject which looks at world religions and moral issues and all those issues to do with societal values. The subject teachings are also meant to regulate pupil behaviour hence interpersonal skills are enhanced. Naturalist intelligence should be responsive to environmental sustainability hence the primary school subjects like Environmental Science, Social Studies and Home Economics become useful in developing this intelligence. Basically, all the primary school subjects respond to at least one form of intelligence. The question to be asked is: Do teachers know that the primary school curriculum is organised so as to develop these multiple intelligences?

Statement of the problem

In teachers colleges, would-be –teachers are taught a number of theories in psychology which are meant to anchor their practice in education later on after graduation. It is after they leave training institutions that they quickly forget all they would have learnt. This becomes problematic if they cannot link theory and practice. The purpose of this study is to establish if teachers know that the primary school curriculum is organised according to the Multiple Intelligence theory.

6.1 Research questions

- How many subjects do primary teachers teach at primary level?
- Do primary teachers study Multiple Intelligences theory at college?
- Do primary teachers know that the curriculum is organised according to Multiple Intelligences theory?
- Do primary teachers teach according to Multiple Intelligences theory?
- Do primary teachers assess pupils according to Multiple Intelligences theory?

VII. METHODOLOGY

7.1 Population and Sample

The participants who took part in this study were 11 qualified primary school teachers who were teaching at a rural school in Makonde District, Mashonaland West. The 11 teachers made up the entire staff. All the teachers had more than four years post qualification teaching experience. They were all holders of Diplomas in Teacher Education.

7.2 Research Design

This study was qualitative in nature in which a case study design was adopted. Best and Kahn(2006)[11] say that a case study is a way of organising social data for the purpose of viewing social reality. Only one school was chosen on the basis of easy accessibility by the researchers.

7.3 Data collection instruments

Data were collected through interview and Focus Group Discussion. Interviews allow the obtaining of rich descriptive data that helps in understanding the participants' construction of knowledge and social reality (Maree, 2010)[12]. On the other hand, Focus Groups are group interviews that rely on interactions within the group rather than on question and answer format of interviews. Krueger and Casey(in Mertens, 2005)[13] point out that focus groups result in the researcher obtaining more of the participants' viewpoints than would be evidenced in a more researcher-dominated interview. Thus these tools were considered appropriate for this study.

7.4 Data processing

Data were processed qualitatively whereupon some of what the participants said was captured verbatim. The narrative form of data presentation was used as Patton (1990)[14] says that much of the qualitative data are people and the words they say.

VIII. RESULTS AND DISCUSSION

The results and discussion are going to be based on the small sample of participants. The results are going to be analysed qualitatively with some verbatim statements being included.

8.1 Subjects taught at primary school level

There were variations as to the actual number of subjects taught at primary school level. Some teachers said ten while others said eleven or twelve. The Zimbabwean curriculum for infants (Grades1-3) has ten subjects while juniors (Grades 4-7) do 11 subjects. During FGD participants said that the curriculum was overloaded and expressed concern about the heavy teaching load they bear.

8.2 Psychology learning theories learnt at college

All the interviewed participants said that they learnt quite a number of theories in psychology ranging from cognitive to behavioural. Some participants went on to mention about Piaget and Bruner as well as Thorndike and Skinner. Asked to list in developmental order Piaget's cognitive development stages, only three participants were able to do so. This shows that most teachers had forgotten the theories and their importance in teaching and

learning. It was during FGD that the participants revisited the order of the stages. One participant actually said, "Ah, we do not need those theories when teaching; we forgot them as soon as we left college."

8.3 Did you study Multiple Intelligences theory at college?

Ten out the eleven participants expressed surprise at the mention of this theory. One interviewee actually asked, "What is that?"Another participant said that they did a number of these theories in psychology but they quickly forgot them after they left college. Only one participant had some idea about the multiple intelligences theory. This implies that teachers did not know that the primary school curriculum is organised according to the multiple intelligences theory.

8.4 Do you teach according to multiple intelligences?

All the participants said that they taught subjects as timetabled, they said that they did not know about teaching according to multiple intelligences. During FGD participants reiterated what had been said during interviews. One participant said, "Since we don't know about the multiple intelligences theory, there is no way we can infuse it in our teaching. In any case there is no time to think about that." Participants said that they taught to cover the syllabi. This shows that the non traditional subjects have generally been overlooked in education. However, Mead (in Campbell, 1997)[3] says that if we can develop ways to teach and learn by engaging all seven intelligences, we will increase the possibility for student success and create the opportunity to 'weave a social fabric in which each diverse human gift will find a fitting place.'

8.5 Ways of assessing learners' competencies

All the participants indicated that assessment was through written exercises and tests. Those learners who excelled in other areas like Music, Art and Design and Physical Education are not assessed at all. Participants said that there were no facilities to develop those skills hence they concentrated on examinable subjects only. They acknowledged that they invested much of their time teaching subjects like English and Mathematics. Campbell (1997)[3] says that, as teachers, we must devise procedures and instruments which are "intelligence fair" and which allow us to look directly at the kinds of learning in which we are interested. Assessment should drive instruction and we should be able to assess the learning that takes place in the different domains. Campbell (1997)[3] notes that while most teacher education institutions make an honest effort to produce teaching candidates of high quality, these institutions have not been at the forefront of efforts at educational improvement.

8.6 A paradigm shift- the multiple intelligences route

Asked if they would embrace the multiple intelligences in their teaching, all the participants indicated their willingness to do. However, they also said that there was need for continuous teacher development programmes to align themselves with current global teaching trends. One participant said that it is indeed true that people are gifted differently hence the need to develop the abilities they exhibit. Participants felt that if they got all the necessary support they would work to assist pupils develop their intelligences.

IX. CONCLUSION

The concept of multiple intelligences is a broad vision of education. All the seven or more intelligences are needed to live life successfully. Teachers therefore need to attend to all intelligences, not just the linguistic and mathematical intelligences that have been their traditional concern. The theory shows that students think and learn in many different ways. It also provides educators with a conceptual framework for organising and reflecting on curriculum assessment and pedagogical practices (Kornhaber, 2001)[15].While the Zimbabwean primary school curriculum reflects what Gardner advocates in terms of curriculum organisation, it remains to be seen when and how this can be implemented in pedagogy.

X. Recommendations

The study recommends, on the basis of the findings that:

- Teachers continually upgrade themselves in terms of educational foundational knowledge about teaching and learning.
- Teachers be taught the importance of assessment of learners that take into account all the intelligences.
- Educational provision be made in terms of resources, facilities and support to develop

learners' multimodal ways of knowledge and skills acquisition.

XI. REFERENCES

1. Smith, L.G.& Smith, J.K(1994*). Lives in education. A narrative of people and ideas 2e*. New York: St Martin's Press.
2. Gardner, H. & Hatch, T.(1989). Multiple intelligences go to school: Educational implications of the theory of multiple intelligences. *Educational Researcher, 18(8),4-9.*
3. Campbell,L . (1997). How teachers interpret MI theory. *Educational Leadership*, 55(1), 14-19.
4. Gardner,H. (1983). *Frames of mind: The theory of multiple intelligences*. New York: Basic Books.
5. Lazear,D. (1992). *Teaching for multiple intelligences*. Bloomington: Phi Delta Kappan Educational Foundation.
6. Gardner, H. (1995).Reflections on multiple intelligences: Myths and messages. *Phi Delta Kappan.76: 200-209.*
7. Gardner, H. (1999). *The disciplined mind: Beyond facts and standardised tests, the K-12 education that every child deserves*. New York: Simon and Schuster.
8. Samples, B, (1992). Using learning modalities to celebrate intelligence. *Educational Leadership, 50(2),62-66.*
9. Armstrong,T.(1994).*Multiple intelligences in the classroom*. Virginia: ASCD**.**
10. Gardner, H.(1987). Beyond IQ: Education and human development. *Harvard Educational Review, 57 (2), 187-193.*
11. Best, J.W.& Kahn, J.V.(2006). *Research in education.*(10th Ed).USA; Pearson Education Inc.
12. Maree, K(Ed).(2007*). First steps in research. Pretoria*: Van Schaik Publishers.
13. Mertens, D.M.(2005*). Research and evaluation and psychology: Integrating diversity with quantitative, qualitative, and mixed methods*. California: Sage Publications Inc.
14. Patton, M.C.(1990*). Qualitative evaluation and research methods*. London : sage.
15. Kornhaber, M.L. (2001).' Howard Gardner' in J.A. Palmer (ed.) *Fifty modern thinkers on education: From Piaget to the present.* London: Routledge.