

**ALTERNATIVE MANAGEMENT MODELS FOR ENHANCING MULTIPLE  
INTELLIGENCES AMONG STUDENTS IN SECONDARY SCHOOLS IN  
KENYA**

**BY  
MABOKO DAVID NASSIUMA**

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**DECLARATION**

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.....

.....

**MABOKO DAVID NASSIUMA**

DATE

EDU/ D.PHIL.A/ 1009/ 13

**DECLARATION BY SUPERVISORS**

This thesis has been submitted with our approval as University Supervisors

.....

.....

**PROF. JONAH N. KINDIKI**

DATE

Department of Educational Management and Policy Studies

Moi University

.....

.....

**DR. SAMMY K. CHUMBA**

DATE

Department of Educational Management and Policy Studies,

Moi University, Eldoret, Kenya

**DEDICATION**

To Judy, Jayden and Ammiliah

*And whatever you do, whether in word or deed, do it all in the name of the Lord Jesus, giving thanks to God the Father.*

Colossians 3:17



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## **ABSTRACT**

The development of Multiple Intelligences in schools is a critical component in the promotion of individual development and self-fulfillment amongst students which is one of the national goals of education. Differences in the way schools model themselves to achieve this goal undeniably exist across and within schools, yet to date, relatively little research has investigated the ways students Multiple Intelligences should be enhanced. Accordingly, this study was designed to examine alternative management models that enhance Multiple Intelligences among secondary students in Kenya. The specific objectives were: To examine the instruction management models that enhances Multiple Intelligences; To investigate assessment management models that enhances multiple intelligences; To explore the technological advancement management models that enhances multiple intelligences and to examine the off school business management model that enhances multiple intelligences among students in Kenya. The study was guided by the Multiple Intelligence Theory advanced by Howard Gardner and Management Competency Framework advanced by Quinn, Faerman, Thompson and McGrath. The study adopted the concurrent mixed methods design where both quantitative and qualitative approaches were used during the various stages of research. The study target population was 150 secondary schools in Elgeyo Marakwet comprising of 150 chairpersons of Board of Management, 150 Principals, 1200 Heads of Department and 4450 students. The respondents were stratified into National, Extra County, County and Sub County schools. Proportionate and simple random sampling was used to select respondents who included 108 Principals, 108 Board of Management Chairpersons and 292 Heads of Departments. Eight focus group discussions comprising of 10 students were used. The data of the study was collected using the triangulation approach that involved questionnaires, document analysis, focus group discussion and interviews. The questionnaires were tested for internal reliability by the use of Cronbach alpha single administration. The obtained data was analyzed using descriptive and inferential statistics and qualitative thematic approach. Multiple regression analysis was used to determine the prediction between the alternative management models and the enhancement of multiple intelligences among students. Data was presented in tables arising from the data analysis techniques utilized in the study. The findings indicated that schools management was managing traditional models of enhancing multiple intelligences thus majority of the students' abilities were not developed. Alternative management models were found to be effective in enhancing multiple intelligences among students though majority of the schools had not adopted them. The outcome of the study advances models for school managers and curriculum developers and universities with a rationale for an enhanced development of students' intelligences.

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## ACRONYMS AND ABBREVIATIONS

<b>EFA-</b>	Education for All
<b>BOM-</b>	Board of Management

<b>KICD-</b>	Kenya Institute of Curriculum Development
<b>KNEC-</b>	Kenya National Examinations Council
<b>MDG-</b>	Millennium Development Goals
<b>MI-</b>	Multiple Intelligences
<b>MOE-</b>	Ministry of Education
<b>MOEST-</b>	Ministry of Education Science and Technology
<b>SMASSE-</b>	Strengthening of Mathematics and Science in Secondary School
<b>TSC-</b>	Teachers Service Commission
<b>UNESCO-</b>	United Nation Educational, Scientific and Cultural Organization
<b>UPE-</b>	Universal Primary Education

## **CHAPTER ONE**

### **INTRODUCTION TO THE STUDY**

#### **1.1 Introduction**

The development of Multiple Intelligences in school is a critical component in the promotion of individual development and self-fulfillment amongst students which is one of the national goals of education. It is therefore imperative for the school management to engage diverse students' abilities actively in classes and outside classes for them to understand and interact within their unique worlds. Traditional school management models tend to neglect active student involvement, and so fail to tap their rich wells of diversity in class.

Consequently this chapter gives general background information about the study, the statement of the problem, the purpose of the present research, objectives and research questions. The chapter also gives the significance of the study, scope and limitations and lastly it looks at the theoretical framework, conceptual framework and definitions of terms.

#### **1.2 Background of the Study**

The major purpose of education and educational training institutions is to impart knowledge to the learners. Besides it aims at facilitating the total and all round development of learners intelligences by providing opportunities for the fullest development of an individual (National Research Council, 2013). The current research took as its starting point the definition of multiple intelligences provided by Gardner (1983) who defines Multiple Intelligences as varied student's abilities that help them understand the environment around them. Lancy (1988) refers to intelligence as the cognitive ability of an individual to learn from experience, to reason well and to cope effectively with the demands of daily living. Barnes (1999) has defined intelligence as an operation and a coordination of operations. Greenfield and Quiroz (2013) defined intelligence as an act of immediate comprehension.

While the concept can be defined in several ways its core definition includes the idea that people are born with different abilities to attain high level of achievement in various activities so that what is presented is the broad concept of Multiple Intelligence and varied views of what it exactly is. This definition reiterates high expectations for every child, emphasizing the facilitative models that the management ought to employ. On the other hand management models refers to the supervisory, innovative, directive, facilitative and coordinating role done by several administrative levels (Board of Management, Head teacher, and Heads of Department) in schools aimed at the enhancement of multiple intelligences.

As a developing nation in the 21<sup>st</sup> century, Kenya and its government are facing numerous challenges that are obstacles in the path of the transformation of this country into a fully developed country (United Nations Development Programme, 2012). Issues like globalization, Acquired Immune Deficiency Syndrome pandemic and Ebola affect the economy and the growth of almost every nation in the world, particularly countries in the African Continent (Wanyama & Changach, 2013). This problem coupled with other issues like illiteracy, violence, crimes, unemployment, poverty and lack of skilled people are crippling the nation.

Therefore the government and the nation have the responsibility to find long term and permanent solutions to these issues that are seriously affecting the growth of this country and the welfare of its citizens. To find such solutions is not easy and cannot be resolved immediately. Perhaps education has a major role to play in this regard. Though the questions that beg for answers are; is our education system effective or capable enough to address these problems? Are we producing whole rounded people who can transform this country into a modern economy? Woessmann (2006) points that, education is a very important human activity and a necessity for any society for it fashions and models man to be able to function well in his environment. These questions can be dealt with when we delve in to the models that are being used in our

secondary schools to develop a population that is dependent and whole rounded. Too many schools are not modeled up to give students an education that teaches them to love learning and takes their individual needs into account. Schools have continued to apply one-size- fits-all models of management, despite the growing evidence that suggests students learn in many different ways and environments (Sternberg, 1996; Gardener, 2006).

Research has shown that examination oriented teaching is becoming a matter of global concern (Henry, Nyaga & Oundo, 2014). In some countries such as Romania, Egypt, India and other Asian countries where education is prized, there appears to be a rising concern on the effects of examination oriented teaching in their education systems (Karimi, Karimi, & Buyatsi, 2011). A case to mention is in America where the No Child Left Behind (NCLB) Act, which attached great significance to test scores, was passed. According to a research in Pakistan, it is reported that teachers are bound to switch their teaching methods to mainly the lecture method and adopt teacher and curriculum centered approaches to teaching and learning so as to ensure good performance in examinations (Rehmani, 2003). These instruction models turn students into learning machines all day long throughout the four year period (Buhere, 2007). Despite the articulation by Mao Tse –tung in 1957 that the central aim of education is to develop morally, intellectually and physically endowed individuals with both socialist consciousness and culture; students in China continue to be burdened with long school days, mountains of homework and time consuming activities (Zhang, 2006). In Ghana, there is lack of respect for mere book knowledge without wisdom (Akrofi, 2007). This may be attributed in part to their experiences with school instruction that generally stresses memorization of text and recall of information, hence de-emphasizes creativity and responsibility for constructing learning, and minimizes ability to connect school information to a wider world of understanding (Akrofi, 2007).



It is against this backdrop that the management of secondary education which is a steppingstone for individuals to identify and nourish their abilities and talents need to be looked at. Secondary schools education gives opportunities for learners to identify their career path and directs learners to various higher institution where they acquire knowledge and skills that will help them to become part of a workforce that can build the economy of this country. Though, the quality manifested in the development of these potential is critical, reports indicate otherwise. The draft Education Master Plan, 1997-2010 suggests that the issues of relevance and quality of education need targeting for reform. The education sector has not satisfactorily met its objectives of inculcating a modern scientific culture, enhancing morality among learners and producing an employable labor force (Otieno, 2002). The Sessional paper No. 6 2006, even recommended that, training institution through the school management should provide a balanced education and training so as to support the national goal of education of promoting individual development and self-fulfillment.

This shows that there is a gap between the goals of education and what is actually being taught in schools. This gap is a manifestation of the fact that, for about a century, testing for assessing aptitudes for example intelligence and achievement has taken an important part in the Kenyan education system and the world at large. Nichols and Berliner (2007) points out that, examination have been undertaken worldwide, in addition they have been used to assess students' aptitudes, achievements, inform decisions about curriculum and instruction, and make predictions about how successful a student may be in future. Evidence that what is not examinable is not taken seriously in schools is seen in Kenya where, at independence, the Ominde Commission recommended that Kiswahili be a compulsory subject in the primary schools (Shiundu & Omulando, 1992). Since the subject was not examinable, most schools did not offer it.

Other subjects like Practical Education and the teaching of HIV/AIDS suffer the same fate. The requirement for schools to be seen to do well in terms of student attainment and the clarity of the relationship between teaching, learning and student outcomes has for some teachers engendered a feeling that if something is not to be assessed then it need not be taught (Freeman, Holmes & Tangney, 2001).

During the colonial period, public examinations were organized by the colonial government for the benefit of their government. The Kenya African Secondary Examinations were first taken in form four in 1940 (Sifuna & Otiende, 1994). Today there are many types of examinations in the education system in Kenya which include the Kenya Certificate of Primary Education (KCPE) which is undertaken at the end of class eight and the Kenya Certificate of Secondary Education (KCSE) taken at the end of Form Four. According to Kinuthia (2009) education in Kenya to a large extent still has a colonial model that promotes rote learning and is still elitist. Students study to pass by cramming their way through the educational curriculum thereby inhibiting creativity and innovativeness, making learning a passive affair for the students. According to OECD (2016) education system teaches students that an education is a means to an end and a passport to a job. This implies that the rote learning and mechanical studying to pass examinations has replaced all the necessary ethics of studying to develop a deep understanding and mastery of one's life and environment.

Khashane (2016) states that the rote learning model produces individuals who cannot 'think outside the bubble'; this is because teaching and instructional material is provided in line with curriculum requirement. Reinforcing the rote learning model is the failure by the school management to provide efficient models that are vital for mental, physical and talent development of pupils and students. Today, most pupils and students in both primary and secondary school levels spend few hours engaging in 'play' and other expanded models that can build students talents.

Despite all these, examinations are an important part in the school curriculum since they enable policy makers to know the state of the curriculum and take corrective action. Makokha, (2009) says the fault is not with examinations. According to Makokha discarding examinations will be a case of throwing out the baby with the bath water. Karimi, Karimi, & Buyatsi (2011) point out that for assessment to play a role in fostering quality education, it must pay attention to the goals of education in terms of what is taught and learned and the levels at which the knowledge and skills acquired by the learner are assessed.

### **1.3 Statement of the Problem**

Despite education institutions being a focal focus in the development of various intelligences among students thereby promoting individual development and self-fulfillment (Gardner, 1999) management models in schools managements have continued to apply a one – size – fits - all model in attaining this goal (Gardner, 2006; McEvoy, 2013).

Growing evidence suggest that many students don't thrive well in this traditional management model, thus a need for alternative management models, for instance out of the 577,253 students who sat for their Kenya Certificate of Secondary Education (KCSE) examinations in 2016, only 88,929, (or 15.4%) scored C+ and above with Elgeyo Marakwet having 23.07% (Kenya National Examination Council, 2017: Elgeyo Marakwet Education Board, 2017).

Alternative management models such as the outdoor classroom, personalized learning, balanced assessment and off school businesses (Pink, 2005; Deschenes, Arbretton, Little, Herrera, Baldwin Weiss & Lee, 2010) have been successfully used in developed countries to assist learners achieve their full potential in class and out of class activities thereby enhancing their multiple intelligences (Harris, 1996). Although Kenya has had notable initiatives in encouraging this development as seen in the

usage of alternative model like the Leap Hubs Initiatives (Ombour, 2014) substantive challenges in education likely attributed to the existing traditional management models that emphasizes on academic content has been witnessed. Existing instructional management model have been less successful because subjects such as Home science, Art and design, Music, Drawing and Design that enhance MI are either optional, nonexistent or regarded as less desirable (Republic of Kenya, 2000). The assessment management model hasn't measured learners' ability, identified aptitudes, skills and competencies. A cursory glance at the secondary schools reveal widespread utilization of ICT however, research evidence on its integration is scanty (PanAf, 2006). The study therefore sought to develop alternative management models for Multiple Intelligences among learners in secondary schools in Kenya.

The outcomes of the study will advance alternative management models for school managers, teachers and curriculum developers with a rationale for an increased development of the different students' intelligences. Students will also benefit from the management model by drawing interventions for an increased intelligence that will help them function well in the society.

#### **1.4 Purpose of the Study**

The purpose of the study was to develop alternative management models for Multiple Intelligences among learners in secondary schools in Kenya. To achieve this, the study used the following specific objectives.

#### **1.5 Objectives of the Study**

The study objectives were as follows:

- i.** To examine alternative instruction management models that enhances Multiple Intelligences among students in Kenya.
- ii.** To investigate alternative assessment management models that enhances multiple intelligences among students in Kenya.

- iii. To explore alternative technological advancement management models that enhances multiple intelligences
- iv. To examine alternative off school business management model that enhances multiple intelligences among students in Kenya.

### 1.6 Research Questions

The study research questions were as follows:

- i. What are the alternative instruction management models that enhance Multiple Intelligences among students in Kenya?
- ii. Which alternative assessment management models enhance multiple intelligences among students in Kenya?
- iii. Which alternative technological advancement management models enhance multiple intelligences among students in Kenya?
- iv. What alternative off school business management models enhances multiple intelligences among students in Kenya?

### 1.7 Hypothesis

**Ho<sub>1</sub>:** There is no statistically significant relationship between alternative instruction management models and enhancement of Multiple Intelligences among students in Kenya. (**Ho<sub>1</sub>**: to be rejected at a  $p < 0.05$  using multiple regression analysis)

**Ho<sub>2</sub>:** There is no statistically significant relationship between alternative assessment management models and enhancement of multiple intelligences among students in Kenya. (**Ho<sub>2</sub>**: to be rejected at a  $p < 0.05$  using multiple regression analysis)

**Ho<sub>3</sub>:** There is no statistically significant relationship between alternative technological advancement management models and enhancement of multiple intelligences among students in Kenya. (**Ho<sub>3</sub>:** to be rejected at a  $p < 0.05$  using multiple regression analysis)

**Ho<sub>4</sub>:** There is no statistically significant relationship between the alternative off school business management model and enhancement of multiple intelligences among students in Kenya. (**Ho<sub>4</sub>:** to be rejected at a  $p < 0.05$  using multiple regression analysis)

### **1.8 Justification of the Study**

This study was informed by the fact that learners have many talents that can be of use to the society and that single measures like a high stake test (assessment management model) is inadequate for determining access to higher level of education and that important material can be taught in many ways thereby activating a range of intelligences (Gardner, 2006). Besides, Vision 2030 calls for a school model that accommodates development of technical and entrepreneurial skills and competencies and the need for schooling to be more closely related to the world of work. For a nation to develop we need to work towards inculcating positive self-image in the young citizens by ensuring that we give them quality education. We need to create a critical mass of self-assured individuals that will help in improving the quality of the living standards. The working and living environment are fast changing from industrial complex to the creative economy therefore the workforce meant to operate in a globalized economy must have a digital and liquid mindset to thrive. Young people are now seeking for opportunities which link happiness to work. Work is no longer separate from personal life. In fact there are more young people who want to open their own businesses than those who are seeking employment. Therefore looking upon the future it is characterized by constant feedback, quick exchange of knowledge, discovery, mobility, shared workspaces and fun. We must therefore ask

ourselves more questions about how our national education proposition and the current education model encourage curiosity and passion among our learners by emphasizing on the development of the whole person.

### **1.9 Significance of the Study**

The study is of great significance to secondary schools management because it provides management models of advancing students non-academic and academic abilities in their institutions. More so, learners in these schools who possess the abilities will acquire valuable information on how to improve their talents and be better citizens in future. Teachers will gain in terms of identifying and developing student's abilities.

The study is of great significance to Ministry of Education, Kenya Institute of Curriculum Development, and Teachers Service Commission as it aims at providing invaluable information in terms of coming up with appropriate strategy on the policy of M.I. This study therefore gives the groundwork from where Kenyan educators can start in establishing facilities, identifying academic and non-academic programmes successfully in schools in fostering creativity, leadership and visual performing arts. It is hoped that, the findings of the study would provide valuable information to fellow researchers who may be interested in the same field.

### **1.10 Scope of the Study**

The study was confined to public secondary schools in Elgeyo Marakwet County. The study target population was 150 secondary schools in Elgeyo Marakwet comprising of 150 chairpersons of Board of Management, 150 Principals, 1200 Heads of Department and 4450 students. Particularly the study focused on the development of alternative models for enhancing Multiple Intelligence among students. The study was carried out between January 2016 to May 2016.

### **1.11 Limitations of the Study**

This research was curbed by various limitations. One of the limitations was that, the study covered only one county with a few schools. A study of the county may suffer failures of not getting information which can be generalized across the country and other countries. However, the researcher utilized a larger sample from the study population which was quite representative. There were varying numbers of departments in the various schools arising from the fact that some school had English and Kiswahili as separate departments whereas others merged them as a department. The study was constrained by very few studies that have been done on enhancement of multiple intelligences in Kenya. The researcher used studies that had been done in other countries on multiple intelligences to make inferences.

### **1.12 Assumptions for the Study**

The study assumptions were as follows; it was assumed that the study variables shall be linear in nature. It was further assumed that the study variable are normally distributed, it was assumed also that there will be no auto correlation or homoscedacity. The respondent is able to interpret the research instruments properly and give sincere answers, all secondary schools are institutions where individual students' abilities are developed through relevant school educational models, schools are institutions that provide quality education for all learners such that it will eventually solve the various social problems and create an atmosphere that is essential for economic and social development, managers of schools have a responsibility to create conditions that are essential for effective teaching and learning. This can be provided by placing effective models that are essential for the provision of quality education.

### **1.13 Theoretical Framework**

The study will utilize the tenets of two theories: the theory of multiple intelligences and management competency framework.



### **1.13.1 Theory of Multiple Intelligences by Howard Gardner (1999)**

The theoretical framework adopted for this study was derived from the theory of Multiple Intelligences developed by psychologist Howard Gardner in 1983 and 1999 that describes an array of different kinds of intelligences exhibited by human beings. Gardner's theory suggests that, people possess seven different intelligences: linguistic intelligence, musical intelligence, logical mathematical intelligence, bodily kinesthetic intelligence, interpersonal intelligences, intrapersonal intelligences and visual intelligences. The theory suggests that, each individual manifests varying levels of these different intelligences thus each person has a unique cognitive profile therefore society must recognize, validate and nurture the varied human intelligence profile. The theory argues that, intelligence as its traditionally defined does not adequately encompass the wide variety of abilities humans display. Students think and learn in different ways as such rather than relying on a uniform curriculum schools should strive to provide a curricula tailored to help develop individual student's needs and abilities. Learning should be multidimensional.

In relation to the topic of study, traditionally school management has almost exclusively emphasized the development of logical intelligence (Mathematics) and linguistic intelligences (reading and writing). SMASSE has argued that while many students function well in this environment there are those who do not. Teachers haven't used different methodologies, exercises and activities to reach out to all students. Opportunities provided to the students by the school haven't favored the development of the different intelligences. Mansa (2007) notes that, the biggest challenge facing the development of Multiple Intelligences has been deployment of human and physical resources, to take advantage of the uniqueness.

Therefore, the Multiple Intelligence theory was purposefully selected in order to explain how the alternative school management models provide extended opportunities towards the development of the various students' needs in academic and

non-academic activities. The theory applies to the study since the school management and society needs to provide a broader vision of education wherein teachers use different methodologies, exercises and activities to reach all students and not just those who excel in a few intelligences. Kornhaber (2001) argues that educators need to develop new approaches that might better meet the needs of the range of learners in their classrooms.

### **1.13.2 Management Competency Framework by Quinn, Faerman, Thompson and McGrath (1996)**

The work of Quinn, Faerman, Thompson and McGrath (1996) *Becoming a Master Manager*, provides a “management competency framework” of the management roles and competencies that can be applied to school management managers (School Principals, BOM and Heads of Department) responsibilities in enhancing multiple intelligences.

The management competency framework model includes eight management roles: the mentor role, the facilitator role, the monitor role, the coordinator role, the innovator role, the broker role, the producer role, and the director role. Various competencies are listed under each role. Mentor role involves understanding self and others, communicating effectively and developing subordinates. The facilitator role involves building teams, using participative decision making and managing conflict. The monitor role involves monitoring individual performance, managing collective performance and managing organizational performance.

The co-coordinator role involves competencies such as managing projects, designing work and managing across functions. The director role envisions visioning, planning and goal setting, Designing and organizing and delegating effectively. The producer role involves working productively, fostering a productive work environment and managing time and stress. The broker role encompasses competencies such building and maintaining a power base, negotiating agreement and commitment and presenting

ideas. Lastly the innovator role involves living with change, thinking creatively and creating change.

This framework adapts to this study because the researcher aims to synthesize research in educational management and educational psychology that highlights the importance of relational competence in organization (schools). It is important for organizations (schools) and their managers (Boards of Management, Principals and Heads of Departments) to understand the benefits of various domain of MI in their organization set up. So that they can effectively apply the competencies mentioned. This is necessary to meet the unique needs of the students. Managers need to develop strategic plans, implement them through organizing available resources, direct and lead the workforce to proper direction.

As BOM, Principals and Heads of Departments they need to play the role of a leader by getting things done from their subordinates. They must lead and motivate the team for attainment of the desired goal. In this study the attainment of the national goal of education of promoting individual development and self-fulfillment. For that, the BOM, Principals and Heads of Departments must know ways of directing and planning for several alternative activities such as working with corporate society, adapting unique games like swimming, and incorporating subjects like Music, Art and Design, Germany and French that are nonexistent.

The BOM, Principals and Heads of Departments according to this framework must possess the facilitator role that require strategic thinking and making right decisions through allocation of resources and equipping themselves with the quality to identify the right resources to enhance multiple intelligences. The framework further stipulates that BOM, Principals and Heads of Departments should play the coordinating role. In so doing they need to design work and initiate projects that will enhance MI. The managers need to coordinate learning and teaching activities from a school

perspective, departmental and subject level that will go a long way in enhancing MI. In addition they need to manage across functions by working with different stakeholders. Lastly, they need to be innovators so as to create change by adopting new models that will enhance MI.

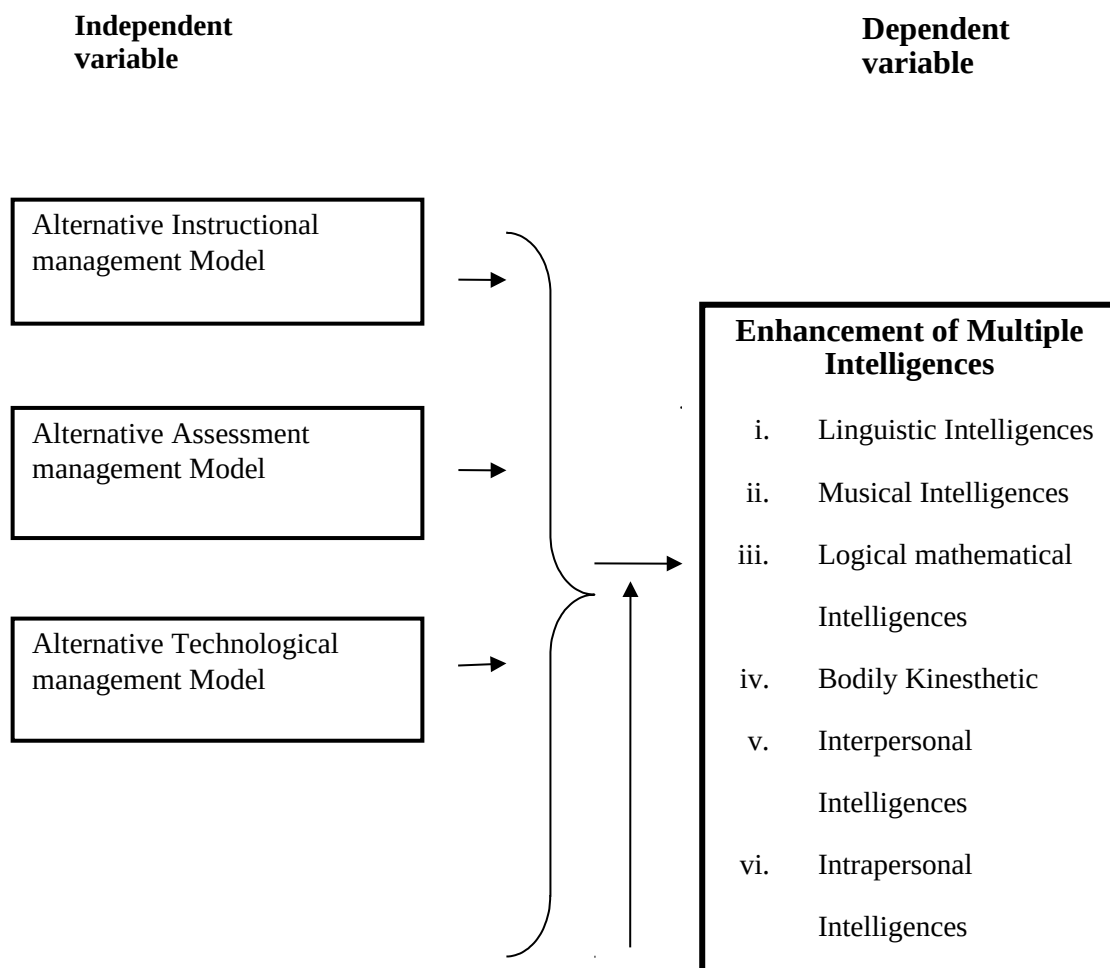
The investigator deemed these roles and related competencies as appropriate for enhancement of multiple intelligences in secondary schools in Elgeyo Marakwet and believes Quinn's framework provides both an understanding of roles that school managers must fulfill and clarifies the related competencies needed to be an effective manager. Failure to understand the need to integrate these competencies can hinder the development of MI among students.

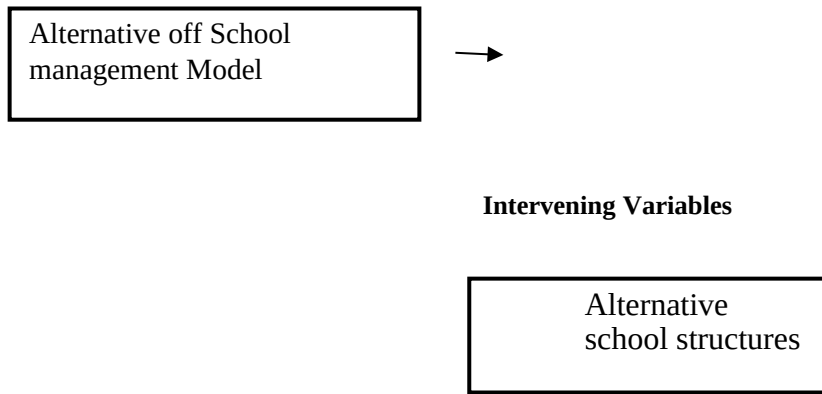
The researcher felt the need to adopt two theories so as to compliment the purpose of the study. It was felt that the theory of multiple intelligence will capture the multiple intelligence aspect of the study that includes the varied abilities that students possess. The management competency framework compliments the theory of multiple intelligence by explaining the different roles played by the managers in this case BOM, Principals and Heads of Departments in enhancing these abilities.

#### **1.14 Conceptual Framework**

The world in which learning take place has changed fundamentally. Today's philosophy of education encourages a broader and a multifaceted approach of imparting knowledge. This makes learners to understand the community and the broader world in which they live in, thereby creating new opportunities and interdependences among learners. New management practices and models are therefore required to handle the situation (Kornahaber, 2001). The framework underlying the development of MI makes use of concepts and relationships in broad category of educational set up.

The research focuses on how alternative management models can enhance the development of multiple intelligences among students so as to make them live their own lives in Kenya as shown conceptually in Figure 1. In this conceptual framework, the independent variables - alternative management models (alternative instructional management model, alternative assessment management model, alternative off school management model and alternative technological management model) are a means to an end, and not an end in itself. Alternative management models are proposed as practices providing infrastructure to support schools overcome the challenges linked to the traditional management models of MI development. This research builds on the thoughts of Gardner (1999) who argued that “we should not only esteem the highly articulate or logical people of our culture but also place equal attention on individuals who show gifts in other areas such as artists, dancers and musicians by providing extended opportunities for them to thrive” It is assumed that for the models to create an impact, they need a holistic approach.





**Figure 1. Conceptual Framework**

### 1.15 Operational Definition

#### **Models**

These are complimentary practices/ innovation that the school management can adopt to enhance the traditional management practices to enhance students multiple intelligences such includes alternative instruction management, alternative assessment management, alternative technological advancement management, and alternative off school business management.

#### **Alternative assessment management model**

These are complimentary practices/innovation such as assessment and certification for the talented, assessment based on national goals of education and formative assessment

#### **Alternative instruction management model**

These are complimentary practices/innovation that includes teaching inclined to music, computer, Art and Design, life skills, Physical Education, differential instruction, student centered methodology, pupils choice of what to be taught and

#### **Alternative off School**

instruction for the talented  
These are complimentary practices/innovation that

<b>management model</b>	students engage in outside normal class academic activities that includes vocational work, entrepreneurship programmes, links with corporate and exchange programme
<b>Alternative technological management model</b>	These are complimentary practices/innovation that is inclined towards information communication and technology
<b>Management</b>	The supervisory, innovative, directing, facilitative and coordinating role done by several administrative levels (Board of Management, Head teacher, and Heads of Department) in schools aimed at the enhancement of multiple intelligences.
<b>Models</b>	Systems, designs, practices, strategies, innovations and processes that illustrate how school management comprising the Board of Management, Principal and Head of Department organize itself to improve varied students' abilities.
<b>Multiple Intelligences</b>	Academic and non-academic abilities that help students to perform well in class and out of class activities. These abilities include: Non-academic abilities such as kinesthetic abilities (Psychomotor abilities), visual abilities, musical abilities, interpersonal abilities, intrapersonal abilities, drama, environmental abilities and academic abilities in subjects such as Music, Computer, Home Science, and Art and Design.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter deals with review of related literature for the study. The literature review is organized as follows: the concept of Multiple Intelligences, Multiple Intelligences (MI) in the Context of Secondary School Education, the existing models for MI development, challenges facing the traditional management models and the alternative models for the development of MI.

#### **2.2 Concept of Multiple Intelligences**

The major purpose of education and educational training institutions is to impart knowledge to the learners. Besides it aims at facilitating the total and all round development of learners intelligences by providing opportunities for the fullest development of an individual (National Research Council, 2012). The current research took as its starting point the definition of multiple intelligences provided by Gardner (1983) who defines Multiple Intelligences as varied student's abilities that help them understand the environment around them. Lancy (1988) refers to intelligence as the cognitive ability of an individual to learn from experience, to reason well and to cope effectively with the demands of daily living. Barnes (1999) has defined intelligence as an operation and a coordination of operations. Greenfield and Quiroz (2013) defined intelligence as an act of immediate comprehension. Though Greenfield and Quiroz definition is precise it seems to be narrow in that, a mathematician will not on immediate comprehend until the sum is resolved. He will grope for his way through trial and error.

While the concept can be defined in several ways its core definition includes the idea that people are born with different abilities to attain high level of achievement in various activities so that what is presented is the broad concept of Multiple Intelligence and varied views of what it exactly is. This definition reiterates high



expectations for every child, emphasizing the facilitative models that the management ought to employ.

The MI theory holds that each person possesses eight intelligences, and uses them to carry several kinds of tasks (Shearer, 2004; Gardner, 2006). Interpersonal intelligence allows one to understand and work with others. It is usually found in people who have effective verbal and nonverbal communication and have the ability to entertain multiple perspectives. Students often identify with this intelligence when they are ones who favor working in a group and are involved in several extracurricular activities. Highly Interpersonal people are leaders among their peers, skillful at communicating, and seem to understand other's feelings and motives. Anyone who deals with people usually possesses a high interpersonal intelligence: teachers, therapists, salespersons, and politicians (Shepard, 2004; Gardner, 2006). Numerous famous people are well known for their excessive levels of specific intelligences. Nelson Mandela and Martin Luther King Junior are known to possess high Interpersonal intelligence. Anne Sullivan, the famous teacher and mentor of Helen Keller, was said to have an influential Interpersonal intelligence (Nolen, 2003; Gardner, 2006).

Intrapersonal intelligence is defined as, "knowledge of the internal aspects of a person: access to one's own feeling life, one's range of emotions, the capacity to make discriminations among these emotions and eventually to label them and to draw on them as a means of understanding and guiding one's own behavior" (Gardner, 2006, p. 17). People with a high Intrapersonal intelligence would rather work alone than be forced to work in a group, and are often labeled shy. They are very aware of their own feelings, and are self-motivated. Psychologists, spiritual leaders, and philosophers have all been labeled as having high intrapersonal intelligence. These professionals use this intelligence to help people solve their personal problems. Oprah Winfrey and Mother Teresa are well known for their Intrapersonal intelligence

because of their understanding and appreciation of people (Nolen, 2003; Shepard, 2004; Shearer, 2004). Students who prefer working alone, enjoy helping others, and believe everyone should be treated fairly tend to have a dominant Intrapersonal intelligence. In a classroom it is often difficult for a student with intrapersonal intelligence to express themselves. This can be aided with imagination exercises, music, language pieces, or similar tasks where students are expressing themselves (Gardner, 2006).

Linguistic/Verbal intelligence is defined as everything having to do with language, speech, reading, and writing. It is said to be the most widely shared human competence. Poets, journalists, and novelists tend to have the highest level of understanding to this intelligence. Maya Angelou, Ngugi wa Thiong'o and John Grisham are said to possess a high Linguistic intelligence. Students who have a high Linguistic intelligence enjoy writing, reading, telling stories or doing crossword puzzles. They are often great storytellers and joke tellers. They are also able to express themselves rhetorically and poetically (Shepard, 2004; Fogarty, 2005; Gardner, 2006).

Spatial intelligence is defined as the capacity to perceive the visual world accurately through transforming, modifying and recreating the aspects of one's individual real world. To some this is known simply as Visual intelligence. Spatial intelligence deals mainly with the concrete world, and is considered the ability to think in three dimensions. Spatial problem solving is used in navigation and in using maps, and requires a great deal of spatial intelligence (Nolen, 2003; Gardner, 2006; Scherer, 2006). Careers that use spatial intelligence range widely. Painters, map topologists, sculptors, sailors, navigators, architects and engineers all use spatial intelligence. Chess players and grocery store baggers also are said to have a high spatial intelligence. Artists like Claude Monet and Edgar Degas are known for their spatial intelligence. Students with extreme levels of this intelligence may be caught doing

mazes, puzzles, or just drawing and daydreaming. Spatial students enjoy rearranging their desk, watching music videos, and creating art. Graphic organizers such as a Venn diagram help these students learn because all the information is organized in a specific way (Praveen & Rajan, 2013).

The Logical/Mathematical intelligence and Linguistic intelligence have traditionally been emphasized in our schools. It can be defined as manipulation of objects and problem solving, and is dominant in the fields of science and mathematics. Any physicist, chemist, and mathematician are assumed to have a prominent Logical/Mathematical intelligence, but it can also be found in detectives. Albert Einstein and Marie Curie are well known for their high level of Logical/Mathematical intelligence. Students with this intelligence are often working on patterns, math problems, strategy games or brain teasers and experiments. These students are often very organized, appreciate schedules and structure, and are quick to ask for assistance when they do not understand a task (Shepard, 2004; Gardner, 2006).

Musical intelligence involves the ability to understand pitch, rhythm, and tone as well as thinking in sound. Many people with Musical intelligences can often hear and remember sounds that others might miss. Musicians, vocalists, composers and conductors all have a high musical intelligence. Students with an advanced Musical intelligence often create a rhyme to memorize information, can easily find patterns in things, and are often distracted when a radio or television is on while they are trying to work. Singers such as Whitney Houston, Sauti Soul and The Beatles are thought to have high musical intelligence (Shepard, 2004; Gardner, 2006; Praveen & Rajan, 2013).

Bodily/Kinesthetic intelligence is the ability to think in movement, using the ability to manipulate objects and several physical skills. This involves a sense of timing and perfection of skills through mind-body unison, which goes further than eye-hand coordination. Careers in this field include athletes, dancers, surgeons, actors, mimes,

technician, typists, programmers, and jugglers. Mikhail Baryshnikov and Michael Jordan are both considered to have high Bodily/Kinesthetic intelligence. Students who have an excessive Bodily/Kinesthetic intelligence are often not able to sit still for long periods of time, learn better by doing rather than watching, and are usually involved in outdoor games or sports (Shepard, 2004; Stager, 2008).

Naturalist intelligence is displayed in a person who is, “keenly aware of how to distinguish the diverse plants, animals, mountains, or cloud configurations in their ecological niche” (Gardner, 2006). People with advanced Naturalistic intelligence have an appreciation for the natural world. They are very concerned with the present, and the future of the world and preserving our planet for future generations. They often show an expertise in recognition and classification of plants and animals. Charles Darwin, the founder of evolution theory, is a prime example of the Naturalist theory. Careers such as a botanist or a chef would possess high levels of the Naturalist intelligence. Students who enjoy spending time outdoors, love to group items together, and always want to recycle are said to have high naturalist intelligence (Armstrong, 2000; Nolen, 2003; Shepard, 2004; Gardner, 2006).

A basic understanding each of these intelligences shows that they can work together or separate. For example, a dancer can excel in his art only if he has a resilient Musical intelligence to distinguish the different rhythms and patterns in the music, Interpersonal intelligence to grasp how he can emotionally move his audience through his movements, as well Bodily-Kinesthetic intelligence to complete the movements successfully (Fogarty, 2005). Gardner (2006) concludes by saying that:

The MI theory leads to three conclusions: 1. all people possess the full range of intelligences: that is what makes human beings, cognitively speaking. 2. No two individuals—not even identical twins—have exactly the same intellectual profile because, even when the genetic material is identical, individuals have different experiences (and identical twins are often highly motivated to distinguish themselves from one another.) 3. Having strong intelligence does not mean that one necessarily acts intelligently. A person with high mathematical intelligence might use her abilities to carry out important experiments in physics or create powerful new geometric proofs; but she

might waste these abilities in playing the lottery all day or multiplying ten-digit numbers in her head. (p. 23).

### **2.3 Multiple Intelligences in the Context of Secondary School Management**

Wilson (2008) notes that, developing Multiple Intelligences amongst students' taps into students' intrinsic levels of motivation through natural talents. Further it validates teacher's insightful and intuitive assessment of students. He further says that many teachers have noticed that pupil's self-esteem and self-efficacy level rise as learners become more aware of their intrinsic gifts and talents. With Multiple Intelligences, cultural difference can be well understood. Level of interpersonal understanding amongst students is developed, this makes it possible for teachers and students to comprehend and celebrate the talents inherent in others (Gardner, 1983). The importance of music for example in any given society is emphasized by Husen and Neville (1994) that, music as an instrument of human expression must of necessity be accorded a role in society's educational systems.

While the above mentioned views looks at the general obligations of the M.I. within the secondary school level the current study widened the scope to include the perception that development of Multiple Intelligence amongst learners is paramount in preparing learners for leading a competent life in this country and the broader world. As Kornaber (2004) cited in Mansa (2007) puts, Multiple Intelligence lets youngsters' master express and understand the community and the broader world in which they live in. It is in this regard that in his presentation at the National Conference on Education and training in 2003 the then Minister for Education Science and Technology Professor George Saitoti talked of the need for the education to shift from mere passing exams to encompass the discovery of talents, development of analytical cognitive and creative potentials. Education must be designed and modeled to help build competencies which enable young people to make informed decisions, communicate effectively, and develop self-awareness and self-management skills which are critical for a healthy community life, a successful and meaningful

personal life, and for positive social relationships. McMahon (1997) illustrates this by the following sentiments:

Education has an important role to play in the transformation and development of a society as well as a nation. It signifies changes in the behavior of individuals, change that is directed towards achieving goals. Education is a process of socialization, preparing each individual to take an active place in the specific society which he or she lives. (p. 10).

The education proposition must be pragmatic in addressing what young people must have, to function well in society as they find it; those skills which help learners to shape their world, not just cope with it.

This implies that, the real challenge is for the school management to ensure that predetermined aims of education are achieved so as to prepare students for active participation in the world. This can be achieved through enhancing their abilities skills, knowledge and a better understanding of the world.

## **2.4 The Existing Management Models for Enhancing MI**

### **2.4.1 Instruction Management Model**

Although there is need for a reasonable and logically accepted balance to be struck involving the youth in academic activities and organized physical activities that includes physical education and sport which are beneficial to the development of youths mental and physical capacities, problems have been experienced in our school. Oluoch (1982) points out that, learning activity which involves formal dimension has received much attention. On the other hand non-formal and informal dimensions of learning have often been neglected in many educational institutions. This is against Nguru (2007) assertion that, there is a direct relationship between effective Curriculum Instruction Management and advancement of students' abilities. The Curriculum Instruction Model (CIM) in schools has not appreciated the development of non-academic skills and academic skills in optional subjects such as Music, Home Science, Computer and Art and Design. Cheng (1996) has argued that schools need to review their curriculum because they are offering subject combinations that are not

job market oriented he says that: “Management of the school is responsible for facilitating instructional activities and coordinating curriculum across the individual programmes managing the instructional programmes and promoting a positive social learning climate” (p. 156).

Wango (2011) concurs to this by arguing that the Kenya Educational system and by extension secondary schools, have not come up with a model of tapping extraordinary talents in pupils whilst many countries have tapped this reserve and treated it as a national treasure. Santrock (2004) exclaims that, when it comes to management for the gifted, most school models seem to select children who have intellectual superiority and academic aptitude. Children who are talented in the visual and performing arts (drama, arts and dance) or in athletics or who have other special aptitudes tend to be overlooked.

Allocations of curricular activities have shown inclination towards mathematics, sciences and linguistics. For example, out of the 45 lessons offered in form four secondary schools in Kenya, these subjects’ accounts for 80%. P.E lessons which may assist students to develop their various intelligences accounts for 4.4% (K.I.E, 1990). The time set for Physical Education and teaching of Life Skills is used for teaching other examinable subjects in many schools. Kathleen (2011) postulates that, unorthodox learning models have been adopted in many Institutional Educational Programmes. This implies that students may wake up at dawn, and attend lessons up to 9 pm daily, without the respite that should punctuate learning or any other routine activity.

Wanderi, Mwisukha and Muniu (2007) agrees saying that, lack and inadequate attention to Physical Education and sports at the expense of academic pursuit has been observed and widely reported among many Kenyan schools. This is also reflected during the inception of 8-4-4 in 1984, when the systems advocated for the

implementation of a curriculum in which music was a compulsory and examinable subject at the primary school level, and an elective but examinable subject at the secondary and university levels. In the year 2000, the Ministry of Education made music to be neither a compulsory nor examinable subject in primary schools, nor an elective and examinable subject in secondary schools this was courting trouble especially when other countries worldwide were clamoring to strengthen music and the rampant employment being witnessed in Kenya.

Cavanaugh (2013) adds to this discussion pointing that, the brick and mortar school along with teachers has continued to be the model of learning therefore being an impediment in developing of MI. This contemporary education model creates more time for boosting drills in math and reading by reducing time in social studies, Physical Education and the Arts. Some defenders of the model argue that basic skills are fundamental and that unless students acquire these they will be unable to reach any other goal. But with respect to some goals of Education, this theory makes no sense. It ought to be noted that success in basic academics does not necessarily lead to success in more complex skills later in life.

#### **2.4.2 Assessment Management Model**

Examinations have been undertaken worldwide. They have been used to assess students' aptitudes, achievements, inform decisions about curriculum and instruction, and make predictions about how successful a student may be in future (Nichols & Berliner, 2007).

For about a century, testing for assessing aptitudes e.g. intelligence and achievement has taken an important part in the Kenyan education system. During the colonial period, public examinations were organized by the colonial government for the benefit of their government. The Kenya African Secondary Examinations were first taken in form four in 1940 (Sifuna & Otiende, 1994). Today there are many types of examinations in the education system in Kenya which include the Kenya Certificate



of Primary Education (KCPE) which is undertaken at the end of class eight and the Kenya Certificate of Secondary Education taken at the end of Form Four. In schools, Continuous Assessments Tests (CATs) are done at night. It is assumed that doing CATs during the day is a waste of time meant for normal teaching.

The reason learning has been reduced to studying the text, particularly at the secondary school levels, is because the immediate goal of learning is to pass tests that open doors to higher education this in essence has sidelined MI development. In addition inclination towards modeling activities to more learning in schools rather than a holistic approach arises from the fact that there is over emphasis of Certificates and lack of talent development which has led to rote learning. The Koech Commission of 1999 noted that, co-curricular activities such as sports, drama, clubs and subjects such as music which enhances social interaction appear not to be given the required prominence in the curriculum due to present emphasis on examinations. A study done by Misigo (1998) also agrees with this, noting that Kenyan Education is oriented towards academic achievement that rewards individuals merely for being competent.

It should be noted that, though assessments are essential in terms of determining the efficiency of an educational system in educational institutions, through administration of exams, the exams have purely shown the core-curriculum (academic excellence negating other aspects of student's abilities such as Music. According to Siringi (2009) the current secondary school education system places emphasis on grades especially at K.C.S.E. the reality is that half of the students sitting the K.C.S.E score mean grades of D+ and below meaning they have no hope of advancing in their education. To him assessment for education should allow learners to develop their talents and skills.

Drawing on practice in schools, Hargreaves (2006) reports on the same saying that:

*Among participants mainly Head teachers 40% attending a specialist's school conference rated assessment for learning as the most developed aspect of MI learning in their schools however, despite the focus on assessment for learning, it still regularly rated as being poorly developed within schools. (p. 19).*

Elsewhere the government and private enterprise have not helped either. They insist on academic papers to hire their workforce. Innovation and entrepreneurship are accorded low or no consideration at all in formal employment. Highly educated graduates are therefore inclined to look for jobs rather than “work” yet agricultural and industrial production requires people with real life skills and a disposition to do actual physical tasks (Wanderi et. al, 2007).

Amid all this, it's fundamental to note that schools have a key role in career education and development (Mburu, 2008). She argues that, though the pressure on passing exams is immense it's important that learners, parents and teachers understand that to succeed, more than academic excellence is necessary; balanced education should produce well rounded individuals whose spiritual, emotional, mental and physical facilities are well developed.

### **2.4.3 Technological Advancement Model**

In this study technological advancement refers to the utilization of computers and other electronic devices aimed at enhancing multiple intelligences in schools. Since the ability to use them as tools for learning and academic achievement is increasingly becoming important for both teachers and students (Li & Ma, 2010). Marilyn, Erika Mae, Aubrey, Stephanie and Jaleen (2014) posits that; clearly becoming fully literate in the traditional sense along with becoming fluent as a means of expressing one's skills is no longer an option in today's society, but a requirement, therefore, it is imperative that we devise the best possible strategies for helping people becoming literate in the broad sense of the members of the society. They further say that although the promise of new computer technology is real, it is still only a promise by

a large scale measure of effectiveness to address the needs of the learners (Marilyn, et.al, 2014).

Unfortunately, current practitioners often do not use these technologies effectively to support instruction. Instead they are often used in homes and in schools in ways that isolate children, locking them into drill and practice program devoid of human interaction (Dede, 2014). Fouzieh, Abbas Pourhosein and Sedigheh (2013) confirms this saying that, “Computer experts consider that computer base instruction materials in elementary schools is mainly restricted to drill and practice exercises and is rarely integrated into ongoing curriculum” (p. 124).

To date, the field of educational technology has been hindered by a research tradition that is often narrowly focused on techno-centric accounts of how the technology itself functions, while paying little attention to learners or the social environments in which learning takes place (Solomon, 1997). Literature is demonstrating that, advancement in technology, increased access to information coupled with a change in the learning styles among learners is causing a shift in the learning ecosystem; placing the learner at the center and relegating the traditional teacher to the periphery. This is in contrast to what we are witnessing currently (existing model) where the two dimension learning model in the traditional classroom has over the time been used by the traditional teacher. Barth (2004) indicates that numerous studies have been conducted to investigate how technologies have been used in public schools for the past decades. These studies indicate that these technologies such as usage of e-learning remain an area that is barely utilized.

Non usage of technologies in schools and by extension the classroom is compounded by what Dede (2014) has called attitude. Dede found that teachers would not use computers to any noticeable extent if they did not feel the computer could contribute to the attainment of their goals. In studying one classroom where the computer was

used minimally, found that it was not clear to the teachers that their goals in covering their daily curriculum would be better or more easily met by integrating technologies.

#### **2.4.4 Off School Business Management Model**

School-family-community partnerships are essential because each component is a powerful sphere of influence on a student's development that can potentially pull together in a mutually positive direction. Family and community resources are also critical in creating learning experiences tied to a student's career interests. Povey, Campbell, Willis, Haynes, Western, Bennett, Antrobus and Pedde (2016) argues that the role and influence of parents and the community in the affairs of the education of learners are extremely important, as they are one of the stakeholders in the education. He further says that they are important influence upon schools and classroom life even where their actual presence is somewhat silent and invisible. However, one wonders whether the communities of the learners are taking any effective role in the education of their children.

#### **2.5 Challenges Facing the Traditional Models**

The magnanimous role of the school management of providing students with relevant education and training that suits the needs of every learner cannot be overemphasized. There must be a desired atmosphere that should satisfactorily expose individual potential in students. However, problems have occurred in the quest of achieving this critical role. The National Conference on Education report of 2008 highlighted that; problems exist in achieving these objectives. The report states that, these problems arise from weak mechanisms in the school levels and district level that manage education services. This finding is further supported by MOEST (2001) which observed that, problems have occurred due to poor curriculum implementation and lack of administrative and managerial skills. Republic of Kenya (1999) in his report explained that, though schools have the key role of development of various intelligences among the students, the wide school curriculum has stifled this role.

According to him, teachers and learners are under pressure to complete this curriculum in time lest they be adversely affected during the final examination. This has left teachers with little time to develop children's talents and mental ability. However, Mburu (2008) says that, the worry is that not all students who top their class or even national examination succeed in life. Thus when the examination system focuses only on knowledge, it influences acquisition of the required skills hence working against the goal of education which is to produce an all-round individual who can fit in the society. Otieno (2002) supports saying that the education sector has not satisfactorily met its objectives of inculcating a modern scientific culture, enhancing morality among learners and producing an employable labor force.

This shows that there is a gap between the goals of education and what is actually being taught and examined in schools. Teaching methods tend to be influenced by demand on teachers to perform. Unfortunately, teachers' performance is measured by students' scores in examinations which influence their approach to teaching. According to a research in Pakistan, it is reported that teachers are bound to switch their teaching methods to mainly the lecture method and adopt teacher and curriculum centered approaches to teaching and learning so as to ensure good performance in examinations (Rehmani, 2003).

The teenager is living in a high pressurized, thrift, loud and hyper consumerist society. The teenager is more prone to experience family dysfunction, over stimulation, information overload, uncertainty and desperate cravings (consumerism). An education proposition and or model which do not acknowledge the living and learning environment of the learner will soon become a stress factor.

Liu & Liu (2004) enumerated problem associated with test- oriented education as: an overemphasis on preparing students for tests; lack of social, moral, emotional, physical and work oriented education; reliance on rote memorization and mechanical

drills; a narrow focus on the few higher achievers and neglect of the majority of students; low student engagement; and lack of creativity.

Gilakjani (2013) indicates that many teachers believe that they are inadequately trained to use computers as an instructional material (even though they recognize their value). They also believe that they are unaware of the ways in which tools such as word processors, desktop publishing, and electronic plan books can help them as a part of computer based instructional material in school.

Recently there was the abolition of ranking in school so as to ensure that unorthodox means are not used in schools. As earlier noted by Agufuna (2006), publication orders merit for K.C.S.E. examinations have negatively impacted on the students because teachers have tended to authoritatively ignore those aspects of the curriculum not included in public examination to the detriment of other aspects of development of the pupils. The bigger question is that how effectively has this been implemented?

Republic of Kenya (1999) also emphasized that, over emphasis of certificates and lack of talent development activities coupled with continuous assessment leads to rote learning thus sidelining other intelligences. This authoritarian leadership and management stifle student's creativity.

## **2.6 Alternative Management Models**

Okumbe (1998) notes that, educational management ought to model itself with the prime function of achieving the objectives of the schools and the national goals which as mentioned earlier includes development of all round students. It's therefore paramount that comprehensive practices build on varied models delivery should be embraced to make a school effective for talented students needs to have a strong emphasis on excellence with high standards in both academic and non-academic areas and high expectations. Bogonko (1992, p. 123) comments that, "special arrangements have to be organized for learners to find their school experience intellectually

rewarding”. This arrangement needs to be as varied as the particular situation demands, and might include the range of opportunities provided within many schools like debating club, special interest club, drama groups, writing workshop, music groups, science congress groups as well as other extra-curriculum activities

However, limiting management models to academics only should not be the core business of the school. The formal and informal nature of the broader world requires that students are taught vast knowledge that transcends the knowledge acquired in books alone. Ndege (1997) notes that, schools in Kenya should be in the business of educating all students to reach their potential. According to Ndege (1997), all students of all ability can learn and it’s the job of the school to help them achieve. Moreover, all educators who strive for excellence for their students should be in the business of preparing their students to lead them down the right path of lifelong learning. On the other hand, Moon, Kelly, and Felddhusen (1997) affirm that, society loses when any learner is not able to maximize his or her potential. It is important that time structure and their related activity are modeled to expand MI opportunities. Ndege (1997) notes that, time structures must be planned, defined and well managed.

### **2.6.1 Alternative Instruction Management Model**

The core business of a school as an educational institution is the effective curriculum delivery. Teaching and learning are necessary if young people are to acquire personally enriching, economically necessary and socially desirable knowledge and skills.

Davidoff and Lazarus (1997) points out that in our attempt to enhance MI, we need to hold as our main concern the quality education in the classroom. Everard and Morris, 1996 concur to this by saying that:

To provide quality education to the learners, the school should have a culture of effective teaching and learning the learners should have the necessary skills and Knowledge to meet the challenges of tomorrow. The most essential needs of tomorrow’s citizens will be those core skills, problem solving, and

creativity, communication together with positive and flexible attitudes. Above all they will need the ability to learn In order to cope better with unstructured situations. (p. 182).

Schools management that seem to have made headways in enhancing students' abilities have well established instructional management models that aim at tapping and enhancing MI. literature found out that when proper and effective models are used the student's environment upon which MI is built will be enhanced. Several models have been discussed and there implications addressed.

Personalized learning approaches/models tend to emphasize learning styles, sometimes linking this to multiple intelligences. Coffield, Moseley, Hall, and Ecclestone (2004) provide compelling evidence to challenge the basis of these approaches though they acknowledge the need to be selective and cautious, since some approaches were found to be more reliable than others and increased motivation. Coffield et al. (2004) critical review of learning styles and their implications for pedagogy concluded that;

*Some of the best known and commercially successful instruments have such low reliability, poor validity and negligible impact on pedagogy that we recommend that their use in research and in practice should be discontinued others emerged from our rigorous evaluation with fewer defects and deserve to be researched further. (p. 56)*

Music objectives built on the acquisition of basic practical and positive social skills attest to the fact that Music curriculum encompasses wide learning areas within performing arts, creative arts and culture. Wanyama et. al (2013) points out that, music education is the nexus and the 'mother of several other subjects' in that it can be used to teach other subjects such as mathematics, languages and religion; just to mention but a few thus the need to be exploited to the maximum for the purpose of various and varied human needs in the modern world. Therefore, it's arguable that the implementation of the music curriculum in its entirety is in itself a milestone in achieving well-rounded development of the learner. Students should be encouraged to create their own music, perform music composed by other people, and perform



music from their own cultures and from cultures foreign to them. They should be exposed to playing musical instruments from the African, Western and Eastern divides. Performance of music for different audiences can help develop human personality and character. This consciousness can lead to virtues like courtesy, respect and general sensibility to various environments (Ibid).

The outdoor classroom model where students engage in constructing forts, collecting rocks, and digging are ways children and or students create their own worlds and become more acquainted with the natural world. Children thrive when they have some choice in their day and to create games and stories to play (Department of Education and Early Childhood Development, 2014). The outdoors is a, classroom of the students, own construction. The time spent in this classroom, however is shrinking for many kids. A recent US Department of Education report states that 14 to 18 % of US children in grades 1-6 gets 15 minutes or fewer of recess a day (National Centre for Education Statistics, 2007). Forty percent of schools have reportedly eliminated some recess time to concentrate on academics (Clements, 2000). Almost linked to the outdoor class is the component of recess. Research tells us that students are more attentive and less restless after recess break (Moyer, 2014). Brain research also shows that when learning is broken up into short periods, recall improves (Karpicke & Grimaldi, 2012).

Children who are more active or struggle with attention disorders suffer when deprived of recess (Silver, 2005). It should be noted that recess at the expense of instruction provides social relationships which is an important ingredient in developing interpersonal and intrapersonal abilities among students. Children find the freedom to practice making and keeping friends. Studies done by Pellegrini, Kato, Blatchford and Baines, (2002) found that primary school children reciprocal social play predicts their social competence one year later. Pierce (2006) agrees with this saying that we cheat our student if we continue to think of school as a class period

that begins and ends with a bell. Although it can be argued that playgrounds are a recipe for aggression, teasing and bullying, we must support it with good management and belief that the social and physical wellbeing of our children is worthy of our time and nurture.

The Twilight School model includes opportunities outside the typical school day for students who are not succeeding in traditional classrooms or for those with special scheduling needs, such as teen parents, students who work so as to study, and students returning from suspension (Elaine, Sue & Renkema, 2012) The programs take different forms: some meet for three or four hours after school; others meet during the school day, but on a schedule separate from the rest of the school and in a dedicated space. The primary goals are credit completion and recovery for struggling and non-traditional students; the programs often incorporate counseling and social services as well (ibid).

Boardman, Roberts, Vaughn, Wexler, Murray and & Kosanovich (2008) further points that there is the extra learning opportunities offered in the Savvy Readers Lab that help struggling students become proficient at understanding what they read and at acquiring new learning from their reading so that they can begin experiencing more success across the standards-based curriculum. The Lab seeks to encourage these students to become independent readers who assume responsibility for their own learning and who understand and enjoy higher-level books. The SR lab provides explicit instruction and practice in applying a wide variety of powerful reading strategies to various types of narrative and expository reading material.

Rotation of learning centers can also provide an enriching experience to students who happen to be in centers that lack facilities (Alfeld, Charner, Johnson, & Watts, 2013). This implies that students can rotate within centers offering computer services, different sports and different subjects not offered but available elsewhere.

To effectively develop MI, we clearly must begin to use some technology that has dramatically changed the lives of many outside classroom (The College Board, 2012). Teachers ought to discuss with their students how to make content more accessible through technologies that students regularly use such as iPods and mp3 players YouTube movies that explains a concept and posted on you tube for student to view at home during holidays or for day schools in evenings. At liberty Missouri technology has enabled teachers to go beyond the traditional classroom walls. Teachers have adopted the virtual book club that embraces using a blogger, a free weblog publishing tool. Students can access the blog from anywhere they have internet access- school home library, and so on. This has enabled interaction among students and teachers.

Are teachers employing cooperative learning strategies not only to obtain better cognitive results, but also to develop the interpersonal skills that employers need and democratic society depend on? Are the arts, health, and physical education given their due during the school day? Do teachers provide adequate feedback on students' class and out of class activities? Until we regularly ask such questions and document how schools perform on those measures, schools will have few incentives to provide an adequate and complete education to future generation on how to model their MI (Ornstein & Hunkins, 1998).

### **2.6.2 Alternative Assessment Management Model**

Schools that seem to have made headways in enhancing students' abilities have well established assessment models that aim at tapping and enhancing MI. A case to mention is China where increasing pressure to develop new education system that prepares candidates with practical talents has seen the country undergo several models of assessments aimed at a balanced curriculum that embraces educating all rounded students (Shen, 2006). There has been an end of using standardized testing, abolition of entrance examination to middle schools and implementation of secondary own graduation examinations instead of using the ones produced by the county education

bureaus. It reformed college entrance exams and admissions criteria and granted colleges more autonomy in admission decisions (Ibid). Other evaluation systems have been developed to assess students' moral and social development that includes love for motherland, respect to school rules, active participation in community service, good hygiene, manual labor, loving nature, and showing respect to parents, teachers, prefects and elders this forms part of the selection criteria to the university.

It's evident that a balanced assessment model should include tests of critical thinking and wider school curricula. In support of this Mwanzia and Miano (2007) point out that for assessment to play a role in fostering quality education, it must pay attention to the goals of education in terms of what is taught and learned and the levels at which the knowledge and skills acquired by the learner are assessed. This led the researcher to investigate if what is taught and learnt in school pays attention to the goals of education or the examinations expected. In a study (Black, Harrison, Lee, Marshall & William, 2003) of key stage 3 teachers and pupils in Mathematics and Science in Medway and Oxford shire, pupils made significant gains in attainment. This teachers in this study reported using the technique of identifying clear targets for improvement, self-assessment and peer assessment. They noted that all pupils work improved.

### **2.6.3 Alternative Technology Advancement Management Model**

In order to understand the technological advancement in schools it's important to understand its brief history of incorporation in education. John Dewey's philosophy of education helped launch the progressive education movement over 100 years ago. One hallmark of progressive education was child centered learning – Dewey and other reformers aimed to free the students from the schedules of subject – centered schools in which rigid, institutional, authoritarian pedagogy left very little room for active learning (Ravitch, 2003). With the start of the new millennium computer has widely been in educational institutions. Dewey's progressive philosophy today is extremely relevant in light of new technologies and use of computers as institutional material

and their potential to support progressive teaching methods. The capabilities offered by new electronic tools breathe new life into Dewey's idea and make the goals of education attainable (Schrier, 2016). Current advancement in technology, increased access to information coupled with a change in the learning styles among learners has complimented the learning ecosystem which has been their based on Dewey's spectacle; placing the learner at the center and relegating the traditional teacher to the periphery. This is based on premise that the current teenager is different from the one who the national curriculum is designed for. In essence we are saying that the student no longer relies on the text book, the teacher and the school library as the only available references; we must therefore embark on understanding the learning ecosystem and consequently build effective models which embrace our realities and offer. Rashid (2004) points that:

In many parts of the world, new technologies of teaching skills and tools are being tested and applied at all levels of education. The hope was that these new technologies would help revolutionize the education system and set patterns which would have positive long term influences on the further development of education. (p. 125)

The recent Task Force formed to review the curriculum noted that only about 2% of schools in the country have the necessary ICT infrastructure. This is against the fact that to expand the school knowledge of, "How to use technology as a pedagogical tool," we must understand how computer-based tools can be well used. As Hawkins (1997, p. 60) points out, "technology alone never makes a difference; it must be embedded in classrooms in ways that optimize learning. A systematic review by Ghasemi and Hashemi (2011) on the impact of ICT on literacy in English highlighted that ICT is changing the teachers' role from instructor to facilitator. Hennessy, Onguko, Harrison, Ang'ondi, Namalefe, Naseem, and Wamakote, (2010) identified innovative practice using ICT to link home and school and its potential for enhancing learning. They noted a shift in teaching and learning practices with more self-directed learning, greater flexibility and autonomy for pupils and improved communication

between home and school. Use of multimedia presentations encourages high levels of interaction amongst the pupils which eventually enhances MI. Interactive whiteboards encourages teachers to get the pupils more involved in the lessons, which means more learning takes place and it is more enjoyable. The cell phone, the television, the internet, the computer and computer games have gradually re-engineered the learning process to allow for participation and give control to the user – a reality that does not exist in the traditional classroom. Many classrooms across the world are now accessible to the learner on YouTube. Groff, Howells, and Cranmer (2012) concurs saying that there is a growing need for a computer that may be used as a means of delivering instructional in the classrooms. In less developed countries this need is more significant than the need elsewhere.

Elsewhere, in recent years Data Quality Campaign (2006) points out that, states have rapidly moved to develop student identifier systems that help to trace youth outcomes back to the school and classrooms that educated these young adults. This is aimed at justifying the effectiveness of school programmes. Pupils also run TV where pupils run a television station on the internet called AliveTV.co.uk (Ibid). These are indicators that our world continues to increasingly be about having media- music, video games, phone calls or streaming video- at our convenience anywhere and anytime. Axelrod, (2004) once said that the world economy is so dependent on computers that by the end of year 2010 most of the jobs will require using technology. By extension these new kinds of media and technologies are also changing the face of education. The convenience of this techno environment needs to gain traction amongst our secondary school students given the fact that today's educators serve as the link between industry and a trained competent work force. However, classrooms, libraries, laboratories and fields in which the potential of the new technologies are fully realized are rare. Compounding this problem is a major disconnect in training with the fact being that many teachers, Principals and Board members complete their

training in institutions that either use new technologies frequently or not at all (Bruce, 1997). This is unfortunate, because current practitioners often do not use computers effectively to support instruction. They are often used in homes and in schools in ways that isolate children, locking them into drill and practice programs devoid of human interaction (Dede, 2014).

Computers are a wonderful invention and have been used in different fields of life successfully. In many parts of the world, new techniques of teaching skills and tools are being tested and applied at all levels of education. There is a growing need for a computer that may be used as a means of delivering instructional material in the classroom and out of class. In developing countries this need is more significant than the need elsewhere since computers when used appropriately with instructional material can enhance leaning and understanding of information. Researchers suggest that interpersonal interaction (interpersonal intelligences) can be substantially increased by introducing technology into the classroom and out of class setting. Computers often serve as a catalyst for collaborative activities, conversation, and spontaneous sharing of ideas (Kärkkäinen & Vincent-Lancrin, 2013). Schofield (1995) proposes that students seem to be drawn to working on the computer because the computer introduces variety into school routine. This variety proves helpful for the student to complete their assignments, reinforce concepts and to build confidence by having children “practice beyond mastery”. Past research has demonstrated that computers are not simply machines that store and organize information. They are tools for amplifying capacities to create and explore the relationships in a body of information and are wonderful instructional material in the classroom (Hawkins, 1997). Gablinske (2014) points out that interactive E- mail messages provides a natural learning environment for students to learn the rules of written communication. By reading other peoples’ messages, students can see why clear and convincing writing is essential for understanding. He further stresses that correspondence is a

fundamental aspect of the learning process by which one becomes a writer. To him communication through E-mail creates a functional learning environment for students to become effective writers. According to Gordon (1998) from a teachers' perspective, technologies offers the support they need to learn, experiment, and refine their practice. It enables them to sail with the wind at their back. In addition it provides students with multiple opportunities to make discoveries and conduct research. By providing new ways of manipulating symbol systems and accessing representation forms, the computer is a great instructional material in schools (Kwek, 2011).

According to Kamil (1997), knowledge is complex, dynamic, context sensitive and interactively related therefore single modes of representation and methods of approach are not likely to be sufficient for capturing the nature of complex materials of learning. Hence, the use of multiple perspective and modes of representation should always be encouraged in learning. That can only be done effectively when computers are used as instructional material in the classroom. Harris (1996, p. 312) states that "the internet can encourage self-initiated learning by providing easy access to a vast array of new ideas, cultures and information". Internet can easily be used as a part of computer based instructional material in the classroom. This new access can enrich locally available resources so that teachers can show things that are not before a student's eyes, things that far exceed the limits of his actual and even potential immediate experience. It is therefore really important to produce a workforce that is talented and will be able to take part in the progress of a country. Now the question arises that how can a country produce that kind of workforce which is trained in Information Technology, which is a need of the present age. One such idea presented by the researcher is to change the school system and equip them with future need of technology (Hazemi, 2007).



### **2.6.5 Alternative off- School Business Management Model**

Schools and schools management as organizations cannot remain in isolation with their environment. They have to interact with the community and try to fulfill the aspirations of the society in which they exist. Through the interaction with the environment a school will be able to identify the expectations of the larger community and steer itself towards directions that are accepted to the community. In essence we are saying that schools exist in the society. The school will therefore be affected and influenced by the society which it serves. As open system, opportunities need to be provided by the school to the learners so that they become dependable members of the same society. French & Bell (1995) have argued that because of these interactions models have to be initiated to enhance this interaction. They say

*Open system planning entails scanning the environment to determine the demands and expectations of external organizations; developing scenarios of the possible future of the organization, both realistic and ideal and developing action plans to ensure that desirable future occurs. (p. 93).*

Based on the needs of the community and the environment, the school should therefore decide on the suitable curriculum to modify the existing curriculum to suit the needs of the society. Cummings, Dyson, Papps, Pearson, Raffo and Todd (2005), suggested that while robust evidence was not yet available, there were examples of raised attainment, increased pupil engagement with learning and growing trust and support between families and schools in what this study describes as the off school business. Phonkhao and Ounjit (2012) support this by saying that schools together with families and communities are the major social institutions for children and youth in modern society.

An earlier study by Webb and Vulliamy (2004) funded by the Home Office in America, demonstrated improved attendance and a reduction in exclusions, when social workers were introduced in a small number of schools and when students participate as social workers. These studies, along with other reviews of extended schools (off school businesses), suggest that it might be possible to link initiatives in

developing services beyond the classroom (Wilkin, Kinder, White, Atkinson, & Doherty, 2003).

Studies indicate that several schools in India runs self-help groups for women that focus on such topics as leadership training, basic literacy skills vocational skills health and women rights this is underpinned in the principle of improving the surrounding community (National University of Education Planning and Administration, 2014). Still Valerio and Parton (2014) notes that, as students go through the content they consider their short term goals in terms of long term benefits for their families, the community and the nation. For instance students participate in entrepreneurship training in the school, creating products (food, clothing, artworks, and so on) to sell to school visitors and community members. In this way, the school helps students learn skills necessary to earn a living and promote sustainability in the community.

A point to note though is that off school business has taken off more in primary than in secondary school. Sturman, Lewis, Morrison, Scott, Smith, Styles, Taggard & Woodthorpe (2005) agree to this saying that primary teachers were more likely than secondary teachers to be develop partnerships with home, the community and relevant welfare agencies. All this is articulated in the aims of education that education should promote economic awareness towards social change.

Back here in Kenya we have the Leap Hubs Initiative that was popularized by Stephen Njoroge who was Principal Moi Forces Academy and currently the director of Centre for Mathematics, Science and Technology Education in Africa (CEMATEA). This initiative exposes students to entrepreneurship life skills without undue emphasis on academic scores. Today the school boasts of well-structured commercial enterprises run entirely by students who among themselves appoint chief executive officers and managers in charge of human resources, marketing, finance and other facets. Currently the school runs the quail club and the dog club among

others (Ombour, 2014). Apart from appointing representatives to the board, religious organizations which sponsor most public schools in Kenya, play a peripheral role in managing the schools and can be key towards enhancing multiple intelligence through the off school business. They should get more involved in guiding and counseling adolescent students given their temporal and spiritual authority.

The literature review demonstrates that it is the nature of the collaboration involved that seems to determine whether school collaboration with parents and carers, has a positive impact on learning and longer term engagement with learning. Leadbeater (2005) concluded that schools have found different ways of organizing themselves, often through collaboration with the other schools or agencies outside school, which provides greater flexibility and adaptability in the provision offered to pupils. To be effective, collaboration needs resources, leadership, shared direction, ownership and responsibility. Sebba (2007) points out that community links are normally enhanced when schools are closer to towns. This creates the potential for greater curricular flexibility (through shared provision), work experience and improved access for outreach work.

The Increased Flexibility Programme which provides vocational learning opportunities through partnerships between schools and colleges was evaluated by (O'Donnell, Golden, McCrone, Rudd & Walker, 2006). They concluded that most young people involved were making sufficient progress to achieve their potential.

## **2.7 Unpacking the Alternative Management Models**

Key features emerged from literature that seems to characterize developing strong models for MI enhancement. These included aspect of instruction, assessment, new technologies, structural features and strong links with the community. The following are conceptual models raised in literature that enhances MI.

- i. A comprehensive design for effective and varied instruction that addresses the needs of the learners and not the needs of the subjects
- ii. An assessment and evaluation model that focuses on all the national goals of education
- iii. A school, parental and community involvement that provides for a meaningful interaction that builds entrepreneurship skills amongst students through identification and utilization of resources both private and public.
- iv. External and internal technical support through new use of new technologies.

### **2.8 Gap in Knowledge**

The literature identified very little research which has evaluated the enhancement of MI in Kenya particularly in Elgeyo Marakwet. Very few studies have been undertaken especially in Sub Sahara Africa though it's important to mention that useful insights into the enhancement of MI in schools have been made in developed countries. The key components of the model were all evident in schools, though not with emphasis within and across school (Mansa, 2007). Schools tended to have unclear and mumble (incoherent) aims around MI development. Assessments for learning were seen as a means of achieving higher standards for schools rather than developing individual students. Besides very few intelligences were tested going against the overall aim of education. Competing interests were seen as limiting MI for examples the expansion of work related opportunities with pressure on KCSE performance. Schools were found not to be targeting the talented students as well as those falling behind in curriculum provision.

School administrators were found not to be utilizing the facilities and opportunities around and within the schools effectively for the provision of quality education for the learners. Therefore the schools were not creating opportunities for their learners to explore and acquire knowledge for themselves. This was seen to impose limitations on the thinking capacity and the development of the desired outcomes expected from

learners on various subjects. Adequate alternatives to the current schooling system do not exist because they have not been allowed to come into existence. Young people could not walk out of the schools tomorrow and immediately find alternative learning establishments to accommodate them. Learning establishments to cater for young people wishing to specialize in mathematics, soccer, science, golf, music, cricket, computer technology, cooking, investing, acting, engineering, medicine, design, massage and myriad other skills for which a demand already exists, would be created to provide whatever training young customers demanded.

The clamor to still cling to the traditional models of enhancing multiple intelligences still persists in the wake of available and alternative (models) theories that can be applied to improve the traditional models. Fear of change and innovation has continued thus creating a gap.

## **CHAPTER THREE**

### **RESEARCH DESIGN AND METHODOLOGY**

#### **3.1 Introduction**

This chapter describes the study area, research philosophy, research design population, sample and sampling techniques, research instruments, instruments validation, ethical consideration data collection procedures, data analysis and summary.

#### **3. 2 Research Design**

Research design is the plan that is employed by a researcher that specifies the sources and types of information relevant to the research problem (Briggs, Coleman & Morrison, 2012). It is a strategy that specifies the approach to be used for gathering and analyzing data. In that regard it indicates the procedures and techniques to be used for gathering information and methods used in data analysis (Creswell, 2013).

According to Kothari (2006) a research design is an arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure.

There are three major frameworks for designing any study; quantitative, qualitative and mixed methods approaches. The three research approaches structure procedures and techniques differently (Creswell, 2003) and their philosophical underpinning have a wide-ranging research strategies and methods that can be implemented in particularly different ways. A framework is desirable when it mixes the elements of philosophical ideas, strategies and methods using the three approaches to research. Given the three approaches, the selection of one approach over another for the design of the study is defined by the research problem, the involvement of the researcher and the audience for whom the report will be written (Creswell, 2003). Therefore mixed methods comprise the planned collection of both quantitative and qualitative data and the mixture of the strengths of each to answer research questions. In mixed methods studies, researchers purposely integrate quantitative and qualitative data rather than keeping them separate so as to maximize the strengths and minimize the weakness of each type of data (Creswell & Plano, 2011).

A mixed methods designs involves the collection and analysis of both quantitative and qualitative data in a single study in which data are collected concurrently or sequentially, are given priority, and involve integration of the data at one or more stages in the process of research (Onwuegbuzie & Collins, 2007). This study adopted a concurrent triangulation approach where both quantitative and qualitative data was collected at the same time and using the same respondents. It mixed both quantitative and qualitative research instruments for purposes of triangulation.

Creswell, Plano, Gutmann and Hanson (2003) and Johnson (2014) noted that in concurrently collecting both forms of data at the same time, the researcher gets to

contrast both varieties of data to search for compatible outcomes. One compares the themes pinpointed in the qualitative data with the statistical results in the quantitative analysis. The study adopted the concurrent triangulation design where both quantitative and qualitative approaches were used to collect data and do the analysis at the same time.

### **3.3 Research Philosophy**

A research paradigm is a way of examining social phenomena from which particular understandings of these phenomena can be gained and explanation attempted. A research paradigm is a perspective about research held by researchers that are based on a set of shared assumptions, concepts, values and practices. Creswell (2003) in his view sees methodology as the strategy or a plan of action that links methods to outcomes and governs the choice and use of methods. Therefore, a research methodology forms an overall paradigm that shapes research approach. Mertens (2010) sees the research paradigms as rooted in philosophical paradigms which aim to determine the direction of research, how the research reaches its reality and how they answer the questions of the seeking mind while helping the researcher use appropriate methodology and apply the research findings.

The study adopted the pragmatic worldview which is a mixed method strategy where both quantitative and qualitative approaches were used to test different methods of inquiry for effectiveness in achieving the intended goal. Pragmatism when considered as an alternative paradigm, avoids the contentious concerns of truth and reality, accepts philosophically that there is a singular and multiple realities that are open to an observed inquiry and positions itself towards solving practical problems in the real world. Pragmatism allows the researcher to be free of mental and practical constraints imposed by positivists and interpretivists and the selection of a research method or techniques (Feilzer, 2010).

The philosophical foundations for mixed methods studies proposes its significance for focusing interest on the research problem in social science research and subsequently using mixed approaches to draw knowledge about the problem (Scotland 2012). A mixed method uses a method and philosophy that endeavor to organize the insights provided by quantitative and qualitative research into practical mix (Johnson & Onwuegbuzie, 2004). Pragmatism assist in identifying how research approaches can be mixed successfully to offer the best expectations for answering fundamental research question.

Mixing both quantitative and qualitative methods will produce the “best of both worlds”. Pragmatism has gained extensive support as a perspective for mixed methods researchers (Johnson & Onwuegbuzie, 2004; Feilzer, 2010) and it is involved with solving practical problems in the real world rather than on assumptions about the nature of knowledge (Feilzer, 2010). A mixed methods research studies an incidence that has several layers through the use of quantitative methods to measure some aspects of the incidence in question and qualitative methods for others. It integrates the different research methodologies utilized and eventually developing a strategy to achieve reliable integration. This provides an enriched grasp of the phenomenon (Feilzer, 2010).

In this study, pragmatic philosophy was used to guide the philosophical assumptions of the study. The use of quantitative methods will allow for collection of facts, data realities and evidences concerning the independent and dependant variables. This technique will also allow for simple descriptive analysis. The qualitative approach will allow for collection of detailed narrative description, analysis and interpretation of data primarily in form of words rather than numbers. The interpretive assumption portrays the world as having been socially constructed, complex and ever changing with no single reality apart from our perceptions. Therefore qualitative research views



things in their natural settings while attempting to make sense and to interpret phenomena in terms of the meaning people bring.

### **3.4 The Area of Study**

This study was undertaken in Elgeyo Marakwet County (Appendix XI). The county is in the Rift valley region, Kenya (0°48'N 35°34'E). The County was formed in 2010 during the promulgation of the new constitution. The county has a population of 443,865. Its major town is Iten. Administratively, the county is split into four sub counties namely, Keiyo South, Keiyo North, Marakwet East and Marakwet West. The county encompasses a variety of Geographical features. The Rift valley is the striking feature that stands out. Climatic conditions are varied as per altitude, whereby in the valley the climate is quite hot, but the temperature lowers as one move upwards. The predominant tribes in the county are the Keiyo and Marakwet which are the sub tribe of the Kalenjins. Elgeiyo Marakwet County was selected for this study because over a long period of time schools have shown that they have students with abilities in class and out of class activities and therefore the need to enhance their development. Educationally, the area has 150 secondary schools, 451 primary schools, and one teacher training college.

### **3.5 Target Population**

The study focused on all the 150 secondary schools in Elgeyo Marakwet. There are 2 national schools, 8 extra county schools, 116 county schools and 24 sub county schools. The top management of schools comprising of Board of management and the Principals, and Middle level management comprising of the Heads of Departments and the form four students formed the study population. Selection of the target population was based on both feasibility and generalizability, which are important aspects of determining the target population (Gay, 1990). The distribution of the target population is shown in Table 3.1 below

**Table 3.1: Target Population**

	<b>Types of school</b>				<b>Target population</b>
	<b>National</b>	<b>Extra County</b>	<b>County</b>	<b>Sub County</b>	
<b>Chairpersons Board of Management</b>	2	8	116	24	150
<b>Principals</b>	2	8	116	24	150
<b>Heads of Department</b>	16	64	928	192	1200
<b>Students</b>	350	1600	1823	677	4450

### 3.6 Study Sample and Sampling Technique

For mixed methods to exploit its trustworthiness as a paradigm, it is critical that the challenges of representation, integration, validity and reliability are addressed in the study. All schools in the county were not covered. In this study a concurrent sampling design was adopted where the respondents for quantitative and qualitative sample were selected at the same time for the data collection. Using Krejcie and Morgan (1970) sample size formula for given finite population a sample of 108 schools of the total number of schools were considered. A large sample size in either quantitative or qualitative sample will yield statistical generalization in mixed methods study (Collins, Onwuegbuzie & Qun, 2006).

The respondents were stratified in four groups' namely National, Extra County, County and Sub County schools. Proportionate and simple random sampling was then used to select respondents who included 108 Principals, 108 Board of Management Chairs and 292 Heads of Department. Purposive sampling was also used to form 8 focus groups (2 per strata) consisting of 10 students. Purposive sampling was used so as to capture students who are in form four. These students have been in school long enough and have participated in both academic and non-academic activities that enhance multiple intelligences. In addition purposive sampling aimed at selecting students who had participated at top level competitions in non-academic activities. All this led to a total sample of 588 respondents. Stratified proportionate sampling was used because it has an advantage of built in assurance that the sample will accurately reflect the numerical composition of the various sub groups (Cozby, 2003). Like in

this study, where sub groups include National, Extra County, County and Sub county schools.

**Table 3.2 Study Sample**

	Pop	Sample	National	Extra county	county	Sub county	n	Technique
<b>BOM</b>	150	108	1	6	84	17	108	Stratified, proportionate simple random
<b>Principals</b>	150	108	1	6	84	17	108	Stratified, proportionate simple random
<b>HoDs</b>	1200	292	4	16	225	47	292	Stratified, proportionate simple random
<b>Students</b>	4450	80	20	20	20	20	80	Stratified, purposive
<b>Total</b>	<b>1500</b>	<b>588</b>					<b>588</b>	

### 3.7 Research Instruments

This study used the following instruments to collect data: Interview schedules, Questionnaires, Focus group discussion guide and Document analysis. The study found it necessary to use the instruments in order to achieve the stated objectives besides the combination of all the instruments was meant to capture both quantitative and qualitative data.

#### 3.7.1 Interview schedules

The semi structured interview guide was used in this study. In this form of interview the topics and questions are specified but they can be reworded in any sequence based on the situation Patton (1990) and Burns (1999) cited in (Zohrabi, 2013). In the Board of Management interview (Appendix III), the questions were open ended intended to elicit unexpected answers not originally anticipated (Kothari, 2006). This data collection instrument was used mainly to establish the partnership of the school and the community in fostering off the school activities that enhance multiple intelligence. The semi structured interview guide was preferable since the investigator has an opportunity to establish rapport with the respondent, explaining meaning of items that

may be unclear and is a means of quickly gathering comparable information from small sample of population (Nichols & Childs, 2009). The instrument also sought to find out the extent of acceptability of the alternative models by the management.

### **3.7.2 Questionnaires**

A questionnaire is a group of questions submitted to a group of persons being surveyed (Kothari, 2006). The self-administered questionnaires were used to get information from Principals (Appendix II) and H.O.Ds (Appendix IV). They attempted to review the existing management models that develop Multiple Intelligences. This tool also focused on eliciting information pertaining management of curricula at the departmental level from the Heads of Department given their focal position of disseminating information to the students.

### **3.7.3 Focus Group Discussion Guide**

A focus group is a form of qualitative research in which a group of people are asked about their perceptions, opinions, beliefs, and attitudes towards a product, service, concept, advertisement, idea, or packaging (Harding, 2013). Questions are asked in an interactive group setting where participants are free to talk with other group members. This instrument (Appendix V) was used to get information from students on their multiple intelligences and how the school management has enhanced them. The researcher utilized this method to eliminate subjective bias and get an in depth view of the problem.

### **3.7.4 Document Analysis**

Documents are original or official printed or written material furnishing specific information or used as a proof of a certain issue (Kothari, 1995). Hancock, Windridge, and Ockleford (2007) says review of documents show that the researcher is aware of available functions of research, identifies what the researcher takes to be key issues, the crucial questions and the obvious gaps. The greatest advantage of

using documents is that it does not disrupt ongoing events besides the researcher determines where the emphasis lies after the data have been gathered (Creswell, 2007). The documents that were analyzed in this study included the school timetable, daily routines, curriculum assessment timetable, school inventory and permission records book.

These documents gave a picture on the curriculum instruction management model, curriculum assessment management model technological resources available and the type of business activities that the students are engaged in. School timetables and daily school routines were examined to give a picture on the management of curriculum instruction, the assessment timetable gave a picture on the management of assessments, the school equipment inventory was examined to check on the existence of technology equipment that enhanced multiple intelligence and the school permission records were used to examine the existence of off the school business and activeness (frequency) of such activities.

### **3.8 Validity and Reliability of Research Instruments**

#### **3.8.1 Validity of Research Instruments**

Validity is the accuracy and meanings of inferences, which are based on the research results. According to Mugenda and Mugenda (1999) validity of the instruments means the degree to which the instruments are used to measure what they intended to measure. Other researchers have described validity as a good example of behaviors; skills and knowledge which the instruments claim to measure (Kombo & Tromp, 2006).

The instruments for these study namely questionnaire, interview, document analysis and observation schedules were designed and developed in terms of content and construct validity. In this study the content validity which refers to an assessment of whether items and questions cover the full range of the issues and investigation

(Singh, 2007; Kumar, 2011) was done by the researcher in consultations with the experts in the Department of Educational Management and Policy Studies at Moi University to criticize make corrections and put some inputs.

The content validity of the instruments was discussed by classmates. Researchers establish construct validity by relating a measuring to a general theoretical framework in order to determine whether the instrument is tied to concepts and theoretical assumptions they are employing (McCall, Jiao & Harris, 2013). Again this was established by the assistance of the supervisors. Mixed methods are inherently neither more nor less valid than specific approaches to research.

As with any research, validity stems more from the appropriateness, thoroughness and effectiveness with which those methods are applied and the care given to thoughtful weighing of the evidence than from the application of a particular set of rules or adherence to an established tradition (Bazely, 2004). In short, there are established rules for controlling validity in standard quantitative and qualitative research. These same rules must be followed when the methods are combined.

### **3.8.2 Reliability of Research Instruments**

Reliability refers to the extent to which a research instrument yields measures that are consistent each time it is administered to the same individual (Kothari, 1995). A measuring instrument is reliable if it provides consistent results or data after repeated trials (Singh, 2007). According to Kumar (2011) if a research tool is consistent and stable, hence predictable and accurate it is said to be reliable. The greater the degree of consistency and stability in an instrument, the greater its stability. Therefore a scale or test is reliable to the extent that repeat measurements made by it under constant conditions will give the same results. The instruments were piloted and this was conducted in four secondary schools in Baringo County. A pilot study is justified for its important in shaping future research (Light, Singer & Willet, 1990).

Baringo was chosen because just like Elgeyo Marakwet County it has characteristic of all secondary schools in Kenya. These includes; using similar objectives of secondary education derived from the national goals of education, having secondary head teachers and teachers who are trained under similar circumstance and having students undergoing the same system of education. The aim of the pilot study was to determine how effective the data collection instruments will be during the actual field research, whether the items in the instruments would be clear and unambiguous to the respondents and the problems they were likely to encounter in response to the item.

The researcher used the split- half technique to measure reliability of the questionnaires. The split- half technique of assessing reliability requires only one testing session. This technique is designed to correlate half of the items with the other half (Kumar, 2011). The questions or statements are divided in half in such a way that any two questions and statements intended to measure the same aspect fall into different halves (Nachmias & Nachmias, 1996). The scores obtained by administering the two halves were then correlated (Singh, 2007). Reliability was calculated by using the Cronbach alpha and the r value for Principals' and Head of Department questionnaires is shown in Table 3.3.

**Table 3.3: Reliability of Instruments**

			<b>Head of Department</b>	<b>Principal</b>
Cronbach Alpha	Part 1	Value	.995	.996
		N of items	30 <sup>a</sup>	28 <sup>a</sup>
	Part 2	Value	.978	.982
		N of items	29 <sup>b</sup>	28 <sup>a</sup>
	Total	N of items	59	56
	Correlation Between Forms			.979

As indicated in Table 3.3 a correlation coefficient (r) of .979 was obtained for Head of Department questionnaires and (r) .972 was obtained for Principals questionnaire. The instrument was therefore reliable. This is according to Kumar (2011) who states that a correlation coefficient of greater than 0.8 will be acceptable. The major advantage of

this procedure is that it eliminates chance error due to differing test conditions as in test- retest (Singh, 2007).

### **3.9 Data Collection Procedure**

Data collection is the gathering of specific information that is intended to compliment some facts (Kothari, 2006). The data collection procedures entailed the following procedures. The authorization to collect data and permission for the research was sought from the National Council for Research, Science and Technology with the facilitation of Moi University School of Education. Upon receiving the permit, the researcher reported to the County Commissioner and the County Director of Education office for letters of permission and introduction to the schools. The researcher then made visits to the schools introduced himself established a rapport with the relevant respondents and carried out data collection.

### **3.10 Data Analysis**

Cohen, Manion and Morrison (2007) describe data analysis as the examination of what has been collected in a survey with a view of making deductions and inferences. This study collected data through questionnaires, interviews, document analysis and observation checklist. The data that was collected through questionnaires was validated, edited and then coded. The validation enabled the researcher determine the return rate. Data from interviews with the BOM and open ended questionnaire constituting qualitative data in form of words and phrases was transcribed and then arranged as per the emerging themes. Quantitative data was subjected to descriptive statistics that produced frequencies and percentages. Correlation analysis and Multiple regression was utilized in the analysis of the relationship and prediction between the dependent and independent variables which gave rise to regression model;  $Y = a + b_1X_1 + b_2 X_2 + b_3X_3 + b_4X_4$ . Where Y represents enhanced multiple intelligences,  $X_1$  is instruction management model,  $X_2$  is assessment management model,



X<sub>3</sub> is technological management model and X<sub>4</sub> is off school management model. The analysis is illustrated in the Table 3.4 below

**Table 3.4: Analysis of Variables**

	<b>Objective</b>	<b>Hypothesis</b>	<b>Statistical Test</b>
<b>i.</b>	To examine alternative instruction management models that enhances Multiple Intelligences among students in Kenya.	<b>Ho<sub>1</sub>:</b> There is no statistically significant relationship between alternative instruction management models and enhancement of Multiple Intelligences among students in Kenya.	Computation of frequencies, percentages  Correlation, Multiple regression analysis
<b>ii.</b>	To investigate alternative assessment management models that enhances multiple intelligences among students in Kenya.	<b>Ho<sub>2</sub>:</b> There is no statistically significant relationship between alternative assessment management models and enhancement of multiple intelligences among students in Kenya.	Computation of frequencies, percentages  Correlation, Multiple regression analysis
<b>iii.</b>	To explore alternative technological advancement management models	<b>Ho<sub>3</sub>:</b> There is no statistically significant relationship between alternative technological advancement management models and	Computation of frequencies, percentages  Correlation,

	that enhances multiple intelligences	enhancement of multiple intelligences	Multiple regression analysis
<b>iv.</b>	To examine alternative off school business management model that enhances multiple intelligences among students in Kenya.	<b>Ho<sub>4</sub>:</b> There is no statistically significant relationship between the alternative off school business management model and enhancement of multiple intelligences among students in Kenya.	Computation of frequencies, percentages, correlation, Multiple regression analysis

### 3.11 Ethical Considerations

The study was designed to meet ethical standards of educational research. This study borrowed heavily on Terrel (2012) ethical considerations while carrying out mixed methods research. Such included: voluntary participation of the participants. Participants understood that they have the right to a copy of the results. Participants also understood the potential benefits of the study and that their privacy will be respected. Researchers must understand the impact of their presence at research sites and ensure that these sites are left undisturbed at the end of the study. Anonymity was maintained during data analysis and data kept for a reasonable period of time. Consideration ensured that writing was free of bias towards any group (such included, age, ethnicity, sexual orientation, race and gender). The details of the study were explained within the actual report so as to allow readers the opportunity to judge the ethical quality of the study for themselves. Ethical issues such as respondent confidentiality, honesty and informed consent were taken into consideration. The rights of respondents and all those who participated in the study were taken into consideration. The privacy of the respondents was assured through assurance to them of non-disclosure of their identities and vigilance on the part of the researcher to ensure that none of them write their names or disclose their identities in the research instrument that were used.

## CHAPTER FOUR

### DATA PRESENTATION, ANALYSIS, INTERPRETATION AND DISCUSSION

#### 4.1 Introduction

This chapter presents findings collected from the field with the help of tables and graphs, analyses and gives interpretation of the data gathered from the respondents in the field. The data analyzed was obtained through Head teachers' and Head of Department questionnaires, Board of Management interview schedules, focus group discussion guide and document analysis guide. It specifically attempted to answer the following research questions: What are the alternative management models that are used to enhance Multiple Intelligences? What are the instruction management models that enhance Multiple Intelligences among students in Kenya? Which assessment management models enhance multiple intelligences among students in Kenya? Which technological advancement management models enhance multiple intelligences among students in Kenya? What off school business management models enhances multiple intelligences among students in Kenya? This chapter further discusses the following hypotheses: **Ho1:** There is no statistically significant relationship between instruction management models and enhancement of Multiple Intelligences among

students in Kenya, **Ho2:** There is no statistically significant relationship between assessment management models and enhancement of multiple intelligences among students in Kenya, **Ho3:** There is no statistically significant relationship between technological advancement management models and enhancement of multiple intelligences and **Ho4:** There is no statistically significant relationship between the off school business management model and enhancement of multiple intelligences among students in Kenya. The findings of this study are therefore presented in accordance to the questions raised above.

#### **4.2 Study Respondents**

A total number of 588 respondents were used in study. There were 108 Board of Management chairpersons, 108 Principals, 292 Heads of Departments and 80 students. Out of these, 76 (70.4%) BoM were interviewed, 87 (80.5%) and 260 (89.7%) Principals and Heads of Departments completed their questionnaires. In addition 8 FGD comprising 10 students in from four were conducted. Thus the resulting number of respondents was composed of 503 (n = 503).

#### **4.3 Demographic Distribution of Respondents**

Section A, of the Principal and Heads of Departments questionnaire dealt with distribution of study population. The distribution was analyzed according to, first the respondent's gender, age, highest level of education, working experience, experience as Principal and Head of Department and Departmental office held by the respondents type of school, number of mathematics teachers, and the pupil's enrolment. This background information is shown in the following sections:

##### **4.3.1 Demographic Distribution of Respondent's by Gender**

The items in the first section of the respondents' questionnaires (Appendix I and III) were aimed at establishing the respondent's gender. The information obtained is contained in Table 4.1.

**Table 4.1: Demographic Distribution of Respondent's Gender**

<b>Gender</b>	<b>Principal</b>		<b>Head of Department</b>	
	<b>Frequency</b>	<b>Percent</b>	<b>Frequency</b>	<b>Percent</b>
Male	38	43.7	100	38.5
Female	49	56.3	160	61.5
Total	87	100	260	100.0

The gender variable as indicated in Table 4.1 shows that 38 (43.7%) Principals and 100 (38.5%) Heads of Departments were male. On the other hand 49 (56.3%) Principals and 160 (61.5%) were female. The finding indicates that, female respondents were the majority in relation to and management of schools and departments. This is accounted for by the fact that, many initiatives have been put in place to ensure that women are represented in leadership roles thus the high numbers.

#### **4.3.2: Demographic Distribution of Respondent's by Age**

The items in the first section of the respondents' questionnaires (Appendix I and III) also aimed at establishing the respondent's age. The information obtained is contained in Table 4.2.

**Table 4.2: Demographic Distribution of Respondent's Age**

<b>Age</b>	<b>Principal</b>		<b>Head of Department</b>	
	<b>Frequency</b>	<b>Percent</b>	<b>Frequency</b>	<b>Percent</b>
25-30 years	-	-	25	9.6
31-36 years	-	-	72	27.7
37-42 years	3	3.4	125	48.1
Above 42 years	84	96.6	38	14.6
Total	87	100.0	260	100

The findings as indicated in Table 4.2 shows that majority of the Principals were over 42 years that is 84 (96.6%). A few Principals 3 (3.4%) were aged between 37- 42 years. It can therefore be argued that, as far as age is concerned Principals were mature enough to execute management issues well in their respective schools.

On the other hand the results indicated that majority of the Heads of Departments 125 (48.1%) had an age bracket between 37-42 years, this was followed by those who have an age bracket of 31-36 years being represented by 72 (27.7%), this was followed by 38 (14.6%) Heads of Departments who were above 42 years, lastly 25 (9.6%) Heads of Departments had an age bracket of 25- 30 years. This may be attributed to Heads of Departments working in upcoming schools that may be having few Teachers Service Commission teachers.

#### **4.3.3 Demographic Distribution of Respondents Education Level.**

The items in the first section of the respondents' questionnaires (Appendix I and III) further aimed at establishing the respondent's age. The information obtained is contained in Table 4.3.

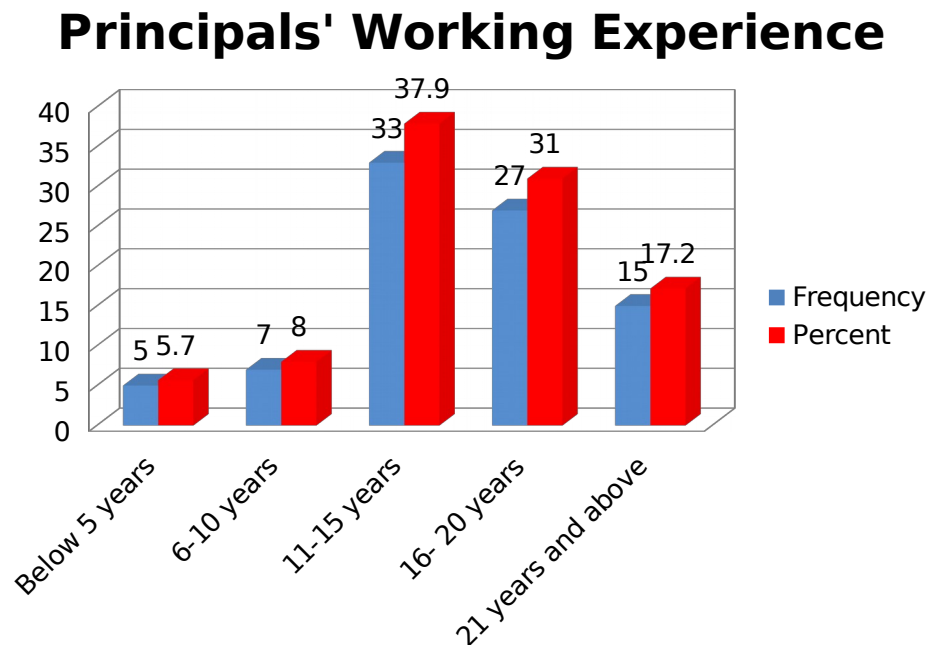
**Table 4.3: Demographic Distribution of Respondents Education Level.**

<b>Level of education</b>	<b>Principal</b>		<b>Head of Department</b>	
	<b>Frequency</b>	<b>Percent</b>	<b>Frequency</b>	<b>Percent</b>
College	19	21.8	45	17.3
University	63	72.4	191	73.5
Masters	5	5.7	24	9.2
Total	87	100.0	260	100.0

The findings as indicated in Table 4.3 shows that majority of the Principals 63 (72.4 %) and Heads of Departments 191 (73.5%) attained a degree from the university, while a few Principals 5 (5.7%) and 24 (9.2%) Heads of Departments attained a master's degree. It's important to mention that 19 (21.8%) Principals had a college diploma while 45 (17.3%) Heads of Departments had a college diploma. From the results it can be inferred that majority of the respondents had at least a degree certificate and that they had the competence to manage activities that enhances multiple intelligences among students.

#### 4.3.4 Demographic Distribution of the Principal's Working Experience.

The items in the first section of the Principal's questionnaire (Appendix I) further aimed at establishing the number of years the Principals have worked in the organization. The findings of this enquiry are presented in Figure 2:



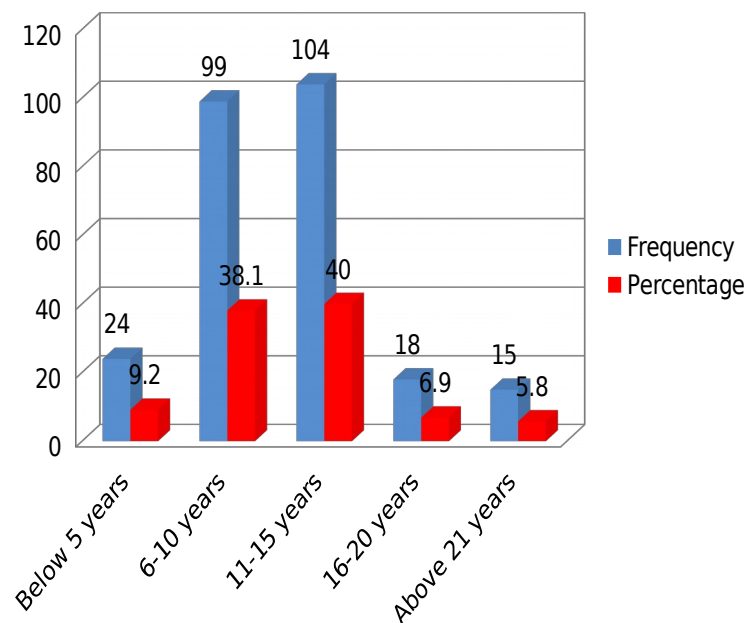
**Figure 2: Demographic Distribution of the Principal's Working Experience**

Figure 2 indicates that, 5 (5.7%) of the Principals had an experience of less than 5 years, 7 (8.0%) of the Principals had working experience of 6-10 years, 33 (37.9%) of the Principals had working experience of 11-15 years, 27 (31.0%) of the Principals had working experience of 16-20 years while 15 (17.2%) of the Principals had working experience of over 21 years. These findings show that majority of the Principals had the required experience to run the offices and institute changes necessary to develop M.I.

#### 4.3.5 Demographic Distribution of the Heads of Departments Working Experience.

The items in the first section of the Heads of Departments questionnaire (Appendix III) further aimed at establishing the number of years the Heads of Departments have worked in the organization. The findings of this enquiry are presented in Figure 3:

### Heads of Departments Working Experience



**Figure 3: Demographic Distribution of the Heads of Departments Working Experience.**

Figure 3 indicates that, 24 (9.2%) of the Heads of Departments had an experience of less than 5 years, 99 (38.1%) of the Heads of Departments had working experience of 6-10 years, 104 (40%) of the Heads of Departments had working experience of 11-15 years, 18 (6.9%) of the Heads of Departments had working experience of 16-20 years while 15 (5.8%) of the Heads of Departments had working experience of over 21 years. These findings show that majority of the Heads of Departments had the required experience to run the offices and institute changes necessary to develop M.I. It's arguable to mention that development of M.I may have been affected by the 24 (9.2%) Heads of Departments who had less than 5 years working experience in the



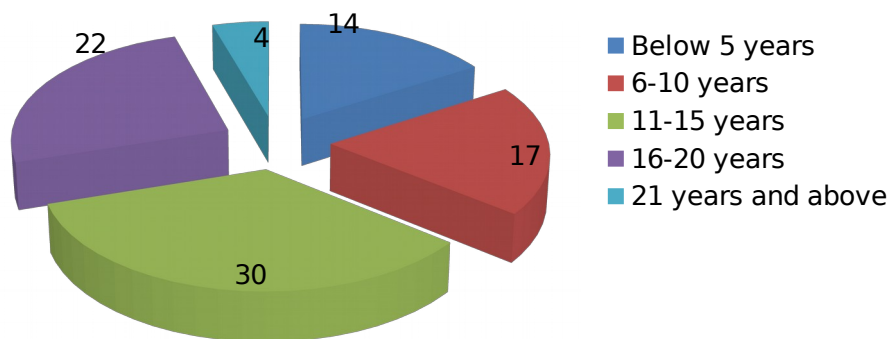
sense that coordination and facilitation of departmental activities requires experience on the part of the managers managing the departmental offices.

#### 4.3.6 Demographic Distribution of the Principals' Experience as Head.

The last item in the first section of the Principal's questionnaire (Appendix I) sought to establish the number of years the Principals have worked in the organization as Principals. The findings of this enquiry are presented in Figure 4.3:

### Experience as Principal

Figure 4:



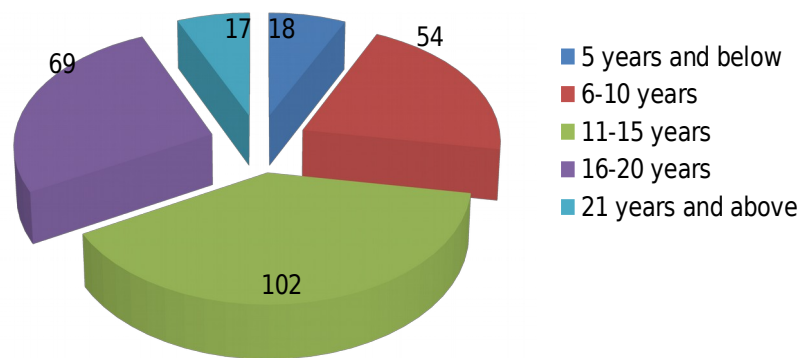
#### Demographic Distribution of the Principals' Experience as Head.

The findings in Figure 4 indicates that 14 (16.1%) of the Principals' had worked as Principals for a tenure below 5 years, 17 (19.5%) had worked as Principals for a tenure of 6-10 years, 30 (34.5%) had worked as Principals for a tenure of 11-15 years, 22 (25.3%) had worked as Principals for a tenure of 16-20 years while 4 (4.6%) had worked as Principals for a tenure of 21 years and above.

#### 4.3.7 Demographic Distribution of the Heads of Departments Experience as Head

The items in the first section of the Heads of Departments questionnaire (Appendix III) further aimed at establishing the number of years the Heads of Departments have served as Heads of Departments in the organization. The findings of this enquiry are presented in Figure 5:

### Working Experience as Head of Department



**Figure 5: Demographic Distribution of the Heads of Departments Experience**

The findings in Figure 5 indicates that 18 (6.9%) of the Heads of Departments had worked as Heads of Departments for a tenure below 5 years, 54 (20.8%) had worked as Heads of Departments for a tenure of 6-10 years, 102 (39.2%) had worked as Heads of Departments for a tenure of 11-15 years, 69 (26.5%) worked as Heads of Departments for a tenure of 16-20 years while 17 (6.5%) had worked as Heads of Departments for a tenure of 21 years and above.

### 4.3.8 Demographic Distribution Heads of Departments

The last item in the first section of the Heads of Departments questionnaire (Appendix III) aimed at establishing the department that Heads of Departments headed. The findings are presented in Table 4.4:

**Table 4.4: Demographic Distribution Heads of Departments**

<b>Department</b>	<b>Frequency</b>	<b>Percent</b>
Languages	24	9.2
Sciences	43	16.5
Humanities	25	9.6
Technical	15	5.8
Director of studies	16	6.2
Mathematics	42	16.2
Boarding	36	13.8
Co-curricular	41	15.8
Guidance & counseling	18	6.9
Total	260	100.0

As indicated in Table 4.4 the entire departments in schools were represented. The Science Department was the most represented department having 43 (16.5%) Heads of Departments participating in the study while the Technical Department was the least represented department having 15 (5.8%) Heads of Departments participating in the study.

## 4.4 Instruction Management Model

The first research question which was “What are the alternative instruction management models that enhance Multiple Intelligences among students in Kenya?” was meant to answer the following research objective: to examine the alternative instruction management models that enhances Multiple Intelligences among students in Kenya. The findings are presented in the following sub sections.

### 4.4.1 Existing Instruction Management Models for MI Development

The Principal plays a key role in terms of coordinating, facilitating and supervising instruction models (practices) that are important in enhancing multiple intelligence models. It was therefore important to look at these practices and establish the Principal's management role. The Principals were asked to rate the level of their involvement in terms of coordinating, facilitating and supervising the various models on a 7 scale rating scale whereby 1=very little, 2= little, 3=slightly little, 4=Neutral, 5=slightly much 6=much 7 very much. The responses were as shown in Table 4.5.

**Table 4.5: Existing Instruction Management Models for MI Development**

Models	Level of Coordination, Facilitation and Supervision						
	1 F (%)	2 F (%)	3 F (%)	4 F (%)	5 F (%)	6 F (%)	7 F (%)
A Teaching inclined to mathematics, sciences and language	2(2.3)	14(16.1)	2(2.3)	3(3.4)	34(39.1)	10(11.5)	22(25.3)
B Remedial classes	10(11.5)	13(14.9)	11(12.6)	1(1.1)	15(17.2)	28(32.2)	9(10.3)
C Teacher centered methodology	32(36.8)	14(16.1)	20(23)	4(4.6)	3(3.4)	14(16.1)	-
D Drilling	-	12(13.8)	13(14.9)	3(3.4)	12(13.8)	17(19.5)	30(34.5)
E Brick and mortar school	13(14.9)	10(11.5)	12(13.8)	2(2.3)	20(23)	14(16.1)	16(18.4)
F Uniform instruction	30(34.5)	15(17.3)	18(20.7)	4(4.6)	10(11.5)	-	10(11.5)
G Early completion of syllabus	9(10.3)	7(8)	20(23)	-	16(18.4)	18(20.7)	17(19.5)
H Dictating of notes to learners	15(17.2)	16(18.4)	23(26.4)	4(4.6)	6(6.9)	11(12.6)	12(13.8)
I Copying notes from the chalkboard, whiteboard	21(24.1)	15(17.2)	16(18.4)	2(2.3)	3(3.4)	12(13.8)	18(20.7)
J Lecture methods	10(11.5)	20(23)	11(12.6)	4(4.6)	12(13.8)	19(21.8)	11(12.6)
K Teaching of examinable subject during PE and life skills lessons	9(10.3)	10(11.5)	9(10.3)	3(3.4)	22(25.3)	16(18.4)	18(20.7)

Note: 1 = very little, 2 = little, 3 = slightly little, 4 = Neutral, 5 = slightly much, 6 = much, 7 = very much

The findings in Table 4.5 indicated mixed results. Majority of the Principals 34 (39.1%) indicated that they were involved slightly much in directing, coordinating, facilitating and supervising teaching that is inclined towards Mathematics, Sciences and Languages, 10 (11.5%) were involved much and 22 (25.3%) were involved very much. On the other hand very few Principals 2 (2.3%) directed, facilitated and supervised teaching that is inclined to Mathematics, Languages and Sciences very little, 14 (16.1%) little and 2 (2.3%) slightly little. This implies that students who are not competent in these subjects are sidelined and their abilities in other areas such as Drawing and Design, Woodwork, Music are wasted. This finding agrees with KIE (1990) that allocations of curricular activities have shown inclination towards mathematics, sciences and linguistics. For example, out of the 45 lessons offered in form four secondary schools in Kenya, these subjects' accounts for 80%.

Analysis of timetables indicated absence of Music, Woodwork, Art and Design Arabic and Germany subjects in all the sampled schools. This implies that development of MI which relies heavily on existence of these activities won't be achieved. Students who were interviewed had this to say

Some students who are good in subjects that require drawing and Music don't have that opportunity to engage in them because the subjects are unavailable. In addition students who wish to pursue subjects that they were good at in primary school such as French and Germany are disadvantaged because these subjects are nonexistent.

Further information from BoM indicated that they were aware of absence of subjects such as music and Art and Design. One BoM had this to say;

As a BOM we normally hesitate to advertise teaching vacancy in subjects such as music and Art and Design because we feel that majority of the students won't be able to take the subjects. As BOM we put more emphasis on core areas like mathematics, languages and sciences. In relation to development of students varied abilities such a management practice will have an impact to the

few students who will have wished to pursue music as a career. But it has to be understood that we don't have an option.

This finding agrees with Nguru (2007) who asserted that, there is a direct relationship between effective Curriculum Instruction Management and advancement of students' abilities. He argues that the Curriculum Instruction Model (CIM) in schools has not appreciated the development of non-academic skills and academic skills in optional subjects such as Music, Home Science, Computer and Art and Design. Cheng (1996) further states that schools need to review their curriculum because they are offering subject combinations that are not job market oriented he says that: "Management of the school is responsible for facilitating and coordinating instructional activities across the curriculum and promoting a positive social learning climate" (p. 156).

Another model that was looked at was managing the extended classes model that involved teaching of remedial classes. The assumption was that such extended classes hindered enhancement of MI among students as it limited participation time. Findings as indicated in Table 4.5 showed that majority of the Principals 28 (32.2%) were involved much in directing and supervising remedial classes and tuition, 15 (17.2%) were slightly much involved while 9 (10.3%) were very much involved. On the other hand though 10 (11.5%) Principals involved themselves very little, 13 (14.9%) little and 11 (12.6%) slightly little.

The BOM further indicated that they did source for money from parents during annual general meetings and prize giving days to cater for payment of remedial. One BOM had this to say;

*Given the competitive nature of exams and the need to finish syllabus early the school management is sometimes forced to extend normal classes and use the commonly known remedial to push the syllabus*

This implies that schools may be very much engaged in academics matters at the expense of other activities that are likely to enhance MI among students. Daily Nation (July, 2008, p.14) quotes that, unorthodox learning models have been adopted in

many Institutional Educational Programmes whereby students wake up at dawn, and attend lessons up to 9 pm daily, without the respite that should punctuate learning or any other routine activity

A cursory look at school timetables indicated that remedial classes ran in the mornings 6am to 7 am, evenings from 5 pm to 6. 30 pm, nights from 7pm to 9 pm and weekends. This management model is a hindrance towards enhancing multiple intelligences. This finding agrees with a recent US Department of Education report that states 14 to 18 % of US children in grades 1-6 gets 15 minutes or fewer of recess a day (National Centre for Education Statistics, 2007). This was further supported by Clements (2000) who said that the time spent in classroom is shrinking for many kids. Forty percent of schools have reportedly eliminated some recess time to concentrate on academics.

The management of teacher centered methodology was also looked at. The findings as indicated in Table 4.5 indicated that majority of the Principals were not involved in directing, coordinating facilitating and supervising this model. Results shows that 32 (36.8%) Principals involved themselves very little in directing teacher centered methodology, 14 (16.1%) had a little involvement while 20 (23%) had a slightly little engagement. On the other hand 3 (3.4%) had a slightly much involvement and lastly 14 (16.1%) were involved much. This result indicates that though majority of the Principals didn't facilitate teacher centered methodology a few Principals did facilitate teacher centered methodology therefore sidelining students' interests and curiosity in developing their abilities

Further findings in Table 4.5 indicated that 30 (34.5%) Principals directed, facilitated and supervised drilling model very much, 17 (19.5%) much and 12 (13.8%) were involved slightly much. On the other hand 12 (13.8%) Principals directed, facilitated and supervised drilling model little while 13 (14.9%) facilitated slightly little. This



implies that programmes and activities associated with enhancing students' multiple intelligences such as singings, dancing, painting, playing, meditation, gardening, scouting and interpersonal relationship are likely to be given very limited time so as to allow drilling of students. The findings agree with Lee (2008) study conclusion that the contemporary education model creates more time for boosting drills in math and reading by reducing time in social studies, Physical Education and the Arts.

A cumulative frequency and percent of 50 (57.5%) Principals were engaged in managing the brick and mortar school while 35 (40.2%) were not engaged. This model is known to be very academic in nature and restricts development of individual talents. This finding agrees with Lee (2006) assertion that the brick and mortar school along with teachers has continued to be the model of learning therefore being an impediment in developing of MI. it's important to mention that some defenders of the model argue that basic skills are fundamental and that unless students acquire these they will be unable to reach any other goal. But with respect to some goals of Education, this theory makes no sense. It ought to be noted that success in basic academics does not necessarily lead to success in more complex skills later in life.

Majority of the Principals 30 (34.5%) involved themselves very little in directing and coordinating uniform instruction among students', 15 (17.3%) involved themselves little and 18 (20.7%) involved themselves slightly little. On the hand a few Principals 10 (11.5%) involved themselves very much in directing and coordinating uniform instruction among students' while 10 (11.5%) involved themselves slightly much in directing and coordinating uniform instruction among students. It can be argued that though majority of the Principals didn't involve themselves in managing uniform instruction a few of them who were coordinating it were denying student with different MI who don't thrive in this model as it doesn't give varied opportunities for students.

Another model that was looked into was the management of early completion of syllabus. Findings in Table 4.5 indicates that 17 (19.5%) Principals were involved very much in directing, supervising and coordinating early completion of the syllabus, 18 (20.7%) much and 16 (18.4%) slightly much. On the other hand 9 (10.3%) Principals were involved very little in early completion of the syllabus, 7 (8%) little and 20 (23%) slightly little. From the foregoing it can be said that majority of the schools were in the business of finishing the syllabus early to prepare for examination. This poses problems to other activities such as games that are meant to enhance MI. Such activities are substituted with class work to facilitate the early completion.

Focus group discussion indicated that management of early completion of syllabus affected programs such as games and half term breaks which are squeezed so that students are able to clear syllabuses in time. Students had this to say;

The school strives to complete syllabus early so as to pave way for KCSE revision. Syllabus is completed in March and the preceding year syllabus started. So as to achieve this objective a lot of teaching is done at the expense of other activities such as games. Sometimes when you want to go for games you are informed that there is Biology discussion and you cannot disobey teachers

Further findings in Table 4.5 indicated that 12 (13.8%) Principals directed, facilitated and supervised dictating of notes to students model very much, 11 (12.6%) facilitated much and 6 (6.9%) facilitated slightly much. On the other hand 15 (17.2%) Principals directed, facilitated and supervised dictating of notes to students model very little, 16 (18.4%) facilitated little, while 23 (26.4%) facilitated slightly little. Though few Principals facilitated this and majority did not, the results demonstrates that the few students who were affected didn't have the opportunity to do more research on their own thus enhancing interpersonal intelligences which requires such individual initiatives.

Further findings in Table 4.5 indicated that 18 (20.7%) Principals directed, facilitated and supervised copying of notes to students model very much, 12 (13.8%) facilitated much and 3 (3.4%) facilitated slightly much. On the other hand 21 (24.1%) Principals directed, facilitated and supervised dictating of notes to students model very little, 15 (17.2%) facilitated little, while 16 (18.4%) facilitated slightly little. Though few Principals facilitated this and majority did not, the results demonstrates that the few students who were affected didn't have the opportunity to do more research on their own thus enhancing interpersonal intelligences which requires such individual initiatives.

Use of lecture methods as an instructional model was also looked at. The findings in Table 4.5 indicated a mixed result with Principals engaging in this model in an almost same level. 41 (47.1%) Principals directed, facilitated and supervised this model little as compared to 42 (48.2%) Principals who were involved much in directing, coordinating and supervising lecture methods very much. This implies that student' intelligences that require varied approaches may not be enhanced to the fullest. This finding are in line with Rehmani (2003)research in Pakistan, where it was is reported that teachers are bound to switch their teaching methods to mainly the lecture method and adopt teacher and curriculum centered approaches to teaching and learning so as to ensure good performance in examinations

This was further supported by analysis of documents (Schemes of Work) that revealed absence of teacher and students activities that enhanced MI. In all the schools sampled none of the teachers had lesson plans. This implies that modeling MI into instruction was nonexistent thus none development.

Lastly the researcher looked at the involvement of the Principal in directing and supervising teaching of examinable subject during PE and Life skills lessons model and the findings indicate that 18 (20.7%) Principals involved themselves very much in

directing, coordinating, facilitating and supervising teaching of examinable subject during PE and Life skills lessons, 16 (18.4%) were involved much, and 22 (25.3%) slightly much. On the other hand 9 (10.3%) Principals involved themselves very little in directing, coordinating, facilitating and supervising teaching of examinable subject during PE and Life skills lessons, 10 (11.5%) little and 9 (10.3%) slightly little. This findings implies that majority of the students may be lacking opportunities to enhance their abilities through PE and Life skills lessons which are very critical in terms of enhancing MI. This finding agrees with Wanderi (2007) studies on Physical Education which concluded that, lack and inadequate attention to Physical Education and sports at the expense of academic pursuit has been observed and widely reported among many Kenyan schools.

A student narrated the following in relation to PE and Life skills;

*Our teacher has never attended life skill lesson for the last two terms. In some classes the life skills lessons are nonexistent. Our Principal who happens to be our PE instructor never turns up. Because of this, subject teachers who are behind in syllabus take the opportunity to attend these lessons.*

Analysis of documents (timetable) showed that a few schools 22 out of 108 of the sampled schools had the right allocations of Physical Education (P.E) lessons in form one to four. Majority of the schools didn't have P.E in form four. Life skills lessons were nonexistent in most of the schools. This gives credence to the minimal involvement of the Principals and Heads of Department in coordinating and directing teaching of these subjects.

#### **4.4.2 Challenges Facing Existing Instructional Management Models of MI Development**

The study sought to find out the challenges that these models pose in enhancing students MI. The information obtained is discussed here;

Students pointed out that it's very difficult to develop their talents because the time set aside for games, sports and other activities related to MI is not there. A student narrated as follows;

In the interests of finishing syllabus early many teachers opt to teach at odd hours and during undesignated time such as games times and lunchtime. This is the time that we need to develop our talents. Many of us follow these school policies for fear of being victimized. In some instances only a few students who are in school teams are the only ones selected to participate while the rest are confined in classrooms

In addition to this students pointed out that majority of them don't function well in subjects that are emphasized more such as Mathematics and Sciences. In fact they do the subject as a formality. Therefore continually stressing these subjects only stresses students and weakens their desire in other subjects that they are good at. A student said the following;

*Since I joined form one my performance in Mathematics and Sciences has been poor yet our teachers still continues to emphasize them. Subjects such as Music, computer and Art and Design are rarely emphasized. Chances are that we are likely to perform well in these subjects because they have a direct impact to our abilities*

Responses from BOM indicated that financial constraints to the school and parents are felt when running these models. In particular they mentioned management of brick and mortar schools has become a challenge with the increasing number of students' enrolment. One of the responses indicated thus;

*As BOM we are forced every year to come up with new classrooms to accommodate the ever increasing number of students. This implies that parents have to come in financially which is not an easy thing. In addition to this there are other accompany materials such as lockers books and even teachers.*

This agrees with MOEST (2001) which observed that, problems have occurred due to poor curriculum implementation and lack of administrative and managerial skills.

Other challenges mentioned included fatigue and burn out among students. This arises from the fact that students are subjected to long hours of study that lacks breaks. This finding is in line with the Republic of Kenya (1999) report which explained that,

though schools have the key role of development of various intelligences among the students, the wide school curriculum has stifled this role. According to this report, teachers and learners are under pressure to complete this curriculum in time lest they be adversely affected during the final examination. This has left teachers with little time to develop children's talents and mental ability.

#### **4.4.3 Alternative Instruction Management Models for Enhancing MI**

In view of the challenges anticipated by the existing models of enhancing MI the researcher sought to examine alternative instruction management models for enhancing MI among students. The findings are represented in Table 4.6

Models		Extent of Enhancing students Multiple Intelligences						
		1 F (%)	2 F (%)	3 F (%)	4 F (%)	5 F (%)	6 F (%)	7 F (%)
A	Teaching inclined to Music, Computer, A&D, Hsc, French and Germany model	9(10.3)	13(14.9)	13(14.9)	3(3.4)	16(18.4)	13(14.9)	20(23)
B	Student centered methodology	3(3.4)	7(8.0)	26(29.9)	3(3.4)	12(13.8)	30(34.5)	6(6.9)
C	Outdoor teaching and learning model	10(11.5)	9(10.3)	3(3.4)	1(1.1)	16(18.4)	16(18.4)	32(36.8)
D	Pupils Choice of what they want to be taught model	19(21.8)	17(19.5)	8(9.2)	4(4.6)	9(10.3)	16(18.4)	14(16.1)
E	Differential instruction model	18(20.7)	16(18.4)	10(11.5)	5(5.7)	14(16.1)	10(11.5)	14(16.1)
F	Practical approach model	3(3.4)	6(6.9)	9(10.3)	4(4.6)	20(23)	35(40.2)	10(11.5)
G	Rotational teaching and learning in different centers model	21(24.1)	15(17.2)	16(18.4)	2(2.3)	3(3.4)	12(13.8)	18(20.7)
H	Teaching of Life Skills model	-	20(23)	13(14.9)	-	26(29.9)	12(13.8)	16(18.4)
I	Teaching of PE model	9(10.3)	9(10.3)	18(20.7)	-	20(23)	15(17.2)	16(18.4)
J	Alternative instruction for the talented	7(8)	14(16.1)	12(13.8)	3(3.4)	10(11.5)	17(19.5)	24(27.6)

**Table 4.6: Alternative Instruction Management Models for Enhancing MI**

Note: 1=extremely ineffective, 2=quite ineffective, 3=slightly ineffective, 4=Neutral, 5=slightly effective 6=quite effective 7 extremely effective

The findings in Table 4.6 indicates that 20 (23%) Principals rated an alternative instruction management model that involves teaching inclined to Music, Computer, Art and Design, Home science, French and Germany as being extremely effective in enhancing students MI, 13 (14.9%) rated quite effective and 16 (18.4%) said it was slightly effective. On the other hand 9 (10.3%) Principals rated this model as being extremely ineffective, 13 (14.9%) as being quite ineffective and 13 (14.9%) as being slightly ineffective. This implies that majority of the Principals were of the view that this model should be adopted in schools so as to enhance MI among students. These subjects give students an opportunity to enhance abilities in music (Musical Intelligence), painters, sculptors and architects (Spatial Intelligence). One of the student responses in the FGD reported that;

*If given chance I will take Art and Design or Drawing and Design as a subject and as a career subject because ever since I was in primary school I have been engaged in designing. I currently do animation and I will appreciate if the school will integrated it the school timetable*

The importance of music for example in any given society is emphasized by Husen, et al. (1994) that, music as an instrument of human expression must of necessity be accorded a role in society's educational systems. Music objectives built on the acquisition of basic practical and positive social skills attest to the fact that Music curriculum encompasses wide learning areas within performing arts, creative arts and culture. Wanyama et. al (2013) points out that, music education is the nexus and the 'mother of several other subjects' in that it can be used to teach other subjects such as mathematics, languages and religion; just to mention but a few thus the need to be exploited to the maximum for the purpose of various and varied human needs in the modern world. Therefore, it's arguable that the implementation of the music curriculum in its entirety is in itself a milestone in achieving well-rounded development of the learner. Students should be encouraged to create their own music, perform music composed by other people, and perform music from their own cultures and from cultures foreign to them.



The findings further indicated that 6 (6.9%) Principals rated an alternative instruction model that was student centered being extremely effective, majority of the Principals 30 (34.5%) rated this model being quite effective and 12 (13.8%) rated the model being slightly effective. On the other hand 3 (3.4%) Principals rated an alternative instruction model that was student centered being extremely ineffective, 7 (8.0%) as being quite ineffective and 26 (29.9%) as being slightly ineffective. The findings reveal that students are very critical in terms of developing their abilities and therefore Principals ought to direct, coordinate facilitate and supervise teaching and learning that is student centered. Personalized learning approaches/models tend to emphasize learning styles, sometimes linking this to multiple intelligences. Coffield et al. (2004) provide compelling evidence to challenge the basis of these approaches though they acknowledge the need to be selective and cautious, since some approaches were found to be more reliable than others and increased motivation.

Management of Outdoor teaching and learning model was also looked at and the findings as indicated in Table 4.6 revealed that majority of the Principal 32 (36.8%) rated this model as being extremely effective, 16 (18.4%) rated it as being quite effective and 16 (18.4%) as being slightly effective. On the other hand 10 (11.5%) Principals rated this model as being extremely ineffective, 9 (10.3%) as being quite ineffective and 3 (3.4%) as being slightly ineffective. It can be argued from the findings that outdoor teaching is very significant in enhancing MI among students in that students will be able to learn from a broad environment that will expose them to a variety of aspects that are essential in enhancing their abilities. The outdoor classroom model where students engage in constructing forts, collecting rocks, and digging are ways children and or students create their own worlds and become more acquainted with the natural world. Children thrive when they have some choice in their day and to create games and stories to play (Anne Santa Ed Leadership).

Pupil's choice of what they want to learn elicited a different response as compared to the other models. Majority of the Principals 19 (21.8%) rated this model as being extremely ineffective, 17 (19.5%) as being quite ineffective and 8 (9.2%) as being slightly ineffective. On the other hand 14 (16.1%) Principals rated this model as being extremely effective, 16 (18.4%) as being quite effective and 9 (10.3%) as being slightly effective. This mixed response arises from the fact that some of the students may not necessary know or understand what they ought to be taught probably because they are ignorant and therefore need assistance from teachers and parents. Besides MI requires guidance for it to be nurtured and thus the need for the students to be managed rather than them managing themselves.

Further information was sought regarding management of differential instruction model. The findings in Table 4.6 revealed that majority of Principals 18 (20.7%) rated differential instruction as extremely ineffective in enhancing MI, 16 (18.4%) rated this model as quite ineffective and 10 (11.5%) rated it as slightly ineffective. On the other hand 14 (16.1%) Principals rated this model as extremely effective, 10 (11.5%) as quite effective and 14 (16.1%) as slightly effective. This implies that this model was not favored to enhance MI.

An attempt was also made to establish the effectiveness of managing a practical approach to teaching and learning model and the findings are shown in Table 4.6. Results indicate that 10 (11.5%) Principals rated this model as being extremely effective, majority of them 35 (40.5%) rated this model as quite effective and 20 (23%) rated the model as slightly effective. On the other hand very few Principals 3 (3.4%) indicated that adopting this model will be extremely ineffective, 6 (6.9%) indicated that it will be quite ineffective and 9 (10.3%) indicated that it will be slightly ineffective.

Rotational teaching and learning in different centers model was looked at and the results as shown in Table 4.9 revealed that majority of the Principal 21 (24.1%) rated this model as being extremely ineffective, 15 (17.2%) as being quite ineffective and 16 (18.4%) as being slightly ineffective. On the other hand 18 (20.7%) Principals rated this model as being extremely effective, 12 (13.8%) as being quite effective and 3 (3.4%) as being slightly effective. These findings may be attributed to the fact that the area under study is expansive and schools may be located far apart making this model ineffective.

Management of Life skills teaching model was also looked at and the finding as indicated in Table 4.6 revealed that 16 (18.4%) Principal rated this model as extremely effective, 12 (13.8%) as quite effective and 26 (29.9%) as slightly effective. On the other hand 20 (23%) Principals rated this model as quite ineffective while 13 (14.9%) rated this model as slightly ineffective. A BOM response to life skill was as follows;

*Today's world is very complex and challenging. Many issues are affecting the youths ranging from drugs, extremist groups that engage in terrorism HIV/AIDS and unwanted pregnancies. As such youths need to be guided through life skills lessons to be able to know values of good living.*

This findings show that life skills are essential in enhancing MI more so the naturalist intelligence.

Majority of the Principals 20 (23%) rated management of Physical Education model as being slightly effective, 15 (17.2%) as being quite effective and 16 (18.4%) as being extremely effective. On the other hand 9 (10.3%) Principals rated this model as extremely ineffective, 9 (10.3%) as quite ineffective while 18 (20.7%) rated this model as slightly ineffective. Students in the FGD also felt that PE is important and should be taken seriously. One student respondent thus;

*Sometimes when you are fatigued due to long periods of sitting and studying you cannot grasp what the teacher is teaching. It becomes important therefore for one to take a break. In addition PE is important because it makes us to*

*socialize with the whole class members through several games unlike sitting in class*

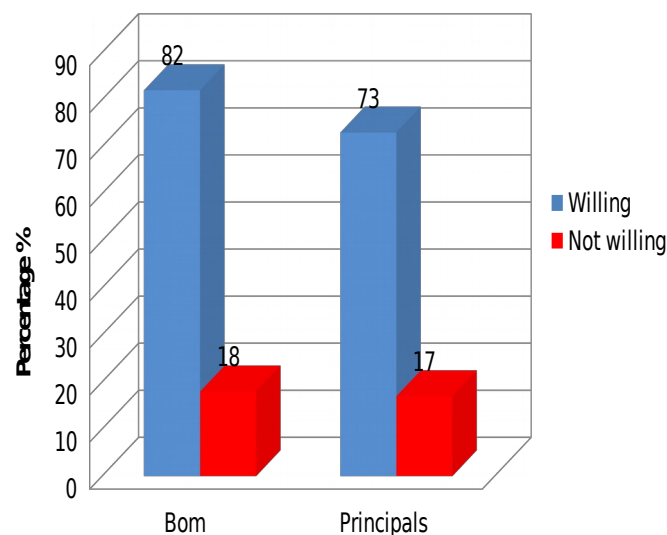
This findings show that Physical Education is essential in reinforcing the contribution of disciplines such as music, drama, dance and visual arts.

Lastly the researcher looked at management of alternative instruction for the talented. The findings revealed that 24 (27.6%) Principals rated this model as extremely effective, 17 (19.5%) as quite effective and 10 (11.5%) as slightly effective. On the other and 7 (8.0%) Principals rated this model as extremely ineffective, 14 (16.1%) as quite ineffective and 12 (13.8%) as slightly ineffective. This findings shows that majority of the talented students may be missing out in developing their talents with the mainstream instruction that puts little emphasis on the talented students.

#### **4.4.4 Willingness to Adopt Alternative Instruction Management Models for MI Development**

Board of Management, Principals and Heads of Department were asked to state their willingness to adopt/change/innovate to the alternative instructional model in section 4.4.3. Their responses were as shown in Figure 6:

### **Willingness to Adopt Alternative Instruction Models**



### **Figure 6: Willingness to Adopt Alternative Instruction Models**

As indicated in Figure 6 majority of the Principals (84%) and BOM (86%) indicated that they were willing to adopt alternative instruction models while a few Principals (16%) and BOM (14%) Principal were not willing. The few who were unwilling cited reasons for unwillingness like it is expensive and requires a lot of infrastructure to run the models. These findings indicate that indeed these models can be a reality if adopted in schools.

#### **4.5 Assessment Management Model**

The second research question which was “Which assessment management models enhance Multiple Intelligences among students in Kenya?” was meant to answer the following research objective: to investigate assessment management models that enhances Multiple Intelligences among students in Kenya. The findings are presented in the following sections.

##### **4.5.1 Existing Assessment Management Models for MI Development**

The BOM, Principal and Heads of Department play a key role in terms of directing coordinating, facilitating and supervising assessment models (practices) that are important in enhancing multiple intelligence models. It was therefore important to look at these practices and establish the Heads of Department management role of directing coordinating, facilitating and supervising. The Heads of Department were asked to rate the level of their involvement in terms of coordinating, facilitating and supervising the existing models on a 7 scale rating scale whereby 1=very little, 2=little, 3=slightly little, 4=Neutral, 5=slightly much 6=much 7 very much. The responses were as shown in Table 4.7.

Models	Level of Coordination, facilitation and supervision						
	1 F (%)	2 F (%)	3 F (%)	4 F (%)	5 F (%)	6 F (%)	7 F (%)
A Examinable content assessment model	15(5.8)	25(9.6)	30(11.5)	3(1.2)	69(26.5)	78(30)	40(15.4)
B Academic target setting model	24(9.2)	37(14.2)	60(23.1)	6(2.3)	101(38.8)	12(4.6)	20(7.7)
C Administration of term series exams model	20(7.7)	30(11.5)	45(17.3)	7(2.7)	88(33.8)	55(21.2)	15(5.8)
D Assessment that is exams and test based	32(12.3)	17(6.5)	19(7.3)	4(1.5)	120(46.2)	48(18.2)	20(7.7)
E Out of formal learning time Assessment (i.e. during games, lunch) model	49(18.8)	38(14.6)	32(12.3)	10(3.8)	8(3.1)	13(5.0)	110(42.3)
F Progression of classes based on exam performance model	41(15.8)	66(25.4)	73(28.1)	3(1.2)	55(21.2)	22(8.5)	-
G Holiday assignment model	-	15(5.8)	20(7.7)	4(1.5)	100(38.5)	69(26.5)	52(20)

**Table 4.7: Existing Assessment Management Models for MI Development**

**Note:** 1=very little, 2= little, 3=slightly little, 4=Neutral, 5=slightly much 6=much 7 very much

As indicated in Table 4.7 majority of the Heads of Departments 78 (30%) were involved much in directing, coordinating, facilitating and supervising examinable content assessment, 69 (26.5%) were involved slightly much and 40 (15.4%) were involved very much on the other hand 15 (5.8%) Heads of Departments were involved very little, 25 little (9.6%) and 30 (11.5%) were slightly involved. This imply that students' abilities in areas that are not examinable such as games, singing, dancing, painting and leadership skills are never taken seriously. These activities are likely to be kept at the periphery at the expense scaffolding students' talents growth. This agrees with a study done by Misigo (1998) which noted that Kenyan Education is oriented towards academic achievement that rewards individuals merely for being competent. Further findings from the Koech Commission of 1999 noted that, co-curricular activities such as sports, drama, clubs and subjects such as music which enhances social interaction appear not to be given the required prominence in the curriculum due to present emphasis on examinations.

Analysis of the Exams timetable in all the schools sampled established that schools were in the business of examining the examinable subjects that were examinable in KCSE. A glimpse of the examination papers showed a bias towards class based content. There was a high frequency of examinations and more so in the upper classes to imply that a lot of emphasis was being put to exams more than other areas of education.

Further information was sought on academic target setting and the results showed that majority of the Heads of Departments 101 (9.2%) were involved slightly much in directing, coordinating, facilitating and supervising academic target setting, 12 (4.6%) were involved much and 20 (7.7%) very much. On the other hand 24 (9.2%) Heads of Departments directed and facilitated very little academic target setting, 37 (14.

2%) little and 60 (23.1%) directed and facilitated slightly little. This finding reveals that a great deal of emphasis is put on academics targets such that schools will go out

of their way like organizing remedial, tuitions and drilling to meet those targets. This will have a negative impact in derailing enhancing of students' abilities.

Students complimented this model (academic setting) by saying that;

*Targets are normally set at the beginning of the term. We are instructed to set marks that we have to score during exams. Such targets are normally verified by parents during academics day when there are face to face and clinics to analyze the targets.*

Information from BOM revealed similar sentiments. One BOM respondent that;

It is a common practice to set targets especially in national exams. In fact targets are set in three different frontiers. One, the target that the BOM will want students to achieve, two, the target that the BOM will want teachers to get from parents and what the BOM will want to get from the school. All these are averaged to get the desired mean. In my school last year (2015) we set a target of 7.5 (B-). It is unfortunate that we fell short of the target.

These findings are in with the study done by Siringi (2009) which concluded that the current secondary school education system places emphasis on grades especially at K.C.S.E. the reality is that half of the students sitting the K.C.S.E score mean grades of D+ and below meaning they have no hope of advancing in their education. To him assessment for education should allow learners to develop their talents and skills.

Further information was sought on management of termly series exams and the results showed that majority of the Heads of Departments 88 (33.8%) were involved slightly much, 55 (21.5%) involved themselves much and 15 (5.8%) involved themselves very much. On the other hand 20 (7.7%) Heads of Departments directed and facilitated term series exams very little, 30 (11.5%) little and 45 (17.3%) slightly little. Many of these exams take away students game time because they need to prepare for the exams. As indicated by most of them in the Focus Group Discussion, they forgo activities such as games, scouting, singing and painting to read for the exams. Several students concurred by saying that;

*At times when you want to go for games and sharpen your skills in a particular game you are told that there will be an exam. Because of fear to fail you forgo games and other spare time to go to class and read so as to pass exams. Sometimes we are even given impromptu exams making us squeeze any available time to read.*



Further information on termly series exams from the documents indicated that several external exams were in place. These included mock exams from other counties and purchased exams. In one school students in form four were subjected up to 10 exams during the term.

Majority of the Heads of Departments 120 (46.2%) were involved slightly much in directing, coordinating and supervising assessments that were tests oriented, 48 (18.5%) were involved much and 20 (7.7%) were involved very much. On the other hand 32 (12.3%) Heads of Departments were involved very little, 17 (6.5%) little and 19 (7.3%) slightly little. It's important to point out that such test oriented exams takes away student time, interests and development of their talents.

The findings further indicated that majority of the Heads of Departments 110 (42.3%) directed and facilitated very much out of formal learning time assessment (i.e. during games, lunch) model, 13 (5.0%) facilitated much while 8 (3.1%) facilitated very little. On the other hand 49 (18.8%) Heads of Departments directed and facilitated very little out of formal learning time assessment, 38 (14.6%) directed little and 32 (12.3%) directed slightly little. It's important to argue that multiple intelligences are best enhanced during such time as lunch and games therefore, infringing into such time mean that student's may not get ample time to enhance his or her abilities.

Progression of classes based on exam performance model was looked at and the findings as indicated in Table 4.7 showed that majority of the Heads of Departments did not direct and facilitate this model. Majority of Heads of Departments 73 (28.1%) said they directed slightly little, 66 (25.4%) little and 41 (15.8%) directed very little. On the other hand, 55 (21.2%) Heads of Departments directed Progression of classes based on exam performance slightly much and 22 (8.5%) directed much. One of the BOM rejoined that;

*At one point in time we used to have progression based on exam performances. Though as we speak now that management model has been*

*phased out. Currently what we are experiencing is a situation whereby parents or students themselves are the ones initiating their own progress based on test performances*

Though it's important to mention that majority of the HoD were not involved in this model, its critical to mention that the few who were involved in coordinating this model were curtailing enhancement of students MI. Schools may not be pursuing progression based on test scores but at the same time they may not be discouraging students or parents basing progression on test scores

Management of Holiday assignment model was looked at and the findings as indicated in Table 4.7 showed that majority of the Heads of Departments 100 (38.5%) did direct and facilitate this holiday assignment model slightly much, 69 (26.5%) much and 52 (20%) very much. A few Heads of Departments 15 (5.8%) said they directed slightly little, 20 (7.7%) little. Though the study focused mainly on the school environment it was felt that holiday assignment that emanate from school would have a far reaching implication on MI development.

#### **4.5.2 Challenges Facing Existing Assessment Models of MI Development**

The study sought to find out the challenges that these models face in enhancing students MI. The information obtained is discussed here

One of the BOM reacted by saying that majority of the students who are subjected to this model graduate from school without any creativity.

This model develops students who are not critical thinkers but robots that wait to be guided on what is to be done. In addition it creates cramming machines that reproduces work given in class by teachers. Many student ends up preparing for exams and not any other thing in school. These same individuals (students) will have nothing to carry home if they fail the very exams they were focusing on entirely.

This finding is in line with Mburu (2008) assertion that, the worry is that not all students who top their class or even national examination succeeds in life. Thus when

the examination system focuses only on knowledge, it influences acquisition of the required skills hence working against the goal of education which is to produce an all-round individual who can fit in the society

It was also found that this model puts a lot of pressure on students to perform. This is so because students always strive to perform so that they are rewarded or they progress to another level.

Because the assessment model doesn't assess non-academic abilities these abilities aren't taken seriously. A student said that

*At the end of the four year cycle (secondary education) certificates only show grading academic subjects such as Kiswahili and Biology. Sporting activities like football, swimming and other interest areas like drawing and painting are never recognized in terms of grading.*

This implies that students, teachers and Principals may never take such activities seriously. This is in line with what Agufuna (2006) noted that publication orders merit for K.C.S.E. examinations have negatively impacted on the students because teachers have tended to authoritatively ignore those aspects of the curriculum not included in public examination to the detriment of other aspects of development of the pupils.

Koech (1999) also emphasized that, over emphasis of certificates and lack of talent development activities coupled with continuous assessment leads to rote learning thus sidelining other intelligences. This authoritarian leadership and management stifle student's creativity.

Lack of social, moral, physical and work oriented education was cited as another challenge that faced this traditional assessment model. One of the BOM interviewed had this to say

*Education purpose of developing a whole rounded child, who is morally upright, physically fit and a social fit in the community may be hard to attain given the current exam oriented model being managed in schools.*

This finding was also supported by Otieno (2002) who said that the education sector has not satisfactorily met its objectives of inculcating a modern scientific culture, enhancing morality among learners and producing an employable labor force. Liu & Liu (2005) further enumerated problems associated with test- oriented education as: an overemphasis on preparing students for tests; lack of social, moral, emotional, physical and work oriented education; reliance on rote memorization and mechanical drills; a narrow focus on the few higher achievers and neglect of the majority of students; low student engagement; and lack of creativity.

#### **4.5.3 Alternative Assessment Management Models for MI development**

In view of the challenges anticipated by the existing assessment Management models of enhancing MI the researcher sought to examine alternative assessment models for enhancing MI among students. The findings are represented in Table 4.8

Models	Extent of Enhancing students Multiple Intelligences						
	1 F (%)	2 F (%)	3 F (%)	4 F (%)	5 F (%)	6 F (%)	7 F (%)
A Exams based on Stated goals of education	-	23(8.8)	17(6.5)	5(1.9)	40(15.4)	55(21.2)	120(46.2)
B 20% class and 80% out of class testable content	12(4.6)	28(10.8)	5(1.9)	19(7.3)	59(22.7)	68(26.2)	69(26.2)
C ICT assessment	111(42.7)	48(18.5)	36(13.8)	11(4.2)	4(1.5)	29(11.2)	21(8.1)
D College entrance exams	12(4.6)	41(15.8)	81(31.2)	30(11.5)	64(24.6)	16(6.2)	16(6.2)
E 80 % formative and 20 % summative assessment	-	8(3.1)	6(2.3)	11(4.2)	88(33.8)	73(28.1)	74(28.5)
F Individual assessment based on students strengths	30(11.5)	93(35.8)	39(15)	25(9.6)	30(11.5)	43(16.5)	-
G Peer assessment based on shared strengths between students	68(26.2)	70(26.9)	35(13.5)	11(4.2)	29(11.2)	10(3.8)	37(14.2)
H Alternative assessment for the talented	-	20(7.7)	16(6.2)	5(1.9)	98(37.7)	15(5.8)	106(40.8)
I Certification to include students' talents.	-	15(5.8)	32(12.3)	7(2.7)	112(43.1)	61(23.5)	33(12.7)

**Table 4.8: Alternative Assessment Management Models for Enhancing MI**

Note: 1=extremely ineffective, 2=quite ineffective, 3=slightly ineffective, 4=Neutral, 5=slightly effective 6=quite effective 7 extremely effective

The findings in Table 4.8 indicates that majority of the Heads of Departments 120 (46.2%) rated an alternative assessment management model that involves exams based on stated goals of education being extremely effective in enhancing students MI, 55 (21.2%) rated this model as quite effective and 40 (15.4%) rated this model as slightly effective. On the other hand 23 (8.8%) Heads of Departments rated this model as quite ineffective and 17 (6.5%) as slightly ineffective. This result implies an assessment that puts into consideration the various goals of education such as promoting individual development and self-fulfillment by exploiting and developing individual potentials and talents for suitable quality life can be used to enhance MI among students. Miano and Mwanzia (2007) pointed out that for assessment to play a role in fostering quality education, it must pay attention to the goals of education in terms of what is taught and learned and the levels at which the knowledge and skills acquired by the learner are assessed.

Further information was sought on an assessment management model that should be 20% class content and 80% out of class content. The findings in Table 4.8 indicated that 69 (26.5%) Heads of Departments rated this model as extremely effective, 68 (26.2%) rated this model as quite effective and 59 (22.7%) rated this model as slightly effective. On the other hand 12 (4.6%) Heads of Departments rated this model as extremely ineffective, 28 (10.8%) as quite ineffective and 5 (1.9%) as slightly ineffective. These findings indicate that majority of the Heads of Departments were of the view that this model was important in terms of enhancing students MI probably because such a model is likely to encourage holistic development of students.

ICT assessment model was also looked at and as the findings indicate majority of the Heads of Departments 111 (42.7%) rated this model as extremely ineffective, 48 (18.5%) rated the model as quite ineffectively and 36 (13.8%) rated it as slightly

ineffective. On the other hand 21 (8.1%) Heads of Departments rated this model as extremely effective, 29 (11.2%) rated it as quite effective and 4 (1.5%) as slightly effective. It can be argued from the findings that reluctance by the majority of the Heads of Departments stems from the fact that most of them may not be computer literate.

College entrance exam model was also investigated and the findings in Table 4.8 showed that majority of the Heads of Departments 64 (24.6%) rated this model as slightly effective, 16 (6.2%) as quite effective and 16 (6.2%) as extremely effective. On the other hand 12(4.6%) Heads of Departments rated this model extremely ineffective, 41 (15.8%) rated it as quite ineffective and 81 (31.2%) as slightly ineffective. This findings show that most of the schools still rate KCSE exam as an important transition tool to universities and colleges thus a negative attitude towards the model. Besides, Heads of Departments may have viewed quality of the college entrance exams as questionable due to lack of a body to manage such exams such as KNEC and KASNEB.

Further enquiry was sought to examine an assessment model that encompasses 80% formative and 20 % summative testing. Majority of the Heads of Departments 88 (33.8%) rated this model as slightly effective, 73 (28.1%) as quite effective and 74 (28.5%) as extremely effective. On the hand other 8 (3.1%) Heads of Departments rated this model as quite ineffective and 6 (2.3%) as slightly ineffective. This implies that students are not likely to be pressurized more on passing the summative testing thereby giving students an opportunity to enhance their abilities.

Individual assessment management model that focuses on students' strength was looked at and the findings revealed the following; 30 (11.5%) Heads of Departments rated this model as extremely ineffective, 93 (35.8%) rated as quite ineffective and 39 rated as slightly ineffective. On the other hand 30 (11.5%) Heads of Departments

rated this model as slightly effective and 43 (16.5%) rated it as quite effective. It's important to argue that individual assessment brings with it extra work to teachers not to mention the already overloaded teaching workforce. This may explain the ineffective nature of this model as far as teachers are concerned.

The findings further revealed that 68 (26.2%) Heads of Departments rated management of peer assessment based on shared strengths between students as extremely ineffective, 70 (26.9%) as quite ineffective and 35 (13.5%) as slightly ineffective. On the other hand 37 (14.2%) Heads of Departments rated peer assessment based on shared strengths between students as extremely effective, 10 (3.8%) as quite effective and 29 (11.2%) as slightly effective. It's arguable to mention that societies consist of hard working and lazy individuals who rely on others to accomplish tasks. It's imperative therefore to say that this model may have been found ineffective by the majority of Heads of Departments because it may encourage laziness among students who rely on others.

Findings in Table 4.8 further showed that majority of the Heads of Departments 106 (40.8%) rated managing an alternative assessment model for the talented as being extremely effective, 15 (5.8%) as being quite effective and 98 (37.7%) as being slightly effective. On the other hand 20 (7.7%) Heads of Departments rated this model as quite ineffective and 16 (6.2%) as slightly ineffective. This shows that students varied abilities can be nurtured and honed so that grading for the same reflects quality that is synonymous with the associated with academic content such English and other subjects.

Lastly the researcher looked at certification model to include students varied abilities. The findings indicated in Table 4.8 shows that, majority of the Heads of Department

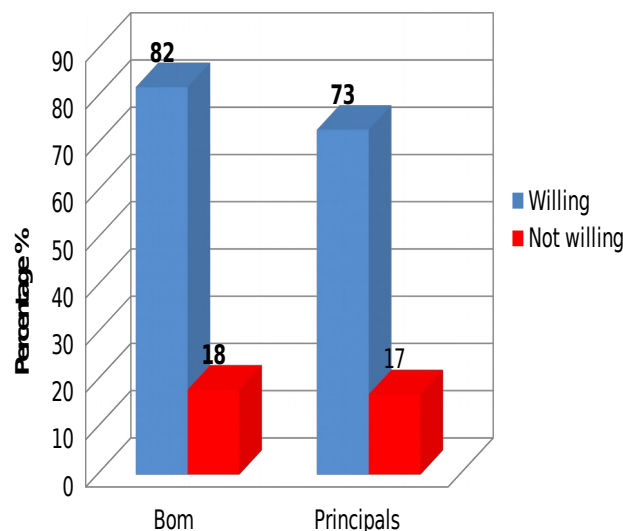


112 (43.1%) rated this model as slightly effective, 61 (23.5%) rated it as quite effective and 33 (12.7%) as extremely effective on the other hand 15 (5.8%) Heads of Department rated this model as quite ineffective, 32 (12.3%) as slightly ineffective.

#### 4.5.4 Willingness to Adopt Alternative Assessment Management Models for MI Development

Board of Management, Principals and Heads of Department were asked to state their willingness to adopt/change/innovate to the alternative assessment model in section 4.6.3. Their responses were as shown in Figure 7

### Willingness to Adopt Alternative Assessment Model



**Figure 7: Willingness to Adopt Alternative Assessment Model**

As indicated in Figure 7 majority of the Principals (73%) and BOM (82%) indicated that they were willing to adopt alternative instruction models while a few Principals (21%) and BOM (18%) Principal were not willing.

#### 4.6 Technological Management Model

The third research question which was “Which technological advancement management models enhance multiple intelligences among students in Kenya?” was meant to answer the following research objective: To explore the technological

advancement management models that enhances multiple intelligences among students in Kenya. The findings are presented in the following sections.

#### **4.6.1 Existing Technological Management Models for MI Development**

Findings revealed that majority of the schools were not utilizing computers and other electronic devices aimed at enhancing multiple intelligences in schools. A student revealed the following;

Although the promise of new computer technology is real, as promised by various stakeholders it is still only a pipe dream in this school. Though the school is blessed with several computers no active programmes have been initiated to assist students. Most of us are likely to complete secondary education without any reasonable computer knowledge.

This is in line with Schofield (1995) assertion that it's unfortunate that current practitioners often do not use these technologies effectively to support instruction. Instead they are often used in homes and in schools in ways that isolate children, locking them into drill and practice program devoid of human interaction

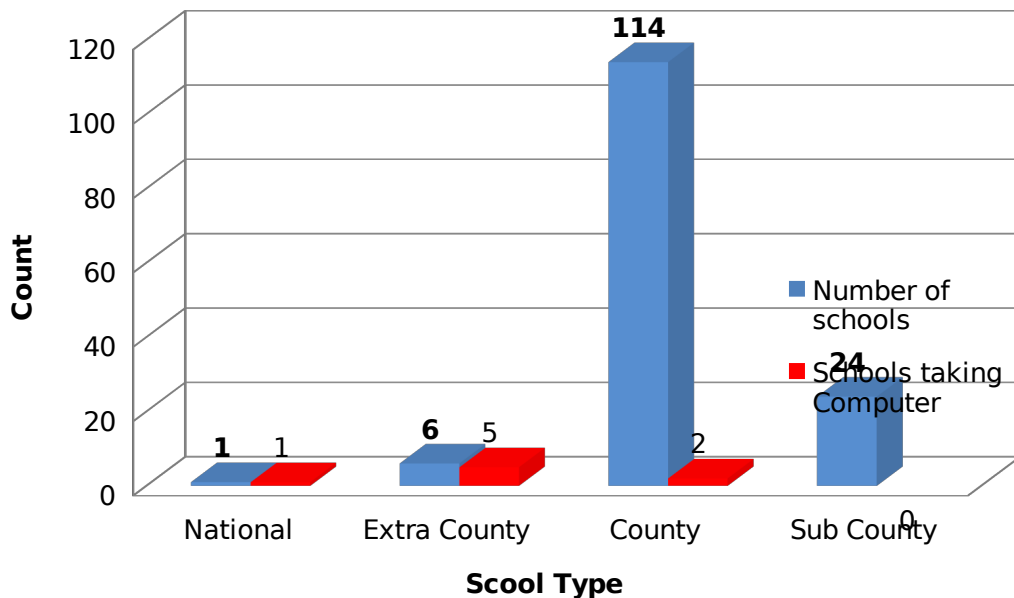
It was also revealed that teachers' often do not use these technologies effectively to support instruction. Instead they are often used in homes and in schools in ways that isolate children, locking them into drill and practice program devoid of human interaction. A student narrated as follows;

*Teachers often at time use the usual lecturing and note dictation during teaching. Sometimes topics directly linked to computer for instance a passage related to technology is never associated with a computer at all. Truth is we learn about computers theoretically.*

This findings agrees with Hawkins (1996) findings which revealed that "Computer experts consider that computer base instruction materials in elementary schools is mainly restricted to drill and practice exercises and is rarely integrated into ongoing curriculum" (p. 124).

The school timetable revealed that many schools were not offering computer in fact out of 87 schools studied only 8 schools were offering Computer as a subject. This is shown in Figure 8

## Schools Taking Computer Subject



**Figure 8: Schools Taking Computer Subject**

It's imperative to note from Figure 8 that no sub county school modeled itself to offer Computer subject and only a few County schools 2 were offering Computer subject. This implies that majority of the school modeled themselves in offering Agriculture and Business Education.

Management of the traditional boards (blackboards) was the most preferred as a communication tool in the classroom. Such boards as the student revealed were boring and they never enhance any talents. The students preferred electronic boards and white boards. A student responded thus;

*For a long time since we were in primary schools we have been subjected to this blackboard thing. Such boards are very limited to chawks and one dimension diagrams thus making it difficult for students, who have interests in art, drawing and spatial activities to be sidelined.*

Barth (2004) indicates that numerous studies have been conducted to investigate how technologies have been used in public schools for the past decades. These studies indicate that these technologies such as usage of e-learning remain an area that is barely utilized to mean that such traditional boards were in existence.

#### **4.6.2 Challenges Facing Existing Technological Management Models of MI Development**

The study sought to find out the challenges that these models face in enhancing students MI. The information obtained is discussed here.

Responses from the focus group discussion indicated that many students have lagged behind in term of computer literacy. This according to them was a setback in a society which is increasingly becoming computerized (digital). Students narrated the following

*Am not happy with myself because I can't send an email to my friends let alone logging in to a computer. I don't understand any application. All this stems from the fact that we are not offered computer studies in school.*

It ought to be remembered that computers are critical in enhancing students' abilities in the sense that they create that platform upon which they can exercise their mind in enhancing their abilities in various areas like writing poems, doing math, drawing creating movies and even singing.

Students pointed out that some of the technology used is a health hazard. One technology mentioned was the black boards that produced chalk dust.

#### **4.6.3 Alternative Technological Management Models for MI development**

In view of the challenges anticipated by the existing Technological Management models of enhancing MI the researcher sought to examine alternative Technological models for enhancing MI among students. The findings are represented in Table 4.9

Models	Extent of Enhancing students Multiple Intelligences						
	1 F (%)	2 F (%)	3 F (%)	4 F (%)	5 F (%)	6 F (%)	7 F (%)
A Power point presentation/ Overhead	11(12.6)	9(10.3)	9(10.3)	2(2.3)	16(18.4)	24(27.6)	16(18.4)
B Computer games model	21(24.1)	19(21.8)	23(26.4)	1(1.1)	4(4.6)	19(21.8)	-
C Internet/ websites/cyberspace/cloud	9(10.3)	13(14.9)	3(3.4)	3(3.4)	12(13.9)	29(33.3)	18(20.7)
D Use of hypertexts	8(9.2)	11(12.6)	15(17.2)	4(4.)	19(21.8)	17(19.5)	13(14.9)
E Talking books (CD Rom based Books)	12(13.8)	9(10.3)	9(10.3)	3(3.4)	19(21.8)	23(26.4)	12(13.8)
F Pupil run television/TV	4(4.6)	23(26.4)	13(14.9)	2(2.3)	21(24.1)	17(19.5)	7(8.0)

**Table 4.9: Alternative Technological Management Models for MI development**

Note: 1=extremely ineffective, 2=quite ineffective, 3=slightly ineffective, 4=Neutral, 5=slightly effective 6=quite effective 7 extremely effective

As indicated in Table 4.9 Principals gave varying responses on the effectiveness the various models. Concerning a directed, coordinated, and facilitated use of power point presentations 16 (18.4%) Principals indicated that it may be extremely effective, 24 (27.6%) indicated that it may be quite effective and 16 (18.4%) indicated that it may be slightly effective. On the other hand 11 (12.6%) Principal indicated that a directed, coordinated, and facilitated use of power point presentations may be extremely ineffective, 9 (10.3%) indicated that it may be quite ineffective and 9 (10.3%) indicated that it may be slightly ineffective. As the results indicate such presentations might enhance students' abilities such spatial intelligences and bodily kinesthetic.

Further findings revealed that Principals were not of the view that computer games should be adopted. This is shown by 21 (24.1%) Principals who perceived this model as extremely ineffective, 19 (21.8%) as quite ineffective and 23 (26.4%) as slightly ineffective. On the other hand 19 (21.8%) Principals perceived this model as quite effective while 4 (4.6%) perceived this model as slightly effective. As indicated earlier with Heads of Department lack of computer literacy among school administrators and teachers may have contributed to the negative perception. This is in line with the findings by the Office of Technology Assessment, (1995) which indicated that many teachers believe that they are inadequately trained to use computers as an instructional material (even though they recognize their value). They also believe that they are unaware of the ways in which tools such as word processors, desktop publishing, and electronic plan books can help them as a part of computer based instructional material in school.

Table 4.9 further revealed that 18 (20.7%) Principals perceived use and management of internet/websites/emails/cyber space and cloud technology as being extremely effective in enhancing students varied abilities, 29 (33.3%) indicated that they were

quite effective and 12 (13.8%) as being slightly effective. On the other hand 9 (10.3%) Principals indicated that they were extremely ineffective, 13 (14.9%) as quite ineffective and 3 (3.4%) as slightly ineffective. Metz (1990) points out that interactive E- mail messages provides a natural learning environment for students to learn the rules of written communication. By reading other peoples' messages, students can see why clear and convincing writing is essential for understanding. He further stresses that correspondence is a fundamental aspect of the learning process by which one becomes a writer. To him communication through E-mail creates a functional learning environment for students to become effective writers. Further findings by Harris (1996) states that the internet can encourage self-initiated learning by providing easy access to a vast array of new ideas, cultures and information further supports the claim. Internet can easily be used as a part of computer based instructional material in the classroom.

Table 4.9 further revealed that 13 (14.9%) Principals perceived use of hypertext as being extremely effective in enhancing students varied abilities, 17 (19.5%) indicated that they were quite effective and 19 (21.8%) as being slightly effective. On the other hand 8 (9.2%) Principals indicated that they were extremely ineffective, 11 (12.6%) as quite ineffective and 15 (17.2%) as slightly ineffective. Schofield (1995: 98) proposes that students seem to be drawn to working on the computer because the computer introduces variety into school routine. This variety proves helpful for the student to complete their assignments, reinforce concepts and to build confidence by having children "practice beyond mastery"

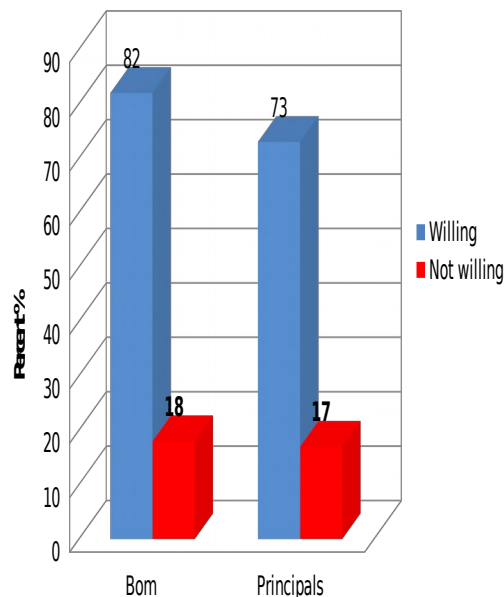
Information was also sought on talking books (CD Rom based books) and bloggers, and as findings in Table 4.9 indicate, 12 Principals perceived this model as being extremely effective, 23 as being quite effective and 19 as being slightly effective. On the other hand 12 Principals perceived this model as being extremely ineffective, 9 as being quite ineffective and 9 as being slightly ineffective.

Lastly the researcher looked at pupil run televisions, radio, and online TV and the results indicated that 7 (8.0%) Principals perceived this model as being extremely effective, 17 (19.5%) as being quite effective and 21 (24.1%) as being slightly effective. On the other hand 4 (4.6%) Principals perceived this model as being extremely ineffective, 23 (26.4%) as being quite ineffective and 13 (14.9%) as being slightly ineffective.

#### 4.6.4 Willingness to Adopt Alternative Technological Management Models for MI Development

Board of Management, Principals and Heads of Department were asked to state their willingness to adopt/change/innovate to the alternative assessment model in section 4.6.3. Their responses were as shown in Figure 9

### Willingness to Adopt Alternative Technological Management Models



**Figure 9: Willingness to Adopt Alternative Technological Management Models**

As indicated in Figure 9 majority of the Principals (88%) and BOM (90%) indicated that they were willing to adopt alternative instruction models while a few Principals (17%) and BOM (18%) Principal were not willing.



#### **4.7 Off School Business Management Model**

The fourth research question which was “What off school business management models enhances multiple intelligences among students in Kenya?” was meant to answer the following research objective: To examine the off school business management model that enhances multiple intelligences among students in Kenya. The findings are presented in the following sections.

##### **4.7.1 Existing Off School Business Management Models for MI Development**

Through the document analysis guide the researcher was able to gather that the off school business model did not have any activity that enhanced MI from students. The permission record indicated that students left school purposively to go collect fees balances from home, suspensions, Sunday schools activities, attending medical checkups and breaking of half term and holidays. Students also left schools to attend to burials of their relatives and attend graduations ceremonies. The school log at the gate showed little effect of anything that was associated with MI activities. It is important to mention though that a few schools did invite comedians and coca cola promotional troupe commonly referred to as the Coke Light Studio.

The visitors’ book commonly kept at the Principals office indicated that majority of the visitors were fellow Principals making courteous calls, Members of Parliament probably coming in fund raising, suppliers and old students coming in to collect certificates.

Schools routine showed little effect to any activities that were related to MI development. The schools routines in most of the schools were the traditional routines that had the usual waking up, cleaning, school timetable, breakfast, lunch, games supper, preps, church service, and lights off. Permanent stores ledger indicated majorly academics materials such as books, pens, files, printing papers and chalk.

Responses from BOM indicated that as much as there were alternative models for enhancing MI the traditional models did take lot of credence in schools. They said thus;

Most of the activities that were carried out in schools (that is the off school business) were geared towards academic excellence and probably issues related to students social wellbeing. We do entrust parents during holidays to ensure that students benefit from activities carried out at their homes such as farming, business and fishing. It's important to mention that the school though put emphasis on the extra curricula activities such as games, sports and music.

Activities aimed to generate income for the school (income generating activities) were mostly run by teachers, support staff and contracted personnel. These include activities such as school canteen, milk and meat supply. This implies that many students may not be exposed to entrepreneurship skills. One BOM said;

*“We rarely give tenders to students in relation to supply of goods and services. It's in the interests of the school that students concentrate in books and passing of exams. Such activities are not graded thus not very critical for academic progression of the students.”*

This implies that off school activities meant to enhance students MI were rarely coordinated, supervised nor directed by the BOM, Principals and HoDs.

#### **4.7.2 Challenges Facing Off School Business Management Models of MI Development**

The study sought to find out the challenges that these models face in enhancing students MI. The information obtained is discussed here

Most of the off school activities did not have any relationship with enhancement of MI among students. They were mostly to enhance the typical class activities that were biased towards Mathematics, languages and Sciences and very little that will enhance activities such as music, painting, environmental aesthetics, meditation, dancing and leadership.

Responses from the BOM indicated that schools did not have links with private sectors that could assist students in developing their leadership skills and

entrepreneurship abilities. Many students were engaged with what just goes on around the school which is basically classroom academics.

#### **4.7.3 Alternative off School Business Management Models for MI development**

In view of the challenges anticipated by the existing off School Business Management models of enhancing MI the researcher sought to examine alternative off School Business Management models for enhancing MI among students. The findings are represented in Table 4.10

Models	Extent of Enhancing students Multiple Intelligences						
	1 F (%)	2 F (%)	3 F (%)	4 F (%)	5 F (%)	6 F (%)	7 F (%)
A Working relations with other education institution	11(12.6)	11(12.6)	7(8.0)	4(4.6)	14(16.1)	26(29.9)	14(16.1)
B Links with other countries (exchange programmes)	7(8.0)	22(25.3)	13(14.9)	5(5.7)	12(13.8)	18(20.7)	10(11.5)
C Links with local/regional/international businesses	8(9.2)	21(24.1)	15(17.2)	6(6.9)	20(23.0)	12(13.8)	5(5.7)
D Links with corporate such as safaricom, Yu, coca cola	3(3.4)	10(11.5)	15(17.5)	1(1.1)	17(19.5)	23(26.4)	18(20.7)
E Links with agencies such as Red cross, KWS	14(16.1)	14(16.1)	-	6(6.9)	24(27.6)	13(14.9)	16(18.4)
F Students representation to boards of schools, churches, and corporate	-	19(21.8)	8(9.2)	4(4.6)	22(25.3)	16(18.4)	18(20.7)
G Entrepreneurship programmes for students	-	12(13.8)	16(18.4)	8(9.2)	19(21.8)	11(12.6)	21(24.1)
H Job attachments and internship	16(18.4)	12(13.8)	22(25.3)	7(8.0)	9(10.3)	13(14.9)	8(9.2)
I Vocational work	14(16.1)	6(6.9)	7(8.0)	6(6.9)	23(26.4)	12(13.8)	19(21.8)

**Table 4.10: Alternative off School Business Management Models for MI development**

Note: 1=extremely ineffective, 2=quite ineffective, 3=slightly ineffective, 4=Neutral, 5=slightly effective 6=quite effective 7 extremely effective

As indicated in Table 4.10 Principals gave varying responses on the effectiveness the various models. Concerning a directed, coordinated, and facilitated working relation with other educational institutions 14 (16.1%) Principals indicated that it may be extremely effective, 26 (29.9%) indicated that it may be quite effective and 14 (16.1%) indicated that it may be slightly effective. On the other hand 11 (12.6%) Principal indicated that a directed, coordinated, and facilitated working relation with other educational institutions may be extremely ineffective, 11 (12.6%) indicated that it may be quite ineffective and 7 (8.0%) indicated that it may be slightly ineffective. As the results indicate such working relations with other institutions might enhance students' interpersonal intelligences whereby students will be given an opportunity to work and communicate with others. These findings are in line with Leadbeater (2005) study which concluded that schools have found different ways of organizing themselves, often through collaboration with the other schools or agencies outside school, which provides greater flexibility and adaptability in the provision offered to pupils. To be effective, collaboration needs resources, leadership, shared direction, ownership and responsibility. Sebba (2007) further pointed out that community links are normally enhanced when schools are closer to towns. This creates the potential for greater curricular flexibility (through shared provision), work experience and improved access for outreach work (ibid). May be this explains the few principals who perceived this model as ineffective.

Further findings in Table 4.10 revealed that Principals were of different view that inks with other countries/exchange should either be adopted or not. This is shown by (78.0%) Principals who perceived this model as extremely ineffective, 22 (25.3%) as quite ineffective and 13 (14.9%) as slightly ineffective. On the other hand 10 (11.5%). Principals perceived this model as extremely effective, 18 (20.7%) as quite effective while 12 (13.8%) perceived this model as slightly effective. This mixed reaction is attributed to the fact that such arrangement requires intense logistical issues such as

acquiring passports, sourcing for air fare and seeking for sponsors. Additional money may be required to meet some of these requirements therefore the need for parents to foot this bill. Shouldering extra financial costs as been an issue in our education system thus the mixed responses from the Principals.

Further findings in Table 4.10 revealed that majority of the Principals were not of the view that there should be a directed and facilitated links with local, regional and international business. This is shown by 8 (9.2%) Principals who perceived this model as extremely ineffective, 21 (24.1%) as quite ineffective and 15 (17.2%) as slightly ineffective. On the other hand 5 (5.7%) Principals perceived this model as extremely effective, 12 (13.8%) as quite effective while 20 (23%) perceived this model as slightly effective. This may be attributed to lack of information on the kind of business in question. Though it's important to mention quite a number of Principals saw this model as a means for students to enhance their interpersonal abilities and linguistic abilities.

Further findings in Table 4.10 revealed that majority of the Principals were of the view that there should be a directed and facilitated links with corporate such as Safaricom, Yu, KCB and Coca cola just to mention but a few. This is shown by 18 (20.7%) Principals who perceived this model as extremely effective, 23 (26.4%) as quite effective and 17 (19.5%) as slightly effective. On the other hand 3 (3.4%) Principals perceived this model as extremely ineffective and 10 (11.5%) as quite ineffective and 15 (17.2%) as slightly ineffective. It's important to mention that such a model enhances students' leadership abilities and communicative abilities thus the need to be enhanced.

Table 4.10 further revealed that 16 (18.4%) Principals perceived link with agencies such as Red Cross, KWS and others as being extremely effective in enhancing students varied abilities, 13 (14.9%) as quite effective and 24 (27.6%) as slightly

effective. On the other hand 14 (16.1%) Principals perceived this model as extremely ineffective and 14 (16.1%) as quite ineffective. This implies that students will be able to enhance intrapersonal intelligences by helping others. This is rarely achieved in a class room set up. In addition naturalistic intelligence in which students' have an appreciation of the natural world will be enhanced.

Further findings in Table 4.10 revealed that majority of the Principals were of the view that there should be a directed and facilitated students representation in schools, churches boards and corporate. This is shown by 18 (20.7%) Principals who perceived this model as extremely effective, 16 (18.4%) as quite effective and 22 (25.3%) as slightly effective. On the other hand 19 (21.8%) Principals perceived this model as quite ineffective and 8 (9.2%) as slightly ineffective. It's important to mention that such a model enhances students' leadership abilities and communicative abilities thus the need to be enhanced.

Table 4.10 further revealed that 21 (24.1%) Principals perceived entrepreneurship programmes for students as being extremely effective in enhancing students varied abilities, 11(12.6%) as quite effective and 19 (21.8%) as slightly effective. On the other hand 12 (13.8%) Principals perceived this model as quite ineffective and 16 (18.4%) as being slightly effective. Entrepreneurship programmes do give students a platform upon which they can show case their artistic and creative prowess in different intelligences such as painting, recording movies and songs, writing magazines, sculpturing and many others. Valerio et al. (2014) speaking on entrepreneurship programmes noted similar findings that, as students participate in entrepreneurship training in the school, creating products (food, clothing, artworks, and so on) to sell to school visitors and community members. In this way, the school helps students learn skills necessary to earn a living and promote sustainability in the community. On the contrary though is that off school business has taken off more in primary than in secondary school as noted by Sturman, Lewis, Morrison, Scott,



Smith, Styles, Taggard & Woodthorpe (2005) who noted that primary teachers were more likely than secondary teachers to develop partnerships with home, the community and relevant welfare agencies. This probably explains the few Principals who rated this model ineffective.

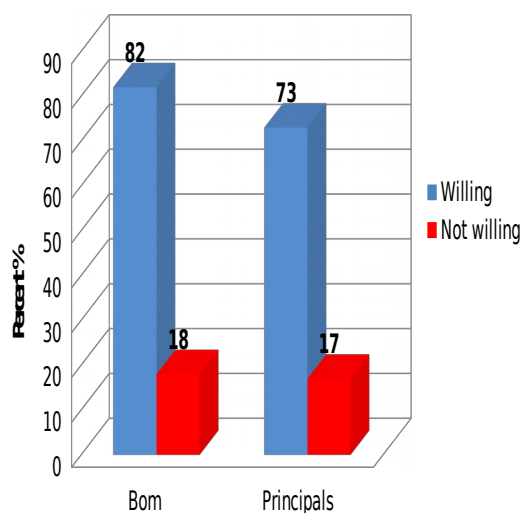
Further findings in Table 4.10 revealed that majority of the Principals were not of the view that there should be a directed and facilitated students job attachments and internship. This is shown by 16 (18.4%) Principals who perceived this model as extremely ineffective, 12 (13.8%) as quite ineffective and 22 (25.3%) as slightly ineffective. On the other hand 8 (9.2%) Principals perceived this model as extremely effective 13 (14.9%) as quite effective and 9 (10.3%) as slightly effective. It's important to mention that such a model enhances students' leadership abilities and communicative abilities thus the need to be enhanced.

Lastly the researcher looked at vocational work related programmes as a means of enhancing students MI and the results indicated that 19 (21.8%) Principals perceived this model as being extremely effective, 12 (13.8%) as being quite effective and 23 (26.4%) as being slightly effective. On the other hand 14 (16.1%) Principals perceived this model as being extremely ineffective, 6 (6.9%) as being quite ineffective and 7 (8.0%) as being slightly ineffective. An earlier study by Webb & Vulliamy (2004) funded by the Home Office in America, demonstrated improved attendance and a reduction in exclusions, when social workers were introduced in a small number of schools and when students participate as social workers. The Increased Flexibility Programme which provides vocational learning opportunities through partnerships between schools and colleges was evaluated by O'Donnell et al., (2006) and concluded that most young people involved made sufficient progress to achieve their potential.

#### 4.7.4 Willingness to Adopt Alternative Off School Business Management Models for MI Development.

Board of Management, Principals and Heads of Department were asked to state their willingness to adopt/change/innovate to the alternative assessment model in section 4.8.3. Their responses were as shown in Figure 10.

### Willingness to Adopt Off -School Business Management Model



**Figure 10: Willingness to Adopt Off – School Business Management Model**

As indicated in Figure 10 majority of the Principals (73%) and BOM (82%) indicated that they were willing to adopt alternative instruction models while a few Principals (17%) and BOM (18%) Principal were not willing.

#### 4.8 Analysis of Alternative Management Models for Enhancing Multiple Intelligences among Students in Secondary Schools

Two statistical tests were performed and the analyses are discussed in the following sub sections;

##### 4.8.1 Correlation Analysis

Pearson's product correlation coefficient was applied to check whether there is linear relationship between the variables. The correlation shown in the table 4.11 below presents bivariate correlations between the study variables (alternative instruction

management model, alternative assessment management model, alternative technological management model, alternative off school management model and enhancement of multiple intelligences).

**Table 4.11 Correlations Analysis between the Dependent and Independent Variables**

		Alt instruction management model	Alt assessment management model	Alt technological management model	Alt off school management model	Enhancement of MI
Alt instruction management model	Pearson correlation	1.000				
Alt assessment management model	Pearson correlation	.797	1.000			
Alt technological management model	Pearson correlation	.795	.836	1.000		
Alt off school management model	Pearson correlation	.756	.838	.783	1.000	
Enhancement of MI	Pearson correlation	.850	.886	.872	.858	1.000
	Sig level	.000	.000	.000	.000	.000
		.000	.000	.000	.000	.000
		.000	.000	.000	.000	.000
		.000	.000	.000	.000	.000
		.000	.000	.000	.000	.000
		.000	.000	.000	.000	.000
	N	87	87	87	87	87
		87	87	87	87	87

87	87	87	87	87
87	87	87	87	87
87	87	87	87	87

\*\* Correlation is significant at 0.001 level (2 - tailed)

From Table 4.11 when the correlation coefficient values ( $r$ ) ranges from 0.10-0.29, it is considered to be weak correlation, 0.30-0.49, medium, 0.5-1.0 is considered strong (Wong & Hiew, 2005). According to Field (2009), correlation coefficient should not go beyond 0.9 to avoid multicollinearity. In this research, the highest correlation coefficient is 0.886, thereby implying that there was no multicollinearity problem in this research, since the value is less than 0.8. Thus alternative instructional management model is positively and statistically significant ( $r=0.850$ ,  $p<0.001$ ), alternative assessment management model is positively and statistically significant ( $r=0.886$ ,  $p<0.001$ ), alternative technological management model is positively and statistically significant ( $r = .872$ ,  $p<0.001$ ) and alternative off school management model is positively and statistically significant, ( $r=0.858$ ,  $p<0.001$ ). This implies that all the study variables alternative instructional management model, alternative assessment management model, alternative technological management model, and alternative off school management model were correlated to enhancement of multiple intelligences.

#### 4.8.2 Regression Analysis

The multiple regression enables the researcher to predict and weight the relationship between the independent variable which is an explanatory variable and the dependent variable which is the explained variable. The Beta weightings ( $\beta$ ) gives an indication of how many standard deviation units will be changed in the dependent variable for each standard deviation unit change in each of the independent variable. To determine the predictor variables that predicts enhancement of multiple intelligences. In a multiple regression analysis, there are several independent variables and one dependent variable and the predictor equation is presented as;

$$Y = a + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4$$

Where  $y$  is the dependent variable and  $x_1, x_2, x_3, x_4$  are the independent variables in the study. The value for  $a$  is more or less an intercept at the vertical axis and the  $b$ 's are the partial regression coefficients. Each  $b$  represents the amount of change in  $y^1$  for a unit change in the corresponding  $x$  value when other  $x$  values are held constant.

$y = \beta_0 + \beta_1$  (alternative instruction management model) +  $\beta_2$  (alternative assessment management model) +  $\beta_3$  (alternative technological management model) +  $\beta_4$ (alternative off school management model) were used where  $y$  is the expected enhanced multiple intelligence.

### 4.8.3 Tests for Regression Analysis Assumption

#### 4.8.3.1 Normality Assumption

The study assumed that all the variables have normal distribution, Kolmogorov-Smirnov test (K-S) one sample test was used in order to test the assumption of the normality of the population distribution whereby a Significant Value of the Shapiro-Wilk Test which is less than 0.05, assumes that the data is normal and if the significance value is greater than 0.05, the data significantly deviate from a normal distribution.. This is shown in Table 4.12 below

**Table 4.12 One-Sample Kolmogorov-Smirnov Test**

Variables	Test	Sig
1 The distribution of alternative instruction management is normal with mean 4.0345 and standard deviation 2.36470	One sample Kolmogorov Smirnov Test	.000 <sup>1</sup>
2 The distribution of alternative assessment management is normal with mean 3.7241 and standard deviation 2.42894	One sample Kolmogorov Smirnov Test	.000 <sup>1</sup>
3 The distribution of alternative technological management is normal with mean 3.2644 and standard deviation 2.34501	One sample Kolmogorov Smirnov Test	.000 <sup>1</sup>
4 The distribution of alternative off school management is normal with mean 3.2759 and standard deviation 2.13329	One sample Kolmogorov Smirnov Test	.000 <sup>1</sup>
5 The distribution of multiple intelligence is normal with mean 3.8736 and standard deviation 2.16099	One sample Kolmogorov Smirnov Test	.000 <sup>1</sup>

Test distribution is Normal  
The significance level is .05

From the table 4.12 above, it is indicated that the data used in this study is normally distributed and hence can be subjected to other statistical tests of significance used to test the relationship between independent and dependent variables that require normally distributed data. This is because the significance values of all the variables were below 0.05 confidence level.

#### 4.8.3.2 Linearity Assumption

Linearity assumption accurately estimates the relationship between dependent and independent variables; it tests if the relationships are linear in nature. It was essential to examine analyses for non-linearity. Non linearity of the regression analysis underestimate the true relationship between the study variables, this was done by use of the Pearson product moment Correlation. The results are shown in table 4.13 below

**Table 4.13: Linearity Assumptions between Dependent and Independent Variables**

		Alt instructio n managem ent model	Alt assessment managem ent model	Alt technologic al managem ent model	Alt off school managem ent model	Enhanceme nt of MI
Alt instruction managem ent model	Pearson correlation	1.000				
Alt assessment managem ent model	Pearson correlation	.797	1.000			
Alt technologic al managem ent model	Pearson correlation	.795	.836	1.000		
Alt off school managem ent model	Pearson correlation	.756	.838	.783	1.000	
Enhanceme nt of MI	Pearson correlation	.850	.886	.872	.858	1.000
	Sig level	.000	.	.000	.000	.000
		.000	.000	.	.000	.000
		.000	.000	.000	.	.000
		.000	.000	.000	.000	.
		.	.000	.000	.000	.000

N	87	87	87	87	87
	87	87	87	87	87
	87	87	87	87	87
	87	87	87	87	87
	87	87	87	87	87

\*\* Correlation is significant at 0.001 level (2 - tailed)

The results in Table 13 indicated that there was a positive linear relationship coefficient of alternative instructional management model  $p= 0.000$ , alternative assessment management model  $p=0.000$ , alternative technological management model  $p=0.000$ , and alternative off school management model  $p=0.000$  which was significant at 0.05 level. This result indicates that the independent variables of the study (all the study variables alternative instructional management model, alternative assessment management model, alternative technological management model and alternative off school management model) move in the same direction as enhancement of multiple intelligences thus assumption of linearity was supported.

#### 4.8.3.4 Durbin -Watson Statistics

The Durbin-Watson statistic should be between 1.5 and 2.5. Thus from the study the Durbin-Watson statistic is 1.705 which is between 1.5 and 2.5 and therefore the data is not auto correlated. The results as shown in table 4.14 below

**Table 4.14: Homoscedasticity Assumptions Test**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.939 <sup>a</sup>	.882	.877	0.75935	1.705

a. Predictors: (Constant), alternative instruction management model, alternative assessment management model, alternative technological management model, alternative off school management model

b. Dependent Variable: Multiple intelligences

#### 4.8.3.5 Test of Variables Multicollinearity

Multicollinearity refers to presence of high correlation among independent variables to the extent that it confounds the real relationships between the Independent variables and Dependent Variables. According to Fidel (2009) bivariate correlation of  $> .9$  is high therefore one of the variables must be removed from the analysis. In this study

the data was subjected to test of collinearity by computing all bivariate correlations as summarized in Table 4.13 all the correlation were below 0.9 thus an indication that the variables are appropriate for multiple regression analysis.

A further statistical analysis was carried to confirm if the variables violated multicollinearity assumption. This was done using the Variance Inflation Factor (VIF) technique as recommended by Cooper and Schindler (2006). The authors suggest that a VIF of below 10 is acceptable for multiple regression analysis. The primary concern is that as the degree of multicollinearity increases the regression model estimates of the coefficients becomes unstable and the standard error of the coefficients can get wildly inflated. The tolerance is an indication of the percent of variance in the predictor that cannot be accounted for by the other predictors, hence very small values indicate that the predictor is redundant and the values that are less than .10 may merit further investigation. Table 4.15 shows the VIF and tolerance

**Table 4.15 Multicollinearity Test**

	Collinearity Statistics	
	Tolerance	VIF
alternative instruction management model	.299	3.344
alternative assessment management model	.199	5.023
alternative technological management model	.247	4.053
alternative off school management model	.266	3.763

Table 4.15 indicates that multicollinearity is within the acceptable limit as all variables have VIF less than 10 and tolerance above .01 the data is therefore suitable for multiple regression analysis based on the multicollinearity assumption

#### **4.9 Test of Hypotheses**

The researcher performed a linear multiple regression analysis so as to test the relationship among independent variables (Alternative Instructional management Model, Alternative Assessment management Model, Alternative Technological management Model and Alternative off School management Model) on dependent



variable (enhancement of multiple intelligence) The statistical package for social sciences (SPSS) was applied to code, enter and compute the measurements of the multiple regressions for the study.

**Table 4.16: Regression Analysis Model Summary of Alternative Management Models for Enhancing Multiple Intelligences**

<b>Model Summary</b>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.939 <sup>a</sup>	.882	.877	0.75935
a. Predictors: (Constant), alternative instruction management model, alternative assessment management model, alternative technological management model, alternative off school management model b. Dependent Variable: multiple intelligence				

As shown in Table 4.16, the R value was 0.939. R is a measure of correlation between the observed value and the predicted value of the dependent variable. Thus, 0.939 is the correlation coefficient between the levels of multiple intelligences in secondary school as reported by the respondents and the levels as would be predicted by the predictor variables. In the model  $R^2 \times 100 = .882 \times 100\% = 88.2\%$  indicating that 88.2 % of the variance in the independent variable is explained by the independent variables in the study. The R-square value indicates that this model succeeds in predicting up to 88.2 % of the variables in enhancement of multiple intelligences in secondary school education. Up to 88.2 % of the variation seen in the area under study is accounted for by these alternative management models. Table 4.17 presents the ANOVA output analysis.

**Table 4.17: Anova Output Analysis**

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	354.327	4	88.582	153.623	.000 <sup>b</sup>
	Residual	47.283	82	.577		
	Total	401.609	86			

- a. Predictors: (Constant), alternative instruction management model, alternative assessment management model, alternative technological management model, alternative off school management model
- b. Dependent Variable: multiple intelligence

Similarly, the ANOVA analysis is highly significant (0.000) indicating that the relationship between the independent variables and dependent variable is very strong. The table assesses the overall significance of the model and since  $p < 0.05$ , the multiple regression model adopted in this study is relevant for the analysis. The ANOVA results of the Multiple Regression Analysis show that the regression equation is statistically appropriate to examine the relationship ( $F = 153.623$ ;  $df = 4$ ;  $p = 0.05$ ) at 0.05 level of significance. The model summary showed that the model can explain 88.2% variation in enhancing multiple intelligences that was occasioned by any changes in the alternative management models. Table 4.18 presents the coefficient arising from the analysis.

**Table 4.18: The Coefficients**

Model	Coefficients <sup>a</sup>				
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	0.492	.165		2.978	.004
Alternative instructional management model	0.219	.063	.240	3.466	.001
Alternative assessment management model	0.239	.076	.269	3.165	.002
Alternative technological management model	0.246	.070	.267	3.500	.001
Alternative off school management model	0.245	.074	.242	3.288	.001

The multiple regression analysis was conducted so as to determine the relationship between Alternative management models and enhancement of multiple intelligences. The equation  $Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$  generated before therefore become:

$$Y = 0.492 + 0.219 X_1 + 0.239 X_2 + 0.246 X_3 + 0.245 X_4$$

Where Y is the dependent variable (Multiple intelligence),  $X_1$  Alternative Instructional management Model,  $X_2$  is Alternative Assessment management Model,  $X_3$  is Alternative Technological management Model and  $X_4$  is Alternative off School management Model

According to the regression equation established, taking all other factors into account (Alternative Instructional management Model, Alternative Assessment management Model, Alternative Technological management Model and Alternative off School management Model) constant at zero, multiple intelligence will be 0.492. The data findings analyzed also show that taking all other independent variables at

zero, a unit increase in Alternative Instructional management Model to the students will lead to a 0.219 increase in multiple intelligence; a unit increase in Alternative Assessment management Model will lead to a 0.239 increases in multiple intelligence, a unit increase in Alternative Technological management will lead to a 0.246 increase in multiple intelligence, a unit increase in Alternative off School management Model will lead to a 0.245 increase of multiple intelligence.

The independent variable 'alternative assessment management model' has the strongest positive effect on the status multiple intelligences ( $\beta = 0.269$ ), and that this is statistically significant. This is followed by the independent variable alternative 'technological management model' ( $\beta = 0.267$ ), alternative off school management model ( $\beta = 0.242$ ). The independent variable 'alternative instructional management' had the least effect on the enhancement of multiple intelligences ( $\beta = 0.240$ ) but that this is statistically significant. This is indicated in Table 4.19

**Table 4.19: Table of Hypothesis**

Hypothesis	5% level of significance	Verdict on the hypothesis
------------	--------------------------	---------------------------

There is no statistical significant relationship between instruction management models and enhancement of Multiple Intelligences among students in Kenya.	0.240	Reject the null hypothesis
There is no statistical significant relationship between assessment management models and enhancement of multiple intelligences among students in Kenya.	0.269	Reject the null hypothesis
There is no statistical significant relationship between technological advancement management models and enhancement of multiple intelligences	0.267	Reject the null hypothesis
There is no statistical significant relationship between the off school business management model and enhancement of multiple intelligences among students in Kenya	0.242	Reject the null hypothesis

Since there is a significant relationship between alternative management models and students multiple intelligence the researcher therefore concludes that the null hypothesis be rejected.

Further information from Table 4.19 indicates that the null hypotheses were to be rejected at a  $p < 0.05$  significance level using the regression analysis. This is discussed in the following paragraphs;

The first hypothesis ( $H_{01}$ ) stated that there is no statistically significant relationship between alternative instruction management models and enhancement of multiple intelligences among students in Kenya. However findings in Table 4.18 showed that alternative instruction management models has a positive and significant influence on enhancement of multiple intelligences among students in Kenya ( $\beta_1 = .240$ ,  $P < 0.05$ ). Thus the hypothesis ( $H_{01}$ ) was rejected and this can be explained further by assessing

the value of the  $t$  – test which indicated that enhancement of multiple intelligences among students in Kenya would be attributed to the regression model 3 times more compared to the effect of the standard error associated with the estimated coefficient ( $t = 3.466$ ). Findings from the ANOVA showed that the sum of squares for the regression model was 354.327. this means that the regression model accounted for more than 153.623 times the variation of enhancement of multiple intelligences among students compared to the residuals,  $F= 153.623$ ,  $P$  value = 0.001

The second hypothesis ( $H_{o2}$ ) stated that there is no statistically significant relationship between alternative assessment management models and enhancement of multiple intelligences among students in Kenya. However findings in Table 4.18 showed that alternative assessment management models has a positive and significant influence on enhancement of multiple intelligences among students in Kenya ( $\beta_2 = .269$ ,  $P < 0.05$ ). Thus the hypothesis ( $H_{o2}$ ) was rejected and this can be explained further by assessing the value of the  $t$  – test which indicated that enhancement of multiple intelligences among students in Kenya would be attributed to the regression model 3 times more compared to the effect of the standard error associated with the estimated coefficient ( $t = 3.165$ ). Findings from the ANOVA showed that the sum of squares for the regression model was 354.327. this means that the regression model accounted for more than 153.623 times the variation of enhancement of multiple intelligences among students compared to the residuals,  $F= 153.623$ ,  $P$  value = 0.001

The third hypothesis ( $H_{o3}$ ) stated that there is no statistically significant relationship between alternative technological advancement management models and enhancement of multiple intelligences among students in Kenya. However findings in Table 4.18 showed that alternative technological advancement management models has a positive and significant influence on enhancement of multiple intelligences among students in Kenya ( $\beta_3 = .267$ ,  $P < 0.05$ ). Thus the hypothesis ( $H_{o3}$ ) was

rejected and this can be explained further by assessing the value of the  $t$  – test which indicated that enhancement of multiple intelligences among students in Kenya would be attributed to the regression model 3 times more compared to the effect of the standard error associated with the estimated coefficient ( $t = 3.500$ ). Findings from the ANOVA showed that the sum of squares for the regression model was 354.327. this means that the regression model accounted for more than 153.623 times the variation of enhancement of multiple intelligences among students compared to the residuals,  $F$ - 153.623,  $P$  value = 0.001

The fourth hypothesis ( $H_{04}$ ) stated that there is no statistically significant relationship between the alternative off school business management model and enhancement of multiple intelligences among students in Kenya. However findings in Table 4.18 showed that alternative off school business management model has a positive and significant influence on enhancement of multiple intelligences among students in Kenya ( $\beta_4 = .242$ ,  $P < 0.05$ ). Thus the hypothesis ( $H_{04}$ ) was rejected and this can be explained further by assessing the value of the  $t$  – test which indicated that enhancement of multiple intelligences among students in Kenya would be attributed to the regression model 3 times more compared to the effect of the standard error associated with the estimated coefficient ( $t = 3.288$ ). Findings from the ANOVA showed that the sum of squares for the regression model was 354.327. this means that the regression model accounted for more than 153.623 times the variation of enhancement of multiple intelligences among students compared to the residuals,  $F$ - 153.623,  $P$  value = 0.001

In conclusion the independent variable accommodation strategy had the strongest positive influence on the status of employee performance ( $\beta = 0.482$ ), and that this is statistically significant. This was followed by the independent variable collaborating strategy ( $\beta = 0.347$ ), competing strategy ( $\beta = 0.201$ ). The independent variable

compromising strategy had the least effect on employee performance ( $\beta = 0.110$ ) but that this is statistically significant. This is summarily presented in Table 4.20 below

In summary we are saying that Multiple regression was used, and the results include the R square (0.882, ANOVA ( $\rho < 0.01$ )) and the standardized ( $\beta$  coefficient of each component variable ( $\beta = 0.240, \rho < 0.05$ ;  $\beta = 0.269, \rho < 0.05$ ;  $\beta = 0.267, \rho < 0.05$ ;  $\beta = 0.242, \rho < 0.05$ )).

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.0 Introduction**

The findings in chapter four are further discussed and summarized to shape up the major findings of the study in relation to the research objectives. The conclusions are drawn based on the findings in order to answer the objectives and hypotheses of the study and thereafter provide recommendations on what should be adopted as alternative management models for enhancement of multiple intelligences among students in secondary school in Kenya. Areas emerging of concern are suggested for further research.



## **5.1 Summary of the findings**

To explain the alternative management models for enhancement of multiple intelligences among students in secondary school in Kenya, four thematic issues were analyzed based on the objectives and hypotheses of the study. These aspects included: alternative instructional management model, alternative assessment model, alternative technological management model and alternative off school management model.

The findings of this research study have been based on the objectives and hypotheses of the study. This study sought to answer the following research objectives: -

- i.** To examine the instruction management models that enhances Multiple Intelligences among students in Kenya.
- ii.** To investigate assessment management models that enhances multiple intelligences among students in Kenya.
- iii.** To explore the technological advancement management models that enhances multiple intelligences
- iv.** To examine the off school business management model that enhances multiple intelligences among students in Kenya.

### **5.1.1 Instruction Management Model**

The Principal plays a key role in terms of coordinating, facilitating and supervising instruction models (practices) that are important in enhancing multiple intelligence models. The study therefore looked at these practices and established the Principal's management role. First the study looked at the existing instruction management models for MI Development in an attempt to give a situational analysis.

The findings showed that majority of the Principals were involved in directing, coordinating, facilitating and supervising teaching that is inclined towards Mathematics, Sciences and Languages. On the other hand few Principals directed, facilitated and supervised teaching that is inclined to Mathematics, Languages and

Sciences. In essence this implied that students who are not competent in these subjects are sidelined and their abilities in other areas such as Drawing and Design, Woodwork, Music are wasted. Further probe showed that there was absence of Music, Woodwork, Art and Design Arabic and Germany subjects in all the sampled schools. Development of MI relies heavily on existence of these activities/ subjects and their absence meant underdevelopment.

It was established that extended classes model that involved teaching of remedial classes was existent and that such extended classes hindered enhancement of MI among students as it limited participation time. Findings showed that majority of the Principals were involved much in directing and supervising remedial classes and tuition. This was further supported by evidence of remedial timetables that ran in the mornings 6am to 7 am, evenings from 5 pm to 6. 30 pm, nights from 7pm to 9 pm and weekends. As literature indicated this current instruction management model was a hindrance towards enhancing multiple intelligences.

The findings revealed that majority of the Principals were not involved in directing, coordinating and supervising teacher centered methodology. On the other hand a few were involved in facilitating this model. This result showed that though majority of the Principals didn't facilitate teacher centered methodology a few Principals did facilitate teacher centered methodology therefore sidelining students' interests and curiosity in developing their abilities.

Managing and coordinating instruction that is drilling in nature limits students' creativity outside and inside the classroom. The study established that majority of the Principals directed, facilitated and supervised drilling model. With such a model programmes and activities associated with enhancing students' multiple intelligences such as singings, dancing, painting, playing, meditation, gardening, scouting and

interpersonal relationship were likely to be given very limited time so as to allow drilling of students.

The findings further showed that majority of the Principals involved themselves very little in directing and coordinating uniform instruction among students'. Only a few Principals involved themselves very much and slightly much respectively in directing and coordinating uniform instruction among students'. It can be argued that though majority of the Principals didn't involve themselves in managing uniform instruction a few of them who were coordinating it were denying student with different MI who don't thrive in this model as it doesn't give varied opportunities for students.

The study established that majority of the Principals were involved in directing, supervising and coordinating early syllabus while a few Principals were involved very little in early completion of the syllabus. From the foregoing it can be said that majority of the schools were in the business of finishing the syllabus early to prepare for examination. This poses problems to other activities such as games that are meant to enhance MI. Such activities are substituted with class work to facilitate the early completion. Students revealed that games and half term breaks were squeezed so that students were able to clear syllabuses in time.

Further findings on the existing model showed that few Principals directed, facilitated and supervised dictating of notes while majority of the Principals directed, facilitated and supervised dictating of notes to students very little. Though few Principals facilitated this and majority did not, the results demonstrates that the few students who were affected didn't have the opportunity to do more research on their own thus enhancing interpersonal intelligences which requires such individual initiatives.

Further findings indicated majority of Principals directed, facilitated and supervised dictating of notes to students model while a few facilitated slightly little. The results demonstrate that the few students who were affected didn't have the opportunity to do

more research on their own thus enhancing interpersonal intelligences which requires such individual initiatives. Use of lecture methods as an instructional model was also looked at. The findings showed a few Principals directed, facilitated and supervised this model little as compared to majority Principals who were involved much in directing, coordinating and supervising lecture methods very much. Schemes of Work revealed absence of teacher and students activities that enhanced MI.

Concerning the involvement of the Principal in directing and supervising teaching of examinable subject during PE and Life skills lessons model the findings indicated that majority of the Principals involved themselves very much in directing, coordinating, facilitating and supervising teaching of examinable subject during PE and Life skills lessons. These findings showed that majority of the students may be lacking opportunities to enhance their abilities through PE and Life skills lessons which are very critical in terms of enhancing MI. Analysis of documents (timetable) showed that a few schools 22 had the right allocations of Physical Education (P.E) lessons in form one to four. Majority of the schools didn't have P.E in form four. Life skills lessons were nonexistent in most of the schools.

The study found out challenges that the existing models face in enhancing students MI. One of the challenge students pointed out was that it's very difficult to develop their talents because the time set aside for games, sports and other activities related to MI is not there. In addition to this students pointed out that majority of them don't function well in subjects that are emphasized more such as Mathematics and Sciences. In fact they do the subject as a formality. Therefore continually stressing these subjects only stresses students and weakens their desire in other subjects that they are good at. Subjects such as Music, computer and Art and Design are rarely emphasized. Chances are that students are likely to perform well in these subjects because they have a direct impact to their abilities.

Responses from BOM indicated that financial constraints to the school and parents are felt when running these models. In particular they mentioned management of brick and mortar schools has become a challenge with the increasing number of students' enrolment. Parents have to come in financially which is not an easy thing. In addition to this there is other accompany materials such as lockers books and even teachers. Other challenges mentioned included fatigue and burn out among students. This arises from the fact that students are subjected to long hours of study that lacks breaks.

In view of the challenges anticipated by the existing models of enhancing MI the researcher sought to examine alternative instruction models for enhancing MI among students. The findings established that majority of the Principals rated an alternative instruction model that involves teaching inclined to Music, Computer, Art and Design, Home science, French and Germany as effective in enhancing students MI while a few Principals rated this model as being ineffective. These subjects give students an opportunity to enhance abilities in music (Musical Intelligence), painters, sculptors and architects (Spatial Intelligence).

The findings established that students are very critical in terms of developing their abilities and therefore Principals ought to direct, coordinate facilitate and supervise teaching and learning that is student centered. This was shown by majority of the Principals who rated this model as being effective. Management of outdoor teaching and learning model was viewed by majority of the Principal as being extremely effective while few Principals rated this model as being ineffective. Outdoor teaching is very significant in enhancing MI among students in that students can learn from a broad environment that will expose them to a variety of aspects that are essential in enhancing their abilities.

Pupil's choice of what they want to learn had majority of the Principals rating it as being ineffective. Few Principals rated this model as being effective. There was a

mixed response arising from the fact that some of the students may not necessary know or understand what they ought to be taught probably because they are ignorant and therefore need assistance from teachers and parents. Besides MI requires guidance for it to be nurtured and thus the need for the students to be managed rather than them managing themselves.

Further information regarding management of differential instruction model showed that majority of Principals rated differential instruction as ineffective in enhancing MI. Few Principals rated this model as effective. Results indicated a few Principals rating this model as ineffective. Majority Principals rated managing a practical approach to teaching and learning as being effective.

Rotational teaching and learning in different centers model showed that majority of the Principal rated this model as being ineffective. Few Principals rated this model as being extremely effective, quite effective and slightly effective. These findings may be attributed to the fact that the area under study is expansive and schools may be located far apart making this model ineffective. Management of Life skills teaching model indicated majority of Principal rating this model as effective. Few Principals rated this model as ineffective. This findings show that life skills are essential in enhancing MI more so the naturalist intelligence.

Majority of the Principals rated management of Physical Education model as being effective. Few Principals rated this model as ineffective. This findings show that Physical Education is essential in reinforcing the contribution of disciplines such as music, drama, dance and visual arts.

Lastly the researcher looked at management of alternative instruction for the talented. The findings revealed that majority of the Principals rated this model as extremely effective while a few Principals rated this model as ineffective. This findings shows

that majority of the talented students may be missing out in developing their talents with the mainstream instruction that puts little emphasis on the talented students.

Board of Management, Principals and Heads of Department were asked to state their willingness to adopt/change/innovate to the alternative instructional model. Majority of the Principals indicated that they were willing to adopt alternative instruction models while a few Principals were not willing. The few who were unwilling cited reasons for unwillingness like it is expensive and requires a lot of infrastructure to run the models. These findings indicate that indeed these models can be a reality if adopted in schools.

### **5.1.2 Assessment Management Model**

The Principal and Heads of Department play a key role in terms of directing coordinating, facilitating and supervising assessment models (practices) that are important in enhancing multiple intelligence models. The study therefore looked at these practices so as to establish the Heads of Department management role of directing coordinating, facilitating and supervising.

The study established that majority of the Heads of Departments were involved much, in directing, coordinating, facilitating and supervising examinable content assessment, on the other hand a few Heads of Departments were involved little. This implied that students' abilities in areas that are not examinable such as games, singing, dancing, painting and leadership skills are never taken seriously. These activities are likely to be kept at the periphery at the expense scaffolding students' talents growth.

Analysis of the Exams timetable in all the schools sampled established that schools were in the business of examining the examinable KCSE subjects. A glimpse of the examination papers showed a bias towards class based content. There was a high frequency of examinations and more so in the upper classes to imply that a lot of emphasis was being put to exams more than other areas of education.

Further findings showed that majority of the Heads of Departments were involved in directing, coordinating, facilitating and supervising academic target setting. On the other hand few Heads of Departments directed and facilitated very little academic target setting, 37 (14.2%) little and 60 (23.1%) directed and facilitated slightly little. This showed that a great deal of emphasis is put on academics targets such that schools go out of their way to organize remedial, tuitions and drilling to meet those targets. Students complimented this model (academic setting) by saying that, “Targets are normally set at the beginning of the term so as to be verified by parents during academics day when there are face to face and clinics to analyze the targets.”

It was also established that majority of the Heads of Departments were involved in management of termly series exams while a few Heads of Departments directed and facilitated term series exams. Many of these exams take away students game time because they need to prepare for the exams. Most students revealed that they forgo activities such as games, scouting, singing and painting to read for the exams. Documents indicated that several external exams were in place. These included mock exams from other counties and purchased exams. In one school students in form four were subjected up to 10 exams during the term.

Majority of the Heads of Departments were involved in directing, coordinating and supervising assessments that were tests oriented while a few Heads of Departments were involved. It’s important to point out that such test oriented exams takes away student time, interests and development of their talents. The findings further established that majority of the Heads of Departments directed and facilitated out of formal learning time assessment (i.e. during games, lunch) model while a few Heads of Departments directed and facilitated very little out of formal learning time assessment. It’s important to note that multiple intelligences are best enhanced during such time as lunch and games therefore, infringing into such time mean that student’s may not get ample time to enhance his or her abilities.



The study showed that majority of the Heads of Departments did not direct and facilitate Progression of classes based on exam performance model while a few Heads of Departments directed Progression of classes based on exam performance. Though it's important to mention that majority of the HoD were not involved in this model, it's critical to mention that the few who were involved in coordinating this model were curtailing enhancement of students MI. Holiday assignment model showed that majority of the Heads of Departments did direct and facilitate this model while a few Heads of Departments directed slightly little. Though the study focused mainly on the school environment it was felt that holiday assignment that emanate from school would have a far reaching implication on MI development.

The study found out challenges that the existing models face in enhancing students MI. One of the challenges BOM pointed out was that majority of the students who are subjected to this model graduate from school without any creativity. It was also found that this model puts a lot of pressure on students to perform. This is so because students always strive to perform so that they are rewarded or they progress to another level.

The study found out that because the assessment model doesn't assess nonacademic abilities these abilities aren't taken seriously. A student said that "At the end of the four year cycle (secondary education) certificates only show grading academic subjects such as Kiswahili and Biology. Sporting activities like football, swimming and other interest areas like drawing and painting are never recognized in terms of grading." Students, teachers and Principals may never take such activities seriously. Lack of social, moral, physical and work oriented education was cited as another challenge that faced this traditional assessment model.

In view of the challenges anticipated by the existing assessment Management models of enhancing MI the study examined alternative assessment models for

enhancing MI among students. The findings revealed that majority of the Heads of Departments rated an alternative assessment model that involves exams based on stated goals of education being effective in enhancing students MI while a few Heads of Departments rated this model as ineffective. This result implies an assessment that puts into consideration the various goals of education such promoting individual development and self-fulfillment by exploiting and developing individual potentials and talents for suitable quality life can be used to enhance MI among students.

Further information was sought on an assessment model that should be 20% class content and 80% out of class content. The findings established that majority Heads of Departments rated this model as effective while a few Heads of Departments rated this model as ineffective. These findings indicate that majority of the Heads of Departments were of the view that this model was important in terms of enhancing students MI probably because such a model is likely to encourage holistic development of students. Findings indicated majority of the Heads of Departments rated ICT assessment model as ineffective while a few Heads of Departments rated this model as effective. It can be argued from the findings that reluctance by the majority of the Heads of Departments stems from the fact that most of them may not be computer literate.

Findings showed that few Heads of Departments rated management of college entrance exam model as effective while majority of the Heads of Departments rated this model as ineffective. This findings show that most of the schools still rate KCSE exam as an important transition tool to universities and colleges thus a negative attitude towards the model. Besides, Heads of Departments may have viewed quality of the college entrance exams as questionable due to lack of a body to manage such exams such as KNEC and KASNEB.

Majority of the Heads of Departments rated management of assessment model that encompasses 80% formative and 20 % summative testing as effective while few Heads of Departments rated this model as ineffective. This implies that students are not likely to be pressurized more on passing the summative testing thereby giving students an opportunity to enhance their abilities. Findings revealed majority Heads of Departments rated managing individual assessment model that focuses on students' strength as ineffective while few Heads of Departments rated this model as effective. It's important to argue that individual assessment brings with it extra work to teachers not to mention the already overloaded teaching workforce. This may explain the ineffective nature of this model as far as teachers are concerned.

The findings further established that majority Heads of Departments rated management of peer assessment based on shared strengths between students as ineffective. On the other hand few Heads of Departments rated peer assessment based on shared strengths between students as effective. It's arguable to mention that societies consist of hard working and lazy individuals who rely on others to accomplish tasks. It's imperative therefore to say that this model may have been found ineffective by the majority of Heads of Departments because it may encourage laziness among students who rely on others.

Findings showed that majority of the Heads of Departments rated management of alternative assessment model for the talented as being effective. On the other hand few Heads of Departments rated this model as ineffective. This shows that students varied abilities can be nurtured and honed so that grading for the same reflects quality that is synonymous with the associated academic content such English and other subjects.

Lastly the study looked at certification model to include students varied abilities. The findings indicated that, majority of the Heads of Department rated this model as effective while Heads of Department rated this model as ineffective.

Board of Management, Principals and Heads of Department were asked to state their willingness to adopt/change/innovate to the alternative management assessment model. Their responses indicated majority of the Principals and BOM were willing to adopt alternative instruction models while a few Principals and BOM were not willing.

### **5.1.3 Technological Management Model**

The Principal and Heads of Department play a key role in terms of directing coordinating, facilitating and supervising technological management models (practices) that are important in enhancing multiple intelligence models. The study therefore looked at these practices so as to establish the BOM, Principals and Heads of Department management role of directing coordinating, facilitating and supervising this model.

Findings revealed that majority of the schools were not utilizing computers and other electronic devises aimed at enhancing multiple intelligences in schools and that new computer technology was still a pipe dream in this school. Though schools were blessed with several computers no active programmes had been initiated to assist students. It was also revealed that teachers' often do not use these technologies effectively to support instruction. Instead they are often used in homes and in schools in ways that isolate students, locking them into drill and practice program devoid of human interaction.

Management of the school timetable revealed that many schools were not offering computer as a subject. It's important to note from the findings that no sub county school modeled itself to offer Computer subject and only a few County schools were

offering Computer subject. This implies that majority of the school modeled themselves in offering Agriculture and Business Education. The traditional boards (blackboards) were the most preferred communication tool in the classroom. Such boards as the student revealed were boring and they never enhance any talents. The students preferred electronic boards and white boards.

The study found out challenges that the existing technological models pose in enhancing students MI. One of the challenge indicated that many students have lagged behind in term of computer literacy. This according to them was a setback in a society which is increasingly becoming computerized (digital). Some alluded to the fact that they can't send an email to friends let alone logging in to a computer. All this stems from the fact that we are not offered computer studies in school. It ought to be remembered that computers are critical in enhancing students' abilities in the sense that they create that platform upon which they can exercise their mind in enhancing their abilities in various areas like writing poems, doing math, drawing creating movies and even singing. Students pointed out that some of the technology used is a health hazard. One technology mentioned was the black boards that produced chalk dust.

In view of the challenges anticipated by the existing Technological Management models of enhancing MI the study examined alternative technological management models for enhancing MI. Concerning a directed, coordinated, and facilitated use of power point presentations majority of the Principals indicated that it may be effective while few Principals indicated that a directed, coordinated, and facilitated use of power point presentations may be ineffective. As the results indicated such presentations might enhance students' abilities such as spatial intelligences and bodily kinesthetic. Further findings revealed that majority of the Principals perceived management of computer games as ineffective while a few Principals perceived this model as effective. As indicated earlier with Heads of Department lack of computer

literacy among school administrators and teachers may have contributed to the negative perception.

Findings revealed that majority of the Principals perceived management of internet/websites/emails/cyber space and cloud technology as being effective in enhancing students varied abilities. On the other hand few Principals indicated that they were ineffective. The study further revealed that majority of the Principals perceived management of hypertext as being effective in enhancing students varied abilities. On the other hand few Principals indicated that they were ineffective. Information was also sought on talking books (CD Rom based books) and bloggers, and as findings indicate, majority of the Principals perceived this model as being effective. On the other hand few principals a few Principals perceived this model as being ineffective. Lastly, the study looked at management of pupil run televisions, radio, and online TV and the results indicated that majority of the Principals perceived this model as being effective while few Principals perceived this model as being ineffective.

Board of Management, Principals and Heads of Department were asked to state their willingness to adopt/change/innovate to the alternative technological management models mentioned. Majority of the Principals and BOM indicated that they were willing to adopt alternative technological management models while a few Principals and BOM Principal were not willing.

#### **5.1.4 Off School Business Management Model**

The Principal and Heads of Department play a key role in terms of directing coordinating, facilitating and supervising technological management models (practices) that are important in enhancing multiple intelligence models. The study therefore looked at these practices so as to establish the BOM, Principals and Heads

of Department management role of directing coordinating, facilitating and supervising this model.

Through the document analysis guide the researcher was able to gather that the off school business model being managed in schools did not have any activity that enhanced MI from students. The permission record indicated that students left school purposively to go collect fees balances from home, suspensions, Sunday schools activities, attending medical checkups and breaking off of half term and holidays. Students also left schools to attend to burials of their relatives and attend graduations ceremonies. The school log at the gate showed little effect of anything that was associated with MI activities. It is important to mention though that a few schools did invite comedians and coca cola promotional troupe commonly referred to as the Coke Light Studio.

The visitors' book commonly kept at the Principals office indicated that majority of the visitors were fellow Principals making courteous calls, Members of Parliament probably coming in for fund raising, suppliers and old students coming in to collect certificates. Schools routine showed little effect to any activities that were related to MI development. The schools routines in most of the schools were the traditional routines that had the usual waking up, cleaning, school timetable, breakfast, lunch, games supper, preps, church service, and lights off. Permanent stores ledger indicated majorly academics materials such as books, pens, files, printing papers and chalk.

Findings indicated that as much as there were alternative models for enhancing MI the traditional models did take lot of credence in schools. Most of the activities that were carried out in schools (that is the off school business) were geared towards academic excellence and probably issues related to students social wellbeing. Activities aimed to generate income for the school (income generating activities) were mostly run by teachers, support staff and contracted personnel. These include

activities such as school canteen, milk and meat supply. This implies that many students may not be exposed to entrepreneurship skills. The BOM reiterated that they rarely give tenders to students in relation to supply of goods and services. They said that it's in the interests of the school that students concentrate in books and passing of exams because such activities are not graded thus not very critical for academic progression of the students. This implies that off school activities meant to enhance students MI were rarely coordinated, supervised nor directed by the BOM, Principals and HoDs.

The study found out challenges that the existing technological models pose in enhancing students MI. The information obtained indicated that most of the off school activities did not have any relationship with enhancement of MI among students. They were mostly to enhance the typical class activities that were biased towards Mathematics, languages and Sciences and very little that will enhance activities such as music, painting, environmental aesthetics, meditation, dancing and leadership.

Findings indicated that schools did not have links with private sectors that could assist students in developing their leadership skills and entrepreneurship abilities. Many students were engaged with what just goes on around the school which is basically classroom academics.

In view of the challenges anticipated by the existing off School Business Management models of enhancing MI the researcher examined alternative off School Business Management models for enhancing MI among students. The findings indicated that majority of the Principals rated a directed, coordinated, and facilitated working relation with other educational institutions as effective. On the other hand few Principals indicated that a directed, coordinated, and facilitated working relation with other educational institutions may be ineffective. As the results indicated such



working relations with other institutions enhances students' interpersonal intelligences whereby students will be given an opportunity to work and communicate with others. Beside other educational institutions may be endowed with resources that can be utilized to enhance MI.

Further findings established that majority of the Principals perceived managing links with other countries/exchange model as ineffective while a few Principals perceived this model as effective. This was attributed to the fact that such arrangement requires intense logistical issues such as acquiring passports, sourcing for air fare and seeking for sponsors. Additional money may be required to meet some of these requirements therefore the need for parents to foot this bill. Shouldering extra financial costs has been an issue in our education system thus the mixed responses from the Principals.

Further findings revealed that majority of the Principals were not of the view that there should be a directed and facilitated links with local, regional and international business. This was attributed to lack of information on the kind of business in question. Though it's important to mention quite a number of Principals saw this model as a means for students to enhance their interpersonal abilities and linguistic abilities. Further findings revealed that majority of the Principals were of the view that there should be a directed and facilitated links with corporate such as Safaricom, Yu, KCB and Coca cola just to mention but a few. It's important to mention that such a model enhances students' leadership abilities and communicative abilities thus the need to be enhanced.

The study further revealed that majority of the Principals perceived link with agencies such as Red Cross, KWS and others as being effective in enhancing students varied abilities while a few Principals perceived this model as ineffective. This implies that students will be able to enhance intrapersonal intelligences by helping others. This is

rarely achieved in a class room set up. In addition naturalistic intelligence in which students' have an appreciation of the natural world will be enhanced.

Further findings revealed that majority of the Principals were of the view that there should be a directed and facilitated student's representation in schools, churches boards and corporate. Such a model was found to enhance students' leadership abilities and communicative abilities thus the need to be enhanced. The study revealed that majority of the Principals perceived managing entrepreneurship programmes for students as being effective in enhancing students varied abilities. On the other hand few principals perceived this model as ineffective. Entrepreneurship programmes do give students a platform upon which they can show case their artistic and creative prowess in different intelligences such as painting, recording movies and songs, writing magazines, sculpturing and many others.

Further findings revealed that majority of the Principals were not of the view that there should be a directed and facilitated students job attachments and internship. On the other hand few Principals perceived this model as effective. It's important to mention that such a model enhances students' leadership abilities and communicative abilities thus the need to be enhanced. Lastly, the researcher looked at managing vocational work related programmes as a means of enhancing students MI and the results indicated that majority of the Principals perceived this model as being effective. On the other hand few Principals perceived this model as being ineffective.

Board of Management, Principals and Heads of Department were asked to state their willingness to adopt/change/innovate to the alternative off school management model. Majority of the Principals and BOM indicated that they were willing to adopt alternative off school management models while a few Principals and BOM were willing.

### 5.1.5 Analysis of Alternative Management Models for Enhancing Multiple Intelligences among Students in Secondary Schools

Two statistical tests correlation analysis and linear multiple regression were performed and the analyses in relation to Pearson's product correlation coefficient was applied to check whether there is linear relationship between the variables between the study variables (alternative instruction management model, alternative assessment management model, alternative technological management model, alternative off school management model and enhancement of multiple intelligences). In this research, the highest correlation coefficient was 0.886, implying that there was no multicollinearity problem in this research, since the values were less than 0.8. Therefore alternative instructional management model was positively and statistically significant ( $r=0.850$ ,  $p<0.001$ ), alternative assessment management model was positively and statistically significant ( $r=0.886$ ,  $p<0.001$ ), alternative technological management model was positively and statistically significant ( $r= .872$ ,  $p<0.001$ ) and alternative off school management model was positively and statistically significant, ( $r=0.858$ ,  $p<0.001$ ). Therefore all the study variables alternative instructional management model, alternative assessment management model, alternative technological management model, and alternative off school management model were correlated to enhancement of multiple intelligences.

The multiple regressions enabled the researcher to predict and weight the relationship between the independent variable which is an explanatory variable and the dependent variable which is the explained variable predictor equation was presented as;

$$y=a+b_1x_1+b_2x_2+b_3x_3+b_4x_4$$

Where  $y$  is the dependent variable and  $x_1$ ,  $x_2$ ,  $x_3$ ,  $x_4$  are the independent variables in the study. The value for  $a$  is more or less an intercept at the vertical axis and the  $b$ 's are the partial regression coefficients. Each  $b$  represents the amount of change in  $y^1$  for a unit change in the corresponding  $x$  value when other  $x$  values are held constant.

$y = \beta_0 + \beta_1$  (alternative instruction management model) +  $\beta_2$  (alternative assessment management model) +  $\beta_3$  (alternative technological management model) +  $\beta_4$  (alternative off school management model) were used where  $y$  is the expected enhanced multiple intelligence.

Kolmogorov-Smirnov test (K-S) one sample test was used in order to test the assumption of the normality of the population distribution whereby a Significant Value of less than 0.05, assumes that the data is normal and if the significance value is greater than 0.05, the data significantly deviate from a normal distribution. The data used in this study was normally distributed and hence subjected to other statistical tests of significance used to test the relationship between independent and dependent variables that require normally distributed data. This is because the significance values of all the variables were below 0.05 confidence level.

Linearity assumption using the Pearson product moment Correlation accurately estimate the true relationship between the study variables. The results indicated that there was a positive linear relationship coefficient of alternative instructional management model  $p= 0.000$ , alternative assessment management model  $p=0.000$ , alternative technological management model  $p=0.000$ , and alternative off school management model  $p=0.000$  which was significant at 0.05 level. This result indicates that the independent variables of the study (all the study variables alternative instructional management model, alternative assessment management model, alternative technological management model, and alternative off school management model) move in the same direction as enhancement of multiple intelligences thus assumption of linearity was supported. The Durbin-Watson statistic which is a test of auto correlation was 1.705 therefore the data was not auto correlated.

Linear multiple regression showed R value of 0.939. In the model  $R^2 \times 100 = .882 \times 100\% = 88.2\%$  indicated that 88.2 % of the variance in the dependent variable is

explained by the independent variables in the study. The R-square value indicated that this model succeeds in predicting up to 88.2% of the variables in enhancement of multiple intelligences in secondary school education. Up to 88.2% of the variation seen in the area under study is accounted for by these alternative management models. The ANOVA analysis was highly significant ( $F = 153.623$ ;  $df = 4$ ;  $p=0.000$ ) indicating that the relationship between the independent variables and dependent variable is very strong. Since  $P<0.05$ , the multiple regression model adopted in this study was relevant for the analysis. The model summary showed that the model can explain 88.2% variation in enhancing multiple intelligences that was occasioned by any changes in the alternative management models.

The multiple regression analysis was conducted so as to determine the relationship between Alternative management models and enhancement of multiple intelligences. The equation  $Y=\alpha +\beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4$  generated was:

$$Y= 0.492+ 0.219 X_1+ 0.239X_2+ 0.246X_3+ 0.245X_4$$

Where Y was the dependent variable (Multiple intelligence),  $X_1$  Alternative Instructional management Model,  $X_2$  is Alternative Assessment management Model,  $X_3$  is Alternative Technological management Model and  $X_4$  is Alternative off School management Model

According to the regression equation established, taking all other factors into account (Alternative Instructional management Model, Alternative Assessment management Model, Alternative Technological management Model and Alternative off School management Model) constant at zero, multiple intelligence will be 0.492.

The independent variable ‘alternative assessment management model’ had the strongest positive effect on the status multiple intelligences ( $\beta = 0.269$ ), this was followed by the independent variable alternative ‘technological management model’

( $\beta = 0.267$ ), alternative off school management model ( $\beta = 0.106$ ). The independent variable alternative instruction management' had the least effect on the enhancement of multiple intelligences ( $\beta = 0.077$ ).

## **5.2. Conclusions**

The purpose of the study was to develop alternative management models for Multiple Intelligences among learners in secondary schools in Kenya. The study was conducted in Elgeyo Marakwet County and was guided by multiple intelligences theory. Four objectives were set up and related hypotheses so as to achieve the stated purpose. Several conclusions emerged from the study based on the objectives of the study.

The study concludes that school management (Principal, BOM and Heads of Department) plays a key role in terms of coordinating, facilitating and supervising instruction models (practices) that enhances or decreases multiple intelligence. The study found that school management was involved in directing, coordinating, facilitating and supervising instructional models that tended to hinder MI. These included inclination towards teaching of Mathematics, Sciences and Languages. There was absence of Music, Woodwork, Art and Design Arabic and Germany subjects in all the sampled schools therefore students abilities in such areas were not developed. Extended classes management model that involved teaching of remedial classes in the mornings from 6am to 7 am, evenings from 5 pm to 6. 30 pm, nights from 7pm to 9 pm and weekends was existent. Drilling that limits students' creativity outside and inside the classroom was being coordinated. The study found out that programmes and activities associated with enhancing students' multiple intelligences such as singings, dancing, painting, playing, meditation, gardening, scouting and interpersonal relationship were given very limited time. Early syllabus completion posed problems to other activities such as games that are meant to enhance MI. Such activities are substituted with class work to facilitate the early completion.

School management directed, facilitated and supervised dictating of notes to students thus denying them the opportunity to do more research on their own thereby enhancing interpersonal intelligences which requires such individual initiatives. Use of lecture methods was found, in addition schemes of work revealed absence of teacher and students activities that enhanced MI.

School management directed and supervised teaching of examinable subject during PE and Life skills lessons thus denying students opportunities to enhance their abilities through PE and Life skills lessons which are very critical in terms of enhancing MI. In addition few schools had the right allocations of Physical Education (P.E) lessons in form one to four. Majority of the schools didn't have P.E in form four. Life skills lessons were nonexistent in most of the schools.

The study concludes that these existing models made students to face challenges in the sense that it's very difficult to develop their talents because the time set aside for games, sports and other activities related to MI is not there. Majority of the students don't function well in subjects that are emphasized more such as Mathematics and Sciences. In fact they do the subject as a formality. Therefore continually stressing these subjects only stresses students and weakens their desire in other subjects that they are good at. Subjects such as Music, computer and Art and Design are rarely emphasized. Chances are that students are likely to perform well in these subjects because they have a direct impact to their abilities. Financial constraints to the school and parents are felt when running these models. In particular management of brick and mortar schools has become a challenge with the increasing number of students' enrolment. Parents have to come in financially which is not an easy thing. In addition to this there are other accompanying materials such as lockers books and even teachers. Fatigue and burn out among students arises from the fact that students are subjected to long hours of study that lacks breaks.

In light of the challenges posed by the existing models of enhancing MI it was found out that school management rated an alternative instruction management model that involves teaching inclined to Music, Computer, Art and Design, Home science, French and Germany as being effective in enhancing students MI because these subjects give students an opportunity to enhance abilities in music (Musical Intelligence), painters, sculptors and architects (Spatial Intelligence). It was found that students are very critical in terms of developing their abilities and therefore school management ought to direct, coordinate facilitate and supervise teaching and learning that is student centered. Management of outdoor teaching and learning model was viewed as effective because students can learn from a broad environment that will expose them to a variety of aspects that are essential in enhancing their abilities.

Managing a practical approach to teaching and learning was seen as being effective. Rotational teaching and learning in different centers model was ineffective likely because the area under study is expansive and schools may be located far apart making this model ineffective. Management of Life skills teaching model indicated majority of Principal rating this model as effective. Management of Physical Education model that reinforces the contribution of disciplines such as music, drama, dance and visual arts and management of alternative instruction for the talented were also seen as effective. Board of Management, Principals and Heads of Department stated that they were willing to adopt/change/innovate to the alternative instructional model.

The school management plays a key role in terms of coordinating, facilitating and supervising assessment management models (practices) that enhances or decreases multiple intelligence. The study found that school management was involved in directing, coordinating, facilitating and supervising assessment models that tended to hinder MI. Supervision of examinable content assessment that resulted in students abilities in areas that are not examinable such as games, singing, dancing, painting



and leadership skills being neglected was scaffolding students' talents growth. Examination papers showed a bias towards class based content. There was a high frequency of examinations and more so in the upper classes to imply that a lot of emphasis was being put to exams more than other areas of education. The study showed a great deal of emphasis being put on academics targets such that schools go out of their way to organize remedial, tuitions and drilling to meet those targets. It was also established that majority of the Heads of Departments involved themselves very much in management of termly series exams. Many of these exams take away students game time because they need to prepare for the exams. Most students forgo activities such as games, scouting, singing and painting to read for the exams. External exams that were in place included mock exams from other counties and purchased exams.

Assessments were tests oriented making students to have less interests and development of their talents because they were viewed as valueless. In addition assessments were facilitated out of formal learning time assessment (i.e. during games, lunch) model. Multiple intelligences are best enhanced during such time as lunch and games therefore, infringing into such time meant that student's did not get ample time to enhance his or her abilities.

Progression of classes based on exam performance model was facilitated. It's critical to mention that the few who were involved in coordinating this model were curtailing enhancement of students MI. The existing assessment models posed several challenges in enhancing students MI such as students graduating from school without any creativity, built up pressure for students to perform and lack of seriousness on non-academic abilities.

In view of the challenges posed by the existing assessment Management models of enhancing MI the study found out that alternative assessment models were vital in

enhancing MI among students. Management of exams based on stated goals of education was found to be effective in enhancing students MI because it puts into consideration the various goals of education such promoting individual development and self-fulfillment by exploiting and developing individual potentials and talents for suitable quality life can be used to enhance MI among students. An assessment model that should be 20% class content and 80% out of class content is effective in terms of enhancing students MI because it encourages holistic development of students. ICT assessment model was viewed as ineffective by majority Heads of Departments because computer illiteracy among many school managers. College entrance exam model was found to be ineffective. This confirms that most of the schools still rate KCSE exam as an important transition tool to universities and colleges. Management of assessment model that encompasses 80% formative and 20 % summative testing was perceived as effective because students are not pressurized more on passing the summative testing thereby giving students an opportunity to enhance their abilities.

Managing individual assessment model that focuses on students' strength was ineffective because it brings with it extra work to teachers not to mention the already overloaded teaching workforce. Closely linked to this was the management of peer assessment based on shared strengths model which was viewed as ineffective. Societies and organizations consist of hard working and lazy individuals who rely on others to accomplish tasks. It's imperative therefore to say that this model was ineffective because it may encourage laziness among students who rely on others. Management of alternative assessment model for the talented was rated effective. In line with this model was the management of certification model to include students varied abilities that was rated by majority of the Heads of Department as effective.

The school management (Principal, BOM and Heads of Department) play a key role in terms of directing coordinating, facilitating and supervising technological management models (practices) that are important in enhancing multiple intelligence

models. The study concluded that BOM, Principals and Heads of Department were not facilitating utilization of computers and other electronic devices aimed at enhancing multiple intelligences. Though schools were blessed with several computers no active programmes had been initiated to assist students. Many schools were not offering computer in fact no sub county school facilitated nor coordinated offering of Computer subject. The traditional boards (blackboards) were the most preferred communication tool in the classroom. Such boards were boring and they never enhance any talents. The students preferred electronic boards and white boards. The existing technological management models posed several challenges in enhancing students MI such as computer illiteracy, health risk due to black boards that produced chalk dust.

In view of the challenges posed by the existing technological management models of enhancing MI the study found alternative technological assessment models vital for enhancing MI among students. Use of power point presentations was found effective because such presentations enhance students' abilities such as spatial intelligences and bodily kinesthetic. Management of internet/websites/emails/cyber space and cloud technology, management of hypertext, management of talking books (CD Rom based books) and bloggers and management of pupil run televisions, radio, and online TV as effective in enhancing students varied abilities was effective.

The school management plays a key role in terms of directing coordinating, facilitating and supervising off school management models (practices) that are important in enhancing multiple intelligence models. The study found that the off school business management model being managed in schools did not have any activity that enhanced MI from students. Few schools did invite comedians and coca cola promotional troupe commonly referred to as the Coke Light Studio. The schools routines in most of the schools were the traditional routines that had the usual waking up, cleaning, school timetable, breakfast, lunch, games supper, preps, church service,

and lights off. Most of the activities that were carried out in schools (that is the off school business) were geared towards academic excellence and probably issues related to students social wellbeing. Management and facilitation of activities aimed to generate income for the school (income generating activities) were mostly run by teachers, support staff and contracted personnel. Many students therefore were not exposed to entrepreneurship skills. Schools did not have links with private sectors that could assist students in developing their leadership skills and entrepreneurship abilities. Many students were engaged with what just goes on around the school which is basically classroom academics.

Alternative off School Business Management models for enhancing MI among students showed that majority of the Principals rated a directed, coordinated, and facilitated working relation with other educational institutions as effective. Such working relations with other institutions enhance students' interpersonal intelligences whereby students will be given an opportunity to work and communicate with others. Beside other educational institutions are endowed with resources that can be utilized among the partnering agencies to enhance MI. Managing, supervising and facilitating links with other countries/exchange model was perceived as ineffective because such arrangement requires intense logistical issues such as acquiring passports, sourcing for air fare and seeking for sponsors. Therefore additional money may be required to meet some of these requirements consequently the need for parents to foot this bill. Shouldering extra financial costs has been an issue in our education system thus the mixed responses. Facilitated links with local, regional and international business was perceived as ineffective because of a likely lack of information on the kind of business in question. A directed and facilitated link with corporate such as Safaricom, Yu, KCB and Coca cola was found to be effective because it enhances students' leadership abilities and communicative abilities thus the need to be enhanced. Links with agencies such as Red Cross, KWS and others were perceived as effective in

enhancing students varied abilities. The study found out that there should be a directed and facilitated student's representation in schools, churches boards and corporate. Such a model enhances students' leadership abilities and communicative abilities. Majority of the Principals perceived managing and facilitating entrepreneurship programmes for students as being effective in enhancing students varied abilities. Entrepreneurship programmes do give students a platform upon which they can show case their artistic and creative prowess in different intelligences such as painting, recording movies and songs, writing magazines, sculpturing and many others. Majority of the Principals viewed that a directed and facilitated students job attachments and internship as ineffective. It's important to mention that such a model enhances students' leadership abilities and communicative abilities thus the need to be enhanced.

Lastly the managing of vocational work related programmes as a means of enhancing students MI was perceived as effective.

### **5.3 Recommendations**

Based on this research, the following recommendations are suggested;

- i.** School management should ensure that the curriculum instruction experiences of the school are rewarding so as to enable all students to develop their Multiple Intelligence to the full. Principals, BOM and Heads of Departments should support establishment and operation of instruction models that enhance Multiple Intelligence such as prioritizing Physical Education to enable students to develop social and physical skills associated with Multiple Intelligences. Subjects such as Home science, Music, Computer and Art and design should be popularized so as to support intelligences such as musical, environmental and drama. Student centered models, practical approach, Life skills and management of alternative instruction for the talented. School administration should ensure that the curriculum assessment experiences of

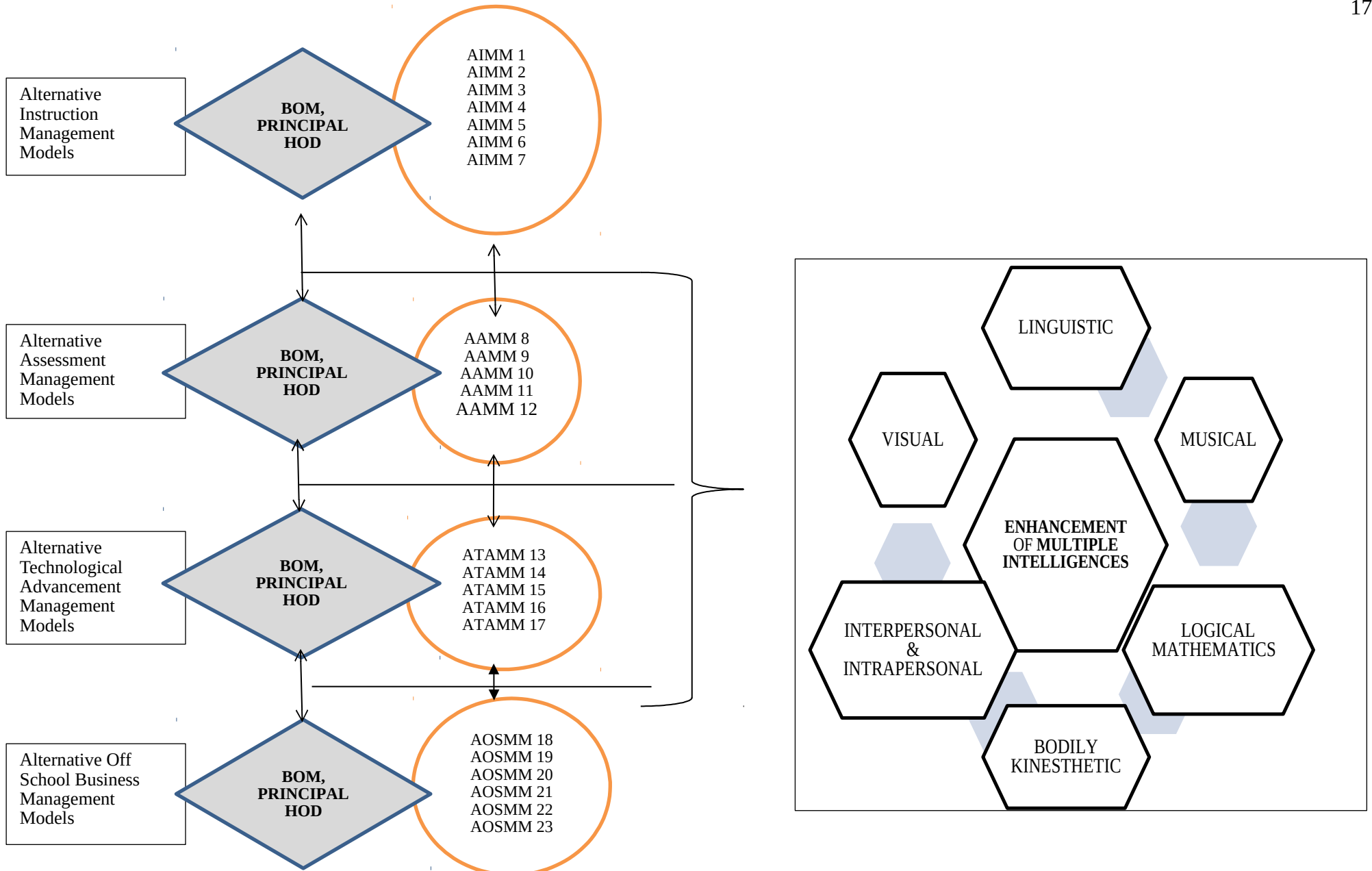
the school are rewarding so as to enable all students to develop their Multiple Intelligence to the full.

- ii.** Principals, BOM and Heads of Departments should support establishment and operation of assessment models that enhance Multiple Intelligence such as management of exams based on stated goals of education, such as the promotion of individual development and self-fulfillment. An assessment model that should be 20% class content and 80% out of class content to encourage holistic development of students. ICT assessment model should be encouraged. Management of assessment model that encompasses 80% formative and 20 % summative should be encouraged because students are not likely to be pressurized more on passing the summative testing thereby giving students an opportunity to enhance their abilities. Management of alternative assessment model for the talented and certification model to include students varied abilities should be encouraged.
- iii.** A directed, coordinated, and facilitated use of power point presentations should be encouraged so as to enhance students' abilities such as spatial intelligences and bodily kinesthetic. Management of internet/websites/emails/ cyber space and cloud technology, management of hypertext, management of talking books (CD Rom based books) and bloggers and management of pupil run televisions, radio, and online TV need also to be encouraged.
- iv.** A directed, coordinated, and facilitated working relation with other educational institutions enhances students' interpersonal intelligences whereby students gets opportunities to work and communicate with others. Other educational institutions are likely to be endowed with resources that can be utilized among the partnering agencies to enhance MI. links with corporate and agencies such as Safaricom, Yu, KCB, Red Cross, KWS and Coca cola enhances students' leadership abilities, interactions and communicative

abilities thus the need to be encouraged. Managing and facilitating entrepreneurship programmes for students give students a platform upon which they can show case their artistic and creative prowess in different intelligences such as painting, recording movies and songs, writing magazines, sculpturing and many others. Managing of vocational work related programmes should be encouraged.

#### **5.4 Alternative Management Model for Enhancing Students Multiple Intelligences**

As educational institutions develop into the next century, they are faced with many critical challenges, such as massive failures and continued lack of talent leading to great uncertainty on the direction of the economic development of the country in the future. Empirical management models are useful in reducing this uncertainty. Key features emerged from the study findings that characterize developing robust alternative management models for MI enhancement among students. These included aspect of instruction, assessment, new technologies, and strong links with the community. Figure 11 shows an alternative management model that enhances multiple intelligences among students in Kenya.



**Figure 11: Alternative Management Models for Enhancing Multiple Intelligences among Students**



**KEY**

## AIMM - Alternative instruction management models

1. Teaching inclined to Music, Computer, Art and Design, Home science, French and Germany
2. student centered methodology
3. Management of outdoor teaching and learning model.
4. managing a practical approach to teaching and learning
5. Management of Life skills teaching model
6. management of Physical Education model
7. Management of alternative instruction for the talented.

## AAMM - Alternative assessment management models

8. Exams based on stated goals of education
9. 20% class content and 80% out of class content.
10. 80% formative and 20 % summative testing.
11. Alternative assessment model for the talented as being extremely effective.
12. Certification model to include students varied abilities

## ATAMM - Alternative technological advancement management models

13. Use of power point presentations.
14. Management of internet/websites/emails/cyber space and cloud technology as being extremely effective.
15. Management of hypertext.
16. Talking books (CD Rom based books) and bloggers,
17. Management of pupil run televisions, radio, and online TV

## AOSMM - alternative off school business management models

18. Working relation with other educational institutions.
19. links with corporate such as Safaricom, Yu, KCB and Coca cola
20. link with agencies such as Red Cross, KWS
21. Student's representation in schools, churches boards and corporate.
22. Managing entrepreneurship programmes for students.
23. managing vocational work related programmes

The Alternative Management Model indicated in Figure 11 indicates that this model comprises of Alternative Instruction Management Models, Alternative Assessment Management Models, Alternative Technological Advancement Management Models and Alternative Off School Management Models. As the findings showed these models are significant in enhancing multiple intelligences among students. The school management consisting of the Board of Management, Principals and Head of Departments have a role of supervising, directing, facilitating and coordinating the 23 practices (systems, designs, strategies, innovations, processes) identified so as enhance the various multiple intelligences (Linguistic Intelligences, Musical

Intelligences, Logical mathematical Intelligences, Bodily Kinesthetic, Interpersonal Intelligences, Intrapersonal Intelligences and Visual intelligences).

### 5. 5 Suggestions for Further Research

During the research it was noted that, only few studies exist that attempt to address development of alternative management models for Multiple Intelligences among learners in secondary schools in Kenya. In view of this the following are recommended for further research.

- i. Further studies should focus on other levels as the present study was focused on secondary school setting. The alternative management models in middle level colleges, universities, primary schools and early childhood learning institutions in developing Multiple Intelligences amongst students should be investigated.
- ii. Further studies should be done to establish the impact of Multiple Intelligences on academic performance.

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## APPENDICES

### APPENDIX 1

#### CONSENT FORM FOR PARTICIPATION IN THE STUDY

##### DECLARATION BY THE PARTICIPANT

I hereby consent to participate in the research project. The purpose and procedures of the study have been explained to me. I understand that:

- a. Participation in this interview is voluntary.
- b. That I may refuse to answer any questions I would prefer not to.

- c. I may withdraw from the interview at any time.
- d. No information that may identify me will be included in the research report.
- e. The study has no direct benefit, nor any foreseeable negative consequences in participating.
- f. Would unanticipated negative consequences arise there are contact details available and assistance, to contact these institutions will be given if needed.
- g. I consent to the researcher using direct quotes in his dissertation, with reference to a general code-named – so my identity will not be included in the research, and that I understand that the researcher will keep responses as anonymous as possible.

Name of Participant: .....

Date: .....

Signature:

.....

## **APPENDIX II**

### **HEADTEACHERS' QUESTIONNAIRE**

The purpose of this study is to examine alternative management models for the enhancement of Multiple Intelligences amongst students in Elgeiyo Marakwet, Kenya.

The objectives of the study will be

- i.** To assess the existence of alternative management models that enhances Multiple Intelligences among students in Kenya.
- ii.** To examine the instruction management models that enhances Multiple Intelligences among students in Kenya.
- iii.** To investigate assessment management models that enhances multiple intelligences among students in Kenya.
- iv.** To explore the technological advancement management models that enhances multiple intelligences
- v.** To examine the off school business management model that enhances multiple intelligences among students in Kenya.

**Directions**

- a) Please answer the question to the best of your ability.
- b) Whatever responses and information provided here in will be treated with utmost confidentiality.
- c) Sincerity is important in filling this questionnaire.
- d) All answers provided here in will be considered correct.
- e) Do not write your name and school on this questionnaire.
- f) Attempt all questions by filling in blank spaces, circling, or by use of a tick (✓).
- g) Feel free to use additional sheets of paper to make comments if necessary.
- h) The questionnaire will take between 10-15 minutes to fill.

Please note: For this research, Multiple Intelligences is defined broadly as students out of class abilities manifested in activities such as games and sports, plays, dance, singing etc. It also includes a range of abilities in class manifested in subjects such as Home science, Art and design and Music.

Maboko D. Nassiuma  
PhD Student  
Moi University

**SECTION A: RESPONDENTS' BIO DATA**

1. Gender      Male      [   ]      Female      [   ]
2. Age 19 –24 yrs [   ] 25 –30 yrs [   ] 31 –36 yrs [   ] 37 – 42 yrs [   ] above 42 yrs [   ]
3. Highest level of education  
Primary [   ] Secondary [   ] College [   ] University [   ] others specify\_\_\_\_\_
4. Working experience  
5 yrs and below [   ] 6-10 yrs [   ] 11-15 yrs [   ] 16-20 yrs [   ] 21 yrs and Above [   ]
5. Experience as The Principal  
5 yrs and below [   ] 6 – 10 yrs [   ] 11 – 15 yrs [   ] 16 – 20 yrs [   ] 21 yrs and Above [   ]

**SECTION B INSTRUCTION MANAGEMENT MODEL**

6. Indicate the level of School Principal involvement in the following models for instruction?

**Whereby 1-very little and 7- means very much**

	<b>Instruction Management Models</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
A	The Principal through the various departments directs, coordinates, facilitates and supervises teaching that is Inclined towards Mathematics, Sciences and Languages							
B	The Principal through the various departments directs,							



	coordinates facilitates and supervises extended classes e.g. Remedial Classes, tuition,							
C	The Principal through the various departments directs, coordinates, facilitates and supervises teacher centered methodology							
D	The Principal through the various department directs, coordinates, facilitates and supervises the brick and mortar (classroom centered) school							
F	The Principal through the various department directs, coordinates, facilitates supervises Uniform instruction among learners							
G	The Principal through the various department directs, coordinates, facilitates and supervises early completion of syllabus							
J	The Principal directs, coordinates and facilitates lecture methods							
K	The Principal directs, coordinates and facilitates teaching of examinable subject during PE and Life skills lessons.							

7. Below are some alternative instruction management models that can be used to enhance students varied abilities in school. Give the extent to which the models can enhance students varied abilities.

**Whereby 1-means extremely ineffective and 7- means extremely effective**

<b>Alternative Instruction Management Models</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
A	A directed, coordinated, and facilitated inclination towards Music, Computer, Art & Design, Home science, Music, French and German							
B	A directed, coordinated, and facilitated student centered teaching and learning							
C	A directed, coordinated, and facilitated outdoor teaching and learning							
D	A directed, coordinated, and facilitated pupil's choice of what they want to be taught							
E	A directed, coordinated, and facilitated differential instruction							
F	A directed, coordinated, and facilitated practical approach to teaching and learning							
G	A directed, coordinated, and facilitated rotational teaching and learning in different Centers							
H	A directed, coordinated, and facilitated teaching of Life skills							
I	A directed, coordinated, and facilitated teaching of Physical Education							
J	A directed, coordinated, and facilitated alternative instruction for the talented.							

8. As a Head of the Institution state your willingness to adopt/change/innovate to the above mentioned models \_\_\_\_\_

### SECTION B: ASSESSMENT MANAGEMENT MODEL

9. Indicate the level of the Principal involvement in the following models for assessment?

**Whereby 1 – Very little and 7- Very much**

<b>Assessment Management Models</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
A	The Principal through the various departments directs, coordinates facilitates and supervises examinable content assessment							
B	The Principal through the various departments directs, coordinates facilitates and supervises academic target setting							
C	The Principal through the various departments directs, coordinates facilitates and supervises administration of term series exams							
D	The Principal through the various departments directs, coordinates facilitates and supervises administration of exams and test oriented/based assessment							
E	The Principal through the various departments directs, coordinates facilitates and supervises administration of test and exams out of formal learning set time							
F	The Principal through the various departments directs, coordinates facilitates and supervises repetition of classes based on exam performance.							

10. Below are some alternative assessment management models that can be used to enhance students varied abilities in school. Give the extent to which the models can enhance students varied abilities;

**Whereby 1-means extremely ineffective and 7- means extremely effective**

<b>Alternative Assessment management Models</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
A	A directed, coordinated, facilitated and supervised exam based on stated goals of Education							
B	A directed, coordinated, facilitated and supervised testing to be 20% class content and 80 % out of class Content to encourage holistic development.							
C	A directed, coordinated, facilitated and supervised							

	Assessment by ICT								
D	A directed, coordinated, facilitated and supervised College entrance exam rather than National exams								
E	A directed, coordinated, facilitated and supervised testing to be 80% formative and 20% summative								
F	A directed, coordinated, facilitated and supervised Individual assessment based on students strengths								
G	A directed, coordinated, facilitated and supervised Peer assessment based on shared strengths between students								
H	A directed, coordinated, facilitated and supervised alternative exam for talented								

11. As The Head of institution state your willingness to adopt/change/innovate to the above mentioned models \_\_\_\_\_

### SECTION B: TECHNOLOGICAL MANAGEMENT MODEL

12. How has your school embraced technology in academic matters relating to teaching, learning and other academic activities?

\_\_\_\_\_

\_\_\_\_\_

13. Below are some alternative technological management models that can be used to enhance students varied abilities in school. Give the extent to which the models can enhance students varied abilities;

**Whereby 1-means extremely ineffective and 7- means extremely effective**

	<b>Alternative technological management Models</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
A	A directed, coordinated, and facilitated power point presentations/ overhead projector							
B	A directed, coordinated, and facilitated use of computer games							
C	A directed, coordinated, and facilitated use of internet/ websites/emails/cyber space/cloud							
D	A directed, coordinated, and facilitated use of hypertexts							
E	A directed, coordinated, and facilitated Talking books (CD Rom Based Books)/bloggers							
F	A directed, coordinated, and facilitated pupils run televisions/ radio/online TV							

14. As the Head of Institution state your willingness to adopt/change/innovate to the above mentioned models \_\_\_\_\_

### SECTION B: OFF SCHOOL BUSINESS MANAGEMENT MODEL

15. As the School Principal explain how you have involved yourself in enhancing students activities not directly linked with class work (activities outside school) such as

entrepreneurship programmes, job attachment, student's income generating activities, work for fees etc?

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16. Below are some alternative off the school management tasks that can be used to enhance students varied abilities in school. Give the extent to which the tasks can enhance students varied abilities;

**Whereby 1-means extremely ineffective and 7- means extremely effective**

	<b>Alternative off school management Models</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
A	A directed, coordinated, and facilitated working relation with other education institutions							
B	A directed, coordinated, and facilitated links with other countries/exchange programmes							
C	A directed, coordinated, and facilitated links with local/regional/international businesses							
D	A directed, coordinated, and facilitated links with corporate such as Safaricom, Yu, KCB, Coca cola							
E	A directed, coordinated, and facilitated link with agencies such as Red Cross, KWS							
F	A directed, coordinated, and facilitated student's representation to boards of schools, church, corporate							
G	A directed, coordinated, and facilitated entrepreneurship programmes for students							
H	A directed, coordinated, and facilitated students job attachment, and internship							
I	A directed, coordinated, and facilitated vocational work related to the real work							

17. Specify other off school initiative that can enhance students' abilities, talents other than the one mentioned above \_\_\_\_\_

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18. As The Head of Institution state your willingness to adopt/change/innovate to the above mentioned models \_\_\_\_\_

19. Determine the impact that the alternative management models below will have on enhancement of multiple intelligences/students varied abilities/talents in school.

	<b>Alternative Management Models</b>	<b>Enhancement of multiple intelligences</b>						
		<b>Low</b>						<b>High</b>
1	Alternative instruction management model	1	2	3	4	5	6	7
2	Alternative assessment management model	1	2	3	4	5	6	7
3	Alternative technological management model	1	2	3	4	5	6	7

4 Alternative off school management model 1 2 3 4 5 6 7

20. Rate how the following alternative management models have been used to enhance students multiple intelligences in your school

Alternative Management Models	Frequency of Alternative models						
	Very little						Very much
1 Alternative instruction management model	1	2	3	4	5	6	7
2 Alternative assessment management model	1	2	3	4	5	6	7
3 Alternative technological management model	1	2	3	4	5	6	7
4 Alternative off school management model	1	2	3	4	5	6	7

21. Students multiple intelligences/students' abilities/talents has been enhanced in school.

	Actively						Passively
Multiple intelligences	1	2	3	4	5	6	7

**Thank You**

### **APPENDIX III**

#### **BOARD OF MANAGEMENT INTERVIEW SCHEDULE**

1. Describe how instruction is directed and organized in your school?
2. How effective is this instruction in enhancing students' abilities?
3. Are there some instruction practices that if facilitated may enhance students' abilities? Explain their usage in your school?
4. Describe how the BOM involves itself in management of assessment practices?
5. Which ICT has the management initiated to enable students develop their varied abilities? If not give reasons for non-engagement?

6. How important is it for students to engage in activities which have no direct relationship with class work?
7. How has the school involved itself in activities not directly linked with class work (activities outside school) such as entrepreneurship programmes, job attachment, student's income generating activities, work for fees etc?
8. What are the challenges that have been experienced in the running of instruction, assessment, technological and off school practices in schools?
9. Explain the willingness of the Board to facilitate and coordinate other practices to enhance students' abilities other than the ones currently in use?

**Thank You**

## **APPENDIX IV**

### **HEAD OF DEPARTMENT QUESTIONNAIRE**

The purpose of this study is to examine alternative management models for the enhancement of Multiple Intelligences amongst students in Elgeiyo Marakwet, Kenya.

The objectives of the study will be

- i.** To assess the existence of alternative management models that enhances Multiple Intelligences among students in Kenya.
- ii.** To examine the instruction management models that enhances Multiple Intelligences among students in Kenya.
- iii.** To investigate assessment management models that enhances multiple intelligences among students in Kenya.
- iv.** To explore the technological advancement management models that enhances multiple intelligences
- v.** To examine the off school business management model that enhances multiple intelligences among students in Kenya.

#### **Directions**

- i.** Please answer the question to the best of your ability.
- ii.** Whatever responses and information provided here in will be treated with utmost confidentiality.
- iii.** Sincerity is important in filling this questionnaire.

- iv. All answers provided here in will be considered correct.
- v. Do not write your name and school on this questionnaire.
- vi. Attempt all questions by filling in blank spaces, circling, or by use of a tick (✓).
- vii. Feel free to use additional sheets of paper to make comments if necessary.
- viii. The questionnaire will take between 10-15 minutes to fill.

Please note: For this research, Multiple Intelligences is defined broadly as students out of class abilities manifested in activities such as games and sports, plays, dance, singing etc. It also includes a range of abilities in class manifested in subjects such as Home science, Art and design and Music.

Maboko D. Nassiuma  
PhD Student  
Moi University

#### SECTION A: RESPONDENTS' BIO DATA

1. Gender      Male      [   ]      Female [   ]
2. Age 19 –24 yrs [   ]25 –30 yrs [   ]31 –36 yrs[   ]37 – 42 yrs[   ] above 42 yrs [   ]
3. Highest level of education  
Primary [   ] Secondary [   ] College [   ] University [   ] others specify \_\_\_\_\_
4. Working experience  
5 yrs and below [   ]6-10 yrs[   ]11-15 yrs[   ]16-20 yrs[   ]21 yrs and above [   ]
5. Experience as Head of Department  
5 yrs and below [   ]6 – 10 yrs [   ]11 – 15 yrs [   ]16– 20 yrs[   ] 21 yrs and above [   ]  
Indicate the Department that you Head  
\_\_\_\_\_

#### SECTION B: INSTRUCTION MANAGEMENT MODEL

6. As a Head of Department indicate the level of your involvement in the following models for instruction?

**Whereby 1-very little and 7- means very much**

	<b>Instruction Management Models</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
A	Coordination, facilitation and supervision that is Inclined towards teaching of Mathematics, Sciences and Languages							
B	Coordination, facilitation and supervision of Remedial							

	Classes								
C	Coordination, facilitation and supervision of teacher centered methodology								
D	Coordination, facilitation and supervision of drilling								
E	Coordination, facilitation and supervision of the brick and mortar (classroom centered) school								
F	Coordination, facilitation and supervision of Uniform instruction								
G	Coordination, facilitation and supervision of early completion of syllabus								
H	Coordination, facilitation and supervision of dictating of notes to learners								
I	Coordination, facilitation and supervision of Students copying notes from the chalkboard, whiteboard								
J	Coordination, facilitation and supervision of lecture methods								
K	Coordination and facilitation of Students copying notes from the text book								
L	Coordination, facilitation and supervision teaching of examinable subject during PE and Life skills lessons.								

7. How are these instruction models a challenge towards enhancing student's abilities, talents?

---



---

8. Below are some alternative instruction management models that can be used to enhance students varied abilities in school. Give the extent to which the models can enhance students varied abilities;

**Whereby 1-means extremely ineffective and 7- means extremely effective**

	<b>Alternative Instruction Management Models</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
A	A directed, coordinated, and facilitated inclination towards Music, Computer, Art & Design, Home science, Music, French and German							
B	A directed, coordinated, and facilitated student centered teaching and learning							
C	A directed, coordinated, and facilitated outdoor teaching and learning							
D	A directed, coordinated, and facilitated pupil's choice of what they want to be taught							
E	A directed, coordinated, and facilitated differential instruction							
F	A directed, coordinated, and facilitated practical approach to teaching and learning							
G	A directed, coordinated, and facilitated rotational teaching							



	and learning in different Centers							
I	A directed, coordinated, and facilitated Home schooling teaching and learning							

9. Specify other alternative instruction management models that can enhance students' abilities, talents

---

10. As a Head of Department state your willingness to adopt/change/innovate to the above mentioned models

---

### SECTION C: ASSESSMENT MANAGEMENT MODEL

11. As a Head of Department indicate the level of your involvement in the following models for assessment?

**Whereby 1-Means Very little and 7- Means Very much**

<b>Assessment Management Models</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
A	As the HOD i direct, coordinate and facilitate examinable content assessment							
B	As the HOD i direct, coordinate and facilitate academic target setting							
C	As the HOD i direct, coordinate and facilitate administration of termly series exams							
D	As the HOD i oversee assessment that is exams and test oriented/based							
E	As the HOD i direct, coordinate and facilitate assessment out of formal learning set time i.e during lunch, games, morning and evening preps							
F	As the HOD i direct, coordinate and facilitate repetition of classes based on exam performance.							

12. Below are some alternative instruction management models that can be used to enhance students varied abilities in school. Give the extent to which the models can enhance students varied abilities;

**Whereby 1-means extremely ineffective and 7- means extremely effective**

	<b>Alternative Assessment management Models</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
A	A directed, coordinated, facilitated and supervised exam based on stated goals of Education							
B	A directed, coordinated, facilitated and supervised testing to be 20% class content and 80 % out of class Content to encourage holistic development.							
C	A directed, coordinated, facilitated and supervised Assessment by ICT							
D	A directed, coordinated, facilitated and supervised College entrance exam rather than National exams							
E	A directed, coordinated, facilitated and supervised testing to be 80% formative and 20% summative							
F	A directed, coordinated, facilitated and supervised Individual assessment based on students strengths							
G	A directed, coordinated, facilitated and supervised Peer assessment based on shared strengths between students							
H	A directed, coordinated, facilitated and supervised alternative assessment (exam)							

Specify other alternative assessment management models that can enhance students' abilities, talents \_\_\_\_\_

—

13. As a Head of Department state your willingness to adopt/change/innovate to the above \_\_\_\_\_ mentioned \_\_\_\_\_ models

#### **SECTION D: TECHNOLOGICAL MANAGEMENT MODEL**

14. How has your department embraced technology in academic matters relating to teaching, learning and other co curriculum activities?

\_\_\_\_\_

15. Below are some alternative technological management models that can be used to enhance students varied abilities in school. Give the extent to which the models can enhance students varied abilities;

**Whereby 1-means Ineffective and 7- means Effective**

	<b>Alternative technological management Models</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
A	A directed, coordinated, and facilitated power point presentations/ overhead projector							
B	A directed, coordinated, and facilitated use of computer games							
C	A directed, coordinated, and facilitated use of internet/ websites/emails/cyber space/cloud							
D	A directed, coordinated, and facilitated use of hypertexts							
E	A directed, coordinated, and facilitated Talking books (CD Rom Based Books)/bloggers							
F	A directed, coordinated, and facilitated pupils run televisions/ radio/online TV							

16. Specify other alternative technology advancement management models that can enhance students' abilities, talents

---

17. As a Head of Department state your willingness to adopt/change/innovate to the above \_\_\_\_\_ mentioned models \_\_\_\_\_

#### **SECTION E: OFF SCHOOL BUSINESS MANAGEMENT MODEL**

18. How has your department involved itself in activities not directly linked with class work (activities outside school) such as entrepreneurship programmes, job attachment, student's income generating activities, work for fees etc?

---

19. Below are some alternative management tasks that can be used to enhance students varied abilities in school. Give the extent to which the models can enhance students varied abilities;

**Whereby 1-means extremely ineffective and 7- means extremely effective**

	<b>Alternative off school management Models</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
A	A directed, coordinated, and facilitated working relation with other education institutions							
B	A directed, coordinated, and facilitated links with other countries/exchange programmes							
C	A directed, coordinated, and facilitated links with local/regional/international businesses							
D	A directed, coordinated, and facilitated links with corporate such as Safaricom, Yu, KCB, Coca cola							
E	A directed, coordinated, and facilitated link with agencies such as Red Cross, Kenya Wildlife							

F	A directed, coordinated, and facilitated student's representation to boards of schools, church, corporate							
G	A directed, coordinated, and facilitated entrepreneurship programmes for students							
H	A directed, coordinated, and facilitated students job attachment, and internship							
I	A directed, coordinated, and facilitated vocational work related to the real work							
J	A directed, coordinated, and facilitated link with radio and TV stations							

20. Specify other off school initiative that can enhance students' abilities, talents

---

21. Specify other off school initiative models that can enhance students' abilities, talents

---

22. As a Head of Department state your willingness to adopt/change/innovate to the above mentioned models

---

23. Determine the impact that the alternative management models below will have on enhancement of multiple intelligences

	Alternative Management Models	Enhancement of multiple intelligences						
		Low						High
1	Alternative instruction management model	1	2	3	4	5	6	7
2	Alternative assessment management model	1	2	3	4	5	6	7
3	Alternative technological management model	1	2	3	4	5	6	7
4	Alternative off school management model	1	2	3	4	5	6	7

24. Rate how the following alternative management models have been used to enhance students multiple intelligences in your school

	Alternative Management Models	Frequency of alternative models						
		Very little						Very much
1	Alternative instruction management model	1	2	3	4	5	6	7
2	Alternative assessment management model	1	2	3	4	5	6	7

3	Alternative technological management model	1	2	3	4	5	6	7
4	Alternative off school management model	1	2	3	4	5	6	7

24. Students multiple intelligences (varied abilities, talents) has been enhanced in school.

	<b>Actively</b>						<b>Passively</b>
Multiple intelligences	1	2	3	4	5	6	7

**Thank You**

## **APPENDIX V**

### **FOCUS GROUP DISCUSSION GUIDE**

**Welcome and thank you for participating.**

**Purpose of the session:**

To provide input to the researcher as he investigates on the alternative management models for enhancing multiple intelligences. Am gathering input from individuals and will seriously consider everyone's ideas.

**Introductions:** Please tell us your name, class, and role in School

**Ground Rules:**

- i. Be honest; your individual comments will remain confidential but will be compiled into a report
- ii. I will be recording the session in order to write my report but will not share the tape with anyone.
- iii. Be respectful- no personal attacks; if you disagree, please tell us but in a calm and respectful manner
- iv. Stay on the subject
- v. Participate

**Discussion Questions**

1. What activities are you actively involved in school other than academics?

2. How has the school management (BOM, Principal and HOD) enhanced these activities?
3. What do you think the school management should do to enhance your abilities so as to participate effectively in these activities?
4. What are some of the challenges that you encounter as you participate in these activities?
5. Has the instruction model enhanced your abilities? How would you like it to be modeled?
6. Describe how the school has balanced exams and ability development?
7. How has the repetition policy impacted on you?
8. How does it impact on development of your abilities?
9. Which technology do you wish can be put in place to enhance your abilities?
10. What off school activities (attachment, president award, entrepreneurship, Red Cross, community work etc) are you engaged in?

#### **APPENDIX VI DOCUMENT ANALYSIS GUIDE**

Below is a list of documents that can be used to ascertain school processes that aim to enhance Multiple Intelligences among students. The attributes are likely to enhance development of Multiple Intelligences.

<b>Documents</b>		<b>Remarks/ Comments</b>
School timetable	Presence of Computer subject	
	Presence of Music subject	
	Presence of Art and Design	
	Presence of Woodwork subject	
	Presence of Drawing and Design	
	Presence of French, Arabic and German	
	Presence of Home Science	
	Balanced class and out of class activities	
	Presence of PE	
Presence of life skills lessons		
Permission record book	Whether reasons given to Students going out or entering schools have any links with off school business	
School daily Routine	Activities that enhance MI	
Exams Timetable	Frequency of exams	
	Balanced assessment based on goals of education	
Schemes of work	Activities that enhance MI	
	Methods that enhance MI	
Permanent Stores Ledger	Equipments and materials that support MI	
Visitors Book	Corporate visits	
	Other schools visits (Principals)	
	Agencies (Red Cross, St John's) visits	
	Local business persons	
	CDF officials visits	

# APPENDIX VII RESEARCH PERMIT

**CONDITIONS**


- 1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit.**
- 2. Government Officers will not be interviewed without prior appointment.**
- 3. No questionnaire will be used unless it has been approved.**
- 4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.**
- 5. You are required to submit at least two(2) hard copies and one(1) soft copy of your final report.**
- 6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice.**

**RESEARCH CLEARANCE PERMIT**

**Serial No: A/0106**

**CONDITIONS: see back page**

**NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION**



**THIS IS TO CERTIFY THAT:**

**MR. DAVID MABOKO NASSIUMA**

**of MOI UNIVERSITY 2060 50200**

**BUNGOMA, has been permitted to**

**conduct research in Elgeyo-Marakwet County**

**on the topic: ALTERNATIVE MANAGEMENT MODELS FOR ENHANCING MULTIPLE INTELLIGENCES AMONG STUDENTS IN SECONDARY SCHOOLS IN KENYA**

**for the period ending:**

**12th May, 2017**

**Permit No.: NACOSTI/P/16/55641/11260**

**Date Of Issue : 13th May, 2016**

**Fee Received :Ksh. 2000**


*[Signature]*

**Applicant's Signature**

*[Signature]*

**Director General**

**National Commission for Science, Technology & Innovation**



**APPENDIX VIII**  
**RESEARCH AUTHORIZATION**



**NATIONAL COMMISSION FOR SCIENCE,  
TECHNOLOGY AND INNOVATION**

Telephone: +254-20-2213471,  
2241349,3310571,2219420  
Fax: +254-20-318245,318249  
Email: dg@nacosti.go.ke  
Website: www.nacosti.go.ke  
when replying please quote

9<sup>th</sup> Floor, Utalii House  
Uhuru Highway  
P.O. Box 30623-00100  
NAIROBI-KENYA

Ref. No.  
**NACOSTI/P/16/55641/11260**

Date:

**13<sup>th</sup> May, 2016**

David Maboko Nassiuma  
Moi University  
P.O. Box 3900-00100  
**ELDORET.**

**RE: RESEARCH AUTHORIZATION**

Following your application for authority to carry out research on “*Alternative management models for enhancing multiple intelligences among students in secondary schools in Kenya*,” I am pleased to inform you that you have been authorized to undertake research in **Elgeyo-Marakwet County** for the period ending **12<sup>th</sup> May, 2017**.

You are advised to report to **the County Commissioner and the County Director of Education, Elgeyo-Marakwet County** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

  
**BONIFACE WANYAMA**  
**FOR: DIRECTOR-GENERAL/CEO**

Copy to:

The County Commissioner  
Elgeyo-Marakwet County.

The County Director of Education  
Elgeyo-Marakwet County.





**APPENDIX IX**  
**RESEARCH AUTHORIZATION**



**OFFICE OF THE PRESIDENT**  
**MINISTRY OF INTERIOR & COORDINATION OF NATIONAL GOVERNMENT**

Telegrams:  
Telephone: (053) 42007  
Fax : (053) 42289  
E-mail: [cclgeyomarakwet@yahoo.com](mailto:cclgeyomarakwet@yahoo.com)  
[cclgeyomarakwet@gmail.com](mailto:cclgeyomarakwet@gmail.com)  
When replying please quote

**COUNTY COMMISSIONER'S OFFICE,**  
**ELGEYO-MARAKWET COUNTY,**  
**P.O. BOX 200-30700**

**ITEN**

**PUB. CC 24/2 VOL.II/35**

**12<sup>th</sup> May, 2016**

Ref. ....

Date .....

**TO WHOM IT MAY CONCERN**

**RE: RESEARCH AUTHORIZATION**  
**DAVID MABOKO NASSIUMA**

This is to confirm that the above named has been authorized to carry out a research on  
*"Alternative management models for enhancing multiple intelligences among students in  
Secondary Schools in Kenya"* for the period between 12<sup>th</sup> May, 2016 to September, 2016.

Please accord him necessary assistance.

**S. B. MUNYASIA**  
**For: COUNTY COMMISSIONER**  
**ELGEYO MARAKWET COUNTY**

c.c. All Deputy County Commissioners  
**ELGEYO MARAKWET COUNTY.**

SBM/sjk

**APPENDIX X**  
**FORMAL RESEARCH AUTHORIZATION**



REPUBLIC OF KENYA

**MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY**  
**STATE DEPARTMENT OF EDUCATION**

TELEGRAM:.....  
TELEPHONE NO: 0534142207  
WHEN REPLYING PLEASE QUOTE OUR REFERENCE  
EMAIL: [cdeelgeyomarakwet@gmail.com](mailto:cdeelgeyomarakwet@gmail.com)

COUNTY DIRECTOR OF EDUCATION,  
ELGEYO MARAKWET COUNTY,  
P.O. BOX 214-30700,  
ITEN.

DATE: 13<sup>TH</sup> May, 2016

REF No: CDE/EMC/R/26/VOL.II/ (33)


**David M. Nassiuma,**  
Moi University,  
P.O. Box 3900 – 30100,  
ELDORET

**RE: FORMAL RESEARCH AUTHORIZATION – DAVID MABOKO  
NASSIUMA**

Following the authorization by the National Commission for Science, Technology and Innovation (NACOSTI) to carry out research in **Elgeyo Marakwet County** vide Authority letter **Ref. No. NCST/P/16/55641/11260** dated **13<sup>th</sup> May, 2016** you are hereby formally granted authority by this office to proceed with your study on  
*“Alternative management models for enhancing multiple intelligences among students in secondary schools in Kenya”* for a period ending, **12<sup>th</sup> May, 2017**

You are further required to report to the Sub-County Directors of Education –**Elgeyo Marakwet County** before you embark on your research.

By copy of this letter, the Sub-County Directors of Education-**Elgeyo –Marakwet County** is requested to accord you the necessary assistance.

  
**Rose C. Bolivo,**  
For: County Director of Education,  
**ELGEYO MARAKWET.**

FOR: COUNTY DIRECTOR OF EDUCATION  
ELGEYO MARAKWET  
P.O. Box 214 - 30700.

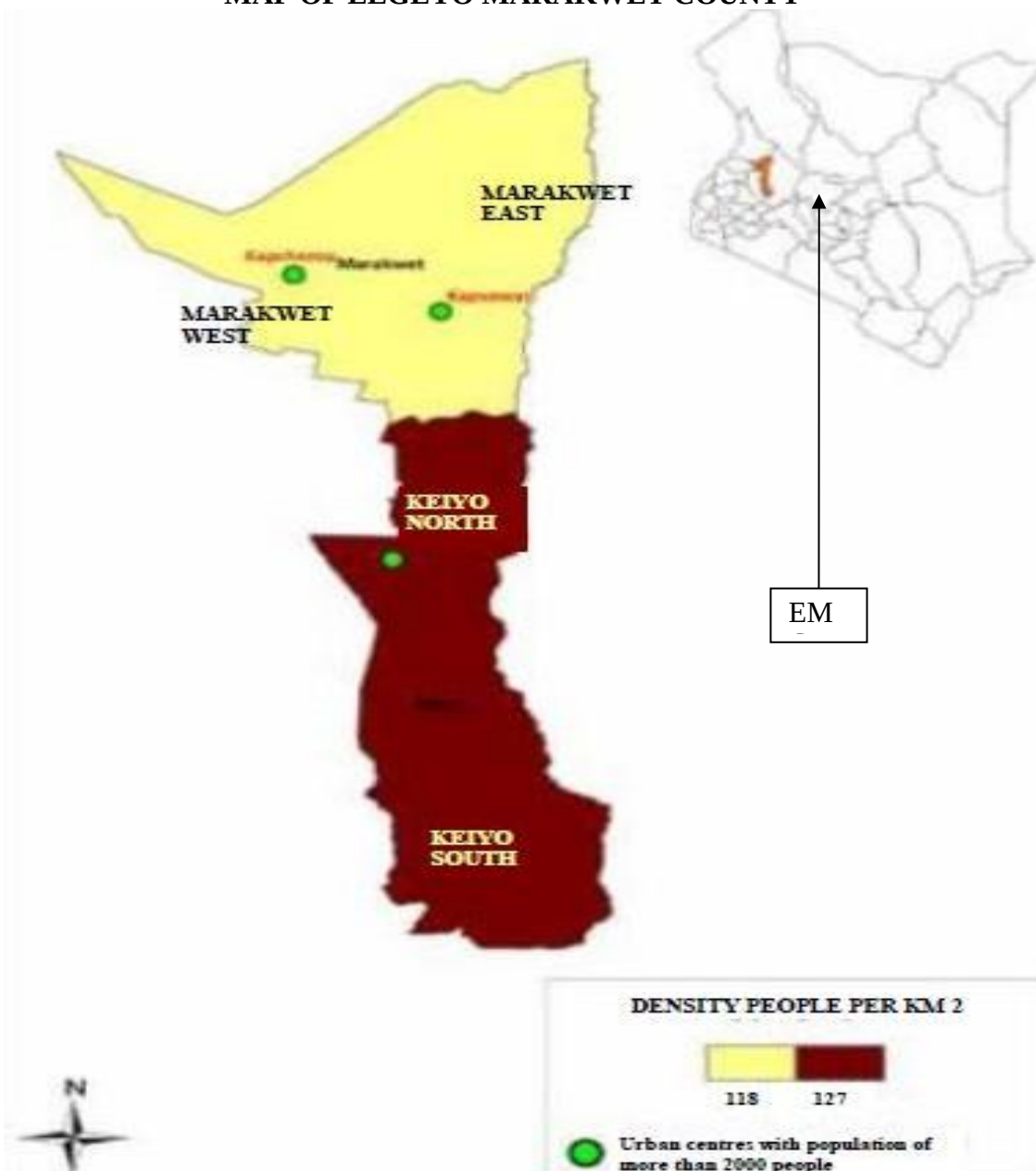
**Copy to:**

1. The Sub-County Directors of Education –Keiyo, Keiyo South, Marakwet West and Marakwet East.
2. The Director General/CEO -NACOSTI



APPENDIX XI

MAP OF ELGEYO MARAKWET COUNTY



Source: [www.kenyampya.com/index.php?county=Elgeiyo Marakwet](http://www.kenyampya.com/index.php?county=Elgeiyo%20Marakwet).