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Alternative Instruction Management Models that Enhance Multiple Intelligences among Secondary Students in Kenya

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Abstract:

Enhancement of Multiple Intelligences (MI) in schools is critical in the promotion of individual development and self-fulfillment amongst students. This is outlined in the Kenya's national goals of education. Conversely variations in the way schools carry out this function exists in schools, yet to date, relatively little research has investigated the ways students MI should be enhanced in Kenya. Therefore, this study was designed to examine alternative instruction management models that enhance MI among secondary 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. Proportionate and simple random sampling was used to select respondents who included 108 Principals, 108 Board of Management (BoM) Chairpersons and 80 students. The data was collected using triangulation approach involving questionnaires, document analysis, focus group discussion and interviews. Data was analyzed using qualitative thematic approach, descriptive and inferential statistics and presented in tables and graphs. The findings indicated that schools management was managing traditional instruction management models of enhancing multiple intelligences thus majority of the students' abilities were not developed. Alternative instruction management models were found to be effective in enhancing multiple intelligences among students though majority of the schools had not adopted them.

Keywords: *Alternative instruction, management, multiple intelligences*

1. Introduction

As a starting point this paper defines alternative instruction management models as complimentary/ innovative practices in which the school management manages (directs, facilitates, coordinates and supervises) usage of different teaching and learning methods that enhances students' abilities. On the other hand multiple intelligences are the varied abilities that students' posses that enable them function well in different environment (Gardner, 2006). Globally, research has shown that examination oriented teaching is becoming a matter of concern (Travelers, 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. In Pakistan, teachers are bound to switch their teaching methods to mainly the lecture method and adopt teacher and curriculum centered approaches for purposes of good performance in examinations among learners (Rehmani, 2003). Elsewhere in China students continue to be burdened with a lot of school work despite earlier 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(Zhang, 2006).

These scenarios may be attributed in part to experiences in school instruction that generally stresses memorization of text and recall of information, hence de-emphasizes creativity (Akrofi, 2007).It is important to note that these teaching models turn students into learning machines all day long throughout their high school life (Buhere, 2007). It is against this backdrop that the management of instruction models in regard to developing student's Multiple intelligences (student varied abilities) need to be looked at. Evidence that what is not examinable is not taken seriously in Kenya secondary schools can be traced way back at independence, where 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. According to the Ministry of Education, education in Kenya "to a large extent still has a colonial model, that promotes rote learning and is still elitist," (Kenya Institute of Education, 2001: 12).

A gap has thereby been created between the goals of education and what is actually being taught in schools. 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).Wilson (2008) notes that, developing Multiple Intelligences amongst students' taps into students' intrinsic

levels of motivation through natural talents. Therefore education must be designed and modeled to help build competencies that will 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 (McMannon & Goodlad, 1997). 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.

Although there is need for a reasonable and logically accepted balance to be struck involving the youth in academic activities and organized physical activities 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. 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). Wanderi (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.

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) comments that, special arrangements have to be organized for learners to find their school experience intellectually rewarding. This review indicates that 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. Music objectives for instance 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, 2013). 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.

1.1. Statement of the Problem

Growing evidence suggest that many students in Kenya secondary schools don't thrive well in traditional instructional management model. 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). This calls therefore for a need to have alternative instructional management models. Alternative management models such as the outdoor classroom and personalized learning (Deschenes, Arbreton, Little, Herrera, Baldwin Weiss, and 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). Kenya has had little notable initiatives in encouraging this development likely because of the existing traditional management models that emphasizes on academic content. Existing instructional management model have been less successful because subjects such as Home science, Art and design, Music, Drawing and Design etc that enhance MI are either optional, nonexistent or regarded as less desirable (Republic of Kenya, 2009).

1.2. Objectives of the Study

The study objectives were as follows:

- i. To examine existing instruction management models that enhances Multiple Intelligences among students in Kenya.
- ii. To examine alternative instruction management models that enhances Multiple Intelligences among students in Kenya.
- iii. To determine whether alternative instruction management models enhances Multiple Intelligences among students in Kenya.

1.3. Hypothesis

- **Ho₁**: There is no statistically significant relationship between alternative instruction management models and enhancement of Multiple Intelligences among students in Kenya.

2. Research Methodology

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. Creswell (2003) points that the three research approaches (quantitative, qualitative and mixed methods) structures procedures and techniques differently and their philosophical underpinning have a wide-ranging research strategies and methods that can be implemented in particularly different ways. Importantly though, a framework is said to be desirable when it mixes the elements of philosophical ideas, strategies and methods using the three approaches to research. In mixed methods studies, researchers purposely integrate quantitative and qualitative data concurrently or sequentially rather than keeping them separate so as to maximize the strengths and minimize the weakness of each type of data (Onwuegbuzie & Collins, 2007; Creswell & Plano, 2011). This study therefore adopted a concurrent mixed method design where both quantitative and qualitative data was collected at the same time and using the same respondents. The study focused on 2 national schools, 8 extra county schools, 116 county schools and 24 sub county schools. The study population comprised of Board of management, Principals

and the form four students. This study used interview schedules, questionnaires, focus group discussion guide and document analysis to collect data.

3. Discussion

The first objective sought to examine the existing instruction management models that enhance Multiple Intelligences among students in Kenya. The findings are presented in the following sections.

3.1. 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 1

| | Existing Instruction Models | Level of Coordination, facilitation and supervision | | | | | | | Mean | Standard deviation |
|---|--|---|------------|------------|------------|------------|------------|------------|--------|--------------------|
| | | 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) | 4.9425 | 1.79376 |
| B | Remedial classes | 10(11.5) | 13(14.9) | 11(12.6) | 1(1.1) | 15(17.2) | 28(32.2) | 9(10.3) | 4.3563 | 2.01723 |
| C | Teacher centered methodology | 32(36.8) | 14(16.1) | 20(23) | 4(4.6) | 3(3.4) | 14(16.1) | - | 2.8621 | 2.10300 |
| D | Drilling | - | 12(13.8) | 13(14.9) | 3(3.4) | 12(13.8) | 17(19.5) | 30(34.5) | 5.1379 | 1.86256 |
| 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) | 4.2874 | 2.10706 |
| F | Uniform instruction | 30(34.5) | 15(17.3) | 18(20.7) | 4(4.6) | 10(11.5) | - | 10(11.5) | 2.8736 | 1.98133 |
| G | Early completion of syllabus | 9(10.3) | 7(8) | 20(23) | - | 16(18.4) | 18(20.7) | 17(19.5) | 4.4828 | 2.01657 |
| 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) | 3.5862 | 2.06043 |
| 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) | 3.6782 | 2.33524 |
| J | Lecture methods | 10(11.5) | 20(23) | 11(12.6) | 4(4.6) | 12(13.8) | 19(21.8) | 11(12.6) | 4.0230 | 2.06846 |
| 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) | 4.5977 | 2.00847 |

Table 1: Existing Instruction Management Models for MI Development

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

The findings in Table 1 presented majority of the Principals 34 (39.1%) indicating that they were involved slightly much in managing 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%) managed 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 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. 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 1 showed that majority of the Principals 28 (32.2%) were involved much in managing 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. 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, 2008:14) 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

The findings in Table 1 indicated that majority of the Principals were not involved in managing teacher centered methodology. 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. Further findings in Table 1 indicated that 30 (34.5%) Principals managed drilling model very much, 17 (19.5%) much and 12 (13.8%) were involved slightly much. On the other hand 12 (13.8%) Principals managed 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.

Majority of the Principals 30 (34.5%) involved themselves very little in managing uniform instruction among students', 15 (17.3%) involved themselves little and 18 (20.7%) involved themselves slightly little. On the other hand a few Principals 10 (11.5%) involved themselves very much in managing uniform instruction among students' while 10 (11.5%) involved themselves slightly much in managing 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.

Findings in Table 1 indicates that 17 (19.5%) Principal were involved very much in managing 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 1 indicated that 12 (13.8%) Principals managed 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 1 indicated that 18 (20.7%) Principals managed 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.

The findings in Table 1 indicated 41 (47.1%) Principals managed lecture method as an instructional model little as compared to 42 (48.2%) Principals who were involved much in managing 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 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 managing 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 managing 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 managing 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. 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.

3.2. Alternative Instruction Management Models for Enhancing MI

Objective two sought to examine alternative instruction management models for enhancing MI among students. The findings are represented in Table 2

| | Models | Extent of Enhancing students Multiple Intelligences | | | | | | | Mean | Standard deviation |
|---|--|---|------------|------------|------------|------------|------------|------------|--------|--------------------|
| | | 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) | 4.4138 | 2.09957 |
| 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) | 4.4713 | 1.69705 |
| 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) | 5.0690 | 2.15014 |
| 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) | 3.8161 | 2.26976 |
| 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) | 3.7701 | 2.18718 |
| F | Practical approach model | 3(3.4) | 6(6.9) | 9(10.3) | 4(4.6) | 20(23) | 35(40.2) | 10(11.5) | 5.0345 | 1.58810 |
| 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) | 3.6782 | 2.33524 |
| H | Teaching of Life Skills model | - | 20(23) | 13(14.9) | - | 26(29.9) | 12(13.8) | 16(18.4) | 4.5172 | 1.82911 |
| I | Teaching of PE model | 9(10.3) | 9(10.3) | 18(20.7) | - | 20(23) | 15(17.2) | 16(18.4) | 4.4023 | 2.00267 |
| 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) | 4.6322 | 2.13015 |

Table 2: 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 2 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.

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.

Management of Outdoor teaching and learning model was also looked at and the findings as indicated in Table 2 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.

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 2 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 2. 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 2 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 2 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.

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.

3.3. 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. Their responses were as shown in Figure 1:

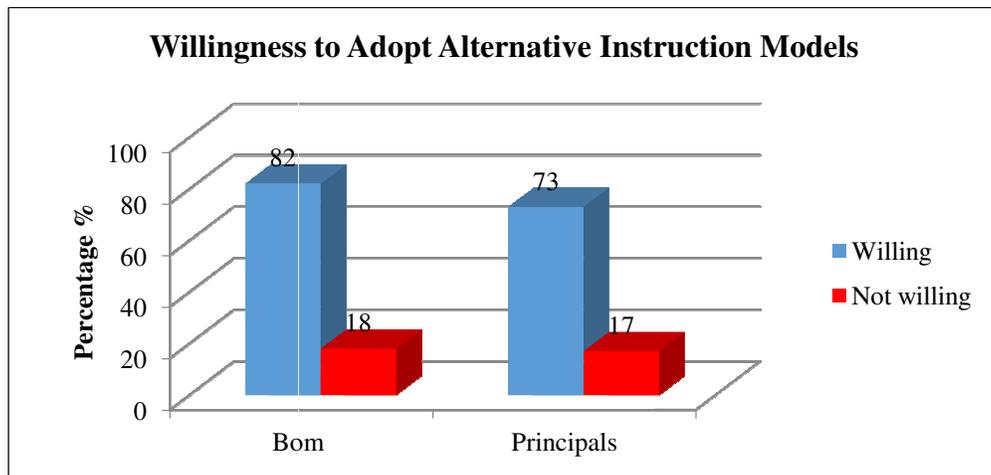


Figure 1: Willingness to Adopt Alternative Instruction Models

As indicated in Figure 1 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.

3.4. Determining Whether Alternative Instructional Management Model Enhances Multiple Intelligences among Students in Kenya

The third objective sought to find out whether alternative instruction management models enhance multiple intelligences among students in Kenya. The following hypothesis was hypothesized: **Ho:** There is no statistically significant relationship between the alternative instruction management model and enhancement of multiple intelligences among students in Kenya. Pearson’s product correlation coefficient was applied to check linear relationship between alternative instruction management model and enhancement of multiple intelligences. The correlation is shown in the Table 3;

| Correlations | | | |
|---------------------|--|-----------------------|--|
| | | multiple intelligence | alternative instruction management model |
| Pearson Correlation | multiple intelligence | 1.000 | .850 |
| | alternative instruction management model | .850 | 1.000 |
| Sig. (1-tailed) | multiple intelligence | . | .000 |
| | alternative instruction management model | .000 | . |
| N | multiple intelligence | 87 | 87 |
| | alternative instruction management model | 87 | 87 |

Table 3: Correlations Analysis between the Dependent and Independent Variable
 ** Correlation is significant at 0.001 level

Table 3 indicates that alternative instruction management model is positively and statistically significant ($r = 0.850, p < 0.001$). This implies that alternative instruction management model is correlated to enhancement of multiple intelligences. Linear multiple regression analysis to determine the prediction of alternative instruction management Model on dependent variable (enhancement of multiple intelligence) was done. The findings are presented in Table 4;

| Model Summary | | | | | | | | | |
|---------------|-------------------|----------|-------------------|----------------------------|-------------------|----------|-----|-----|---------------|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | |
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change |
| 1 | .850 ^a | .722 | .719 | 1.14639 | .722 | 220.587 | 1 | 85 | .000 |

Table 4: Simple Linear Regression Analysis Model Summary of Alternative Instruction Management Model for Enhancing Multiple Intelligences

a. Predictors: (Constant), alternative instruction management model

As shown in Table 4, the R value which is a measure of correlation between the observed value and the predicted value of the dependent variable was 0.850. Thus, 0.850 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 variable. In the model $r^2 \times 100 = .722 \times 100\% = 72.2\%$ indicating that 72.2% of the variance in the dependent variable is explained by the independent variable in the study. The R-square value indicates that this model succeeds in predicting up to 72.2% of the variable in enhancement of multiple intelligences in secondary school education. Table 5 presents the ANOVA output analysis.

| ANOVA ^a | | | | | | |
|--------------------|------------|----------------|----|-------------|---------|-------------------|
| | Model | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 289.900 | 1 | 289.900 | 220.587 | .000 ^b |
| | Residual | 111.709 | 85 | 1.314 | | |
| | Total | 401.609 | 86 | | | |

Table 5: Anova Output Analysis

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

Similarly, the ANOVA analysis is highly significant (0.000) indicating that the relationship between the independent variable and dependent variable is very strong. The table assesses the overall significance of the model and since $p < 0.05$, the simple linear regression model adopted in this study is relevant for the analysis. The ANOVA results of the simple linear regression analysis show that the regression equation is statistically appropriate to examine the relationship ($F = 289.900$; $df = 1$; $p = 0.05$) at 0.05 level of significance. The model summary showed that the model can explain 72.2% variation in enhancing multiple intelligences that was occasioned by any changes in the alternative instruction management model. Table 6 presents the coefficient arising from the analysis.

| Coefficients ^a | | | | | | |
|---------------------------|---|-----------------------------|------------|---------------------------|--------|------|
| | Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | .741 | .244 | | 3.036 | .003 |
| | alternative off school management model | .776 | .052 | .850 | 14.852 | .000 |

Table 6: The Coefficients

The simple linear regression analysis was conducted so as to determine the relationship between Alternative instruction management model and enhancement of multiple intelligences. The equation $Y = \alpha + \beta X$ therefore becomes:

$$Y (\text{Multiple intelligence}) = 0.741 + 0.776 X (\text{Alternative instruction management Model})$$

Where Y is the dependent variable (Multiple intelligence), X is Alternative instruction management Model. According to the linear regression equation established, taking alternative instruction management model constant at zero, multiple intelligence will be 0.741. A unit increase in alternative instruction management model will lead to a 0.776 increase of multiple intelligence. The p-value is equal to 0.003 which means that, since it is smaller than 0.05, the null hypothesis should be rejected. Consequently it can be said that there is a significant relationship between alternative instruction management models and enhancement of multiple intelligences, tested at the 5% level of significance.

5. Conclusions

The study concludes that school management (Principal, BoM and Heads of Department) plays a key role in terms of managing instruction models (practices) that enhances multiple intelligence. School management was involved in managing instructional models that tended to hinder MI. In light of the challenges posed by the existing models of enhancing MI, school management rated 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. School management ought to manage teaching and learning that is student centered. Management of outdoor teaching and learning model in addition to a practical approach 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. Management of Life skills teaching model and 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.

Based on this research, the study recommends that 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.

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