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**CHALLENGES TO THE USE OF INNOVATIVE INSTRUCTIONAL METHODS IN PUBLIC HEALTH PROGRAMME IMPLEMENTATION AT MOI UNIVERSITY, KENYA**

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**ABSTRACT:** *Public Health is one of the Schools in the College of Health Sciences of Moi University, which offers training for health professionals. The paradigm shift from traditional instructional methods to innovative instructional methods has been emphasized in the College in a bid to respond to challenges and trends in health professions' training and education in the 21<sup>st</sup> century. The innovative instructional mode of teaching was adopted in the college of Health Sciences in 1998. However, the level of challenges experienced by both the students and lecturers in implementation of these methods have not been investigated. Therefore, the study sought to establish the challenges faced in the use of innovative instructional methods in Public Health Programme. Mixed method approach was used in this study involving the use of both quantitative and qualitative strategies. This was aimed at providing a comprehensive analysis of the research problem. The quantitative strategy (cross-sectional survey research) was used to gather numeric descriptions of level of knowledge of innovative instructional methods among a sample of lecturers. The qualitative strategy (phenomenological research) was used to identify students and lectures experiences about determinants of use of innovative instructional methods. Pre-tested structured and unstructured sets of questionnaire were administered to students and lecturers of the school of Public Health. Structured interview was conducted among a sample of members of the management team including the Dean School of Public Health and heads of various departments. An observational checklist was used to assess the adequacy of infrastructure and availability of instructional materials. All the lecturers and most of the students affirmed that there were challenges experienced in the use of innovative instructional methods. The challenges ranked in order of their seriousness from the most to least serious are: large classes; less resource allocation; lack of facilities for example, rooms, research centre; lack of technical knowledge (skills) on the use of instructional methods, and less training for personnel, among others. From the study findings and conclusion, it is recommended that the University's School of Public Health needs to address the main factors like funding that hinder use of innovative instructional methods in implementation of Public Health Programme.*

**KEYWORDS:** challenges, use, innovative instructional methods, public health programme, MOI University, Kenya

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## INTRODUCTION

These are expected and unexpected developments in education and society which, in turn create the unpredictable challenges for the designers and users of instructional media as observed by Kafu (2011). Among them is the present over-emphasis on research and theoretical learning that do not lend themselves to development and use of media resources. There is also the failure to emphasize the teaching of logic / critical thinking as well as concept formation in modern education which require media resource use. The development and use of instructional media involves a large number of processes and activities that must be clearly understood and appreciated (identification, selection, development, management, policy formulation and implementation). This is the feature that makes educational media an exclusive field. The development and use of instructional media in teaching and training of health professionals is always a joint effort between the teacher and learners. This is the feature that makes media resources formidable tools in instructional process.

The emergence of a large and often contrasting huge variety of media resources for instruction in medical education. This development creates confusion in the development and use media resources. The changing perception of education to-day where education is regarded as the end of means rather than means of the end of whatever is pursued. This approach has not considered social capital as a major component of education. The latter is heavily media-based process. The rise of materialism / consumerism character in modern society. This development makes people to be interested in quick results / returns in whatever they are pursuing rather being patient. This discourages the development and use of media resources which are normally painstaking process in their development, management and use. To many people to-day, this is nonsensical or put it in another way nuisance process in instruction.

The College of Health Sciences at the Moi University strives to ensure that the students acquire practical and intellectual skills using modalities that encourage active learning in the context in which they will later function as health professionals. One such modality is the use of innovative instructional methods. Emphasis is placed on students' acquisition of knowledge and skills through self-directed learning, problem-solving and effective communication skills. This modality has been in place since the inception of the school in 1998. It is not clear what determines the implementation of these innovative instructional methods. The level of and determinants of the implementation especially in public health programme has not been investigated, hence the interest in the present study.

Implementation research is one of the most important and, at the same time, most neglected aspect of evaluation research. Reviews of research from a number of different disciplines suggest that issues pertaining to implementation are often ignored (Potter, Watts & Preslar, 2002). The topic of programme implementation, though alluded to by some authors (Duttweiler & Dayton, 2009), has not received a full treatment, as highlighted in the evaluation literature.

Although there are inspiring examples of innovative teaching, research continues to show that in most places classroom practice lags behind goals (Organization for Economic Co-operation and

Development [OECD], 2009). The sources of this gap between the rhetoric of change and the realities of classrooms range from lack of access to resources and training to lack of clear expectations in systems that are still organized and indented towards traditional measures of achievement. Most students still experience instruction that is largely lecture-based, and extensive national education investments in technology have not yet resulted in widespread transformation of learning opportunities (Kafu, 1976; Bransford, Brown & Cocking, 1999). As such, the need to investigate which mitigations should be used to redress this persisting conservative approach to preparing Health Professionals.

In this paper, innovative instructional methods are teaching / learning approaches that are becoming increasingly popular and whose main characteristic is the transfer of responsibility for learning from the teacher to the learner (student-centred) (Chen, 2002). Another characteristic is the teaching of students in small groups and in tutorial rooms as opposed to many students in lecture halls (Mutema, Kangethe & Naweya, 1992). The methods of strategies include: Small Group Tutorials (SGTS), Small Group Discussions (SGDS), Problem-based learning (PBL), Community-Based Education and Service (COBES), Computer-assisted instruction, Computer Assisted Assessment, E-learning, Self-directed learning (SDL), Independent study, Electives and SPICES. These aspects are briefly discussed herein below.

### **Factors that Hinder Implementation of Innovative Instructional Methods**

Many factors do hinder the implementation of innovative instructional methods in the context of health professionals' education. According to Fullan and Pomfret (1977), several factors could influence the implementation of novel instructional methods. These factors include staffing issues, resistance to change, time-related factors, issues arising from school structures and conflicting demands among different stakeholders.

Regarding staffing, first, a high staff turnover would threaten the inevitably lengthy process of developing a shared understanding of planning its implementation. Second, new or inexperienced teachers could find it difficult to cope with the nature of implementation, perhaps feeling a need for more detailed direction as to what they should teach. Third, staff who have been teaching perhaps for many years in a more traditional way might be apathetic or resistant to the idea of wholesale change. Those who had not been consulted about the school's vision and values, or made aware of the intent and principles of implementation might also be reluctant to 'buy in' to the process of change. A change of principal during this period could, therefore, cause even greater difficulties, although a new principal could sometimes be appointed with the specific task of implementing change.

Moreover, people tend to resist change in implementation when they do not understand it; they simply do not follow what is being introduced. If people do not understand where they are going and are not clear as to what is required of them, they would rather maintain the status quo. People also resist change because of lack of ownership. Staff members will not accept change if they consider it coming from outside or imposed on them. Unfortunately, most curriculum reform

efforts are initiated from the outside or using the top-down approach, which minimizes ownership among those who ought to be in the forefront in implementing those changes.

Additionally, people also tend to resist change if they do not have the competencies to cope with those changes. It is natural for persons to resist if they do not have the knowledge and skills to cope with the changes. In most cases, staff members would prefer not to be told that they are incompetent. There is the likelihood that the implementation of the new curriculum has been rushed or, due to budgetary constraints, the training period has been greatly reduced and teachers are not adequately equipped.

Staff also resist if there are no clear incentives or benefits from the envisaged changes. If teachers are not convinced that the new programme will make things better for students (in terms of learning) or themselves (such as greater recognition, respect or reward), they are likely to resist the suggested change. Lastly, people resist if they do not have the time to engage with the change. Teachers often find it difficult having to juggle between bringing about change and handling their current responsibilities. Focusing their energies on change activities may run the risk of neglecting their current responsibilities.

Time for planning and implementation is another moderate barrier to implementation. Time for implementation is an issue raised as impeding progress towards fully giving effect to implementation. However, time should not be an issue. What is needed is proper planning of the available time. Where school structures are insufficient, the timetable could be seen as a particular constraint to implementing a given policy, in this case innovative instructional method in public health programme. This could happen in the event of time allocations and venues for lessons clashing due to limited facilities.

Lastly, the competing demands of assessment and qualifications could be other barriers to implementation. Lack of skills among the implementers, lack of awareness and knowledge ability on innovative instructional methods and poor attitudes of staff and of students also hinder implementation of innovative instructional methods.

### **Statement of the Problem**

The paradigm shift from traditional instructional methods to innovative instructional methods has been emphasized in order to respond to challenges and trends in health professions' training and education. This need has arisen from the knowledge explosion, and the rapid technological advancements which characterize the modern world. Trainers of all professionals particularly health professionals have felt a great need to adopt new teaching/learning methods which will ensure effective learning for their trainees. The College of Health Sciences of the Moi University strives to ensure that the students acquire practical and intellectual skills using modalities that encourage active learning in the context in which they will later function as Health Professionals.

One such modality is the use of innovative instructional methods. Emphasis is placed on student's acquisition of knowledge and skills through self-directed learning, problem solving and effective communication skills. This modality has been in place since the inception of the school in 1998.

It is not clear what determines its implementation. The level of and determinants of the implementation especially in Public Health programme has not been investigated, hence the interest in the present study. Implementation research is one of the most important, and at the same time most neglected aspect of evaluation research. Reviews of research from a number of different disciplines suggest that issues pertaining to implementation are often ignored (Potter *et al.*, 2002). The topic of programme implementation, though alluded to by some authors (e.g. Duttweiler & Dayton, 2009), has not received sufficient treatment, as highlighted in the reviewed literature.

Although there are inspiring examples of innovative teaching, research continues to show that in most places classroom practice lags behind goals (OECD, 2009). The sources of this gap between the rhetoric of change and the realities of classrooms range from lack of access to resources and training to lack of clear expectations in systems that are still organized toward traditional measures of achievement. Most students still experience instruction that is largely lecture-based, and extensive national education investments in technology have not yet resulted in widespread transformation of learning opportunities (Kafu, 1976; Bransford *et al.*, 1999). Therefore, there was need to investigate which strategies should be used to redress this persisting conservative approach to preparing health professionals.

## **MATERIALS AND METHODS**

The most suitable research design of the study was the mixed methods approach. The study site was School of Public Health, College of Health Sciences Moi University. The College of Health Sciences is situated in Eldoret town, Uasin Gishu County, Kenya. The study population was undergraduate Public Health students, the lecturers Heads of Departments and the Dean School of Public Health in College of Health Sciences of Moi University. Purposive Sampling was used to select the required representation where the Public Health Programme is implemented. Census method was used where the total enumeration of the study population was included. The sample size was forty-one (41) fourth year students, thirty-nine (39) third year students and forty (40) second year students, a total of thirty (30) lecturers and six (6) members of management team. The key informants were the Dean School of Public Health, Heads of various departments and the administrator of the school.

The main instruments used to collect data were questionnaire, observation and interview schedule. Since the research design of the study was mixed method type, the data collected from the research was analysed using both quantitative and qualitative techniques. Data was recorded using Microsoft Excel software package. The data collected was then coded accordingly in order to facilitate analysis. Quantitative data was summarized using frequency counts and tables then analysed using linear regression statistical method. Qualitative data was grouped into broader categories, content coded for open-ended questions and analysed using descriptive statistics. Interview was summarized using summary form and described to give meaning. Data from observation checklist was summarized for easy understanding.

## RESULTS AND DISCUSSION

The study sought to identify the challenges experienced in the use of innovative instructional methods in the implementation of Public Health Programme. In relation to this objective, the lecturers were asked to state whether there were some challenges experienced in the use of innovative instructional methods.

### Challenges Experienced the Use of Innovative Instructional Methods

From the results, all the lecturer-respondents, 26(100.0%), admitted that there were challenges in the use of innovative instructional methods in implementation of the Public Health Programme. When further probed to mention some of these challenges, their responses were as presented in Table 1 below.

The student-respondents were asked to indicate whether implementation of Public Health Programmed using innovative instructional methods was faced with challenges. From the results, there are challenges in use of innovative instructional methods as shown by 88% of the students' respondents. Only 12% indicated that there were no challenges in use of Innovative Instructional Methods. This number may not be quite clear on what challenges there could be experienced in use these methods. Otherwise, the use of innovative instructional methods is confronted with many challenges.

**Table 1: Challenges Mentioned by Lecturers**

Response	Frequency	Percentage
Limited exposure to innovative instructional methods	18	69.2
Limited experience in the use of instructional methods	12	46.2
Limited/inadequate instructional resources	16	61.5
Lack of transport to field	12	46.2
Limited facilities, e.g. rooms, internet access	14	53.8
Occasional power failures	12	46.2
Shortage of trained personnel	13	50.0
Lack of commitment among lecturers and students	12	46.2
Timetabling, e.g. clash of classes in the same venue	11	42.3
Large student populations	15	57.7
Lack of regular training or in-service training among facilitators	11	42.3
Lack of regular review of problems	11	42.3
Limited LCD projectors	11	42.3
Student absenteeism	11	42.3
Lack of knowledge of ICT	11	42.3
Inadequate financial facilitation	11	42.3
Overworked lecturers	11	42.3

Table 1 clearly shows that limited exposure to innovative instructional methods was mentioned by a majority, 18(69.2%), of the lecturers as a challenge in the use of innovative instructional methods. Limited or inadequate instructional resources was the second most noted problem as

indicated by 16(61.5%). Other challenges noted included large student populations, 15(57.7%), limited rooms and facilities, e.g. internet access and 14(53.8%), shortage of trained personnel, 13(50.0%). Innovative Instructional Methods were introduced in the school of Health Sciences in the 1990s and student admissions were strictly controlled. With the current increased student enrolment, innovative instructional methods may not be easily applied unless lecturer numbers are also increased. A total of 12(46.2%), in each case, indicated limited experience in the use of innovative instructional methods, lack of transport to fieldwork and lack of commitment among lecturers and students. If the lecturers are not introduced to the methods and inducted to use them, they face a challenge trying to adopt to them. In the course of their teaching if emphasis is not laid on using them, they may choose the methods that they are familiar with. Similarly, the acceptance of these methods could have been slow.

Other challenges, each of which was indicated by 11(42.3%) of the lecturers, were: timetabling challenges for example clash of classes in the same venue; lack of regular training or in-service training among facilitators; lack of regular review of problems; limited LCD projectors; student absenteeism; lack of knowledge of ICTs; inadequate financial facilitation, and overworked lecturers. These findings agreed with those of South and Monson (2000) who identify the following as the main challenges to implementation of innovative instructional methods namely: core cost, storing, provision of infrastructure, creating meta-data for each object and maintaining standards of learning objects.

The students were asked to mention the specific challenges they experienced in using innovative instructional approaches. Their feedback was as tabulated below.

**Table 2: Challenges Mentioned by the Students**

<b>Challenge</b>	<b>2<sup>nd</sup> Yr</b>	<b>3<sup>rd</sup> Yr</b>	<b>4<sup>th</sup> Yr</b>
Cost issues	17	18	16
Lecturers' lateness to class	16	17	18
Inadequate learning resources	16	18	16
Poor time management	16	16	17
Inadequate allocated time	16	17	17
Lack of knowledge or experience in the methods	18	17	16
Large class sizes	17	16	17
Less human resource personnel	16	16	18
Students' preference of familiar methods	16	16	17
Inadequate physical facilities (labs, classrooms)	16	20	18
Inadequate modern equipment	16	19	17
Lack of funding for field trips (transport)	16	18	17
Methods not familiar to students	19	16	15
Methods not practical	17	16	15
Inadequate textbooks in the library	15	18	18
Adapting to communities outside	16	17	15
Exposure to diseases and poor conditions	18	16	17
Poor internet services, Poor Wi-Fi connection	19	17	20

From Table 2, several challenges faced in use of innovative instructional methods as viewed by students were highlighted. Among these challenges, poor internet services, poor Wi-Fi connection and physical facilities were among the main challenges faced. There is therefore need to address these challenges so as to improve the implementation of Public Health Programme using innovative methods.

During interview, the Dean and Heads of various departments were asked to mention some of the challenges experienced when using innovative instructional methods in teaching Public Health Programme. The mentioned challenges included inadequate instructional resources, large student populations, limited rooms and facilities, poor internet access and shortage of trained personnel. Some respondents indicated limited experience in the use of instructional methods, lack of transport to fieldwork and lack of commitment among lecturers and students.

### Rating of Challenges to Use of Innovative Methods

Besides this, the lecturers were further asked to rate these challenges from the most to the least serious ones. Table 3 summarizes the ratings by lecturer-respondents.

**Table 3: Lecturers' Rating of Challenges**

Challenges	Most serious		Least serious	
	Frequency	Percentage	Frequency	Percentage
Large classes	13	50.0		
Limited funding	13	50.0		
Lack of facilities, e.g. rooms, research centre	13	50.0	11	42.3
Negligence and <i>laissez faire</i> attitude of lecturers	11	42.3		
Fewer members of staff			11	42.3
Limited exposure to innovative instructional methods	11	42.3		
Lack of transport for field work			11	42.3
Lack of technical knowledge on the use of innovative instructional methods			12	46.2
Limited LCD projectors	11	42.3		
Lack of commitment			11	42.3
Limited knowledge of ICT	11	42.3		

As shown in Table 3, the most serious challenges were mainly large classes, 13(50.0%); limited funding, 13(50.0%); lack of facilities for example rooms, research centre, 13(50.0%), and lack of technical knowledge in the use of instructional methods (46.2%). Other factors listed as most serious at 11(42.3%) each were lack of training for personnel; negligence and *laissez faire* attitude of lecturers; limited exposure of lecturers to innovative instructional methods; limited LCD projectors; lack of commitment and limited knowledge of ICT. Limited exposure to innovative instructional methods and lack of technical knowledge on the use of innovative instructional



methods is a challenge emanating from the training and development of the enough exposure in them.

Innovative Instructional methods may not have been part of the curriculum of the facilitators; therefore, they could not have had enough exposure in them. An induction to the staff once is not enough to enable the facilitators be confident with the methods. Large student population being rated as most serious has implications on use of innovative instructional methods. These methods are learner-focused, therefore when the population is large the facilitator may not give adequate attention to individual learners. Limited funding is also another serious challenge. The innovative methods require varied learning materials. Less financial allocation cannot allow for adequate acquisition of the learning materials.

The lecturers listed the following both as serious and less serious challenges: Fewer members of staff, 11(42.3%), and lack of transport facilities for field work, 11(42.3%). Others pointed out challenges included, lack of facilities such as rooms, research Centre, at 13(50.0%), and 11(42.3%) respectively. Limited number of staff falls under least serious challenges in the sense that it may not be the numbers that determine the use. Even few members of staff if well conversant with these methods of teaching could use them effectively. On the other hand, large numbers of staff if not well conversant with them methods could fail to utilize them.

The student-respondents were further asked to rate the listed challenges from the worst to the least challenge. The rated challenges are indicated in Table 4.

**Table 4: Students' Rating of Challenges**

<b>Which is the worst challenge?</b>	<b>2<sup>nd</sup> Yr</b>	<b>3<sup>rd</sup> Yr</b>	<b>4<sup>th</sup> Yr</b>
Cost issues	17	16	18
Lecturers' lateness to class	16	17	18
Inadequate learning resources	16	18	16
Poor time management	16	16	17
Inadequate allocated time	17	16	17
Lack of knowledge or experience in the methods	16	16	16
Large class sizes	17	16	17
Less human resource personnel	16	17	15
Students' preference of familiar methods	16	16	17
Inadequate physical facilities	18	17	19
Inadequate modern equipment	16	18	17
Lack of funding for field / educational trips	16	18	17
Methods not familiar to students	19	16	17
Methods not practical	17	16	15
Inadequate textbooks in the library	15	17	15
Adapting to communities outside	16	17	15
Exposure to diseases and poor conditions	13	15	14
Poor internet service	19	17	18

From Table 4 above, poor internet service and inadequate physical facilities like lecture rooms, tutorial rooms and laboratories had the highest number of respondents as a challenge. Exposure to diseases and poor conditions was rated least as a challenge. All the other challenges had relatively similar number of respondents.

Internet service is one of the key elements in the use of Innovative Instructional Methods. Poor accessibility of the internet can therefore be a major challenge as indicated by student-respondents. Inadequate physical facilities like tutorial rooms are also a major challenge as they limit where students can meet for small group discussions and tutorials which are among innovative instructional methods. Exposure to diseases and poor conditions may only be experienced in some instances during fieldwork.

### Causes of the Challenges

The lecturers were further asked to identify the possible causes of the challenges they identified as affecting the use of innovative instructional methods and when the collected data was analysed, the observations were as shown in Table 6.

**Table 6: Causes of the Challenges according to Lecturers**

Causes of Challenges	Frequency	Percentage
Poor preparation among tutors	11	42.3
Poor planning	17	65.4
Poor monitoring by Quality Assessment Department	15	57.7
Lack of trained personnel	11	42.3
Resistance to change	11	42.3
Limited in-service/refresher courses on ICT	11	42.3
Lack of commitment from staff to implement IIM	12	46.2
Poor use of available resources	11	42.3
Inadequate resources	15	57.7
Poor remuneration of staff	11	42.3
Lack of exposure to IIM	11	42.3

Majority, 17(65.4%), of the lecturers identified poor planning as a major cause of the challenges facing the use of innovative instructional methods in Public Health Programme. Other causes, each mentioned by 15(57.7%) lecturers, were poor monitoring by Quality Assessment Department and inadequate resources respectively. A total of 12(46.2%) lecturers attributed the challenges to general lack of commitment from staff to implement innovative instructional methods. The rest of the lecturers, 11(42.3%) in each case, identified poor preparation among tutors; lack of trained personnel; resistance to change; limited in-service/refresher courses on ICT; poor use of available resources; poor remuneration of staff and lack of exposure to innovative instructional methods as other causes.

Poor planning causes a challenge to implementation as there would be no clear roadmap to follow in the use of innovative instructional methods. In order for an instructional method to be used effectively, there should be proper monitoring to inform its implementation and also point out any shortcomings. Poor monitoring by Quality Assessment Department poses a challenge as the

facilitators would not discover or be informed of their mistakes in order to improve the use of innovative instructional methods. Resistance to change from conventional instructional methods to innovative instructional methods causes a challenge to use of innovative instructional methods which calls for a shift from traditional instructional methods to innovative instructional methods.

Furthermore, the students were required to suggest causes of the challenges. Their responses were as shown in Table 5.

**Table 5: Causes of Challenges according to Students**

<b>Cause of Challenges</b>	<b>2<sup>nd</sup> Yr</b>	<b>3<sup>rd</sup> Yr</b>	<b>4<sup>th</sup> Yr</b>
Excessive workload for lecturers	19	20	18
Poor management of time	19	18	17
Poor learning environment	16	18	16
Poor understanding of the methods	15	16	18
Improper induction on methods	19	17	17
Lack of follow-up on implementation of policy	16	17	16
Limited funding	18	19	21
Poor attitudes towards the methods among students	13	16	19
During exam times, students occupy most of the teaching rooms	14	16	15
Limited space in the college to facilitate building of more learning rooms and expanding the library.	15	16	17
Environmental factors, especially during field study	13	19	18
Proximity of ICT department to classrooms and laboratories	13	17	16

The major cause of the challenges was limited funding followed by excessive workload on lecturers. The students could have attributed some of the challenges like inadequate physical facilities in the library and limited or lack of funding for educational trips to limited funding. Most student respondents cited limited funding as this cause generally affects provision of learning materials and facilitation of students' and lecturers' field studies. Excessive workload on lecturers hinders application of innovative instructional methods as the lecturers may not have adequate time to prepare and, therefore, may resort to traditional methods like lecture method. The causes are not limited to one source but emanate from students, lecturers, administrators and the learning environment. Therefore, all these people have a role to play and can contribute either positively or negatively in the use of innovative instructional methods. However, most important are the administrators who should understand the causes from the various sources of the challenges and address them in order to facilitate the implementation of innovative instructional methods. These sentiments are echoed from Zhu and Engels (2014) who indicated that leadership have a great role to play in learning institutions. If the leadership initiates formulation of and implementation of Innovative Instructional Methods, then it can succeed. On the other hand, if administrators do not support Innovative Instructional Methods, then its adoption may not be realized.

### **Statistical Analysis for Challenges in Using Innovative Instructional Methods**

Multivariate linear regression analysis was done to predict the relationship between challenges

faced in the use of innovative instructional methods and the various departments. On the results obtained from the students, a Chi-square test was done to determine the measure of association between year of study and whether there are challenges in the use of innovative instructional methods. A further cross-tabulation was done for Chi-square test and correlations to determine the measure of association between year of study and whether there are challenges in the use of innovative instructional methods. The findings were as shown in Tables 7, 8 and 9.

**Table 7: Statistical Analysis for Results from Lecturers**

Model	Coefficients		Standardized Coefficients	T	Sig.
	Unstandardized Coefficients				
	B	Std. Error			
(Constant)	2.309	.745		3.100	.005
Personnel Challenges	-2.000	1.263	-.926	-1.583	.128
Infrastructure Challenges	.600	.720	.270	.833	.414
Limited Knowledge	-.014	1.547	.000	.000	1.000
Financial Challenges	1.545	1.143	.707	1.353	.191

Multivariate linear regression analysis was done to predict the relationship between challenges faced in the use of innovative instructional methods and the various departments. There was no statistical significance between the dependent and independent variables. However, looking at the beta coefficients shows that financial challenges as the strongest independent variable with 0.707. A standardized beta coefficient compares the strength of the effect of each individual independent variable to the dependent variable. The higher the absolute value of the beta coefficient, the stronger the effect.

**Table 8: Statistical Analysis for Results from Students**

	Chi-Square Tests		
	Value	Do	Asymp. Sig. (2-sided)
Pearson Chi-Square	.288 <sup>a</sup>	2	.866
Likelihood Ratio	.292	2	.864
Linear-by-Linear Association	.247	1	.619
N of Valid Cases	103		

A Chi-square test was done to determine the measure of association between year of study and whether there are challenges in the use of innovative instructional methods and the P-Value was 0.866. This result was not statistically significant at  $p < 0.05$ .

**Table 9: Statistical Analysis for Challenges faced by students Across Years of Study*****Chi-Square Tests***

	Value	Df	Asymp. Sig. (2-sided)	Sig.
Pearson Chi-Square	51.608 <sup>a</sup>	2	.000	
Likelihood Ratio	65.279	2	.000	
Linear-by-Linear Association	39.712	1	.000	
N of Valid Cases	103			

***Symmetric Measures***

	Value	Asymp. Approx. Std. Error <sup>a</sup>	T <sup>b</sup>	Approx. Sig.
Interval by Interval Pearson's R	.624	.067	8.024	.000 <sup>c</sup>
Ordinal by Ordinal Spearman Correlation	.625	.072	8.055	.000 <sup>c</sup>
N of Valid Cases	103			

A cross-tabulation was done for Chi-square test and correlations to determine the measure of association between year of study and whether there are challenges in the use of innovative instructional methods. The P-Value of 0.000 for chi square shows there is a strong statistical significance at  $p < 0.05$ . Moreover the Pearson r and spearman correlation also showed strong relationship between the variables at P value of 0.624 and 0.625 respectively. Logistic regression was also done to predict if challenges affect the use of innovative instructional methods and there was also a strong significance at P-value of 0.000 which confirms the presence of challenges in the use of innovative instructional methods.

**CONCLUSION AND RECOMMENDATIONS**

There are challenges experienced in the use of innovative instructional methods to implement the Public Health Programme at the Moi University's College of Health Sciences. The challenges ranked in order of their seriousness from the most to least serious are: large classes; less resource allocation; lack of facilities for example, rooms, research centre; lack of technical knowledge (skills) on the use of instructional methods; less training for personnel; limited exposure to innovative instructional methods; negligence and *laissez faire* attitude of lecturers; fewer LCD projectors; lack of commitment; limited knowledge of ICT; fewer members of staff and lack of transport for field work.

From the study findings and conclusion, it is recommended that the University's School of Public Health needs to address the main factors like funding that hinder use of innovative instructional methods in implementation of Public Health Programme. Moreover, stakeholders (especially administrators and lecturers) should embrace the interventions suggested from the study in order to improve the use of innovative instructional methods. There is also a need for regular review of implementation of innovative instructional methods in Public Health Programme at the Moi University. This study focused mainly on determinants of implementation of innovative instructional methods in Public Health Programme and interventions in Moi University. Further

research ought to be carried out to establish the application of innovative skills among Moi University Public Health graduates in their workplaces.

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