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The Application of Innovative Instructional Methods in Implementing Public Health Programme in Moi University, Kenya

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Abstract:

The Innovative Instructional mode of teaching has been adopted in the College of Health Sciences of Moi University since the 1990s. Nonetheless, the levels of application of innovative methods by students and lecturers have not been sufficiently ascertained. Therefore, the research examined the extent of application of innovative methods in the implementation of Public Health Programme at the Moi University. The mixed methods research design was used in the study. 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. On the use of innovative methods in Public Health Programme, most of the lecturers indicated that PBL, COBES, SDGs, SDL, SGTs, tutorials and electives were most used. On their part, most of the students identified SGTs, SDGs, SDL, Electives and PBL as the most used. Majority of the respondents indicated they knew some innovative methods used in evaluation of Public Health Programme while some said they did not have such knowledge. It is recommended that the School of Public Health addresses the main factors like funding that hinder use of innovative instructional methods in implementation of Public Health Programme.

Keywords: *Extent, application, innovative instructional methods, implementing public health programme, Moi University*

1. Introduction

Curriculum implementation entails putting into practice the officially prescribed courses of study and syllabuses. The process involves helping the learner acquire knowledge or experience. It is important to note that curriculum implementation cannot take place without the learner. The learner is, therefore, the central figure in the curriculum implementation process. Implementation takes place as the learner acquires the planned or intended experiences, knowledge, skills, ideas and attitudes that are aimed at enabling the same learner to function effectively in a society (University of Zimbabwe, 1995). Viewed from this perspective, curriculum implementation also refers to the stage when the curriculum itself, as an educational programme, is put into effect. Putting the curriculum into operation requires an implementing agent. Implementation takes place when the teacher-constructed syllabus, the teacher's personality, the teaching materials and the teaching environment interact with the learner (University of Zimbabwe, 1995). Curriculum implementation, therefore, refers to how the planned or officially designed course of study is translated by the teacher into syllabuses, schemes of work and lesson plans.

Educators in today's classrooms must ensure that the curriculum has been implemented with integrity for all students prior to making general assumptions about suspected learning or behaviour problems as intrinsic to the student. To best meet the challenge of implementing the curriculum in the manner in which it is intended to be implemented, as well as providing corroboration that effective implementation has actually occurred, one must understand the critical factors that provide the basis for making effective curriculum implementation decisions in order to meet the needs of all learners (Potter et al., 2002). Learners are very important in this process and therefore during implementation their learning needs have to be adequately addressed.

Curriculum implementation must be done the way it was designed to be done. That is, with fidelity; in a consistent manner; and with challenges to students to facilitate the development and use of higher level thinking abilities. Effectiveness of the curriculum and its implementation requires assessment that is based on the curriculum taught in the

classroom; is linked directly to what has been taught; and is conducted on a regular basis to closely monitor students' progress toward curricular benchmarks. Implementation is an interaction between those who have created the programme and those who are charged to deliver it.

1.1. Conditions for Successful Implementation of Innovations

Effective curriculum implementation can only occur in presence of five key components, viewed and implemented in integrated ways in the classroom (Colliver & Robbs, 1999). First, content and skills to be taught and assessed through research-based curricula must be clearly stated. Second, evidence-based interventions should be used to teach content/skills, manage behaviour and support differentiated instructional needs. Third, instructional arrangements or settings in the classroom must be used to implement the research-based curriculum and evidence-based interventions in order to teach and assess content/skills. Fourth, there should be an overall classroom and instructional management, which includes addressing both academic and behavioural aspects of teaching and learning. Lastly, there must be a strategy for valuation of progress to assess learners' growth toward achieving benchmarks and /or meeting supplemental needs.

Despite these five components being necessary for curriculum implementation, in most cases, not all are applied in one setting during implementation. Some, like content and skills taught, may be emphasized while others like evidence-based interventions used to teach content/ skills may be assumed or ignored. As stated by Fullan and Pomfret (1977): "effective implementation of innovations requires time, personal interaction and contacts, in-service training and other forms of people-based support".

Potential users of an innovation are more likely to accept it if a number of vital conditions below are met (University of Zimbabwe, 1995). First, the innovation must be relevant to them. Second, it must be feasible in their particular organizational context. Third, it must be compatible with the practices, values and characteristics of their system. Fourth, it must be seen as posing little or no threat to the user group's identity, integrity and territory. Fifth, the innovation must be shown to be tolerable and non-threatening. Sixth, the innovation must yield material or non-material benefits. Gains in social status or recognition could be some of the non-material benefits. Seventh, it must be flexible and adaptable. Nonetheless, it is important to note here that the users of the innovation; in this case facilitators and learners may accept or reject it mainly if it is not relevant to them.

1.2. Instructional Media In Implementation of Innovative Instructional Methods

Media is defined as "all means of communication, whatever its format" (Kafu, 1976). With respect to education, media are the symbol systems that teachers and students use to represent knowledge. Instructional media refers to materials for teaching and learning. This encompasses all the materials and physical means an instructor use to implement instruction and facilitate students' achievement of instructional objectives (Randy et al., 2003). Therefore, for any instructional process to meaningfully take place, instructional media are necessary and must be component of this process. According to Kafu, instructional media are classified on the basis of their: origin or nature (real objects, models, electronics); human senses (visual media materials, audios, olfactory, tactile and taste materials); time frame (traditional and modern innovative media), and use (projected materials and non-projected materials). Other media materials are resource centres, skills laboratories, theatres and human resource which encompass the above four.

There a number of benefits of incorporating instructional media in innovative instructional methods. The role of media for instructor-directed instructional situations is for supplemental support of the live instructor in the classroom. In other words, media is used to enhance the live instruction. It is most effective when the instructor explains the media and relates them to instructional objectives. In this method an instructor relates and disseminates information to learners. This takes shape in the lecture format, educational television, and various computer formats of instruction.

The concept of advance organisers has developed and is intended to create a mind-set for reception of instruction. Advance organizers can help ensure that media play an appropriate role as a supplemental supporter of instruction (Carpenter, 2003). Easy to access course materials is also another benefit. Course material on a website allows learners to engage in asynchronous learning and study at a time and location they prefer and to obtain the study material very quickly (Lee, 2011).

Student motivation is another benefit of incorporating instructional media. According to Reiguleth (2012), who studied the effectiveness of computers used for instruction, students usually learn more in less time when receiving computer-based instruction and they like classes more and develop more positive attitudes towards computers in computer-based classes (Lee, 2011). Students are more motivated to learn when they are interested in the subject matter, which can be enhanced by using modern technologies in the classroom and targeting the need for screens and digital material (Reiguleth, 2012).

Using online resources help students spend more time on specific aspects of what they may be learning in school while at home. These online lessons allow for students who might need extra help to understand materials outside of the classroom. The internet has unlocked a world of opportunity for students. Information and ideas that were previously out of reach are a click away. Students of all ages can connect, share, and learn on a global scale. Using computers or other forms of modern technology can give students practice on core content and skills while the teacher can work with others, conduct assessments, or perform other tasks (Lai, 2011).

Studies completed in "computer intensive" settings found increases in student-centric, co-operative and higher order learning, students writing skills, problem solving, and using technology (Bransford, Brown & Cocking, 2000). In addition, positive attitudes toward technology as a learning tool by parents, students and teachers are also improved and

easily adopted. Instructional media are useful instruments for unifying and integrating cultures of peoples. They have no cultural barriers and boundaries. They can be used across cultures (Kafu, 1976). The most common use of media in an instructional situation is for supplemental support of the instructor in the class room to enhance learning (Heinich et al., 2002).

1.3. 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 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 the 1990s. 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 the application of innovative instructional methods in implementing Public Health Programme in Moi University, Kenya.

2. 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.

3. Results

3.1. Application of Innovative Instructional Methods in Implementation of Public Health Programme

The research assessed the application of innovative instructional methods in the implementation of Public Health Programme in the School of Public Health. To achieve this objective, a number of variables were explored in the study. The first item in the questionnaire under this objective sought the lecturers' views on whether or not innovative instructional methods were used in implementation of Public Health Programme.

The results indicated that all the lecturers, 26(100.0%), affirmed that innovative instructional methods were used in implementation of Public Health Programme. Hence, innovative instructional methods are not a new idea in the School of Public Health. This leads to the question of what determines the use of innovative instructional methods in implementation of Public Health Programme that this study sought to address. The second item under the same objective asked the lecturers to list some of the innovative instructional methods used in teaching of Public Health Programme. The methods they listed were as summarized in Table 1.

Response	Frequency	Percentage
PBL	21	80.8
COBES	20	76.9
SGTs	14	53.8
Self-directed learning (SDLs)	13	50.0
SGDs	19	73.1
Tutorials	12	46.2
Electives	14	53.8
E-learning	13	50.0
Project writing	11	42.3
Students' presentations	11	42.3
Overviews	11	42.3
Field study	12	46.2
Video Link	11	42.3
Independent study	11	42.3
Visual aids	11	42.3
Internet search	13	50.0

Table 1: The Innovative Instructional Methods Used in Teaching of Public Health Programme

From the results in the Table 1, majority, 21(80.8%), of the lecturers indicated that Problem Based Learning (PBL) was the most frequently used method in teaching of Public Health Programme. This was followed by Community-Based Education and Service (COBES) at 20(76.9%) and then Small Group Discussion (SGDs) at 19(73.1%). These results show that the three methods of PBL, COBES and SGDs were the most popularly used according to the lecturer respondents. Savin-Baden and Major (2004) observe that PBL may be implemented in a variety of ways and it is now extensively practiced in medical education and other health-related disciplines including veterinary medicine and nursing. PBL is not totally a new method of teaching. Public Health, being a health related discipline, adopts this approach that allows a student to take a community health problem as stimulus for learning. This is in line with Edward et al.(2001) who observe that, in PBL, students seek solutions to real life problems and, thereby, derive understanding of underlying principles and concepts.

In addition, many of the lecturers said Small Group Tutorial (SGTs) and electives were used, with each of these methods being indicated by 14(53.8%) of the lecturers. At least half, 13(50.0%), of the lecturers, in each case, reported that Self-Directed Learning (SDLs), e-learning and internet search were commonly used innovative methods. A significant proportion of the lecturers, 12(46.2%) in each category, said tutorials and field study were used. Lastly, 11(42.3%) lecturers in each case indicated the following methods as most commonly used in teaching of Public Health Programme: project writing, students' presentations, overviews, video links, independent study and visual aids. These methods are popular as both the lecturers and students are familiar with them. The methods that fall under the 40.3(11%) category are not used a lot, could be due to large student population, limited availability of the needed equipment and there being not applicable to all courses. These methods are most practical with small student population.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.944	.573		1.649	.119
PBL	1.278	.537	.563	2.379	0.030
COBES	-.015	.842	.000	.000	1.000
SGT	1.000	.842	.390	1.188	.252
SDL	.500	.687	.220	.728	.477
SGD	.500	.842	.205	.594	.561
Tutorials	-.016	.842	.000	.000	1.000
Electives	-3.000	.842	-1.384	-3.565	.003
Independent Study	.500	.842	.229	.594	.561

Table 2: Statistical Analysis of Most Used Innovative Instructional Methods

There was a statistical significance between use of electives and PBL at the different departments of p value of 0.003 and 0.030 respectively. According to the beta coefficients, use of PBL was the strongest independent variable followed by small group tutorial as the most used innovative instruction method. The lecturers were also asked to indicate other methods that they had used or witnessed being used in the implementation of the Public Health Programmes. Their responses were as presented in Table 3.

Response	Frequency	Percentage
Field study	13	50.0
Lecture method	17	65.4
Question-Answer method	16	61.5
Demonstrations	11	42.3
Seminars	11	42.3
Workshops	11	42.3
Research based	11	42.3
Overviews	12	46.2

Table 3: Other Methods Used in Teaching of Public Health Programme

The presentations in Table 3 show that according to the lecturers, other methods that were most commonly used in the implementation of the Public Health Programmes were: the Lecture method, 17(65.4%); Question-and-answer method, 16(61.5%), and field study, 13(50.0%). The following methods were also mentioned: Overviews was indicated at 12(46.2%) and Demonstrations, Seminars, Workshops, research based learning, each of which was indicated by 11(42.3%) lecturers. These findings imply that lecture method which is among the traditional methods of instruction is still widely used in teaching of Public Health Programme though there is emphasis on innovative instructional methods. This persistence of other methods is due to there being most established and widely used. There are no regulations prohibiting use of these methods hence no stern measures could be taken to discourage their use.

The study sought to assess among the students the application of innovative instructional methods in the implementation of Public Health Programme. In line with this, the study first sought to identify the innovative methods that have been used in the teaching and learning of Public Health Programme. The students were provided with a list of innovative instructional methods to indicate their rating on those that had been used most often. The results were as presented in Table 4.

Innovative Instructional Method	2 nd yr	3 rd yr	4 th yr	Total	Percentage
Small Group Discussions (SGDs)	28	36	30	94	91.3
Small Group Tutorial (SGT)	25	34	31	90	87.4
Problem-Based Learning (PBL)	26	37	33	94	91.3
Community-Based Education and Service (COBES)	28	27	33	88	85.4
Computer-Assisted Instruction (CAI)	18	18	18	54	52.4
Computer Assisted Assessment (CAA)	18	16	16	50	48.5
E-Learning	21	24	21	66	64.1
Self-Directed Learning (SDL)	25	34	33	92	89.3
Independent Study (IS)	23	27	32	82	79.6
Electives	21	29	30	80	77.7

Table 4: Innovative Methods That Have Been Used in the Public Health Programme

From Table 4, it is clear that, according to the majority (91.3%) of the student - respondents Small Group Discussion (SGDs) and Problem-Based Learning (PBL) are the methods mostly used in instruction of Public Health Programme. Of the students, 89.3% said Self-Directed Learning (SDL) had been used, 87.4% said Small Group Tutorial (SGTs) had been used, 85.4% said Community-Based Education and Service (COBES) had been used, 79.6% said Independent Study (IS) had been used, 77.7% said Electives had been used, 64.1% said E-learning had been used, 52.4% said Computer-Assisted Instruction (CAI) had been used and 48.5% said Computer Assisted Assessment (CAA) had been used.

According to the students, Small Group Discussion and Problem Based Learning are the most used innovative methods used in the Public Health Programme. These two methods have a similar high percentage which goes in line with the argument of Edward et al. (2001) who said that Problem Based Learning as a teaching Strategy involves having students work co-operatively in small groups to seek solutions to real life problems and thereby derive understanding of underlying principles and concepts and more importantly develop skills of becoming self-directed learners. Indeed it is evident that self-directed learning follows with 89.3% of the students indicating that it is used in the Public Health Programme. This approach requires learners to seek to learn on their own with the facilitators simply guiding them.

Computer Assisted Instruction and Computer Assisted Assessment have lower percentages compared to the other methods. These two require the availability of Computers and the staff have also to be well versed with their use. Limited numbers of computers as learning resources cannot allow many facilitators to use this method in instruction. Inadequate knowledge on use of computer programmes designed for instruction limits their usage.

The student respondents were further asked to list other teaching and learning methods that had been used aside from the listed ones in teaching and learning of the Public Health Programmes. The methods that were mentioned by the students included those indicated in Table 5.

	2 nd yr	3 rd yr	4 th yr	Total	Percentage
Practical sessions	12	22	24	56	54.4
Lectures	25	23	20	68	66.1
Assignments (take-away, class assignments)	11	13	26	50	48.5
LCD projections /Slides	13	17	19	49	47.5
Field study	17	16	17	50	48.5
Lecture overviews	16	19	21	56	54.4
Handout notes	15	22	26	63	61.1
Use of internet / emails to send notes	11	11	12	34	33.0
Library use	21	15	11	47	45.6

Table 5: Other Methods of Teaching in Public Health Programme

The findings showed that lectures were the most (66.1%) used of these other methods. This was followed by handout notes (61.1%) and question-answer method (58.3%), lecture overviews (54.4%), practical sessions (54.4%). Other methods included educational trips (45.6%), assignments (i.e. take-away assignments and class work) (48.5%) and field studies (48.5%) and library use (45.6%), slides (47.5%), use of internet (33.0%).

Lecture method has a high total percentage as it used in instruction across all the years. This method has been in use for a long time. Probably the facilitators were taught using this method and could be more comfortable using such a method that they are familiar with. Lecture method forms a basis for other methods as it is through this method that the content is explained. Other methods like practical sessions and Field study then follow. Internet has less use across all the classes. This could be attributed to the cost involved in and accessibility of internet services. Internet use if well accessed could enhance adoption of innovative instructional methods as it provides quick access to information presented in a variety of formats; pictures, videos, PowerPoint among others.

The study also sought to establish the extent of the use of innovative instructional methods in the implementation of the Public Health Programme. The lecturers were consequently asked to indicate the extent of the use of the listed innovative instructional methods. The findings were as presented in Table 6.

Response	Frequency	Percentage
Not at all	0	0.0
Least extent	0	0.0
Some extent	15	57.7
Great extent	11	42.3
Total	26	100.0

Table 61: The Extent of Use of Innovative Instructional Methods in Teaching of Public Health Programme

From Table 6, majority, 15(57.7%), of the lecturer respondents reported that innovative instructional methods were used to some extent while 11(42.3%) of them said the methods were used to a great extent. From this finding, it is worth noting that innovative instructional methods were at least put to use by the lecturers. Therefore, it is important to determine what influences the extent of use of innovative instructional methods in implementation of Public Health Programme. In order to determine this, the lecturers were further asked to give their explanations for extent of use they indicated in the above item. Those who indicated that the innovative instructional methods were used to some extent gave the following explanations: Lack of familiarity with innovative instructional methods; not all lecturers and departments use them; Lecture method has become the norm; they are not the only methods in use; not all innovative instructional methods are solely used; some innovative methods only suit certain units; not all Innovative Instructional Methods are used in teaching Public Health Programme; other methods are used to enhance student interaction; competition with world technology and new innovations and being a school requirement.

The lecturers responses on the other side who said that innovative instructional methods were used to a great extent gave the following explanations for their responses: Methods make learning student-centred; to enhance understanding of teaching content; Innovative Instructional Methods are quite handy; these are the most common methods in the School of Public Health; All lecturers are properly inducted to Problem Based Learning compared to other methods; Problem Based Learning is most suited to teaching Public Health Programme and given that public health affects all people. The lecturers' responses on the other side bring out reasons as to why innovative instructional methods should actually be used in implementation of Public Health Programme.

To further assess the application of innovative instructional methods in the implementation of Public Health Programme in the School of Public Health, the Dean and Heads of Department views on this were sought. From the results, all, 5(83.0%), of the respondents affirmed that innovative instructional methods were used in implementation of Public Health Programme. The study also sought to establish among the Heads of Departments and the Dean, the extent of use of innovative instructional methods in the implementation of the Public Health Programme. In relation to this, respondents were asked to indicate the extent of use of the listed innovative instructional methods. Half, 3(50%), of the respondents reported that innovative instructional methods were used to some extent while only 16% of them said the

methods were used to a least extent. These responses indicate that the innovative instructional methods were at least put to use by the lecturers as there was even no response for the methods not being used at all.

The study further sought to establish whether lecturers incorporated instructional media resources whenever they used innovative instructional methods. From the findings, majority, 20(76.9%) of the lecturers said instructional media resources were used alongside with innovative instructional methods. Nevertheless, 6(23.1%) of them said instructional media resources were never used along with innovative instructional methods. For implementation of any one instructional method, even in traditional methods, media resources are always used. This is so because media refers to all means of communication. Therefore, the respondents who indicated media resources as never used may not understand what media implies.

The lecturers who responded in the affirmative that media resources were used in innovative instructional methods were further probed to indicate some of the media resources that had been used in the implementation of the Public Health Programme. Their responses to this follow-up item were as summarized in the Table 7.

Response	Frequency	Percentage
Internet	14	53.8
Laptop/computers	20	76.9
LCD projectors	25	96.2
White boards and markers	14	53.8
Flip charts	13	50.0
e-Learning	11	42.3
Laboratory specimens	12	46.2
Videos	11	42.3
Pictures, pamphlets, posters	11	42.3

Table 7: Media Resources Applied with Innovative Instructional Methods

As shown in the Table 7, most of the lecturers, 25(96.2%), said L CD projectors or Power Points were used along with innovative instructional methods. A reasonably large number of them, 20(76.9%), also said computers were used. Over half of the respondents, 14(53.8%), said internet was used and a similar number of lecturers mentioned whiteboards and whiteboard markers as the media resources used with innovative instructional methods. However, half (50.0%), of the lecturer respondents indicated flip charts were used, 12(46.2%) indicated laboratory specimens were used while a consistent number of 11(42.3%), in each case, indicated the use of e-learning tools, videos and pictures, pamphlets and posters. E-learning is applicable mostly with distance learning. However, Public Health is not yet offered through e-learning in Moi University. Laboratory specimens are selectively used for some courses. Videos, Pamphlets, charts, posters may not be appealing to students hence not popularly used. LCD projector is the most popularly used media resource given that it blends the traditional lecture and demonstration methods that were used together with innovative instructional methods. The LCD projector as a media resource can be conveniently used in the instruction of all the courses in the Public Health Programme. This medium is a modification of flip chart. The other media with less than 50% could be attributed to their limited accessibility.

The study further sought to establish the extent of use of media resources in innovative instructional methods in teaching of the Public Health Programmes. Majority of the lecturers, 14(53.8%), said that media resources were used to some extent alongside other innovative instructional methods. On the other hand, 7(26.9%) said the media resources were used to a great extent while only 5(19.2%) said the media were used to a least extent. These findings show that media resources were used in innovative instructional methods though not to a large extent. This could be attributed to lecturers not being trained in media education.

The lecturers were further asked to give explanations for their responses on the extent of use of media resources in innovative instructional methods. Those who said media resources were used to a least extent gave the following explanations: Media resources are not popular to use; media resources not enough; media resources are not readily available. Not all users are conversant with media resources; media resources are inadequate and large numbers of students. The lecturer-respondents who said media resources were used to some extent gave the following explanations: Limited quantity of media resources; lecturers not conversant with varied forms of media resources and their use in instruction; inadequate support personnel such as technicians; cost of media resources and limited facilities for large student populations. Lastly, those who said media resources were used to a great extent gave the following explanations: Most topics require the use of instructional media to foster learners' understanding of content; they help make teaching easier; media resources promote quick access, retrieval and manipulation to information and more information is available in media publications. Media resources are a tangible form through which learning can take place. Through these resources learners understand the concepts via audio-visual means. This enhances learning.

These explanations are in line with the view by Kafu (1976) and Lee (2008) that as advanced organizers, media resources play an appropriate role as a supplemental supporter of instructional methods. In support of these view, Heinrich et al. (2002) state that the most common use of media in an instructional situation is for supplemental support of the instructor in the classroom to enhance learning. Similarly, Lee (2011) indicated that course material on websites or the internet allows learners to engage in asynchronous learning and study at a time and location they prefer and to obtain the study material very quickly. Lee also says that students are more motivated to learn when they are interested in the

subject matter, which can be enhanced by using technologies in the classroom and targeting the need for screens and digital material. In line with this, Lai (2008) argues that computers or other forms of technology can give students practice on core content and skills while the teacher can work with others, conduct assessments, or perform other tasks.

The lecturers were also requested to list the teaching skills they used in innovative instructional methods. Their responses to this item were as summarized in Table 8.

Response	Frequency	Percentage
Management skills	11	42.3
Questioning skills	16	61.5
Discussion skills	11	42.3
Practical skills	12	46.2
Communication skills	18	69.2
Writing skills	11	42.3
Presentation skills	12	46.2
Mentoring skills	12	46.2
Research skills	11	42.3
ICT skills	14	53.8
Listening skills	11	42.3

Table 8: Teaching Skills Used by Facilitators in Innovative Instructional Methods

The results as presented in Table 8 show that the majority, 18(69.2%), of the lecturers used communication skills with innovative instructional methods. An equally large proportion, 16(61.5%), of the lecturers used questioning skills with innovative instructional methods, while slightly over half, 14(53.8%), of the lecturers indicated ICT skills. A total of 12(46.2%) lecturers indicated, in each case, practical skills, presentation skills and mentoring skills. Lastly, 11(42.3%) of the lecturers in each case indicated the following skills: Management skills, discussion skills, writing skills, research skills and listening skills.

These findings concur with those of Mutema et al. (1992) who note that the application of innovative learning methods and experiences require the teacher to apply a number of teaching skills. These skills include: Facilitating the learner to learn; advising the learner on important issues; guiding the learner to make appropriate decisions; informing the learner of important facts or processes; participating in the learner's learning process, and withdrawing from the learning scene to give the learner an opportunity to direct his learning.

The study further sought to establish the extent to which innovative methods were used by lecturers in evaluation during implementation of the Public Health Programme. To achieve this objective, the lecturers were asked to indicate whether or not they knew about any innovative methods used in evaluation of Public Health Programme. The research results indicate that the majority, 22(84.6%), of the lecturers were aware that some innovative methods were used in evaluation of Public Health Programme while only 4(15.4%) did not have such knowledge.

Those who said they knew that some innovative methods were used in evaluation of Public Health Programme were probed further to indicate some of these methods used in evaluation of Public Health Programme. Their responses were as presented in Table 9.

Response	Frequency	Percentage
Report writing	16	61.5
Project documentation	16	61.5
Oral assessment	13	50.0
Field assessment	12	46.2
Practical examinations	11	42.3
Self-assessment especially by lecturers	11	42.3
Peer assessment	12	46.2
Multiple choice questions (MCQs)	13	50.0
Short-answer questions (SAQs)	12	46.2
OSCOPE	12	46.2
Student-tutor assessment	11	42.3
Long essay questions (LEQs)	12	46.2
Group and Individual presentations	11	42.3
Laboratory reports	12	46.2

Table 9: Innovative Methods Used in Evaluation of Public Health Programme

As shown in Table 9, report writing and project documentation were each indicated by majority, 16(61.5%), of the lecturers as the innovative methods most frequently used in the evaluation of Public Health Programme. These were followed by oral assessments and multiple choice questions (MCQs) each of which was mentioned by half, 13(50.0%), of the lecturer respondents. The other methods mentioned by 12(46.2) lecturers in each case were: field assessments, peer assessments, short-answer questions (SAQs), OSCPE, long-essay questions (LEQs) and laboratory reports. The rest of the

methods, indicated by 11(42.3%) lecturers each, were: practical examinations, lecturers' self-assessment, student-tutor assessments, group and individual presentations. Report writing and project documentation have a higher percentage as compared to other methods. This finding was attributed to the Public Health Programme course requirements. The field studies carried out require a report to be written at the end. When students go to the field they pick on a project and therefore, have also to document their findings. The methods with less than 50% frequency are applied only in some courses like electives. All in all the evaluation methods used should focus on all the skills including communication, writing and practical skills. This gives an overall view of the student's preparedness in handling public health issues.

The students were also asked to identify the methods used in the assessment of innovative instructional methods. Their responses were as summarized in Table 10 below.

Innovative Instructional Method	2 nd Yr	3 rd Yr	4 th Yr	Total	Percentage
Small Group Tutorial (SGT)	23	28	29	80	77.7
Small Group Discussions (SGDs)	26	25	28	79	76.7
Problem-Based Learning (PBL)	24	32	27	83	80.6
Community-Based Education and Service (COBES)	25	36	28	89	86.4
Computer-Assisted Instruction (CAI)	19	16	16	51	49.5
Computer Assisted Assessment (CAA)	19	16	17	52	50.5
E-Learning	20	18	18	56	54.4
Self-Directed Learning (SDL)	22	26	26	74	71.8
Independent Study (IS)	22	23	27	72	69.9
Electives	22	26	25	73	70.9

Table 10: Methods Used in the Assessment of Innovative Instructional Methods

As indicated in Table 10, Community Based Education Service (COBES) is the most used method in assessment at 86.4% followed by Problem Based learning. Computer Assisted Instruction is the least used with 49.5%. Public Health Programme deals with issues that affect human population at different levels including community level. The students, as they undertake their studies, are sent to the communities for experience on handling Public health issues. Most of their assessment is based on the activities done and reports written while undertaking their attachment in the communities.

Computer Assisted Instruction is least used in assessment as this calls for availability of modern technologies like computers and their related software for all the facilitators and the technical know-how of handling them. The needed computers may not be available let alone being enough. The facilitators may not be very conversant with the programmes required for this kind of assessment. That is lecturers may lack the required expertise.

Besides this, the students were asked to identify other methods used in the evaluation of innovative instructional methods in their school. Their established views were as presented in Table 11.

Suggestions Per Year	2 nd Yr	3 rd Yr	4 th Yr
Class presentations	15	21	17
Presentations (Projects)	13	16	17
Research	13	16	16
Practical tests	16	18	20
Examinations (end of semester and end of year)	22	26	17
Continuous assessment tests (both take-away and sit-ins)	20	25	17
Assignments	15	19	16
Questionnaires	13	16	17
Tutorial assessment sheet	11	14	15

Table 11: Other Methods Used in the Evaluation of Innovative Instructional Methods

From Table 11, examinations (End of Semester and End of Year) and Continuous Assessment Tests (both take away and sit-ins) are the other most used methods across all the classes in the evaluation of innovative instructional methods. This can be attributed to the fact that they are the conventional methods of assessment in universities. Tutorial assessment sheets are the least used methods of assessment at this level as they are more used at graduate level. Though Continuous Assessment Tests, End of Semester and End of Year Exams are considered conventional methods of assessment, they are not innovative in nature. Hence the need to devise innovative methods and incorporate them in the evaluation programmes.

The lecturer-respondents were further asked to indicate the extent to which the innovative methods were used in the evaluation of the Public Health Programme. As indicated by the results, all the respondents agreed that innovative methods were at least used in the evaluation of the Public Health Programme but in varied degrees. Of the lecturer-respondents 12(46.2%) said the methods were used to some extent, 8(30.8%) said the methods were used to a least extent and (23.1%) said they were used to a great extent.

Those who said the innovative methods of evaluation were least used said traditional assessment methods like Continuous Assessment Tests (CATs) are preferred and innovative assessment methods are not taken seriously. The

respondents who said the methods of evaluation were used to some extent said the methods were meant to give feedback that is accurate and other methods of assessment are ideal. This view corroborates the findings of Potter et al. (2002) that in order to accurately measure implementation, programmers need to focus on three key areas: programme foundations, the implementation system, and programme monitoring. Lastly, those who said the innovative methods of evaluation were used to a great extent said most evaluations require technology to produce reliable outcomes and it is also in keeping with the current trends. All in all, the use of innovative methods in evaluation depends on familiarity of the method with users and practical application of the method. If innovative instructional methods are used in teaching, similarly, innovative approaches should be used in evaluation.

The lecturers were further probed to give explanations for the rating they gave above. Those who said the innovative methods of evaluation were least used gave the following explanations: Traditional assessment methods like CATs are preferred, end of semester and end of year exam because of institutional policies and practices; innovative assessment methods are not taken seriously; innovative assessment methods may not be applicable to some units, and most students are evaluated on practical basis as per the course requirements.

The lecturer-respondents who said the innovative methods of evaluation were used to some extent gave the following explanations: To give feedback that is accurate; other methods of assessment are ideal. Innovative assessment methods only complement these ones; most of the assessors are still stuck in the old methods, e.g. end of semester exams; various levels of Knowledge Attitude and Practice (KAP) are assessed, needing variety of methods; most study results are based on field research; innovative assessment methods not known by many lecturers; popularity of or familiarity with traditional methods; MCQs are time consuming and that it is not a must to use innovative methods to assess. Most of these responses do not fully support use of innovative methods of evaluation. Lastly, those who said the innovative methods of evaluation were used to a great extent said it is in keeping with the current trends. Evaluation cannot be complete without use of ICT which is a common phenomenon in all aspects of modern society.

4. Conclusion and Recommendations

On the use of innovative methods in Public Health Programme, most of the lecturers indicated that PBL, COBES, SDGs, SDL, SGTs, tutorials and electives were most used. On their part, most of the students identified SGTs, SGDs, SDL, Electives and PBL as the most used. Majority of the respondents indicated they knew some innovative methods used in evaluation of Public Health Programme while some said they did not have such knowledge. Some of the methods said to be used in evaluation included: report writing, multiple choice questions (MCQs), field assessments, peer assessments, short-answer questions (SAQs), OSCPE, long-essay questions (LEQs), COBES, group and individual presentations, practical examinations, lecturers' self-assessment, student-tutor assessments and laboratory reports. It is recommended that the School of Public Health to address the main factors like funding that hinder use of innovative instructional methods in implementation of Public Health Programme. Moreover, the stakeholders (administrators and lecturers) need to embrace the interventions suggested from the study in order to improve the use of innovative instructional methods.

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