Promoting Clinical Skills Acquisition and Proficiency Using Video Modelling Among Medical Students in Preclerkship

Dr. Mrs. Agbarakwe, Haret Akudo
Department of Curriculum Studies and Educational Technology
Faculty of Education, University of Port Harcourt, Nigeria

Doi: 10.19044/esj.2018.v14n15p387 URL:http://dx.doi.org/10.19044/esj.2018.v14n15p387

Abstract

This study was designed to make bare the importance of a proficiency driven curriculum, the need to foster self -directed and self- motivated learners hence the study investigated the factors influencing the acquisition of clinical skills and skills proficiency in preclerkship clinical education using video modelling among medical students in MacArthur Clinical Skills Laboratory (MCSL). It adopted the ex-post facto design. The population of the study was three hundred and eight(308) 4th and 5th year medical students who took the course Introduction to Clinical Medicine (ICM). Four research questions and four hypotheses guided the study. The instrument titled clinical skills acquisition through video modelling questionnaire (CSATVMQ) was developed and used to collect data. The reliability of the instruments was established using the Cronbach Alpha method of internal consistency. The reliability coefficients of the sub scales of CSATVMQ were 0.57, 0.84, 0.86, 0.95, respectively for self- directed learning, clinical skills acquisition, frequency of visitation and proficiency. Simple percentage was employed for analyzing the research questions while the hypotheses were tested using the chi-square. The findings established that the utilization of video modelling technique for the promotion of clinical skills acquisition and proficiency was not dependent on gender, academic level and age of medical students, also further test with lambda (λ) indicated no relationship with a λ value of 0.0 between the dependent and independent variables studied. The researcher therefore recommend that College of Health Sciences, University of Port Harcourt should allocate more time in their Faculty lecture timetable to provide students with adequate practice hours and feedback sessions while enforcing it as a compulsory teaching and learning technique to enhance proficiency and self –evaluation of learnt skills during preclerkship clinical training.

Keywords: Skills proficiency, clinical skills, video modeling

Introduction

The educational system in recent times is frequently faced with reformations in both content and delivery strategies owing to the dire need of promoting quality learning and practice in authentic environment. Knowledge explosion, globalization and technological advancement have also placed a great demand on the nature and quality of learning outcomes from the various institutions of learning. The implication of this is that products or graduates of the different professions in our institutions of learning are expected to compete favourable as well as confront authentic tasks with high degree of proficiency. Technological revolution has also influenced the paradigm shift which has place demands for technology mediated instructions rather than the talk show instructions in practice. Learners of this century are to be prepared in an environment with supportive technologies that offer and promote high degree of proficiencies, self-directed learning and self-evaluation practices as a corrective feedback mechanism to verify self-performance and skills proficiency level in psychomotor domain of learning.

The field of medicine is not left out in this transformation since the paradigm shift has affected the teaching methodology in medical education with strong emphasis on authentic learning to produce authentic outcome. According to the Australian Medical Council [AMC] in McKimm (2010: 38)

> *Teaching and learning approaches should be designed to ensure that students acquire the appropriate scientific and clinical knowledge; that they acquire the practical, procedural and communication skills or competencies needed to practice medicine, and that they develop professional attitudes and demonstrate behaviours appropriate to the practice of medicine*

Kemahli (2001) recommended that training for clinical practice requires a more contemporary approach that fosters trainee's competencies in clinical practice especially among medical students who would be required to perform skills as an evidence of skills, knowledge and attitude acquired in real context. The predominant clinical teaching strategy used for training clinical skills has been the lecture method, cognitive apprenticeship and Objective Structured Clinical Examination (OSCE). The lecture methods is believed by many scholars to impact factual and conceptual knowledge while cognitive apprenticeship involves modelling, coaching, scaffolding, reflection and exploration. The OSCE is used during clinical examinations to determine

students' cognitive reasoning level. The above strategies seem not to make adequate provision for medical students to acquire the skill of step by step approach in clinical assessment in a safe and non-threatening environment hence the need for video modelling of clinical skills in clinical skills laboratory.Video modelling is the demonstration or performance of skills using video as a representation of the modelled skill. In 2013, Nkanginieme in the 41st minutes of MacArthur Clinical Skills Laboratory described the art of video modelling skills in a clinical skills laboratory as a complementary approach to the traditional training approach used for acquiring and passing on clinical expertise to novice learners. Training clinical skills in a skills laboratory through video modelling provides a perfect platform that can enhance students' confidence and proficiencies during their preclerkship training. He further stated that it encourages self- learn, peer tutoring among novice learners as well as allow the verification of learnt skills using video models alongside the specified check offs and checklists in each clinical skills to be learnt.

From observations' as an Educational Technologist in the MacArthur Clinical Skills Laboratory it was discovered that medical students perceived the clinical acquisition process as a difficult and challenging phase during preclerkship training, it was also observed that expert clinicians rarely put up their clinical expertise in recorded formats such as the Digital Video Disc (DVD) formats for the easy acquisition of clinical skills by novice learners and as such it hinders effective transfer of clinical expertise to novice preclerkship medical students. What then becomes the fate of the younger generation of clinicians who need to tap from the skills and knowledge of the expert clinicians?

Assessment and evaluation in clinical training according to Kemahli (2001) also remains an aspect of concern in the teaching of clinical skills. This is because the traditional method of assessment which uses bedside oral examinations and written essays does not sufficiently provide feedback for students to identify errors in the sequence of their performances. Lund, Schultz, Maatouk, Krautter, and Möltner (2012) states that students' skills acquired in skills laboratory is superior to bed side teaching thereby making the transfer of this skill more professionally.

Confidence is an important aspect of learning which must not be ignored. Even when the practicing doctor has all it takes to carry out a particular skill but lacks confidence in himself /herself, there is this tendency that the doctor will omit some vital steps and possibly make mistakes due to lack of self- confidence.This was confirmed in a study on senior house officers work related stress by Williams, Dale, Glucksman, Wellesley (1997) in Khaja et al (2008) that psychological distress is linked to confidence in performing clinical tasks.

Inadequate inpatients for skills demonstration, often times medical student are found crowding around one consultant just to see how a particular clinical skill can be assessed in a patient. This form of training is improper and could possibly not avail the students' access to vital skills needed for clinical assessment in real practice. The above fact is supported by Anochie 2013 (UNIQUE UniPort July-September, pg 30, 2013) in a press interview who strongly emphasized the need for medical students to be provided a digital clinical setting to complement the ward based teaching of clinical skills because during ward- based teaching most students do not have proper interaction with patients, blaming the deficiency on inadequate exposure of students to various clinical clerking skills during routine teaching. Therefore, students need access to those critical skills that they may not acquire from a typical hospital setting.

From the above, it has been shown clearly that developing skills proficiency, promoting learners active participation and ownership in ward-based teaching cannot be guaranteed, and if we believe in Goethe's philosophy that says; "Knowing is not enough; we must apply; willing is not enough; we must do."(Association of American Medical Colleges; AAMC, 2008 pg. 1) hence this question; What are the factors that could influence the promotion of clinical skills acquisition and proficiency while fostering learners' self - directed learning potentials among medical students using clinical skills video models?

Objectives of the Study

The aim of this study is to explore the factors that influence the promotion and acquisition of clinical skills proficiency and self-directed learning using video modelling technique at the MacArthur Clinical Skills Laboratory (MCSL), University of Port Harcourt. Specifically, the study sought to;

1. determine if gender of medical students has any bearing on the frequency of visitation to the MCSL
2. establish the influence of the academic level on the acquisition of clinical skills among medical students using MCSL Video models
3. ascertain the influence of age on the extent of proficiency acquisition among medical students
4. establish if age of medical students' influences self-directed learning;

Research Questions

1. Has gender of medical students any bearing on the frequency of visitation to the Clinical Skills Laboratory?

2. To what extent do the academic levels of medical students influence the acquisition of clinical skills while using Video models?
3. To what extent do age influence the acquisition of proficiency among medical students using MCSL video model?
4. How could the age of medical students' influence self-directed learning using video models?

Null Hypotheses

Ho_1. Gender of medical students does not significantly influence the frequency of visit to the clinical skills laboratory.
Ho_2. Academic level of medical students does not significantly influence clinical skills acquisition using video modelling.
Ho_3. Age of medical students does not significantly influence the acquisition of clinical skills proficiency using MCSL video models
Ho_4. Age of medical students does not significantly influence self- directed learning using video models.

Methodology

The study adopted the Ex-Post Facto design. It is an Ex-Post Facto because variable suspected to have influence or related to the independent variable were not manipulated, data were simply collected from persons who made use of the clinical skills video models.

The population consisted of 308 medical students in their fourth and fifth year, year 4 was made of 79 students and year 5 was made of 229 students respectively. These students were posted to the MacArthur clinical skills laboratory. Out of 308 medical from both level, only 226 participated and responded to the questionnaire as shown in the distribution below.

Table 1: Sample Size Distribution of Medical Students

S/no	Academic Year/ Level	Male	Female	Total
1	Year five (5)	105	56	161
2	Year four (4)	27	38	65
Total		132	94	226

The sample size was two hundred and twenty six (226) medical students who took the course Introduction to Clinical Medicine (ICM) in the MacArthur clinical skills laboratory.

The instrument titled Clinical Skills Acquisition through Video Modelling Questionnaire (CSATVMQ) was used to collect data.

Reliability coefficient of the sub scales are as follows: Acquisition of Clinical Skills items = 0.84, Proficiency = 0.96 and Self-Directed Learning = 0.57. using Cronbach Alpha @ $P<_{-0.05}$ level of significance

The research questions were answered using simple percentage and the null hypotheses were tested using Chi-square and Lambda statistics to determine the direction of association. The statistical package for the Social Sciences (SPSS) was used for the analysis.

Results

Research Question One

Does gender of medical students have any bearing on the frequency of visitation to the Clinical Skills Laboratory?

The data in table 2 below reveals as follows; male medical students were 131 out of which 33(14.6%) responded to daily, 21(9.3%) once a week, 26(11.58 %) twice a week, 18(8.0%) once a month and 33(14.6%) not at all. Female medical students were 95, out which 27(11.9%) responded to daily, 17(7.5%) once a week, 17(7.5%) twice a week, 11(4.9%) once a month, not at all 23(10.2%). In summary, despite their gender, 60(26.5%) responded to daily, 38(16.8%) once a week, 43(19.0%) twice a week, 29(12.8%) once a month, 56(24.8%) not at all.

Table 2: Male and Female student's frequency of visitation to the skills lab

			Frequency of visitation to CSL					
			Once a Week	Twice a Week	Once a month	Not at all	Daily	Total
Sex	Male	Count	21	26	18	33	33	131
		% of Total	9.3%	11.5%	8.0%	14.6%	14.6%	58.0%
	Female	Count	17	17	11	23	27	95
		% of Total	7.5%	7.5%	4.9%	10.2%	11.9%	42.0%
Total		Count	38	43	29	56	60	226
		% of Total	16.8%	19.0%	12.8%	24.8%	26.5%	100.0%

For further illustration, data is presented in figure 1.0 using a bar chart.

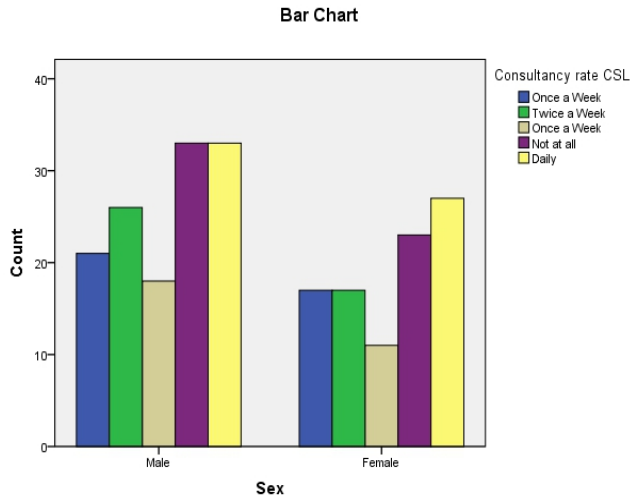

Figure 1: Male and Female student's frequency of visitation to the skills lab

Research Question Two

To what extent do the academic levels of medical students influence the acquisition of clinical skills while using Video models?

Table 3 reveals as follows: 500 level students,7(3.1%) responded to not at all, 25(11.1%), low extent, 66(29.2%) moderate extent, and 63(27.9%) to high extent. The 400 level medical students 5(2.2%) responded to low extent,27(11.9%) moderate extent and 33(14.6%) high extent. Conclusively, out of the 226 medical students in 500and 400 level, 7(3.1%) responded to not at all, 30(13.3%) low extent, 93(41.2%) moderate extent and 96(42.5%) high extent.

Table 3: Students Academic level showing extent of skills acquisition

			Extent CSLA skills				
			Not at all	Low extent	Moderate	High Extent	Total
Academic Level	500 level	Count	7	25	66	63	161
		% of Total	3.1%	11.1%	29.2%	27.9%	71.2%
	400 Level	Count	0	5	27	33	65
		% of Total	.0%	2.2%	11.9%	14.6%	28.8%
Total		Count	7	30	93	96	226
		% of Total	3.1%	13.3%	41.2%	42.5%	100.0%

For further illustration, data is presented in figure 2.0 using a bar chart.

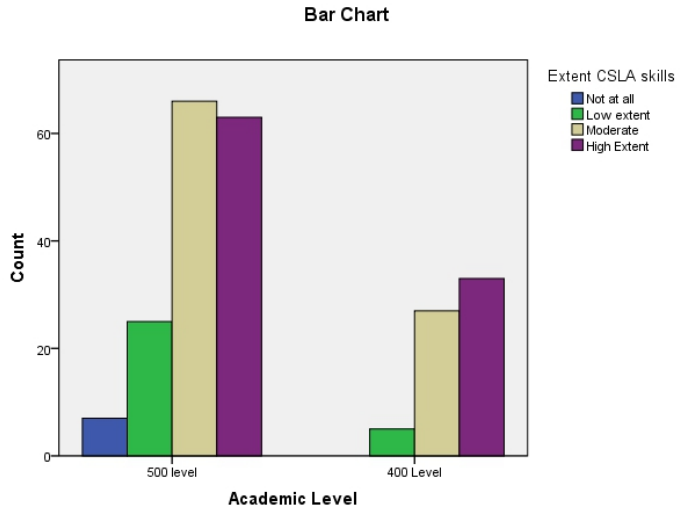

Figure 2: Extent of clinical skills acquisition using video model by students' Academic level

Research question three

To what extent do age influence the acquisition of proficiency among medical students?

Table 4 reveals the age bracket of student responses to the use of video models for the acquisition of clinical proficiency as follows:

- 18-21years; 2(.9%) not at all, 2(.9%) low extent, 6(2.7%) moderate extent, 21(31%) high extent.
- 22-25years; 8(3.5%)not at all, 10(4.4%)low extent, 39(17.3%) moderate,96(42.5%)high extent.
- 26-29years; 1(.4%) not at all, 1(.4%)low extent,10(74.4%) moderate,20(8.8%) high extent.
- 30-33 years; 1(.4%) moderate extent,5(2.2%)high extent.
- 34 &above; 2(.9%) not at all, and 2(0.9%) high extent.

In summary, irrespective of their age brackets, 13(5.8%) responded not at all, 13(5.8%) low extent, 56(24.8%) moderate extent and 144(63.7%) high extent.

Table 4: Showing students acquisition of proficiency by age

			Extent of CSL LAB proficiency Acquisition				
			Not at all	Low extent	Moderate	High Extent	Total
Age	18-21yrs	Count	2	2	6	21	31
		% of Total	.9%	.9%	2.7%	9.3%	13.7%
	22-25yrs	Count	8	10	39	96	153
		% of Total	3.5%	4.4%	17.3%	42.5%	67.7%
	26-29yrs	Count	1	1	10	20	32
		% of Total	.4%	.4%	4.4%	8.8%	14.2%
	30-33yrs	Count	0	0	1	5	6
		% of Total	.0%	.0%	.4%	2.2%	2.7%
	34 & above yrs	Count	2	0	0	2	4
		% of Total	.9%	.0%	.0%	.9%	1.8%
Total		Count	13	13	56	144	226
		% of Total	5.8%	5.8%	24.8%	63.7%	100.0%

Bar chart is used for further illustration as shown in figure 3.0

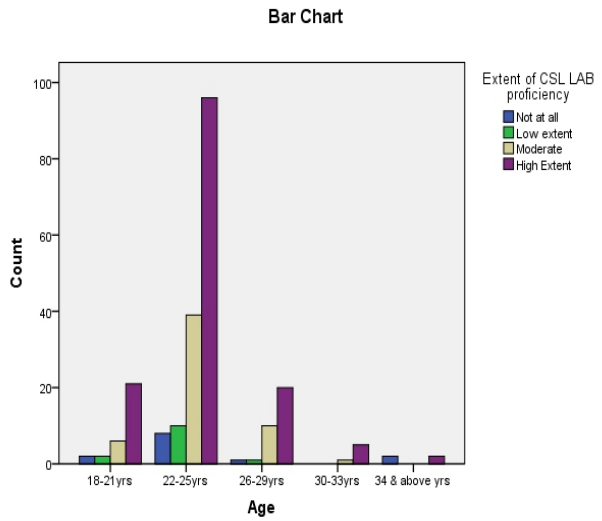

Figure 3: Student's acquisition of clinical skills proficiency by age

Research Question four

How could the age of medical students influence self -directed learning using video models?

Table 5 reveals the age bracket of student responses to use of video models for enhancing self-directed learning as follows:

- 18-21years; 2(0.9%) not at all, 2(0.9%) low extent, 15(6.6%) moderate extent, 12(5.3%) high extent.
- 22-25years;4(1.8%)not at all, 10(4.4%)low extent, 64(28.3%) moderate,75(33.2%)high extent.
- 26-29years; 1(.4%) not at all, 10(4.4%) moderate,21(9.3%) high extent.
- 30-33 years; 1(0.4%) moderate extent,5(2.2%)high extent.
- 34 &above; 1(0.4%) not at all, 1(0.4%),1(0.4%) moderate and 2(0.9%) high extent.

In summary, irrespective of their age brackets, 8(3.5%) responded not at all, 12(5.3%) low extent, 91(40.3%) moderate extent and 115(50.9%) high extent.

Table 5: Extent of student's self-directed learning by age using video modelling

			Extent of Usage CSL for Self-directed learning				
			Not at all	Low extent	Moderate extent	High extent	Total
Age	18-21yrs	Count	2	2	15	12	31
		% of Total	.9%	.9%	6.6%	5.3%	13.7%
	22-25yrs	Count	4	10	64	75	153
		% of Total	1.8%	4.4%	28.3%	33.2%	67.7%
	26-29yrs	Count	1	0	10	21	32
		% of Total	.4%	.0%	4.4%	9.3%	14.2%
	30-33yrs	Count	0	0	1	5	6
		% of Total	.0%	.0%	.4%	2.2%	2.7%
	34 & above yrs	Count	1	0	1	2	4
		% of Total	.4%	.0%	.4%	.9%	1.8%
Total		Count	8	12	91	115	226
		% of Total	3.5%	5.3%	40.3%	50.9%	100.0%

Data is further presented in figure 4.0 for further illustration.

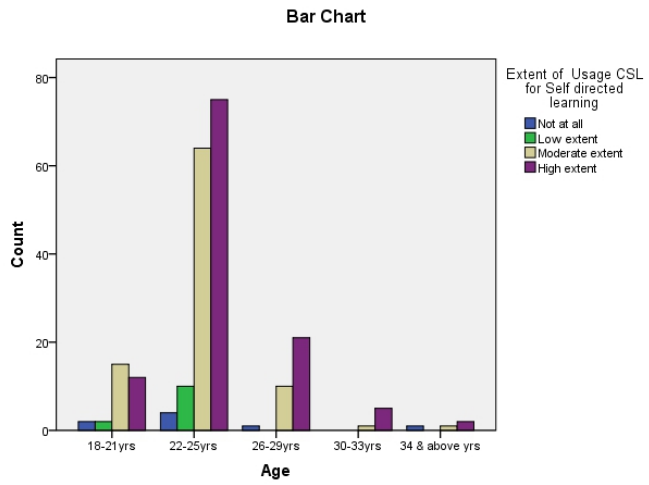

Figure 4: Extent of students' self-directed learning by age using video modeling

Hypotheses

Hypothesis One

Gender of medical students does not significantly influence the frequency of visitation to the clinical skills laboratory.

Using the data in table 6a & 6b, the computed chi-square ($\chi 2$) value of .662, df(4),P= .956,(P>.05) level of significance was obtained. The finding was, gender of medical students did not have any significant influence on the frequency of visit to the clinical skills laboratory located in University of Port Harcourt Teaching Hospital. The conclusion is that both male and female students regularly visit the clinical skills laboratory during their posting for the course Introduction to Clinical Medicine (ICM).

Table 6a: Influence of gender of medical students on the frequency of visitation to clinical skills laboratory

Gender	n	$\chi 2$Cal	X^2Crit	df	alpha	P. Value
Male	131	.662	9.49	4	0.05	.956
Female	95					

Table 6b: Directional Measures

		Value	Asymp.Std Error
Nominal by Nominal	Lambda Symmetric	.000	.031
	Sex dependent	.000	.000
	Frequency of visitation to CSL	.000	.049

Sig(2-tailed) P value (.956)>.05) @ df of 4 , **λ=0.0**

Decision: Null hypothesis accepted.

Hypothesis Two

Academic level of medical students does not significantly influence clinical skills acquisition using video modelling in clinical skills laboratory.

As shown in table 7 below, the computed chi square ($\chi 2$) value obtained is 6.448, df(3),P=.092(P>.05.) level of significance. The finding is that academic level of medical students did not significantly influence the acquisition of clinical skills using the clinical skills video models. It could be deduced that the academic level of medical students is not a determinant factor in the acquisition of clinical skills using video modelling. Both levels of students responded positively to the utilization of the clinical skill laboratory for skill acquisition during the training sessions.

Table 7a: Influence of academic level on skills acquisition among medical students in clinical skills training

Academic level Value	n	$\chi 2$Cal	X^2Crit	df	alpha	P.
500	161	6.448	7.82	3	0.05	.092
400	65					

Table 7b: Directional Measures

		Value	Asymp.Std Error
Nominal by Nominal Lambda	Symmetric	.015	.058
	Academic Level dependent	.000	.000
		.023	.086
	Extent of CSA in CSL		

Sig(2-tailed) P value (.092)>.05) @ df of 3, **λ= 0.0**

Decision: Null hypothesis accepted.

Hypothesis three

Age of medical students does not significantly influence the acquisition of clinical skills proficiency using MCSL video models.

As shown in table 8 below, the computed chi square ($\chi 2$) value obtained is 18.272, df(12),P=.108(P>.05.) level of significance. The finding is that age of medical students did not significantly influence the proficiency level of the medical students of clinical skills using the clinical skills video models. This simply states that the acquisition of proficiency is not dependent on the age of student. From the individual item analysis it shows that the number of attempted practice could account for their proficiency level.

Table 8a: Influence of age on skills proficiency among medical students in clinical skills training

Age brackets	n	χ2Cal	X^2Crit	df	alpha	P.Value
18-21yrs	31	18.272	21.03	12	0.05	.108
22-25yrs	153					
26-29yrs	32					
30-33yrs	6					
34 & above	4					

Table 8b: Directional Measures

		Value	Asymp.Std Error
Nominal by Nominal	Lambda Symmetric	.000	.013
	Age dependent	.000	.000
	Extent of Proficiency Acquisition in CSL	.000	.024

Sig(2-tailed) P value (.108)>.05) @ df of 12, **λ=0.0**
Decision: Null hypothesis accepted.

Hypothesis Four

Age of medical students does not significantly influence self-directed learning using video models.

As shown in table 9, the calculated chi-square (χ2) is 15.208, df(12),P= .230 (P>.05) level of significance. The finding reveals that the ages of medical students had no significant influence in the use of clinical skills video models for enhancing self-directed learning. It could be concluded that self-directed learning among medical students is greatly enhanced through the use of video models developed in the University of Port Harcourt clinical skills laboratory.

Table 9a: influence of Age on Self Directed learning among medical students using clinical skills video models

Age brackets	n	χ2Cal	X^2Crit	df	alpha	P.value
18-21yrs	31	15.208	21.03	12	0.05	.230
22-25yrs	153					
26-29yrs	32					
30-33yrs	6					
34 & above	4					

Table 9b: Directional Measures

		Value	Asymp.Std Error
Nominal by Nominal Lambda	Symmetric	.016	.028
	Age dependent	.000	.000
	Extent of usage for Self - directed learning	.027	.046

Sig(2-tailed) P value (.230)>.05) @ df of 12, **λ= 0.0**
Decision: Null hypothesis accepted.

Discussion

Influence of Gender on Frequencies of Visitation of Medical Students Visit to the Clinical Skills Laboratory

The result from table 2 reveals a high frequency of visitation (daily) by both sexes. Conclusively, the extent of the frequency of the medical students' visitation to the clinical skills laboratory falls within daily. This simply means that medical students of the Faculty of Clinical Sciences University of Port Harcourt during their introduction to clinical medicine (ICM) posting course visited the clinical skills laboratory regularly irrespective of their gender.

Influence of Academic level on clinical skills acquisition through video modelling.

Table 3 reveals a moderate extent on clinical skills acquisition among the 5th year medical students with 66 (40.99%) out of 161 students and a high extent for 4th year medical students with 33(50.76%) out of 65 students.

Similarly, in table 7a & 7b the computed chi square ($\chi 2$) value was 6.448, df(3),P=.092 (P>.05).The finding showed that the academic level of the students did not significantly influence the acquisition of clinical skills using the clinical skills video models. It could be deduced that the academic level of medical students is not a determinant factor in the acquisition of clinical skills using video modelling. The responses to the research items also showed that students acquired skills required for carrying out physical examination, systems examination and bedside investigations. This finding is supported with the study done by Bellini and Jennifer whose findings reported that video modelling and video self modelling promoted skills acquisition and that the acquired skills retain longer and can be transmitted from one person to another. More so, Majorie (2000) also stated that video modeling did not only lead to the acquisition of the targeted behaviour but made the acquisition of the targeted behaviour faster than in vivo modelling. Therefore the use of video models to model clinical skills in University of Port Harcourt has also been

found to enhance skills acquisition as well as equip the medical students as they move through pre-clerkship to clerkship period in medical college. This conclusively is in alignment with the clarion call by the medical education council that demands that students be exposed to challenging skills curriculum that provides them with the opportunity to increasingly master the basic skill as the basis for advance undergraduate and post graduate training.

Influence of Age of medical students on proficiency skills acquisition

Table 4 reveals that clinical skills instructional video models promote the acquisition of proficiency during skills performance among the different age brackets using video models in MCSL situated in the University of Port Harcourt Teaching hospital.

Also table 8a & 8b showed that the computed chi square ($\chi 2$) value obtained is 18.272, df (12),P=.108(P>.05.) level of significance. In clinical training the degree at which a performer perform or exhibit skills is very paramount, therefore a performer is said to be proficient in a skill when after observing the expert clinician performance with repeated self-practice he/she is able to replicate same to an acceptable degree. When adequate practice and appropriate feedback follow demonstrations, increased skill performance and learning occurs. The results obtained in the study on the use of clinical skills video models to develop and enhance students skills proficiency can as well be supported by the study done by Margaret etal (2011) on the investigation of the use of video iPods to enhance Levels of Clinical Skills Competence and Self-Confidence among interms and the work by Lund etal 2012 that proved the efficacy of developing proficiency as a result of training skills in a skills laboratory because the study provided students the competency and opportunity to perform IV cannulation more professionally on volunteer students acting as patients with performance videotaped.

Influence of Age on Self-Directed Learning through video modelling among medical students

Table 5 reveals that age bracket 22-25, 26-29, 30-33 and 34 & above responded to high extent while age bracket 18-21years responded to moderate extent. The findings is, ages bracket 22-25yrs had a population of 75 students, 26-29yrs had 21 persons 30-33years responded to high extent while 18-21 yrs bracket with a population of 15 out of 31 responded to moderate extent.

Similarly, using table 9, the calculated chi-square was 15.208, df (12),P=0.230(P>0.05). The finding revealed that age did not show any significant influence in the use of clinical skills video models for enhancing self-directed learning among medical students in University of Port Harcourt. In using the Clinical Skills Laboratory video model, students' self-directed learning is enhanced as they are motivated to acquire and master skills and

take ownership of their training. During the training period they were able to identify specific resources used for the different system examinations well as self-evaluate their individual recorded performances at their convenient time.The findings of this study could be supported with Kim, 2013. Kim found out that using cellular phone, self-observation increased satisfaction, self-study participation activities, interest and self-directed learning ability among nursing students.

Conclusion

The research revealed that the acquisition of clinical skills, proficiency and the promotion of self-directed learning is not dependent on gender, academic level and age of medical students in preclerkship clinical education. The degree of associated obtained using the lambda statistics indicated 0.0, meaning no relationship and as such both the dependent and independent variables investigated were not related as to have influenced each other. the Using the video modelling approach provided the medical students the opportunity to watch the performed video models, record and carryout self-assessment of their clinical skills at their convenient time while their recorded performances were saved in DVD formats at a reduced cost. This is because the recorded and produced DVD formats of their skills performances were made available to them and the facilitators to replay and assessed for critique; feedback was provided. The possibilities of the above have assured the effective training for skills and proficiency acquisition among medical students as well as promote self-directed learning among the students who engage in self-improvement using the video models.

In addition to the enhancement of skills acquisition, proficiency, self-directed learning, it could possibly reduce the amount of trial and error observed in real life clinical practice since it allows for verification of performance and effective self-assessment by both the performer (model) and the learner in safe and convenient learning environment. The Clinical Skills Laboratory video modeling approach is not to substitute real clinical experiences. It's to offer medical students early exposure to clinical experiences and opportunities to practice skills in a patient non-threatening environment in addition to promoting long life learning and best global authentic practices.

Recommendations

Based on these findings, the following recommendations are thus put forward:

1. The use of instructional media such as video models should be enforced as one of the compulsory instructional media use for the training of clinical skills.

2. Students should be given more time to cover and have more hands practice by allocating more time in the faculty lecture time table.
3. The video modeling technique should be encouraged to be adopted across other medical training colleges in the country.
4. It is capital intensive and maintenance of facility used for this teaching technique requires regular maintenance and update of software hence adequate funding is required for sustenance.
5. The medical facilitators should provide adequate feedback sessions for students to clarify conflicting ideas.

References:

1. Abdus, S.,Harlina, H. S. ,Nabi -shab, M.S. &Yousuf R. (2011) . Bed side teaching in undergraduate medical education. Issues, strategies & new models for better preparation of new generation Doctors. Iran J. Med. Sci. March, 36(1)pg 1-6.
2. Association of American Medical College .(2008). Recommendations for Clinical Skills Curriculum for Undergraduate Medical education. Achieving Excellence in Basic Clinical Methods through Clinical Skills Education. Retrieved *15th July ,2014 from https://www.aamc.org/.../clinical skills_....*
3. Association of American Medical Colleges (2007). Effective Use of Educational Technology inMedical Education *Colloquium on Educational Technology: Recommendations and Guidelines for Medical Educators* AAMC Institute for Improving Medical Education March 2007.
4. Awotua-Efebo, E. B. &Agbarakwe, H. A. (2016). Instructional Video Modelling: A Panacea for Effective Performance Based Learning & Skills Acquisition. Journal of the Port Harcourt Journal of the Nigeria Association for Physical, Health, Education, Recreation, Sports and Dance (PORTJONAPHER - SD).
5. Bloom's Taxonomy (2012).Learning Domains: Benjamin Bloom's Taxonomy of Learning Domains – Cognitive, Affective, Psychomotor Domains - design and evaluation toolkit for training and learning. Retrieved *18th September, 2012 from http://www.businessballs.com/bloomstaxonomyoflearningdomains.htm*
6. Clerkship in Medical Education: Retrieved *7th July , 2015 fromhttps://en.wikipedia.org/wiki/Clerkship_%28medicine%29*
7. Cleve, M.(2013).Performance Based Learning for Teaching One –One Classes .retrieved on *22nd March, 2013 from http://peo.cambridge.org/index.php?option=com_content&view=arti*

cle&id=231:performance-based-learning-for-teaching-one –to-one-classes-by –cleve-miller&catid=general-articles&Itemid=8

8. How Common Are Medical Mistakes? (2008). Retrieved 3oth November, 2013 from*http://www.wrongdiagnosis.com/mistakes/common.htm*
9. Information and Communication Technology (ICT) in Teacher Education. (2012). A planning guide, Division of higher education UNESCO 2003, ED, HED/TED 3
10. James, S.(2014). Wikipedia free encyclopedia=What-is-video-modelling.Retrieved *20th January, 2014 from https://en.wikipedia.org/wiki/James_Stanfield*
11. Johannesson , E. (2012) Learning manual and procedural clinical skills through simulation inhealth care education .Retrieved*10th August, 2015 from http://www.diva-portal.org/smash/get/diva2:507532/FULLTEXT01.pdf* .
12. Kemahli, S. (2001) .Clinical Teaching and OSCE in PediatricsMedEduc Online [serial online] 2001;6:10. Retrieved 20th March, 2016 from URL*http://www.med-ed-online.org.*
13. Kim , D. H. (2013) . The effects of Self -Observation on the self - Directed Learning ability of nursing students: an experimental study: open journal of nursing 3,517-523. Doi. 104236/2013.
14. Lund,F.,Maatouk, I., Krautter, M., Möltner A, et al. (2012). Effectiveness of IV Cannulation Skills Laboratory Training and Its Transfer into Clinical Practice: A Randomized, Controlled Trial.*PLoS ONE 7(3): e32831. doi:10.1371/journal.pone.0032831*
15. Margaret, H., George,O.,John,W.,Iain, D., Samuel, G., Karina, M.,& Lloyd, M.(2011) Enhancement of Medical Interns' Levels of Clinical Skills Competence and Self-Confidence Levels via Video iPods: Pilot Randomized Controlled Trial. Retrieved *12th August, 2015 fromhttp://www.ncbi.nlm.nih.gov/pmc/articles/PMC3221351/*
16. Marijorie ,H.,Loc, L.,Kurt, A. F.(2000) .A comparison of video modeling with invivo modelling for teaching children with autism .Retrieved *26th April,2013fromhttps://wiki.umn.edu/pub/ASD_Reading_Group/Articles/Charlop-Christy2000.pdf*.Available at Journal by autism and developmental disorders, vol.30, No.6.
17. McKimm, J. (2010). Current trends in Undergraduate Medical Education: Teaching Learning and Assessment. Retrieved *20th June, 2012 from http://www.oceaniamed.org/smj/V002I0012010/11.%20Current%20Trends%20in%20Undergraduate%20Medical%20Education%201.pdf.*
18. Minutes of 41stMacArthur Clinical Skills Laboratory held on

19thFebruary, 2013, Pg 4.
19. Olele, C.N. & Agbarakwe, H. A.(2017).Quality Assurance in Clinical Skills Training
20. Laboratory: Implication for Educational Technology. (African International Journal of Educational Learning (AIJEL), 6, (9) . Retrieved 10th July, 2017 from http://aijel.org/current/#1496107553497-0b13f673-aba2
21. Unique Uniport (July- Sept,2013) a Quarterly Publication of the Information, Publications and Public Relation Unit, University of Port Harcourt, Nigeria. Available at*www.uniport.edu.ng.*
22. Video Modelling: Retrieved *13th July, 2015 from http://www.watchmelearn.com/v*