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New Media Use for Learning and Knowledge Sharing in Healthcare Academia

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Abstract:
Medical learning is vast and it deals with several concepts that are difficult to master. With changing times, the method of learning and sharing of knowledge has taken a leap from textbooks and conventional classroom teaching to internet based interactions through online platforms, videos, online discussion forums, online courses, social networking sites, etc. This is not only a further enhancement to the traditional classroom knowledge sharing but also in accordance with the "Media Richness Theory". As the discussion taking place in the new media is interactive and information rich, this makes the information in the new media richer than class lectures. However, there is little-reported data in this area of teaching and learning in healthcare academia. The purpose of this study was to assess new media use for learning and knowledge sharing by healthcare academia. A cross-sectional survey was carried out among the 243 students in healthcare institutes in the city of Bhubaneswar and Cuttack with the use of a self-explanatory questionnaire. Our study found a general lack of overwhelming use of new media in the health academia. However, the majority of the students felt that it will be beneficial and there is a need to maximise its use.

Keywords: New media, healthcare academia, media richness theory, learning, knowledge sharing,

1. Introduction
Traditionally, the outcomes of learning have focused on classroom based face-to-face interactions between the teacher and the students. With the advent of time and technology, newer means have crept into the learning space, providing possibilities of an active, constructive and self-regulated process for the learner.

The use of new media has now become all pervasive. Thus, learning is no longer confined to the textbooks and face-to-face interaction. With the huge amount of information available online, students are turning to online media for a better understanding of difficult concepts and subject clarity (Benson, 2016). Information from around the world is readily available through the internet today and has turned the world into a "global village" where the classroom has been "flipped over" by the internet (McLuhan & Powers, 1989).

New media such as online technologies are helping fill the knowledge gaps among the professional students. It has allowed the classrooms to travel beyond the confines of its four walls and multiplied the time and resources for learning for the students (Weaver & Nilson, 2005). The 21st century digitalized classroom is a "burden" as well as a "blessing", with the educational technologies providing a "gateway to the world" (J. Aagaard, 2016). However, with internet based technologies like laptops, smartphones and tablets into the classrooms there is a negative side of rising attention deficit, falling grades, multitasking by students (Jesper Aagaard, 2015).

Yet, in an era of globalisation, new media has gained importance and brought quality information to the developing countries and cannot be ignored as an effective communication tool for learning and knowledge sharing. While there are advantages of synchronous media being responsive, asynchronous media communication may have peers and professional experts who have a delayed response. However, with regularity, it makes way for an enriched professional communication.

New media usage in learning and knowledge sharing as related to professional courses especially in medicine and dentistry has not been explored and there is a dearth of understanding in this area.

1.1 New Media in Learning and Knowledge Sharing
New Media is the digitally enabled mass communication. Some of the important characteristics of new media are; interactive, networked, hypertexted, simulated, deals with digital processes, fixity and flux (Lister, 2009). It provides new textual experiences to the readers and opens up new possibilities of representing the world around them. This gives rise to immense possibilities in the area of learning and sharing of knowledge.

Although the emergence of new media has been associated with a bogie call of the demise of old media, both face-to-face learning and online learning can complement each other, and provide support to each other (Hassoun, 2015). India is slowly witnessing the changes that the developed countries have already undergone in classroom teaching, notably ITC integration as well as internet access in the classrooms (Kumar & Singh Shaheed, 2006).

Through the use of multimedia, especially personal media has been seen largely as an impediment in teaching by the teachers; it is a growing phenomenon and cannot be negated. In India, the phenomenon is just beginning to catch up. With most of the professional institutions not having or allowing internet access into the classrooms(Panda & Sahu, 2003) and only as much as half of engineering colleges having dial up connections in 2003, the situation is fast changing with improved penetration of mobile telephony. Present generation academics are aware of the e- resources and use them for studies but preferred print to electronic information sources (Sampath Kumar & Kumar, 2010).

But with information available online there is a growing need to realise this potential and facilitate communication between faculty and students after classroom hours. Various forms of technology-driven new media such as video, online discussion forum, WhatsApp, mobiles, emails, animations, presentation slides are enhancing the learning experience of the professional students. Studies have found that students used web-based technologies for learning and knowledge sharing among themselves. It also found that infrastructural availability, motivation and encouragement can enhance knowledge sharing among university students (Usman & Oyefolahan, 2014).

1.2. Learning and Knowledge Sharing in Health Care Academia
Medical based learning involves a combination of theoretical as well as practical skills. Medical learning is vast and it deals with several concepts that are difficult to master. Medical learning can be divided into clinical and non-clinical learning. Concept clarity is very essential for students for practical implementation of the knowledge gained in the clinical as well as non-clinical studies. Knowledge sharing among health care students is necessary as intra-professional communication is essential for them to be able to perform well in practice after they pass out (Boulos, Maramba, & Wheeler, 2006).

Organisations need to think of ways to transfer expertise and knowledge from experts to novices to increase efficiency. Based on such an assumption there is a need to transfer expertise of the senior healthcare professionals, who are also teachers, to the undergraduate students (Hinds, Patterson, & Pfeffer, 2001).

With the ease of access and rapid increase in the use of the web-based technologies, students in health care institutes are interested in taking a shift from face-to-face interaction to internet based interactions with their peer group, teachers and academia. Web-based 'collaboration ware' i.e. Web. 2 based applications are now widely being used by health professionals because of their ease of use and access (Areskog, 1988).Internet-based technologies are now becoming more and more popular to supplement and support face-to-face class lectures. Online media is an effective tool towards understanding difficult concepts. The online media is free from the shortcomings of the traditional learning method as it is not dominated by an individual, it is unconventional and therefore less intimidating for a student (Wang & Noe, 2010).

The method of learning and sharing of knowledge has shifted from textbooks to internet based interactions through online platforms, videos, online discussion forums, online courses, social networking sites, etc.(Damodaran & Olphert, 2000).A study also found that medical students had a highly favourable attitude towards video games and related new media technologies in education (Kron, Gjerde, Sen, & Fetters, 2010).

1.3. Theoretical Framework
Online knowledge sharing in the healthcare academia is not only a further enhancement to the traditional classroom knowledge sharing but also in accordance with the "Media Richness Theory" (Daft & Lengel, 1986)and "Theory of Online learning" (Anderson, 2008).Media Richness theory is a framework used to describe a communication medium's ability to reproduce the information sent over it. It postulates that variable modes of communication media have variable ability to communicate information as per the ability of the medium to convey meaning through verbal and non-verbal communication, feedback, language, the interaction between the listener and the sender.

1.4. Need and Purpose of Study
New media is interactive and information rich; thus it enables enhanced modes of communication in the conventional classroom-based education. However, there is alack of understanding and knowledge in the area of teaching and learning in healthcare academia. Therefore, the purpose of this study was to evaluate the use of new media for learning and knowledge sharing in healthcare academia.

2. Methodology
A cross-sectional survey was conducted among the medical and dental undergraduate students of the various medical institutes of Bhubaneswar and Cuttack over a period of four months (June 2016 – September 2016). A random sampling method with the convenient sample was adopted. All information was collected with the help of a using a self-explanatory close-ended questionnaire. Authors reviewed two successive revisions of the survey questionnaire and after piloting in an initial twenty-seven students for its efficiency, fourteen questions were finalised. The questionnaire recorded the demographic information and the responses to questions pertaining to new media usage, its access, type and mode. Also, it gathered information about preferences and opinions of new media in medical education. The collected data were entered into the computer and analysed by using Excel and Statistical Package for Social Sciences (SPSS Inc., Chicago, IL version 20) software. Descriptive statistics were generated to summarise the responses.

3. Results and Discussion

The study population (aged 18 – 26 years; mean age 22.35 ±1.62 years) was selected for ease of access and to increase the response rate. Out of 300 distributed questionnaires, 32 returned the questionnaires unfilled while 25 were partially filled. Therefore, we received valid answer from 243 students (M = 114(46.9%); F = 129(53.1%)).

3.1. Approach for Understanding Difficult Concept

Around 34.6 % students preferred face-to-face communication and discussed with their friends when faced with a difficult concept in studies, but surprisingly only a few sought clarification from faculty (17.3 %) after classes. This was next to 32.9 % who referred books for clarification. Only 15.2 % students searched the internet for the answers. Thus, searching the internet was not a preferred option among students for understanding difficult concepts. This finding was contrary to our assumption taking into consideration the immense penetration and availability of internet services in the recent times. Lack of quick feedback and guidance may be among the reasons for such observation.

3.2. Accessing Internet-based Technologies

While nearly 80 % agreed they had used internet-based technologies for studies, it was surprising to notice that around 9.5 % students never referred to the internet for studies. It may be possible that these students were mostly engrossed in using the internet for social sites.

S No	Questions	Frequency	% age
Q1	**Approach for understanding difficult concept**		
	Textbook reference	80	32.9
	Peer Discussion	84	34.6
	Teacher / Faculty Interaction	42	17.3
	Online search /study	37	15.2
Q2	**Accessing Internet-based Technologies**		
	Never	23	9.5
	Sometimes	115	47.3
	Often	61	25.1
	Very Often	44	18.1
Q3	**Type of learning accessed**		
	Clinical	119	49.0
	Non-Clinical	124	51.0
Q4	**Mode of online learning**		
	Video	120	49.4
	Audio	15	6.2
	PPT	66	27.2
	Animation	18	7.4
	Podcast	5	2.1
	Online Courses	4	1.6
	None	15	6.2
Q5	**Relevance of Internet-based learning**		
	High Relevance	108	44.4
	Medium Relevance	122	50.2
	Low Relevance	13	5.3
Q6	**Type of internet based learning used**		
	Webinar	35	14.4
	Live Video	76	31.3
	Expert Discussion Forum	82	33.7
	Others	50	20.6
Q8	**Participation in online discussion forums**		
	Never	115	47.3
	Sometimes	80	32.9
	Often	28	11.5
	Very Often	20	8.2

Table 1: Descriptive statistics Questions 1 – 7 (N=243)
Type and mode of learning accessed

The students almost equally accessed clinical 49.0% and non-clinical subjects 51.0 %. Such a distribution may be attributed to the personal choice and level of understanding. Medical education considers both theoretical as well as clinical skills equally important for comprehensive learning. It was not surprising to find that around half of the students (49.4 %) preferred the more the richer

medium of videos for their learning. Availability of free videos online has been a boon to learning in all sectors. Interestingly, a substantial number (27.2 %) preferred Powerpoint presentations since they helped them make notes for exams. Around 33 % had participated in an expert discussion forum, while 31.3% watched live videos while 14.4 % had attended a webinar. While there is a lack of dedicated online discussion forum for most topics in medicine, students may have mistaken this with their clinical case discussions and interactions in social media.

3.3. Relevance of Internet-based Learning
Around 95 % of the students felt that internet supported learning was of medium to high relevance. This makes it clear that students find the internet an important education tool beyond classrooms.

3.4. Online Discussion Forum
Nearly half the respondents 47.3 % said that they had never participated in an online discussion forum, while around 52 % said that they were part of an online discussion forum. There was a need for an online discussion forum in the classroom which would promote inter-class communication as well as teacher-student interaction beyond classroom hours.

S No	Questions	Frequency	% age
Q8	**Communication with faculty**		
	Face to Face	173	71.2
	Online Discussion Forum	28	11.5
	Online	10	4.1
	Telephone	7	2.9
	Others	25	10.3
Q9	**New media in peer communication**		
	Online Discussion Forum	13	5.3
	Text Message	5	2.1
	E-Mail	4	1.6
	Facebook	6	2.5
	Phone Call	62	25.5
	WhatsApp	153	63.0
Q10	**Internet access during classroom teaching**		
	Would divert attention from the teacher's teaching	77	31.7
	Would enhance better understanding among students	117	48.1
	Can't say	49	20.2
Q11	**Online reference in classrooms**		
	Not so beneficial	31	12.8
	Not sure	92	37.9
	Beneficial	120	49.4
Q12	**New media as reinforcement in teaching**		
	Podcast	5	2.1
	Webinar	8	3.3
	Live surgical discussion	164	67.5
	Online discussion forum	44	18.1
	Others	22	9.1
Q13	**Advantage of new media in medical education**		
	Better understanding of difficult concepts	93	38.3
	Encourages in- depth study	60	24.7
	Exposure to newer concepts	90	37.0
Q14	**Negative aspect of new media in medical education**		
	Creates confusion	38	15.6
	Non-interactive	94	38.7
	Expensive	59	24.3
	poor feedback	52	21.4

Table 2: Descriptive statistics Questions 8 –15 (N=243)
Communication with faculty

With the lack of proper discussion forums, the medium majority of students (71.2%) preferred to have a face-to-face discussion with faculty for better understanding. This was contrary to our belief that students would prefer to use online search for their queries.

3.5. New Media in Peer Communication

For peer communication, 63 % used WhatsApp as the chosen mode of communication and 25%used voice calls. WhatsApp and similar android based technologies are being used by students for communication as they are free and provide multiple options like groups, audio, video transfer.

3.6. Internet Access during Classroom Teaching

Despite the low usage of internet for learning, difficult concepts and preference for face-to-face interaction nearly half of the students surveyed (48.1%) felt that internet access in classrooms could improve learning, while 17 % said it would divert attention.
Nearly half the students surveyed said that provision of online reference would be beneficial. While, 31.7 % said they were not sure about benefits of online reference while being taught.

3.7. New Media as Reinforcement in Teaching

Most of the students (67.5 %) found live surgical discussion most beneficial as reinforcement to classroom based teaching. It is pertinent that visuals help in better understanding of the subject. This was also true for students in medical and dental students.

3.8. Advantage of New Media in Medical Education

While choosing the advantages of new media in medical education,38.3% felt new media provided a better understanding of difficult concepts. While nearly equal numbers37.0 % said online technologies exposure to newer concepts.

3.9. Negative Aspect of New Media in Medical Education

While 38.7% felt that it was confusing and non-interactive poor 21.4%opted for poor feedback and 24.3% considered it to be expensive.

4. Conclusions

Our study found a general lack of overwhelming use of new media in the health academia. Students responded that they were more comfortable with face-to-face interactions with faculty for the understanding difficult concept. Use of online video for clinical and non-clinical topics was most preferred. The majority of the students felt that use of new media would be beneficial and there is a need to maximise its use.

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