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Educational Media

Dr. Kanagasabapathy Kamaraj. Consultant in Renal Medicine, Singapore General Hospital

Singapore General Hospital
SingHealth

Introduction

Educational media is defined as any communication system which transmits messages with the intended purpose of teaching and learning. It can be classified into print, non-print and electronic media each of which has further sub-classifications. Media has claimed a place in medical education which has been paramount to its delivery of content and making significant impact on teaching and learning (Yoon, 2009;Omodara, 2018).

Today students are more prepared to use technology and readily have access to information with advanced gadgets. Companies are also moving at a rapid pace to create gadgets and programs to target the field of medical education as such educators need to keep abreast with technology and design their curriculum taking media into consideration.

There are different types of media available which makes it difficult to choose the best one for an educational activity. The type of media selected must be effective in both teaching and learning. Bates described "SECTIONS" framework that can be used to select appropriate media for teaching (Scott, 2015).

S tudents
E ase of use
C ost
T eaching functions
I nteraction
O rganization
N etworking
S ecrecy and privacy

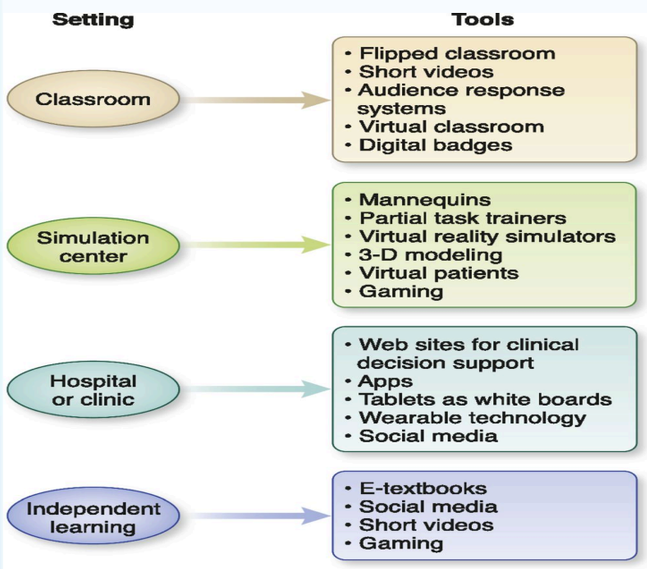
Audio- Visual aids

The origin of audio-visual (AV) aids can be traced back to John Amos Comenius from 17th century (Akram.S, 2012). AV aids are forms of instructional media that involve both hearing and visual sensations. Examples include tape recordings, video recordings, web casts, webinars etc. The use of multimedia can be to convey messages in various forms and representations. However, to assist deep learning and comprehension of the subject, it is important to capture the needs and interests of the learners. Thus, the degree of audience control over the content and the level of interactivity enhances the learning process (Cairncross and Mannion, 2001).
Faraday and Sutcliffe (1997) conclude that one of the benefits of representing information audio-visually is that one could successfully recall the information easily. Also, supporting teaching activities with these aids can assist some learners to grasp information better visually and/or with audio aids. In comparison to written material it acts as a pleasing and engaging media.

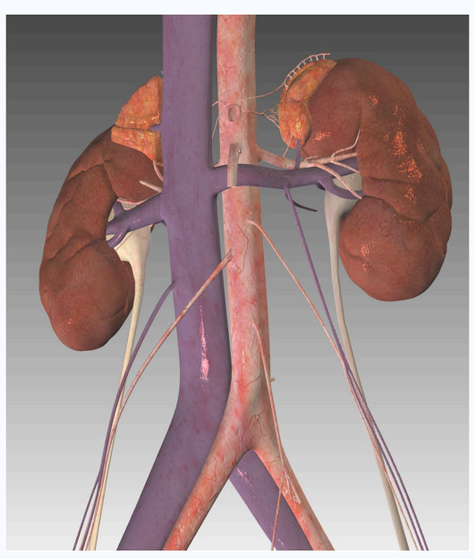
Despite its vastness and complexity, lack of interactive engagement with the audience can lead to superficial knowledge acquisition. In addition, it can act as a deterrent if the students misuse them and deviate from the intended purpose of acquiring knowledge. Other disadvantages include technical glitches in the software, high equipment costs, language and cultural barriers to deliver the content (Swanwick, 2014b).

Databases

Databases are an organized storage collection of data. Database management systems (DBMS) allow the user to create or edit data. Digitalization and the internet have revolutionized the development and use of databases. In the medical field there are thousands of databases created by various health organization, specialist societies, pharmaceutical companies, universities and medical institutes, residents and even by public. Medscape, PubMed, MEDLINE and CINAHL, UK medical education database (UKMED) online transaction processing (OLTP) for few examples of healthcare databases (Soper,2013; Dowell et al., 2018).



Roadmap of educational tools



Model of kidney anatomy for simulation

Citation: Majka Woods and Mark E. Rosenberg.CJASN March 2016, 11 (3) 518-526

Online databases are readily accessible and are often free. Public access databases such as Facebook have led to more user friendly searches, and Google Scholar can be as useful as PubMed. Academic databases often result in inappropriate results. Online searches can be supplemented by time-consuming hand searches of relevant articles. However all database searches need to be reviewed critically (Cleland et al., 2013).

Social Media

Social media (SoMe) is defined as Web-based technology that facilitates multi-user interaction which enables sharing ideas through interaction, collaboration and discussion (Cheston et al., 2013; Sterling et al., 2017). In medical education, it has several advantages:

Access & Understanding: SoMe makes knowledge more widely and rapidly accessible. This impacts traditional models of education as information is often gathered outside the classroom. Consequently, teaching is focused on how information is assimilated and explored with peers, colleagues or other like-minded individuals (McLaughlin et al; 2014).

Communication: SoMe allows rapid dissemination of information with millions almost instantly. Medical conferences can be accessed virtually with online participants and information shared by use of # tags. Journals can receive feedback on data prior to the conclusion of the final peer-review process (Adrian Wong, 2018).

Outcomes: SoMe has flattened the traditional educational hierarchy and eliminated the divide between information producers and receivers. This can facilitate development of professional networks unlimited by geographical boundaries or qualification (Sherbino et al., 2015). Patients can join these networks bringing their own perspective and further improving understanding.

While SoMe has many benefits, the association between student performance or learning outcomes and use of SoMe in medical education remains unclear (Sterling et al., 2017). SoMe platforms offer free but unregulated information, which may contain inaccurate information (Pant et al., 2012). Due to the highly variable content on YouTube, Sutherland & Jalali(2017) state that it is not an adequate resource for educational purposes. Technological issues have been identified as a major barrier for incorporating SoMe into medical education. Age or technical savviness were reported as being key components in SoMe use, with students more inclined to use SoMe than faculty (Sutherland and Jalali, 2017). Many concerns have been reported regarding privacy and professionalism of medical students when using SoMe (Whyte W, 2017). Studies report students behaving unprofessionally (Pander et al., 2014), conversely Cartledge et al., (2013) found that when SoMe is implemented correctly.

Simulations

Simulation has been defined as an artificial representation of a real-world process to achieve educational goals via experiential learning (Divya G Krishnan, 2017). It aims to increase task proficiency and patient safety, reduce medical errors and enhance professional communication and team management skills. Simulation enables the learner to move from the lower levels of Bloom's cognitive taxonomy, such as comprehension, to higher, more complex, levels, such as the application, analysis and even synthesis of knowledge. Thus, it boosts the learners' confidence and satisfaction (Swanwick, 2014a; Divya G Krishnan, 2017).

Disadvantages

Transferability: In the workplace, the learner will be faced by many affected factors that have not been integrated into the simulated environment, such elements will create some difficulties on the transferability of learning from the simulated to the clinical setting (Swanwick, 2014a). No real consequences for mistakes may result in students underperforming and not being fully engaged in the training, thus producing inaccurate results (Moorthy et al., 2005).

Cost factor: Simulators can be very expensive and require constant updates and maintenance (Walsh, 2013; Swanwick, 2014a).

Defective learning: Poorly designed simulation can promote negative education. Often there can be lack of individualized approach for each student (Divya G Krishnan, 2017).

Technical and programming difficulties: Incomplete mimicking of the workplace environment and difficulties to include every situation (Divya G Krishnan, 2017).

Discussion

Predicting future is somewhere between an inexact science and a mug's game. Seconds into Googling produces a myriad of information. Medical education is no different and change in it has been relentless. Media has eventually emerged as a front runner in medical education with ever growing demand for healthcare professionals. It has been shown to improve learner's outcomes, attitudes, skills and allows rapid access to educational content. However, a gap exists in transferring these attributes to a clinical setting which lays foundation for future research. Few limitations of educational media include expensive equipment, unregulated content, technical difficulties using hardware and software. Despite these challenges, educators adapt to new technologies and invent new opportunities to excel in the field and help student achieve intended better outcomes.

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