

Is Technology Only a Vehicle?

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INTRODUCTION

Teaching is an art that is defined as “providing instruction” and “imparting knowledge,” as per Merriam Webster (Merriam-Webster, n.d.). Teaching can occur in a myriad of arenas and through different methods. Is it possible that one delivery method for teaching could be superior to another? In 1983, Richard Clark began a controversial debate regarding the use of various media sources for education purposes. Clark stated,

The best current evidence is that media are mere vehicles that deliver instruction but do not influence student achievement

any more than the truck that delivers groceries causes changes in our nutrition. Basically, the choice of vehicle might influence the cost or extent of distributing instruction, but only the content of the vehicle can influence achievement. (Clark, 1983, p. 445)

Clark’s argument is that media technology, by itself, will not influence learning. Learning will occur more through some aspect of educational design and instructional methodology.

THE BACKGROUND

Educators strive to create the perfect learning environment and experience for those individuals who are being taught. Technological advances within media are continually occurring and therefore it should not come as a shock that this evolution is being utilized more for teaching. Does this mean that media will become a better source of education and teaching? Should all the other methods be thought of as outdated? Clark has not believed this to be the case for nearly 35 years! It is Clark’s stance that media should not replace the value placed on creating strong instructional methods. In 1994, he described instructional methods as being able to stimulate the cognitive processes necessary for learning and motivation (Clark, 1994).

It is through instructional methods that a learner will become aware of what is expected from an educational experience. In *Health Professional as Educator: Principles of Teaching and Learning*, Kathleen Fitzger-



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ald describes the advantages and disadvantages of many different types of instructional methods. These include but are not limited to: lecture, group instruction, one-to-one instruction, demonstration, return demonstration, gaming, simulation, role-playing, role modeling, and self-instruction. Several factors should be considered when deciding which method to utilize. These include the characteristics of the audience, experience of the educator, objectives of a learning experience, the cost effectiveness, and the setting learning is to occur (Fitzgerald, 2011). It is Clark's belief that correctly selecting an appropriate instructional method is the key. He is not stating that media and all its wonderful achievements and advancements cannot be an excellent tool for learning but that media without proper design is useless.

Kozma has been an opponent of Clark's "mere vehicles" stance. It is Kozma's belief that learning is extremely dependent on media as a medium for transmission of information necessary for learning to occur (Kozma, 1994). A strong stance is taken that it is nearly impossible to separate the two. Kozma does seem to agree with Clark that there needs to be solid instructional methods and designs for learning to occur. The problem with Kozma's argument is that it needed to be supported more by evidence.

ACADEMIC SETTING

The academic world is continually changing. More pressure has been put on physical therapists to earn advanced degrees. There are more clinical professionals that have decided to receive transitional doctorates in physical therapy and PhD degrees in related fields. State regulations are continually changing which are forcing certain continuing education credits to maintain licensure. With the wide variety of media options available it has made receiving this education easier but not necessarily better. It must be evaluated which

media options are appropriate and can be accessed and used to the advantage of all students. To properly create an educational experience that is worthwhile, educational design and structure must be utilized. It is possible that a mixture of different delivery mediums may be the most advantageous for students. As originally proposed by Hastings and Tracey it might be time to start a new study and debate regarding how media affects learning, and not if media affects learning (Hastings & Tracey, 2005).

CLINICAL SETTING

Clinically, physical therapists are continually educating and teaching our patients. A physical therapist may teach a patient a home exercise program to strengthen a weak muscle or educate someone on a more efficient resting posture. All patients deserve access to the highest quality care. In the past half century, it has been brought to attention that many people living in remote towns and cities do not receive access to the same quality health care as those living in large cities. One possible and cost-effective solution to this issue is telehealth. Telehealth, often referred to as telemedicine, is broadly defined as a means to provide different health related services and information utilizing various communication technologies at a distance (Lee, 2012). Although telehealth is not new, advancements in technology have made telecommunication materials more available. Telehealth has proven to be efficient for both patients and health care providers.

There are two types of telehealth: real time and store-and-forward applications. When using real-time telehealth, an individual can send information instantly with little delay. Examples of real-time telehealth are a telephone call and a videoconference. Benefits of real-time telehealth are that decisions can be made immediately, and if a clinician needs information, they

can request it immediately. Store-and-forward applications are created when information is created and then transmitted to the recipient for a response at a different time (Smith, Bensink, Armfield, Stillman, & Cattery, 2005). Examples of this would be an e-mail or fax. The benefit of this type of telehealth is that individuals can examine material at a time that is most convenient for them. When deciding which form of telehealth to use, the consumer must keep in mind how fast they need a reply and what type of information needs to be sent.

When referring to physical therapy practice in the arena of telehealth it is only appropriate to call it telerehabilitation. Physical therapists cannot keep this word all to themselves, as it also encompasses occupational therapists, speech therapists, and other members involved in a rehabilitation team. If you were to talk to an individual with an eye in the past, the word telerehabilitation may seem far too futuristic. The truth is the future is now. The term includes a large range of services that include "assessment, monitoring, prevention, intervention, supervision, education, consultation, and counseling" (Brennan, 2010, p. 31). Services can often be received at many different locations including health care settings, clinics, homes, schools, and other community locations.

CONSIDERATIONS

As one can imagine, there are quite a few issues and concerns when it comes to media as a form of education and teaching. Connection issues due to bandwidth and telephone service pose as a major threat. Natural disasters can also be an issue because telephone poles and cable lines can be destroyed. These issues, along with the possibility of software and hardware failure would prevent the health care provider from being able to provide services for clinical and educational purposes. Students learning for courses for a collegiate degree, post professional courses, or con-

tinuing education would be affected as well. When it comes to telehealth there must be a patient and clinician acceptance of decreased interaction between one another. Some people reveal feeling safer in a hospital setting with a clinician present, compared to their own homes without a healthcare professional there (Eron, 2010). Other items to be aware of when deciding whether media technology is appropriate would be the learners fear of something new, the cost effectiveness of the form of media utilized, and being certain to choose the appropriate type of media.

CONCLUSION

Although decades old, Clark's original stance carries significant substance today. In recent years media technology has progressed to a point where life is unrecognizable without it. In certain instances, it has allowed individuals to receive degrees that would have never been possible without the use of media. It must be remembered that although this media is great, it cannot replace the hard work that must be put into creating a successful educational experience. Content, organization, care and enthusiasm, and the willingness to learn must always be evaluated.

REFERENCES

- Brennan D., Tindall, L., & Theodoros, D. (2010). A blueprint for telerehabilitation guidelines. *International Journal of Telemedicine Applications*, 2(2), 31–34. doi:10.5195ijt.2010.6063
- Clark, R. E. (1983). Reconsidering research on learning from media. *Review of Educational Research*, 53(4), 445–449.
- Clark, R. E. (1994). Media will never influence learning. *Educational Technology Research and Development*, 42(2), 21–29.
- Eron, L. (2010). Telemedicine: The future of outpatient therapy? *Clinical Infectious Diseases*, 51, S224–S230. doi:10.1086/653524
- Fitzgerald, K. (2011). Instructional methods and settings. In S. B. Bastable, P. Gramet, K. Jacobs, & D. L. Sopszyk (Eds.), *Health profes-*

- sional as educator: *Principles of teaching and learning* (pp. 421–462). Sudbury, MA: Jones & Bartlett.
- Hastings, N. B., & Tracey, M. W. (2005). Does media affect learning: Where are we now? *Tech Trends*, 49(2), 28–30.
- Kozma, R. B. (1994). Will media influence learning: Reframing the debate. *Educational Technology Research and Development*, 42(2), 7–19.
- Lee, A. C., & Harada, N. D. (2012). Telehealth as a Means of Health Care Delivery. *Physical Therapy*, 92, 463–468.
- Merriam-Webster. (n.d.) Teaching. Retrieved from <http://www.merriam-webster.com/dictionary/teaching>
- Smith, A. C., Bensink, M. M., Armfield, N. N., Stillman, J. J., & Cattery, L. (2005). Telemedicine and rural health care applications. *Journal of Postgraduate Medicine*, 51(4), 286–293.