The Influence Of Personal Electronics On Moral Reasoning Skills
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ABSTRACT

Introduction: In the past several decades the teaching of medical ethics in medical schools has increased to the point of it now being required in the curricula of all medical schools in the United States. During this same time period the development and regular use of personal electronic devices such as laptops, iPads, and smart phones had become commonplace. This has resulted in increased concerns over multi-tasking and the distractions associated with it. In many places laws are being enacted to regulate the use of these devices.

Hypothesis: The presence of personal electronic devices such as laptops, i-pads, and smartphones in a medical ethics course interferes with the development of moral reasoning skills.

Methods: This study pre and post tested students participating in a medical ethics course. One group had access to personal electronic devices and the other group did not. The instrument of assessment of their moral reasoning skills was the DIT which is based on Kohlberg’s cognitive moral development theory.

Results: The group not having access to personal electronic devices showed significant increases in their moral reasoning scores while the group having access to their personal electronic devices showed no increase.

Conclusion: The presence of personal electronic devices in the classroom inhibits the development of moral reasoning skills in students.

Keywords: Moral Development; iPads, Smartphones; Kohlberg; Cognitive Moral Theory; Evaluation

INTRODUCTION

The incorporation of medical ethics teaching into the curricula of medical schools in the United States has been dramatic in the last few decades. In the 1970’s very few medical schools had any required curriculum in medical ethics (Veatch & Sollitto, 1976). Now all medical schools are addressing the subject either with Institutes, Departments, or programs of a wide variety. Indeed, the Liaison Committee on Medical Education (LCME, 2014) requires that medical ethics be addressed in the curriculum in some format in order to be accredited. Along with this growth of the teaching of medical ethics, there has been a similar dramatic growth in educational technology. Whereas in the past, most medical ethics teaching was in the first two years of the curriculum as simply a classroom lecture given on the topic; now in addition to classroom lectures most teaching of medical ethics includes video clips, teleconferences, online discussion boards, self-directed modules, and even complete online courses. In deed, some courses have become paperless with textbooks, assignments, and examinations all being conducted online.

Paralleling this development in educational technology has been the development of personal electronic devices including laptops, i-pads, smart phones with a host of social media outlets for their use. This, in turn, led to multi-tasking which inevitably results in distraction and loss of focus on the primary task at hand. According to the Insurance Information Institute, there were 3,328 deaths in 2012 due to distraction-affected crashes, based on National Highway Traffic Safety Administration (NHTSA) criteria (Insurance Information Institute, 2014). No
doubt we have all participated in this kind of multi-tasking at some time in some place. There are increasing laws to regulate this behavior such as when driving or when in a school zone (Mauriello, 2013). Many news reports have documented tragedies from texting while driving (Wells, 2012). As in many other areas, this multi-tasking and distraction raises concerns about their influence in education in general and in medical education in particular (Fried, 2008; Tindell & Bohlander, 2012).

HYPOTHESIS

The presence of personal electronic devices such as laptops, i-pads, and smartphones in a medical ethics course interferes with the development of moral reasoning skills.

METHODS

This study was designed as a pre and post testing of students participating in a semester long medical ethics course with one group not having access to personal electronic devices and the other group using their personal electronic devices during class. The data from the students without personal electronic devices came from the ethics course for the Classes of 1991 and 1992 which were combined because of the small class size in earlier years. The data for students with access to personal electronic devices came from the ethics course for the Class of 2013 which had grown to a much larger size in recent years. The instruments of assessment of their moral reasoning skills were the DIT and DIT-2 developed by Rest (Rest, J. R., 1979). The DIT-2 is an updated version of the original DIT and improves its validity. The correlation of the original DIT with the DIT-2 is .79 which is nearly the test-retest reliability of the original DIT with itself. Scores on the DIT can range from 0 to a maximum of 95. The DIT is based on Kohlberg’s cognitive development theory which has been described in detail elsewhere (Self, Baldwin, & Olivarez, 1992). It is a stage theory involving pre-conventional, conventional, and post-conventional reasoning with the use of the principle of justice being considered the highest moral value (Kohlberg, 1984). The post-conventional reasoning is usually reported as a P score or an N2 score. This study used the P scores from both groups for reflecting the post-conventional reasoning. Data were analyzed using SPSS version 22 with a 0.05 p-value being used as the point of statistical significance.

RESULTS

The group not having access to personal electronic devices showed significant increases in their moral reasoning scores. The group having access to their personal electronic devices showed no increase in their moral reasoning scores as indicated in Table 1. The power to detect the difference was 0.996. The analysis of these data confirms the hypothesis that the presence of personal electronic devices interferes with the development of moral reasoning skills in a medical ethics course.

| Table 1: Moral Reasoning Scores of 1st Year Medical Students in Medical Ethics Classes |
|----------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                                  | Without Devices N = 72 | With Devices N = 100 |
|                                  | Pre Score | Post Score | p-score | Pre Score | Post Score | p-score |
| Mean DIT Score                   | 46.15     | 53.38     | 0.0010  | 37.98     | 38.05      | 0.9600  |
| Standard Deviation              | (13.70)   | (13.63)   | (15.45) | (16.11)   |

DISCUSSION

This study confirms what many faculty have long suspected. It also supports intuitive thoughts about attention and distraction. No doubt there are many positive effects of students having personal electronic devices outside of class. These devices provide an enormous increase in access to information which is developing at an exponential rate. Similarly, these devices provide an enormous increase in communication ability with classmates, faculty, and others. No one can deny the value of these devices, but their downside must also be acknowledged and dealt with constructively. In addressing the problem of personal electronic device distraction, some faculty have simply instructed students to turn the devices off and put them away while in class (Jeffery, 2010). Other faculty have actually collected the devices from students as they come in the classroom and re-issued them to the students as they leave the classroom. Since using the devices while someone is talking to you is disrespectful, one suggestion...
has been to make it a violation of the Honor code. After all the Hippocratic Oath and many other codes require students to be respectful to their teachers and their classmates.

Physicians’ having computers in the patient examination room has enabled physicians to see more patients by spending less time with each patient (not necessarily a good thing), but patients frequently complain now that during the reduced time the physicians are looking at the computer screen instead of at the patient. Some physicians are trying to limit the problem by rearranging the examination rooms so that the computer screen is in the line vision of the patient.

A limitation of the study is that it was conducted at one school in one region of the country. Perhaps other schools or regions do not have a similar experience, although it seems intuitively unlikely. This study needs to be replicated in other places. Perhaps students think that medical ethics is not important and can be taken lightly as oppose to anatomy, physiology, pharmacology, and so forth.

CONCLUSION

This study supports the claim that the presence of personal electronic devices in the classroom inhibits the development of moral reasoning skills in students. Certainly more research needs to be done on distraction and multi-tasking in class.

REFERENCES