

Editorial

Tortoise versus Hare

Most people are acquainted with Æsop's fable "The Hare and the Tortoise" about a race, and its moral: *slow and steady wins the race* (Jones, 1912). The moral is also apt when considered in the context of research. In a recent issue of *The Guardian Weekly* appeared an obituary for Sir Richard Doll (Tucker, 2005). Among other accomplishments, Doll is credited with being among the first researchers to ascertain a strong and consistent correlational link between cigarette smoking and the incidence of lung cancer. His first study on this subject, published in 1950, appeared many years before the general consensus about cigarettes became that they were unhealthy at best and the cause of particular diseases at worst.

If, as Tucker (2005) states, Doll's findings "statistically proved the link between lung cancer and smoking" (p. 30), why did not Doll's research immediately alter attitudes toward cigarette smoking? A number of factors explain why this did not occur including: difficulty in disseminating results; opposition from advertisers of cigarettes; the influence of the tobacco industry; and the established belief among the general public at that time that cigarettes were innocuous. In addition, a skepticism existed, and still exists to some degree, about the findings of new research. From our present vantage point it seems beyond question that smoking or the use of other tobacco products will result in a greater likelihood of a user developing particular disease conditions than one who does not use tobacco or is not in an environment where tobacco smoke is present. Indeed, in many areas of the world people who use tobacco are considered either pariahs or addicts. Nevertheless, it took the better part of 35 years following Doll's initial study for public opinion to be so firmly consolidated against tobacco. One may speculate that had public opinion shifted sooner, then many individuals who have succumbed to tobacco-related diseases might not have perished. On the other hand, although I do not advocate smoking or any other method of ingesting tobacco products, it is important to consider that changing policy and opinion on the basis of a single study is risky, both in medicine and in education. Indeed, it was partly this kind of view that enabled the tobacco industry and others to diffuse the findings of studies that suggested a link between tobacco and disease. Besides questioning matters such as sample and study design, results from studies using different research methodologies were sometimes used to confuse the issue. For example, if I had wished, I could have undertaken a single-case study of my Great-Uncle Harry (1879-1975) and his smoking habits. He claimed to have begun smoking at 15, and he continued to smoke cigarettes on the order of a pack a day, as well as smoking a pipe in between cigarettes, until shortly before his death at the age of 95. His death was the result of pneumonia, which was not directly attributable to his use of tobacco. On the basis of this information, I could conclude that Uncle Harry's health probably had not been adversely affected by tobacco. To be sure he might have lived longer had he not smoked, but succumbing at 95 far exceeds the national average for life expectancy. There-

fore, on the basis of Uncle Harry's life, we can conclude that smoking does not contribute to diseases that result in early death. Of course, my tongue is firmly planted in my cheek, as even most undergraduate students know that it is untenable to generalize from a single case study. Uncle Harry was extremely fortunate, either because of genetics or environment (he lived most of his life on a farm), or a combination of such factors. Nevertheless, it is tempting to some people to justify a position on the basis of *ad hominem* argument. In addition, referring to the harmful effects of tobacco use, some tobacco companies deliberately suppressed information or spread falsehoods about the effects of tobacco. This topic, and the various consequences, is described vividly in the motion picture *The Insider*, released in 1999.

By the same token, research findings from a single study or studies from the same research team that are taken to be indicative of how things are can also create problems if the recommendations are put into practice without replication of the study by others or through similar studies that corroborate findings. As I have noted in earlier editorials, problems have resulted when the opinions of high-profile individuals influence educational practice without additional inquiry or research findings. In such cases students themselves become participants in a study whether or not they wish. Consider the advocacy of open-area schools in the early 1960s. Before this time school buildings were usually either a single rectangular classroom or an aggregation of rectangular classrooms connected by some sort of corridor. Rooms of different configurations existed for specialized subjects and for administration. Although John Dewey (1915) advocated a modified design with the library and other resources in a central area, individual rectangular classrooms surrounding the central area continued to be the locus of most teaching. It does not appear that Dewey's design resulted in much architectural change of school buildings at the time.

Beginning in the late 1950s, some school districts experimented with innovative designs that either eliminated the box-type classroom altogether or minimized the number of discrete classrooms. In both cases versions of open-area design were employed (Estes, 1965; Shaver, 1962). Typically, such structures were built new and took a cylindrical shape. Little formal research into the advantages and disadvantages of open-area schools, especially in the long term, appear to have been undertaken at that time. Nevertheless, the lack of research findings did not stop some people from extolling the merits of open-area schools (Educational Facilities Laboratories, 1965).

Unfortunately, the paucity of research on aspects of open-area schools or comparing the effectiveness of open-area schools with more traditional school designs did not lead governments and school districts either to proceed slowly or to request further study. Rather, many plunged headlong into constructing new school buildings, especially for the elementary grades, based on the open-area concept. Although some claimed that open-area schools would force teachers to become collaborative and supportive (Educational Facilities Laboratories, 1965), in many instances teachers instead experienced a cacophony of noise both from other teachers and from students. Besides the noise, there were many visual stimuli that although educational were not always germane to what a particular student was supposed to be attending to. In this manner much time on task was lost. Teachers and students usually found the open-area

experience frustrating. Also, round open-area schools proved difficult to heat and ventilate (Hall, 1972). The ultimate result was that in most jurisdictions the construction of open-area schools ceased, and existing buildings were retrofitted to discrete classrooms at great expense and with difficulty (Hall, 1972). The rapid and widespread deployment of open-area schools in much of North America, reinforced by high-profile support, proved an ill-advised and costly impromptu widespread study.

On one hand, as in the case of tobacco, protracted delay in implementing research findings was probably detrimental. On the other hand, as in the case of open area schools, implementing a seemingly “great idea” on the basis of little research was also detrimental. In both cases consistent research findings ultimately led to the view now prevalent. On the basis of these examples, should extensive research be done before widespread implementation of something innovative or new, even if it means the potential delay of something beneficial? Or should the research be done after a seemingly good innovation is implemented, thus speeding the implementation of something that might be beneficial? Although it may not be easy to answer these questions, it should be easier to take into account something that neither case seemed to consider, that is, the welfare of the individuals affected. In either circumstance—early implementation or delay until more research is done—the potential consequences to those affected should always be uppermost in consideration, but often they are not.

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References

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