Abstract Title Page
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Title:

Enhancing clinical trials by incorporating side effects

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Abstract Body

Limit 5 pages single spaced.

Background/context:

Description of prior research and/or its intellectual context and/or its policy context.

Evidence-based medicine is often seen as a model for evidence-based education, and deservedly so, but evaluators in education have been slow to adopt one of its salient features, attention to side effects. Many education evaluations focus almost exclusively on efficacy, that is on achievement test scores.

Regardless of domain, all interventions produce collateral effects beyond those sought by the interveners. As we continue to learn in medicine, in agriculture, and in warfare, failure to consider collateral effects may and often does lead to ill-advised recommendations.

Purpose/objective/research question/focus of study:

Description of what the research focused on and why.

Acknowledging that educational interventions produce side effects raises two key questions for those seeking to incorporate them in evaluations: 1. Which side effects? 2. How can they be assessed?

Setting:

Specific description of where the research took place.

Nor relevant

Population/Participants/Subjects:

Description of participants in the study: who (or what) how many, key features (or characteristics).

Not relevant

Intervention/Program/Practice:

Specific description of the intervention, including what it was, how it was administered, and its duration.

The best way of answering the first question is by taking the medical context as our guide while acknowledging one significant disanalogy between the two contexts: while physicians aim only to avoid negative side effects, educators aim both to avoid negative and to produce positive side effects.

Most drugs produce myriad side effects, but some common ones (e.g. fatigue) are normally deemed relatively insignificant when measured against a drug's effectiveness. On the

other hand, side effects such as heightened risk of stroke or heart attack become significant because those put the patient's life at risk, and therefore challenge a positive evaluation based on efficacy alone.

The problem in education is not the absence of collateral learning but its abundance? Evaluators ought to be obliged to assess the collateral learning which suffices to call into question a verdict based on measures achievement measures alone. One kind of collateral learning *unequivocally* meets this requirement, namely motivation to continue learning (hereafter, CM). A reduction in CM need not always outweigh a gain in academic achievement. However, *evidence concerning the strengthening or weakening of CM is always relevant to, and may overturn a verdict based solely on achievement measures.* Two considerations support this claim: Of all the side effects produced by an educational program or policy, CM is the one that is undeniably at the core of the academic mission of the school, a mission that almost all consider the *raison d'etre* of the school in the first place. Moreover, following Edward Deci's classic experiments on the role of rewards in reducing intrinsic motivation, a line of evidence from psychology gives us reason to doubt whether policies and reward structures which induce higher test scores (e.g. paying teachers or students) *necessarily* induce growth in CM. (I answer the second question below under Findings/Results)

Research Design:
Description of research design (e.g., qualitative case study, quasi-experimental design, secondary analysis, analytic essay, randomized field trial).

Analytic essay

Data Collection and Analysis:
Description of plan for collecting and analyzing data, including description of data.

Not relevant

Findings/Results:
Description of main findings with specific details.

There are three main ways of assessing CM: the survey or questionnaire, the longitudinal study, and the experiment. Examples of each show their relative strengths and limitations. Experiments, incorporated into clinical trials, offer a reasonable trade-off between the greater validity and cost of the longitudinal study on the one hand and the limited validity and low cost of the survey on the other. I suggest a couple of randomly controlled experiments designed to assess continuing motivation in reading and mathematics. These experiments test interest in continuing study in the face of attractive alternatives, and willingness to produce effort as evidence of continuing motivation.

Conclusions:

We are now learning, sometimes to our sorrow, that medical drugs and procedures must not only be efficacious for the conditions they address, but that such efficacy must outweigh any adverse effects they cause. Likewise, evaluations of programs and policies designed to boost academic success would be irresponsible if they failed to take losses as well as gains in CM into account. I do not deny that educational experiences strengthen or weaken other important dispositions and the more of them that evaluators can incorporate, the better, but assessing CM ought not to be optional.

Appendixes

Not included in page count.

Appendix A. References

References are to be in APA format. (See APA style examples at the end of the document.)

Avorn, J. (2005). *Powerful medicines: The benefits, risks, and costs of prescription drugs*. New York: Vintage Books. Revised Edition.

Carneiro, P., & Heckman, J. (2003). *Human capital policy*. Cambridge, MA: National Bureau of Economic Research.

Carnoy, M., & Loeb, S. (2002). Does external accountability affect student outcomes? A cross-state analysis. *Educational Evaluation and Policy Analysis*, *24*, 305-331.

Deci, E. (1971). Effects of externally mediated rewards on intrinsic motivation. *Journal of Personality and Social Psychology*,*18*, 105-115.

Dewey, J. (1973/1938). *Experience and education*. New York: Collier Books,

Eisenberger, R. & Cameron, J. (1996). Detrimental effects of reward: Reality or myth? *American Psychologist, 51,* 1153-1166.

Hoxby, C. M. (2003), School choice and school competition: Evidence from the United States. *Swedish Economic Policy Review, 10*, 11-67.

Maehr, M. (1976). Continuing motivation: An analysis of a seldom considered educational outcome. *Review of Educational Research*, *46*, 443-462.

Ryan, R.M. & Deci, E.L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*, 68-78.

What Works Clearinghouse, (2007). Washington: Institute of Education Sciences.

Table 1

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Table Text

Figure 1. Insert figure caption here

APA Reference Style Examples

Sample Citation: Journal Article

Hypericum Depression Trial Study Group. (2002). Effect of Hypericum perforatum (St John's Wort) in major depressive disorder: A randomized controlled trial. *JAMA, 287,* 1807–1814.

Sample Citation: Newsletter/Newspaper Article

Brown, L. S. (1993, Spring). My research with oranges. *The Psychology Department Newsletter, 3,* 2.

Sample Citation: Book

American Psychiatric Association. (1990). *Diagnostic and statistical manual of mental disorders* (3rd ed.). Washington, DC: Author.

Booth, W. C., Colomb, G. G., & Williams, J. M. (1995). *The craft of research.* Chicago: University of Chicago Press.

Sample Citation: Chapter or Section in a Book

Stephan, W. G. (1985). Intergroup relations. In G. Lindzey & E. Aronson (Eds.), *The handbook of social psychology* (3rd ed., Vol. 2, pp. 599–658). New York: Random House.

Sample Citation: Web Page

Dewey, R. A. (2004). *APA Style Resources by Russ Dewey.* Retrieved September 8, 2004, from http://www.psywww.com/resource/apacrib.