Vol. 3, No. 3
November 2007

T3 TEACHERS TEACHING TEACHERS™

FOR A DYNAMIC COMMUNITY OF TEACHER LEADERS

THE GOOD, THE BAD, AND THE IRRELEVANT:
A brief guide to education research

By Kristine Chadwick, Caitlin Howley, and Carla Thomas McClure

Nearly everyone agrees that the best available research evidence should inform education policy and practice. But finding and interpreting high-quality research is not as simple as one might hope. With no mechanism in place for the systematic delivery of important findings, where can busy education leaders find good research? How do they determine the relevance and practical value of the research they read? What should they be looking for? How should they interpret what they read?

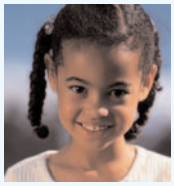
Googling for answers isn't the answer

Although the Internet allows easy access to a plethora of research information, a Google search doesn't always yield the best results. An example involving an NSDC member illustrates its limitations:

After reading a research brief in *Teachers Teaching Teachers (T3)*, the NSDC member went online to search for the peer-reviewed journal article cited in the brief. He found a research paper with the same title and written by the same authors. But the paper's conclusions differed from those reported in the *T3* article. "Could you please help me with this discrepancy?" he wrote.

A quick e-mail query to the researchers revealed that the online paper was a preliminary report presented at a conference where feedback was solicited from other researchers. The authors revised the paper and submitted it to a journal for publication. The journal's peer reviewers suggested that the authors analyze the data differently. When they did, the authors drew substantially different conclusions. However, the early unrevised paper remained online as part of the con-

WHAT'S INSIDE



National Staff Development Council
800-727-7288
www.nsdc.org

WHERE TO START

American Educational Research Association
http://aera.net

Education Resources Information Center
www.eric.ed.gov

Education Week
www.edweek.org

U.S. Department of Education, Institute of Education Sciences (IES)
http://ies.ed.gov

Comprehensive Centers
- *Assessment and Accountability Comprehensive Center*
  www.aacompcenter.org
- *National High School Center*
  www.betterhighschools.org
- *Center on Innovation and Improvement*
  www.centerii.org
- *Center on Instruction*
  www.centeron instruction.org
- *National Comprehensive Center for Teacher Quality*
  www.ncctq.org

National Center for Education Statistics
www.nces.ed.gov

National Center for Research on Evaluation, Standards, and Student Testing
www.cse.ucla.edu

Regional Educational Laboratories
http://ies.ed.gov/ncee/edlabs

What Works Clearinghouse
www.whatworks.ed.gov

ference proceedings.

Tip: *Just because something is online doesn't mean it's up-to-date or has met professional standards.*

Let professionals screen the research for you

One way to find research that has met minimal professional standards is to read peer-reviewed journals. Articles published in these journals have been reviewed by professional researchers who have scrutinized the author's assumptions, methods, and conclusions. Although peer review doesn't guarantee that research findings will hold up under further scrutiny, the process does weed out poorly designed studies and those with unsupported conclusions.

Of course, you probably don't have time to read all the research you'd like. A practical approach is to read research syntheses, meta-analyses, and literature reviews on topics relevant to your work. These are often published by professional organizations such as the National School Boards Association, by research centers, and by the U.S. Department of Education and its federally funded programs. Research syntheses can provide an overview of what's known on a particular topic, and you can use the reference list to track down research reports that you want to read in full.

Tip: *Look for research that has been peer reviewed and/or published by a trusted source. Use research syntheses to help you get "up to speed" on research in a particular topic area.*

Use the web wisely

Where do you go to find research you can trust? As long as you steer clear of its pitfalls, the Internet is a good place to start. The Education Resources Information Center (ERIC), for example, provides free access to more than a million bibliographic records of journal articles and other materials, sometimes including links to full text. Respected online subscription databases for social science research and evaluation are PsychINFO, Academic Search Premier, JSTOR, ProQuest Education Journals, and Wilson Education Abstracts. If you have library privileges at a university, you may have access to some of these databases from your home computer. Most university libraries allow the public to use computers and online databases located in their facility. Check with the librarian.

The Internet can also help you stay up-to-date on education research. Several organizations (for example, American Educational Research Association, American Evaluation Association, American Education Studies Association, Phi Delta Kappa, and *Education Week*) offer research information and updates via web sites or electronic newsletters. Some organizations publish research reviews online or invite educators to "ask-an-expert."

FOR MORE INFORMATION

Schneider, B., Carnoy, M., Kilpatrick, J., Schmidt, W.H., & Shavelson, R.J. (2007). *Estimating causal effects using experimental and observational designs.* Washington, DC: American Educational Research Association. http://www.aera.net/publications/Default.aspx?menu_id=46&id=3360

Shavelson, R.J. & Towne, L. (Eds.) (2002). *Scientific research in education.* Washington, DC: Center for Education. http://books.nap.edu/openbook.php?isbn=0309082919

Tip: *Build a list of trustworthy web sources on topics of interest. Know your sources and beware of bias. Advocacy groups, for example, may selectively report on research that promotes their point of view. When research is reported in the popular press, read past the headlines; news reports sometimes oversimplify issues or overstate study results.*

Learn to read and interpret research

The now-familiar term scientifically based research describes research that bases its conclusions on scientific methods of observations, hypotheses, and data collection. In 2002, the Committee on Scientific Principles for Education Research concluded that education research should (1) pose significant questions, (2) link to relevant theory, (3) use valid tools, (4) rule out alternative explanations, (5) produce findings that can be replicated, and (6) survive scrutiny.

The "gold standard" of scientifically based research is experimental research, in which students, classrooms, or schools may be randomly assigned to either an experimental or control group. Experimental studies control for variables. This helps researchers rule out alternative explanations and determine cause-and-effect relationships. But such studies aren't always feasible. Can you imagine, for example, randomly withholding reading instruction from 1st graders to test what happens?

But experiments are not the only route to solid findings. In 2007, the American Educational Research Association issued a report from a panel of scholars explaining that new, sophisticated statistical techniques and improved quasi-experimental approaches allow researchers to analyze relationships among variables rigorously and to reach conclusions that can be generalized to various settings.

Other types of research cannot be used to prove cause and effect but can provide an in-depth look at how a program or practice operates within a particular context. Case studies, for example, can incorporate a variety of research strategies — including interviews, focus groups, document reviews, structured observation, and data analysis — to provide a comprehensive description of a program or issue under study. Well-designed surveys can help researchers answer important questions by collecting information from a representative sample of a defined population.

Tip: *To find research that is most relevant to schools in your system, look for research that is experimental or conducted in a context similar to your own.*

Integrate research knowledge Into organizational culture

Don't feel like you need to read it all and know it all. Educators (and ultimately, students) are more likely to benefit from research when leaders share the responsibility for using it when making decisions about policy and instruction. Leaders can use the following tactics to integrate research knowledge into organizational culture:

1. Help others improve their ability to find and interpret research (for example, by sharing this article).
2. Support and encourage educators at all levels to use research findings in their work and to share findings with others.
3. Talk about research and cite it yourself when working with staff, explaining what type of research design was used so that staff become comfortable with the terminology.
4. Participate in research projects.

Put research knowledge into perspective

Keep in mind that all research knowledge — especially from social and education research — is tentative because no method can control for every variable, nor account for change. Research suggests what may work in certain instances, but it will never be able to say definitively that this or that program or strategy will be universally effective. In addition, there are always other factors to take into account — even if you use research — when making decisions: local context, affordability, sustainability, alignment with current efforts, ethics, politics, and so forth.

In short, research alone may not provide "the answer," but it does offer good, solid evidence for decision makers' consideration. ◆

Kristine Chadwick and Caitlin Howley direct the Institute for the Advancement of Research and Evaluation at Edvantia. Chadwick also codirects Edvantia's Center for Education Research and Evaluation Studies (with Marshall University) and Howley codirects the Appalachia Regional Comprehensive Center. Carla Thomas McClure is a staff writer at Edvantia; her research summaries are featured regularly in *Teachers Teaching Teachers (T3)*, in this issue on p. 8.