

Special education teachers should think critically before investing in unproven practices, professor says

February 28 2017, by Mike Krings

Special education is a field in which teachers are constantly trying to find new methods to help their students learn. In doing so, educators may be tempted to try untested, unproven and even pseudoscientific interventions, all with the best intentions. Using such practices not only often fails to help students with disabilities but can have harmful effects, waste limited school resources and students' time, and lead to teacher burnout, a University of Kansas professor says in a new article.

Special educators have an ethical responsibility to ensure the interventions they use to teach their [students](#) are backed by empirical [evidence](#), and Jason Travers has published an article outlining ways to help teachers distinguish between effective, unproven and potentially pseudoscientific methods. Travers, assistant professor of special education, published his article in the journal *Intervention in School and Clinic*. Critical thinking skills, ability to distinguish between reliable and questionable evidence and healthy skepticism are important for preparing educators to spot non-evidence-based practices, he said.

As a classroom teacher, Travers used numerous interventions to help improve his students' academic skills. Some were effective, but others were promoted without evidence by vendors with various motives that may conflict with student welfare and education outcomes.

"I witnessed a lot of these ineffective interventions as a teacher, and I

used some of them because I didn't know any better," Travers said. "And schools continue to invest in them."

Educators are dedicated and have good intentions of helping students when they try new interventions, he added. However, trying new methods and repeatedly failing to have a positive effect may lead teachers to get burned out and leave the profession. Ineffective interventions also lead to myriad other problems, such as waste of limited school resources and squandered time that students with disabilities cannot spare.

"There tends to be a rationalizing of trial runs of questionable curricula and methods," Travers said. "Teachers may think, 'How will I know if I don't try?' If they repeatedly try interventions that don't work for even just a few weeks every school year, the long-term effects on the student can be pretty striking."

Many ask how interventions marketed to help students with disabilities that have no scientific standing or basis in evidence persist. Travers writes one of many issues is that vendors often populate education conferences and craft advertisements to lure educators into trial runs using appeals to feelings of frustration, curiosity, intuition and compassion. Appeals to increasingly overburdened educators with empty promises of quick fixes also may lead to flawed defenses of questionable methods such as "you can't prove sensory integration won't work for my students," Travers said. Education science depends on evidence showing that an instructional intervention works, not accepting claims until evidence proves otherwise. The problem is researchers can't prove something doesn't work; they can only fail to find that it does.

Furthermore, questionable interventions may spread via word of mouth and social media. Teachers may provide testimonials that an intervention worked wonders for their student and that it may also work for others.

Anecdotal evidence is the weakest kind of evidence and in special education especially, what works for one student is far from guaranteed to work for others. The truism "correlation does not equal causation" is especially poignant, as many point to an intervention beginning and a student improving.

One example is tinted eyeglasses believed to help students with reading disabilities that were popular in the late '80s and early '90s. A student may have improved his or her reading after trying them, but that does not take into account factors such as improving from additional practice, other methods implemented at school leading to improvement, the removal of a troublesome classmate or countless other possibilities, Travers said.

That also leads to the confirmation bias, or the tendency to accept evidence that supports an existing belief while purposely or unintentionally dismissing evidence to the contrary. The scientific research eventually found that tinted eyeglasses did not improve reading skills, but the practice persists.

When trying something new and unproven, educators do not discover the intervention was ineffective until time and money have already been lost. That amounts to gambling with a student's education, not to mention community and school finances, a practice that is unethical, Travers said.

Fortunately, there are ways to avoid investing in questionable practices that can be ineffective and harmful. There are lists of evidence-based interventions on reputable websites. Lists, however are not enough to keep up with the ever-growing marketplace of educational interventions. Travers argues for healthy skepticism of interventions among educators. Supporting future and current educators to think critically about intervention claims would be a key step. Courses that instruct incoming special education teachers to detect logical fallacies and evaluate the

quality of evidence when considering an intervention may serve teachers and students better than a prescriptive method that simply tells them which methods to use. Being open-minded, but not so much as to be taken advantage of, and questioning claims based on authority rather than evidence are qualities that would likely serve special educators especially well, Travers said.

Teachers are sometimes compelled by colleagues, administrators or school boards to use questionable curricula and methods. In such cases, teachers who are taught how to carefully conduct rigorous trials to evaluate intervention effects may be the best way to adhere to ethical obligations but may also lead to the discovery of new interventions that add to the body of knowledge. Some evidence-based practices have originated from professionals in the field, and educators' insights are important for advancing knowledge of what works for students with disabilities, according to Travers.

The researcher is developing a simple instrument designed to help [educators](#), schools and families evaluate the potential benefit and harm of interventions before investing in them. The tool could help them determine if a method is based on a sound body of scientific evidence, features mostly anecdotal evidence, or depends heavily on pseudoscientific tactics by assigning point values based on the presence of specific features. The next step is to test and validate the tool.

"I want to help members of the [special education](#) community evaluate claims of potential interventions for logical consistency, weigh the evidence and apply healthy skepticism to avoid using risky or ineffective methods," Travers said.

More information: Jason C. Travers. Evaluating Claims to Avoid Pseudoscientific and Unproven Practices in Special Education, *Intervention in School and Clinic* (2017). [DOI:](#)

[10.1177/1053451216659466](https://phys.org/news/2017-02-special-teachers-critically-investing-unproven.html)

Provided by University of Kansas

Citation: Special education teachers should think critically before investing in unproven practices, professor says (2017, February 28) retrieved 25 April 2024 from <https://phys.org/news/2017-02-special-teachers-critically-investing-unproven.html>

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