

Commentary on Carter, Stephenson and Strnadová's Reported Prevalence by Australian Special Educators of Evidence-Based Instructional Practices

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In Volume 35, Issue 1 of the *Australasian Journal of Special Education*, Carter, Stephenson and Strnadová (2011) replicated a study by Burns and Ysseldyke (2009). In Carter et al.'s study, 194 Australian special educators were asked to rate the extent to which they used eight instructional practices. These practices were applied behaviour analysis, direct instruction, formative evaluation, mnemonic strategies, modality training, perceptual-motor training, psycholinguistic training, and social skills training. The first four of these practices had moderate to high effect sizes (and were regarded by the authors as more desirable techniques), and the final four practices had low effect sizes, on the basis of past meta-analytic research. Carter et al.'s findings were that while the Australian teachers used some desirable strategies relatively frequently, they also used some less desirable practices frequently and so desirable instructional practices should be encouraged at the expense of less effective practices. While these results are of interest, they also have the potential to mislead readers and later sections of the current article examine these potential misconceptions.

Keywords: special education instruction, evidence-based practice

There is much to commend in Carter et al.'s (2011) article. Perhaps the most deserving commendation relates to highlighting, in an Australian context, the apparent gulf between best practice and reality in the instruction of students with special needs. This gulf appears to be chronic in most developed countries, despite the weight of research evidence to support the systematic use of effective instructional practice.

For much of its history, special education went to some lengths to differentiate itself from regular education, and it did so by emphasising 'unique' instructional and support methods. However, both the inclusion and the quality teaching movements have done much to evaporate the perceived significant differences between special education and regular education (Department of Education, Employment and Workplace Relations [DEEWR], 2011; Foreman, 2011). The use of a variety of

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distinctive instructional strategies in special education is less important than the need for such strategies to be used with fidelity regardless of the settings in which, and the students with whom, they are used. This claim is strengthened by Kavale's (2007) meta-analysis of special education instruction which, among other things, demonstrates that the effect size magnitude of placement on student outcomes is dwarfed by the use of effective instructional strategies. In this regard, when implemented systematically, special education instruction has been demonstrated to be highly effective and to be a form of evidence-based practice (Swanson, 2001).

While its efficacy has been clearly verified, the delivery of special education instruction varies widely due to a range of factors that include precedent ('we've always done it this way'), lethargy ('I don't have the time to do this'), fiscal stringency ('I don't have the resources to do this'), or attractive rhetoric ('this sounds like it's a better way'). Such factors are responsible for the chronic research-to-practice gap in special education (Heward, 2003), despite our past and current efforts to address this via teacher preparation, ongoing teacher professional development and through the dissemination of research findings.

Although I have no argument with the central message of Carter and his colleagues, there are some aspects of the reporting of the results of their study that have the potential to mislead. I have highlighted three of these potential misunderstandings.

Misunderstanding 1: All Effective Instructional Approaches Should be Used With the Same Degree of Frequency

While I expect that Carter et al. do not believe this, one could forgive some readers for coming to this conclusion after reading their article. However, this conclusion is erroneous because some instructional approaches are suitable only for some students, for some of the time and in some settings. For example, mnemonics (one of the eight practices examined in the article), is a highly specialised instructional technique that, while it has demonstrated efficacy, is relevant to just a particular class of teaching situations and to a particular group of students (Bryant, Goodwin, Bryant, & Higgins, 2003). For example, mnemonics is suited only to those students with the requisite cognitive and reading skills (e.g., students with learning difficulties) and so cannot be reasonably used with many students with high support needs. This is a plausible explanation for the comparatively lower use of mnemonics in Carter et al.'s research findings and is no cause for concern.

At the other end of the spectrum, applied behaviour analysis (another of the eight practices scrutinised in the article) incorporates such a wide range of ancillary instructional techniques (e.g., match to sample, pivotal response training, cognitive behaviour modification) that one wonders what the participants in the research may have regarded as applied behaviour analysis when they selected this option. The teaching practices used in Carter et al.'s study were selected for the purpose of replicating Burns and Ysseldyke's (2009) investigation and this was a logical decision by the former authors. However, these teaching practices do not constitute a comprehensive list of such practices and whether the categorisation of the practices used in both studies is the best conceptualisation is yet to be established.

All of the above raises the issue of when and how should individual evidence-based practices be selected for use. Kavale (2007) correctly noted that the special education teaching and learning process (i.e., the interplay between teacher, student, educational outcomes and teaching environments) is an uncertain process and that 'to create more

certainty, instructional decisions should not be prescriptive . . . but rather based on an assortment of effective options' (p. 216). In this situation, teachers are central players in decision-making about what will work with their student cohort. Such decision-making will incorporate some aspects of what the research demonstrates to be effective and what the teacher believes will best work in their educational environment. In other words, the selection of particular instructional techniques is highly dependent on both the characteristics of the student(s) and the teacher's professional judgment of which techniques to use at any particular time.

Misunderstanding 2: All Instructional Approaches are Equally Effective Across Groups of Students

There is a voluminous literature on effective teaching and more recently on quality teaching (DEEWR, 2011). A review of this literature is beyond the scope of this brief article, but it is important to acknowledge that much of this literature does not address the important question of for whom is this teaching effective? (Norwich, 2004). The implicit assumption is that effective instruction is efficacious for all students, including for all categories of students with special needs. However, this literature is yet to demonstrate either that special education instruction is only effective in special education settings, or that effective instruction in the regular classroom cannot effectively transfer to special education settings.

Depending on the theoretical position taken, it can be argued that there is a body of critical instructional features that apply equally to all students receiving instruction (e.g., Brown, 1988; Engelmann & Carnine, 1982). However, it is also fair to say that a variety of instructional strategies have achieved prominence in the special education and not in the general education research literature. Many of these strategies (e.g., cognitive and metacognitive approaches, match to sample and general case) have an extensive and impressive research base to demonstrate their effectiveness in special education settings (Kavale, 2007).

Numerous studies have also demonstrated that different groups of students (e.g., students with Down syndrome, students with autism) have distinctive group characteristics, including similarities in preferred learning style (Berry, Leitner, Clarke, & Einfeld, 2005; Hodapp & Dykens, 2001). Such studies have suggested that there may be a particular pedagogy that is well suited to such students. However, even if it can be demonstrated that different groups of students with special needs have different behavioural and learning phenotypes (e.g., students with autism may prefer highly structured learning environments and the use of visual learning strategies), it does not necessarily follow that effective instructional techniques will be markedly different across these groups. Norwich's (2004) review of special education pedagogy and instruction supports this position, along with Kavale's (2007) conclusions about the veracity of process interventions for a variety of students, including pupils with learning difficulties. Taken together, the evidence suggests that we still have much to learn about the differential effectiveness of particular instructional approaches across groups of students with known behavioural and learning phenotypes. The sample size and the nature of some demographic questions used in both the Carter et al. (2011) and the Burns and Ysseldyke (2009) studies permitted no conclusions to be drawn in this area.

Perhaps the best way to conclude this section is to '... reject distinctive SEN (special educational needs) teaching strategies and accept that there are common

pedagogic principles which are relevant to the unique differences of all pupils ... ' (Norwich, 2004, p. 327), while accepting that there is a need to vary the intensity and focus of delivery of these instructional strategies for the unique needs of particular students with special needs.

Misunderstanding 3: The Desirable Instructional Approaches Included in Carter et al.'s Article are the Only Desirable Approaches

It is not made clear in Carter et al.'s article the reason for the selection of the eight instructional approaches that participants were required to rate, beyond explaining they were included in order to replicate the Burns and Ysseldyke (2009) study. The reason the latter authors included these eight practices was an apparently arbitrary decision to select four practices with large to moderate effect sizes, and four practices with small effect sizes, based on the meta-analytic work of Kavale and Forness (2000). All of this is important to recognise because it means that we can draw no conclusions about the extent of the use of the full set of effective instructional strategies by special education teachers because a very selective set of practices was examined in both studies. For example, other teaching strategies with large to moderate effect sizes (e.g., peer tutoring, cooperative learning) were excluded in these studies (Erlbaum, Vaughn, Hughes, & Moody, 2000).

Regardless of the above limitation, it is worth discussing what teaching strategies special educators should use. Encouraging special education teachers to limit their instructional techniques to only those for which there is research support has considerable intuitive appeal. However, there are at least two deficiencies with this position. First, the research evidence we use as the basis for selection of instructional approaches may not be as flawless as it seems. Special education faces particular difficulties in the conduct of scientific research because it must deal with problems associated with localised conditions that limit generalisability of results, a situation not often found in the hard sciences (Berliner, 2002). One aspect of the complexity of special education research is the variability of participants. Students receiving special education services may have a range of nonmutually exclusive disabilities that include developmental disability, learning disability and behavioural problems or emotional disturbance. Even within some designated disabilities, such as intellectual disability and autism spectrum disorder, there are acknowledged wide differences in participants' quantitative and qualitative features. Students diagnosed with behaviour problems may display a diverse range of externalising and internalising behaviours. Students with learning disabilities may exhibit, for example, various levels of scotopic sensitivity or dyslexia. Cultural and language diversity further complicate the issue.

The point to be made here is that there may be some instructional strategies, for which there is no research evidence of their efficacy, that do indeed lead to improved educational outcomes for individual students. While such strategies should not be our first port of call, it would be negligent on our part to entirely discard such strategies if more mainstream methods have been demonstrated to be unsuccessful with the students with whom we work, or if caregiver reports imply that these strategies might be helpful.

A second deficiency with an interpretation of 'gold standard' research (i.e., experimental research designs that include a randomised treatment and control group prior to the commencement of special education interventions) as the only standard for selection of special education teaching strategies is that a wide range of teaching

strategies may be regarded as suitable for use in the classroom because of the useful mediating influence they may exert in the learning process. For example, it can be argued that, on their own, sensory-motor techniques such as trampolining or swinging cannot be justified as a reliable instructional activity for some students with higher support needs because of the lack of research evidence. However, if such activities are enjoyable for the student and lead to improvements in motivation and attention then their use in our mix of strategies can be justified.

None of the above is meant to argue for the jettisoning of the best research evidence we have. To illustrate, not to include one of a variety of applied behaviour analysis approaches in our special education teaching strategies would be 'a no-brainer' given the demonstrated benefits of such approaches. However, what the above is meant to demonstrate is that the students we work with should act as their own control group. That is, if the student data that we collect shows little or no improvement in beneficial outcomes then, along with the difficulty of the educational objective and the nature of the teaching environment, we should reconsider changing the teaching strategy we are using.

In conclusion, the minor criticisms I have made of the possible interpretation of the findings reported by Carter et al. (2011) should in no way diminish the importance of their fundamental message. That message is, as Zigmond (1997) has noted, that special education 'is empirically supported practice based on research' (p. 384). Whether that research is peer-reviewed and published in professional outlets or is action research validated by the teacher's own collection of data in single-subject designs, or the like, is not crucially important. What is more important is the need for evidence that the selected instructional strategy is producing acceptable outcomes for the student concerned. In many ways, improving the fidelity of instruction to students with special needs remains as special education's most prominent challenge.

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