

Response to Kohn's Allegations

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Alfie Kohn's lead article in the September, 2006 issue of *Phi Delta Kappan* entitled "Abusing Research: The Study of Home work and Other Examples" harshly criticizes educational researchers and those who attempt to provide teachers with practical applications of that research. We place ourselves in the latter category. In his critique Kohn challenges our recommendations regarding the research on homework and the research on discovery learning in a book we authored entitled *Classroom Instruction that Works: Research-Based Strategies for Increasing Student Achievement* (Marzano, Pickering, & Pollock, 2001). The expressed purpose of that book was to translate the research pertaining to a number of instructional practices into practical suggestions for classroom teachers. Here we address Kohn's criticisms of our recommendations. We begin with discovery learning.

Regarding the topic of discovery learning, Kohn begins by quoting us: "Although the discovery approach has captured the fancy of many educators, there is not much research to indicate its superiority to other methods. Indeed, some researchers have made strong assertions about the lack of evidence of discovery learning, particularly as it relates to skills. For example, researchers McDaniel and Schlager (1990) note: 'In our view,

discovery learning does not produce better skill'(p.153)" (Marzano, Pickering, & Pollock, 2001, pp. 137-138). Kohn then comments on our analysis as follows:

That would indeed be a strong assertion—albeit from only one pair of researchers—if the sentence in question ended there, as Marzano and his colleagues imply that it did. But here's what McDaniel and Schlager actually wrote: "In our view, discovery learning does not produce better skill at applying the discovered strategy during transfer." On the other hand, they add a few sentences later, "The benefit of discovering a strategy seems to be that it encourages the development, practice, and/or refinement of procedures that aid the learner in generating searches for new strategies".... Marzano and his colleagues decision to quote only the first part of the sentence in question (without acknowledging that fact) leads readers to conclude inaccurately that these researchers share their own dim view of discovery learning. As for more general assertions that "there is not much research to indicate its superiority to other methods" everything depends on how one defines the "discovery approach." If this term is understood to mean learning that is inquiry-based, open-ended, process-oriented, or otherwise designed so that students play an active role in constructing meaning, then Marzano et al.'s statement is clearly untrue, and their omission of numerous studies demonstrating the benefits of this approach is as misleading as their cropping of the comment by the only researchers they do cite.

(p.21)

Kohn’s comments about our discussion of discovery learning seem to typify his approach to critique. In fact, he quotes us accurately, but takes our comments out of context and then uses those decontextualized comments as evidence of our intent to mislead the reader. He begins by noting that we cropped a sentence (i.e. did not report the entire sentence). This is a common practice when elements of a sentence do not add to a discussion and might confuse the reader. Specifically we omitted the phrase *at applying the discovered strategy during transfer* because it was inherent in the context of the discussion. Kohn fails to acknowledge the fact that our discussion was not about the generic use of discovery learning. Rather, it was about the use of discovery learning with a specific type of knowledge—skills and processes that are typically algorithmic in nature. For example, Kohn does not report that a few sentences before the one he quoted, we introduced our discussion by explaining that our concern was about the exclusive use of discovery learning with **skills**—not the use of discovery learning for knowledge such as generalization and principles. Our specific comments were:

A common misconception in education is that “discovering” how to perform a skill or tactic is always better than being directly taught the skill or process.

(Marzano, Pickering, & Pollock, 2001, p. 137)

The study by McDaniel and Schlager (1990) most certainly provided solid evidence that discovery learning is not optimal when learning skills. One need only read the abstract to their article to reach this conclusion. There, McDaniel and Schlager state: “Learning by discovery, however, may provide little benefit for tasks that can be completed only by

applying the learned strategy. Two experiments provided support and further refinement of this hypothesis” (p. 129). Kohn not only selects specific sentences from our text that make it appear that we were generalizing about discovery learning when we were not, but he also states that we did not report research on the positive effects of discovery learning when we did. We had an entire chapter on the benefits of generating and testing hypotheses where we reported on findings from nine studies. Interestingly, since our book was published, researcher Richard Mayer published an article in the *American Psychologist* entitled “Should There Be a Three-Strikes Rule Against Pure Discovery Learning?” (Mayer, 2004). There he reviewed research from three domains supporting many of the same concerns we raised in our comments on discovery learning as applied to skills.

Kohn’s approach to critique is also evidenced in his comments about our chapter on homework. In that chapter we attempted to review very briefly the research up to about the year 2000. We noted that Harris Cooper’s (1989a) meta-analysis of the research had reported a positive general effect for homework but this effect was not consistent across the grade levels. Specifically, Cooper (1980a, p.71) reported findings in three grade level bands: 4-6, 7-9, and 10-12. The effect size for the 10-12 band was .64 which translates into an expected gain of about 24 percentile points in a homework versus no homework contrast. However, the reported effect size for the 4-6 grade level band was only .15 which translates into an expected gain of about 6 percentile points. Although this raises the question of whether homework is desirable at lower grade levels, Cooper still recommended homework for elementary students even though the effect size was

relatively small (Cooper, 1989b, p. 90). We also stated that “since Cooper’s meta-analysis, there have been a number of studies...indicating that homework does produce beneficial results for students in grades as low as 2nd grade” (Marzano, Pickering, & Pollock, 2001, p. 62). At the conclusion of that sentence, we parenthetically cited five studies without comment.

Kohn’s reaction to our comments was as follows: “I was frankly stunned by the extent of misrepresentation here. It wasn’t that one or two of the cited studies offered weak support for the proposition. Rather, *none* [original emphasis] of them offered *any* [original emphasis] support. The claim advanced by Marzano and colleagues, that homework provides academic benefits for younger children actually had no empirical backing at all” (p.17). An examination of the studies we cited demonstrates Kohn’s same pattern of selectively quoting from research studies so as to make it appear that those studies are making claims that they are not and then accusing us of trying to mislead the reader. The reader should note that we address this issue in depth in our article entitled “Errors and Allegations About Research on Homework (Marzano & Pickering, in press). Here we summarize briefly. We begin with the study by Gorges and Elliott (1995).

Kohn’s (2006a) comments about the Georges and Elliott (1995) study are that it:

...measured how much time a group of students spent on homework they were assigned but didn’t try to determine whether it was beneficial to assign more (or,

for that matter, any at all). Even so the researchers' main conclusion was the
"high amounts of homework time did not guarantee high performance." (p. 17)

There are a number of inaccuracies in this characterization. First Kohn's comments that the study did not try to determine whether it was beneficial to assign more homework is not true. The very first line of the researchers' abstract to the article reads: "The present study investigated the influence of student homework time and parental time and involvement in helping activities on grade 3 and 5 students' academic performance" (p. 18). Additionally Kohn's quote from the article (found on page 28 of the research article) which he asserts summarizes their main conclusion, does not in fact reflect their overall conclusions. Again, if one looks only to the researchers' abstract to the article, Gorges and Elliott (1995) make the following statement: "Homework time and helping time were found to be predictive of academic performance across grade levels, especially for the grade 3 group" (p.18). In summary, to characterize this study as offering no support for the hypothesis that homework can be beneficial at lower grade levels, one has to ignore the direct statements of the researchers and their reported findings.

A second study we cited was that by Cooper, Lindsay, Nye, and Greathouse (1998). It is entitled "Relationships Among Attitudes about Homework, Amount of Homework Assigned and Completed, and Student Achievement." About this study Kohn states that it "...looked at students of different ages but found no positive effect for the younger children—only a negative effect on their attitudes" (2006a, p. 16). The Cooper et al. (1998) study involved students in grades 2 and 4 (lower grades) and students in grades 6,

8, 10, and 12 with a few students in grades 7 and 11 (upper grades). Homework questionnaires were administered to teachers, parents and students and asked questions regarding perceptions of amount of homework assigned, time spent on homework, and proportion of homework completed. Student achievement was measured using grades and achievement tests regularly scheduled in the district such as the Tennessee Comprehensive Assessment Program. For the purposes of this discussion, we consider the findings at the lower grades only.

Very different patterns of responses were observed between teachers, parents, and students. Of the three measures of homework, the proportion of homework completed as reported by parents demonstrated some strong positive relationships with student achievement. Using a structural equation model that controlled for factors such as standardized test scores, parent attitudes, teacher attitudes, amount of homework assigned by the teacher, and student attitudes, the researchers computed a standardized regression weight (i.e. beta weight) of .13 (Figure 1a., p. 79) between the proportion of homework completed and student grades. This was significant at the .02 level. The researchers summarize their findings as follows:

...in the past, some educational leaders have recommended that homework be abandoned for young children because the evidence has shown no relationship between the amount of homework a child does and achievement...Our results suggest that the benefits of homework for young children many not be immediately evident but exist nonetheless. First by examining complex models

and distinguishing between homework assigned and homework completed, we were able to show that, as early as the second and fourth grades, the frequency of completed homework assignments predicts grades, even when controlling for standardized test differences, amount assigned, and teacher, student, and parent attitudes” (p.82)

A third study we listed was that by Rosenberg (1989). Kohn notes that the study “...consisted of exactly six children with learning disabilities in a classroom featuring rigidly scripted lessons. The researcher sought to find out whether sending them home with more worksheets would yield better results on a five-minute test of rote memory. Even under these contrived conditions the results were mostly negative” (2006a, p.17). In contrast to Kohn’s summary, Rosenberg (1989) reports on two experiments (as opposed to one) that were tightly controlled (as opposed to contrived). The first study (the one Kohn comments on) involved 6 learning disabled (LD) students ages 8 to 10. The quality of instruction provided to each student was standardized by scripting instruction. All students received daily homework assignments and received the same tests of mathematics facts. At the end of the study, the researcher observed an uneven effect on students’ mathematics achievement. However, the researcher also noticed a relationship between proportion of homework completed and whether or not homework had a positive effect on student achievement. This led him to design a second experiment which Kohn does not mention in the body of his article. This time the researcher designed and assigned the homework in such a way as to ensure high completion rates for students. It involved four new elementary LD students. As predicted, homework was found to have

a positive effect on mathematics achievement. About these two studies Rosenberg (1989) comments:

Taken together, the results of the two studies indicate that homework, when planned, assigned, and implemented in a structured and responsible manner, can be successful in maximizing the effectiveness of direct instruction sequences with students diagnosed as LD. Clearly, supplemental homework can serve as a vehicle for additional practice opportunities and thus provide an additional source of learning time for the important practice component in direct instruction sequences. (pp. 322-323)

It is noteworthy that Kohn does not mention the second study or its findings in the body of the article since it was the second study that allowed the researcher to isolate and test an important aspect of effective homework—the completion rate for homework assignments. However, Kohn does mention this second study in a footnote to his article in which he dismisses the positive results saying that students and parents had been “...pressed to follow his [the researcher’s] instruction to the letter” (2006a, p. 21).

A fourth study we listed was that by Good, Grouws, and Ebmeier (1983). About this Kohn notes that it “...listed a number of practices employed by teachers whose students scored well on standardized tests. Among them was a tendency to assign more homework than their colleagues, but the researchers made no attempt to determine what contribution, if any, was made by the homework; in fact they cautioned that other

unnamed factors might have been more significant than any of those on the list” (2006a, pp. 16-17). The Good et al. (1983) study was what is sometimes referred to as an “outlier” study. Research designs that employ outliers attempt to identify a set of “effective” teachers and a set of “ineffective” teachers and then examine what they do differently. In this case effective teachers were operationally defined as those teachers whose students exhibited consistently high scores on a standardized test of mathematics for a two year period of time. Out of 100 third and fourth grade teachers who were originally candidates for the study, 18 teachers were identified “...nine fourth-grade teachers who were relatively effective and stable on total math residual scores across two consecutive years (that is, they were in the top third of the sample across two years) and nine fourth-grade teachers who were relatively ineffective and stable for two consecutive years” (p. 19). These nine “high achieving” and “low achieving” teachers were then systematically observed over a three month period of time. Among other differences in practices the researchers found that “Highs demanded more work and achievement from students...For example, high teachers assigned homework more frequently than lows...Although less effective teachers spent more class time discussing homework, observer’s logs indicated that effective teachers assigned homework more frequently than less effective teachers (48 percent vs. 38 percent)...” (p.22). Overall conclusions from the study included the following statement: “We are pleased that it was possible to isolate patterns of instructional behavior which were associated with student achievement. However, we are well aware of the possibility that many factors other than the behaviors we had observed in high achievement classroom might be responsible for the higher achievement of students” (p. 29). While Kohn quoted the researchers’ comment about

being aware of the possibility of other factors producing higher student achievement (see Kohn, 2006a, footnote 35, p. 21), he did not quote the researchers immediately previous sentence stating their pleasure at being able to isolate patterns of instructional behavior associated with student achievement.

At this point it is useful to re-examine Kohn's comment about the studies we listed as providing support for the positive effects of homework at the elementary level. Again Kohn's comment was: "It wasn't that one or two of the cited studies offered weak support for the proposition. Rather *none* of them offered *any* support." As evidenced in the discussion above to make this claim one must dismiss the findings of those studies as reported by the researchers themselves. In fact, every one of the studies mentioned above provides support for the use of homework at the elementary level albeit with different levels of surety, clarity, and generalizability.

The final study we cited was that by Cooper, Valentine, Nye and Lindsay (1999). Kohn is correct in his observation that this study does not focus on elementary students; rather it involves students in grades 6 through 12. In fact, it should not have been included in the set of studies we asserted supported homework at the elementary level. In retrospect we have no explanation for how it was included on the list. Kohn's interpretation was that we were trying to misrepresent the research. We assure the reader that this was not the case and apologize for our careless error. The book was completed in 2000 and published in 2001. Therefore, for us the document is almost six years old, and it is difficult to reconstruct how this study was included in that particular list of references. To be sure the

Cooper, Valentine, Nye and Lindsay (1999) study was intended to be used as a reference in the book but not where it eventually ended up. While searching through our archives, we found another error—a study that should have been included in the list of those supporting the potential positive effects of homework on elementary students; namely the study by Townsend (1995) which employed a homework versus no homework design with third graders. The effect size for homework on vocabulary learning was .71 which translates into a 26 percentile point gain. We have no explanation as to why the Cooper et al (1999) study was listed inappropriately and why the Townsend study never appeared in the book.

Perhaps the most unfortunate aspect of Kohn's approach to critique is his tendency to attack people as opposed to ideas. Where debate—even heated debate—about educational research and translations of that research is useful to the development of the field, attacking people who hold contrary positions impedes progress. Kohn seems to rely on personal attacks quite frequently. This is evidenced in his 2006 article in the *Kappan* and in his book entitled *The Homework Myth: Why Our Kids Get Too Much of a Bad Thing* (Kohn, 2006b).

Kohn's primary target in both sources appears to be Harris Cooper. For the record, in our opinion, Harris Cooper is the finest meta-analyst in the country and one of the finest pure researchers in the country. Although we have never had the opportunity to meet him, we have read his works for years and count on them to provide the most objective and

clearest analyses of research on broad topics such as homework. Kohn, on the other hand, characterizes Cooper and his work as follows:

A careful reading of Cooper's own studies...reveals further examples of his determination to massage the numbers until they yield something—anything—on which to construct a defense of homework for younger children...When you compare the results section to the conclusion section of these publications, the image that comes to mind is of a magician frantically waving a wand over an empty black hat and then describing the outlines of a rabbit that he swears sort of appeared. (p. 84)

We believe that comments such as these regarding the intent and integrity of someone engaged in an honest dialogue about what is best for k-12 students has no place in the public forum. This example is but the tip of the iceberg if one consults Kohn's book on homework. Table 1 provides a few other selected examples.

Table 1: Examples of Kohn’s Comments about Educational Researchers and Translators of Educational Research Found in His Book.

Person about Whom Kohn Comments	Kohn’s Comments
Researcher: Harris Cooper	Page 84. Kohn accuses Cooper of having “...a fundamental lack of respect for research...that disrespect shows up as an indifference to what studies show or a cynical willingness to cite studies only when doing so serves a certain agenda.” Kohn asserts that Cooper’s message is as follows: “We <i>know</i> homework is good for kids, and we’re not going to let the facts get in our way.”
Researchers: Brian P. Gill; Steven L. Schlossman; Tom Loveless	Page 9. “...these polemicists...” According to Merriam Webster a polemicist is an “aggressive controversialist;” it is from the Greek word polemikos, meaning <i>warlike</i>
Referring to anyone who does not believe that homework is emotionally harming an “awful lot” of children	Page 11 “...only an individual squirreled away in the proverbial ivory tower...only someone bereft of human feelings...
Researchers: E.D. Hirsch; Robert Marzano, Debra Pickering, Jane Pollock, Harris Cooper, Janine Bempechat, Joyce Epstein, Frances Van Voorhis, Brian Gill, Steven Schlossman	Page 76-79: Kohn labels these researchers by lumping them all into a section with a bold title, “When Researchers Mislead.” Kohn ostensibly “discovered” errors in the work of these researchers. (Some of those “discoveries” have already been refuted in the present article.)
National PTA and National Education Association	Page 95. Kohn dismisses the positions of these groups because they are: “...more cheerleaders than thoughtful critics.”
Author: Mel Levine	Page 97. Refers to Levine as, “Someone who looks at children and sees (insufficiently productive) workers...” who is “...trying to turn us into quality-control supervisors to enforce a crude work ethic...”
Researchers: Herbert J. Walberg, Rosanne Paschal, Thomas Weinstein, Janine Bempechat	Page 94. “A reliance on rhetorical devices—loaded language, straw men, and false dichotomies—is even more flagrant among writers who are enthusiastic fans of homework.”
Researcher: Lyn Corno	Page 62-63: Asserts Corno’s true agenda is to get students to submit to “unquestioning obedience,” and accuses Corno of camouflaging this agenda by using a more palatable term, “volition.”

What is one left with after examining Kohn’s commentary on research and researchers?

First, it appears that his conclusions about research studies can be quite different from the conclusions of those who have conducted those studies. Readers might be well advised to read the studies themselves as opposed to accepting Kohn’s analysis of those studies.

Second, readers might keep in mind that attacks on people do not shed light on issues that can and should be debated.

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