

Interactions between Teachers' Attribution for Student Learning and Implementation of Evidence-Based Practices

Melinda Burchard, PhD
Associate Professor
Department of Education
Messiah College
Mechanicsburg, PA

Jennifer Fisler, EdD
Professor
Department of Education
Messiah College
Mechanicsburg, PA

Jan Dormer, EdD
Associate Professor
Department of Education
Messiah College
Mechanicsburg, PA

Abstract

This study investigated interactions between evidence-based practices implemented and attributions of factors contributing to achievement of student learning objectives. Conducted in three school districts in a mid-Atlantic state, 78 teachers completed an end-of-year survey. Internal attributions were significantly correlated with implementation of evidence-based teaching practices in general and in teaching students with disabilities. External attributions were statistically correlated to implementation of evidence-based practices in both reading and teaching students with disabilities. Perceptions of school support were significantly correlated with implementation of evidence-based teaching practices for teaching both reading and writing.

Key Words

teacher quality, evidence-based practices, teacher attribution, student learning outcomes

The Every Student Succeeds Act (ESSA, 2016) stresses implementation of evidence-based teaching practices, and high expectations for students toward postsecondary studies or employment. The emphasis on implementation of evidence-based teaching practices requires that teachers implement teaching practices shown to work well through replicated studies.

An evidence-based teaching practice is defined as a teaching practice established through meta-analysis with a mean effect size greater than .20 for challenging populations or constructs, and .40 or greater for most teaching purposes, and .80 or higher for most noteworthy levels of effectiveness.

For the purposes of this study, the researchers designed a checklist of evidence-based practices directly from meta-analyses of those practices (See appendix A). The assumption of ESSA is that use of evidence-based practices will improve student learning.

Use of effective strategies is not the only possible factor in student learning gains; many factors may impact student learning. Teachers' attributions of the causes of student learning gains may partially explain how a teacher operates within a teacher effectiveness system (Chang and Davis, 2009; Dweck, 2000; Turner, Warzon, and Christensen, 2011).

For the purposes of this study, teacher attribution is defined as conclusions teachers make about student behaviors, successes and failures, especially as these conclusions relate to their own teaching practices. Researchers measured teacher attributions through responses to researcher-created questions aiming at both external (outside teachers' control) and internal (within teachers' control) factors (see appendix A).

The purpose of this study was to investigate relationships between implementation of evidence-based practices and teacher attributions for student learning. This report addresses these relationships using descriptive and correlational analyses.

Procedures

Participant Recruitment

This study took place in one mid-Atlantic state. Researchers recruited teachers who had written an annual goal and related assessment of student learning as part of the state-mandated teacher evaluation system. During spring 2016, recruitment occurred through administrative communication.

Instrumentation

Researchers administered an online survey in late spring. Participants were asked to enter a self-created code and identify only the school and grade levels in which they taught to keep responses anonymous. Teachers rated whether an annual objective for student learning (SLO) was achieved as "yes, fully achieved", "yes, partially achieved", or "no, not achieved" and what data was gathered to document such achievement. Each teacher rated the importance of factors contributing to achievement or lack of achievement of the SLO including prior knowledge and skills of students and teachers, teacher actions, motivation of students and teachers, unanticipated events, and support from the school or district.

Teachers also completed a checklist of evidence-based practices used consistently during the school year. The checklist was based upon three sources: What Works Clearinghouse Practice Guides, high quality meta-analyses of experimentally designed educational studies (Institute of Education Sciences, 2014), Council for Exceptional Children's Current

Practice Alerts, brief summaries of high quality meta-analyses specific to students with disabilities (Council for Exceptional Children, 2000), and a study of meta-analyses of teaching practices with strong evidence-based practices (Burchard, 2014). Both the What Works Clearinghouse Practice Guides and the CEC Current Practice Alerts adhere to strict quality standards, with their highest ratings reserved for teaching practices with mean effect sizes of .80 or higher (Baker, et al., 2014; Council for Exceptional Children, 2000).

For most areas of practice, the checklist included only those practices with mean effect sizes of .80 or higher or rated as strong in the What Works Clearinghouse Practice Guides or as “Go For It” in the Current Practice Alerts. The one exception was for practices to meet the needs of English Language learners, in which researchers included practices with mean effect sizes of .40 or practices rated as moderate by the What Works Clearinghouse Practice Guides. This exception is due to the relatively recent and somewhat limited research on evidence-based practices for teaching English language learners (Baker, et. al, 2014).

Results

Participants

Teachers completed the on-line questionnaire in spring 2016. All 78 participants were certified teachers in three school districts of one mid-Atlantic state.

Implementation of evidence-based teaching practices

Using the checklist, teachers identified a variety of evidence-based practices implemented consistently during the past academic year. All used more than one evidence-based practice in multiple categories.

Evidence-based general teaching practices

As illustrated in Table 1, more than half of participants used five of the evidence-based practices that apply in general to all teaching: graphic organizers ($n=68$, 89.47%), using materials with which students can interact ($n=53$, 69.74%), teaching critical thinking strategies specific to course content ($n=64$, 84.21%), mnemonics ($n=48$, 63.16%), and explicitly teaching and promoting self-regulated learning ($n=47$, 61.84%).

Table 1

Evidence-Based Practices Implemented by 50% or More of Participants

	Percentage and Count	
	Percentage	Count
Evidence-Based General Teaching Practices		
Graphic Organizer	89.47%	68
Critical Thinking Strategies Specific to Content	84.21%	64
Materials with Which Students Can Interact	69.74%	53
Mnemonics	63.16%	48
Self-Regulated Learning	61.84%	47
Evidence-Based Reading Practices		
Questioning Strategies	81.82%	63
Reading Comprehension	77.92%	60
Vocabulary Instruction for Reading	68.83%	53
Text Enhancement Strategies	62.34%	48
Small Group Reading Instruction	58.44%	45
Using Writing to Develop Reading	54.55%	42
Decoding	51.95%	40
Evidence-Based Writing Practices		
Peer Assistance	58.44%	45
Process Approach	57.14%	44
Evidence-Based Math Practices		
<i>None implemented by 50% or more of participants</i>		
Evidence-Based Practices for Teaching Students with Disabilities		
Formative Evaluation	74.03%	57
direct instruction (explicit instruction)	62.34%	48
Evidence-Based Practices for Teaching ELLs		
<i>None implemented by 50% or more of participants</i>		

Evidence-based reading teaching practices

Over half of the participants also reported implementing each of the highly effective practices for teaching reading. These results indicated that teachers appeared to be teaching reading across grade levels and content areas through use of evidence-based reading practices.

Evidence-based writing practices

Over half of respondents reported implementing two of the highly effective writing practices. Most teachers reported using structured peer assistance ($n=45$, 58.44%). Most also reported teaching writing using the Process Approach which moves through stages of brainstorming, drafting, revisions, editing, and on to some sort of publishing ($n=44$, 57.14%).

Evidence-based math teaching practices

In contrast to other categories of evidence-based practices, less than half of participants reported use of each of the highly effective math teaching practices. Participants represented quite a variety of content areas, some of which integrate fewer math practices. Though only practices implemented by half or more of participants were included in Table 3, over 40% reported implementation of three math teaching practices: explicitly teaching students to verbally express math reasoning ($n=34$, 46.58%), use of concrete math manipulatives ($n=33$, 45.21%), and having students create their own visual representations of math problems ($n=33$, 45.21%).

Evidence-based practices for teaching children with disabilities

Specific to teaching children with disabilities, over half of participants indicated consistent implementation of two strongly evidence-based practices for meeting needs of that population. Most teachers reported consistent use of

formative evaluation ($n=57$, 74.03%) and direct or explicit instruction ($n=48$, 62.34%).

Evidence-based practices for teaching ELL

Implementation of evidence-based teaching practices for teaching ELLs occurred less frequently, with less than half of participants implementing any of the evidence-based practices for teaching ELLs. In fact, over 55% of participants reported using none of the listed teaching practices for teaching ELLs ($n=40$, 55.56%). Nearly half of participating teachers ($n=33$, 45.21%) reported integrating oral and written English language instruction within teaching of other content. Just over 30% reported designing structured opportunities to develop writing skills and intervening for ELLs with small group instruction in literacy and language. Importantly, each of the three participating school districts report ELL populations of less than 3% (PDE, 2016), but the survey did not ask teachers to identify if they had ELLs in their own classrooms.

Achieving student learning objectives

Teachers were asked to rate their satisfaction with their achievement of the SLOs and record data gathered to measure achievement of the SLO. Then teachers rated the importance of internal and external factors related to achievement of the SLOs.

Data gathered to assess SLOs

Though some teachers reported using more than one type of assessment, teachers most commonly assessed SLO achievement using teacher-made tests or quizzes ($n=26$, 34%), performance tasks that could be measured with a checklist or by completion ($n=21$, 27%), and national or standardized tests ($n=19$, 25%). Approximately one fifth of teachers reported using projects or portfolios scored by a rubric ($n=15$, 19%). A small number of teachers reported measuring SLO achievement using

writing ($n=7$, 9%) or assessment of gains through progress monitoring ($n=5$, 6%). Finally, almost one fifth of teachers reported using broad assessments such as grades or some otherwise unspecified evaluation of achievement ($n=14$, 18%).

Factors attributed to satisfaction or dissatisfaction in achievement of SLOs

After rating satisfaction or dissatisfaction with accomplishment of their SLO, teachers then rated importance of factors impacting such satisfaction or dissatisfaction. (See Table 2.)

Table 2

Importance of Factors in Satisfaction with SLO Achievement

Construct	Percentage (count)			
	Not Important	Minimally Important	Important	Very Important
Teacher Knowledge	6.41% (5)	8.97% (7)	38.46% (30)	46.15% (36)
Teacher Actions	0% (0)	1.28% (1)	35.90% (28)	62.82% (49)
Teacher Motivation	1.28% (1)	7.69% (6)	42.31% (33)	48.72% (38)
Unanticipated Events	11.54 (9)	43.59% (34)	33.33% (26)	11.54% (9)
Support from Building or District	5.13% (4)	29.49% (23)	41.03% (32)	24.36% (19)
Students' Prior Knowledge	7.69% (6)	16.67% (13)	43.59% (34)	32.05% (25)
Students' Motivation	0% (0)	0% (0)	34.62% (27)	65.38% (51)

Teachers rated their own motivation as important or very important in how well they met their SLO ($n=71$, 91.03%), teaching actions as important or very important ($n=77$, 98.72%), while they indicated that their prior knowledge or skills were slightly less impactful with 84.61% rating that as important or very important ($n=66$). At the same time, 100% of teachers ($n=78$) rated students' motivation as

important or very important in accomplishment of the SLO. While teachers attributed a strong degree of internal control to outcomes of student learning, these teachers also attributed a strong degree of external control through student motivation. These results suggest that attention to motivation strategies is an important priority in progressing toward goals for student learning.

In contrast, teachers attributed greatest importance in any dissatisfaction with

achievement of the SLO to two external factors (see Table 3).

Table 3

Importance of Factors in Dissatisfaction with SLO Achievement

Construct	Percentage (count)				Total
	Not Important	Minimally Important	Important	Very Important	
Teacher Knowledge	30.99% (22)	28.17% (20)	26.76% (19)	14.08% (10)	71
Teacher Actions	12.68% (9)	28.17% (20)	33.80 (24)	25.35% (18)	71
Teacher Motivation	28.57% (20)	27.14% (19)	24.29% (17)	20.00% (40)	70
Unanticipated Events	26.76% (19)	42.25% (30)	21.135 (15)	9.86% (7)	71
Support from Building or District	18.57% (13)	34.29% (24)	34.29% (24)	12.86% (9)	70
Students' Prior Knowledge	18.06% (13)	19.44% (14)	34.72% (25)	27.78% (20)	72
Students' Motivation	4.23% (3)	11.27% (8)	32.39% (23)	52.11% (37)	71

A significant majority of the teachers (84.5%) rated students' lack of motivation as important or very important ($n=60$), and 62.5% of teachers rated students' prior knowledge and skills as important or very important ($n=45$). In other words, when teachers were dissatisfied with how well an SLO was achieved, they attributed an important degree of influence to students' motivation and to what students already knew and could do. These attributions provided important perspectives for school-wide professional development for interventions for students with learning gaps, or low motivation.

Relationships between implementation of evidence-based practices and attribution factors

Results revealed important relationships between implementation of evidence-based teaching practices and teachers' rating of the importance of factors contributing to achievement or lack of achievement of learning outcomes, "attribution factors."

Table 4 shows the matrix of correlations with any significance. External factors of students' prior knowledge and skills, students' motivation, and unanticipated events did not correlate significantly with implementation of

any evidence-based practices and so are not reported in Table 4. While several correlations were statistically significant, twelve

correlations reached the magnitude threshold of .30 or higher, showing a strong predictive relationship.

Table 4

Correlations Matrix of Evidence-Based Practices Implemented to Attributions

Attribution Factors	Pearson Correlation					
	General Practices	Reading Practices	Writing Practices	Math Practices	Teaching Students with Disabilities	Teaching ELLs
Teacher Knowledge	.412***	.264*	.174	.165	.385***	.300**
Teacher Actions	.430***	.234*	.257*	.200*	.268**	.294**
Teacher Motivation	.356***	.208*	.153	.188	.228*	.277**
Internal Factors	.443***	.257*	.209*	.200*	.329**	.319**
School Support	.267**	.404***	.337**	.253*	.273**	.268**
External Factors	.184	.310**	.282**	.121	.304**	.256*

* p-value <.05 ** p-value <.01 *** p-value <.001

Relationships between internal attribution and evidence-based general teaching practices

Results revealed a statistically significant positive correlation between implementation of evidence-based general teaching practices and internal factors of attribution. A strong predictive relationship existed between teacher actions and implementation of evidence-based general teaching practices, $r (n=77)=.430, p<.001$. Results showed a strong relationship between teachers' prior knowledge and skills and implementation of evidence-based general teaching practices $r (n=77)=.412, p<.001$. Results also showed a strong predictive relationship between teacher motivation and

implementation of evidence-based general teaching practices, $r (n=77)=.356, p<.001$. Those three internal factors together correlated more strongly with implementation of evidence-based general teaching practices, $r (n=77)=.443, p<.001$.

It is important to stress that these correlations did not indicate a causal relationship. No results from this study communicated that internal attribution caused teachers to implement evidence-based general teaching practices nor conversely that implementation of evidence-based general teaching practices caused teachers to internalize control over accomplishment of student

learning. These results instead meant that there was a strong linear relationship between those factors for this population. For practical purposes, such correlations might encourage schools to explore professional development in general evidence-based practices and/or encouragement of teachers in developing their knowledge and skills, accounting for their actions, and addressing their own motivation.

Relationships between internal attribution and implementation of evidence-based practices for teaching students with disabilities and ELLs

Combined internal factors (those under a teacher's control) were significantly correlated with implementation of practices that work in teaching students with disabilities, $r (n=77)=.329, p<.01$, or ELLs, $r (n=77)=.319, p<.01$. Of particular interest, teachers' prior knowledge and skills was significantly correlated with implementation of evidence-based teaching practices in teaching both children with disabilities, $r (n=77)=.385, p<.001$, and children who are ELLs, $r (n=77)=.300, p<.01$. This means that professional development could be very important to evidence-based teaching for those two student populations.

Relationships between school support and implementation of evidence-based practices in reading and writing

Results showed an important predictive relationship between perceived support from schools and school districts and implementation of evidence-based practices in reading, $r (n=77)=.404, p<.001$, and writing, $r (n=77)=.337, p<.01$. While we cannot state conclusively that school support would change implementation of evidence-based practices for teaching reading and writing, these results did imply that support from schools and school districts might encourage teachers to implement

practices that work for teaching reading and writing.

Relationships between external attribution and implementation of evidence-based practices in reading and teaching children with disabilities

Results showed a strong relationship between external attribution factors (combining students' prior knowledge, students' motivation, unanticipated events, and perceived support from schools and school districts) and implementation of some evidence-based practices. Specifically, results showed a strong correlation between external attribution and implementation of evidence-based reading practices, $(n=77), r =.310, p<.01$. In making sense of these results it is important to recall the strong positive relationship between perceived school support and implementation of evidence-based reading practices. Further results showed a strong correlation between external attribution factors and implementation of evidence-based practices for teaching children with disabilities, $(n=77), r =.304, p<.01$. These results indicate that educators respond to the needs of learners using practices that work best for teaching children with disabilities.

Discussion

The goal of all educators is to provide high quality instruction that supports student learning. This study demonstrated interactions between teachers' perceived cause of actual achievement of SLOs and implementation of evidence-based teaching practices.

Notably, this study demonstrated that there was a strong predictive relationship between internal attributions (factors within a teacher's control) and teachers implementing evidence-based general teaching practices. Furthermore, there was a strong predictive relationship between internal attributions and

implementation of evidence-based practices for teaching students with disabilities. This means that the more strongly teachers feel they can make a difference in how students achieve learning outcomes, and especially for students with disabilities, the more likely they are to implement methods proven effective, in this case evidence-based teaching practices.

These results may indicate either that teachers attribute strong internal control over student learning as they implement evidence-based teaching practices in general teaching and for students with disabilities, or that they seek teaching practices that work when they attribute personal control to the accomplishment of student learning outcomes.

This study also demonstrated a strong linear relationship between teachers' attribution of external factors (school support, unanticipated events, students' prior knowledge and skills, and student motivation) and teachers' implementation of evidence-based practices in teaching reading and teaching students with disabilities.

One can imagine scenarios in which evidence-based practices are used, but learning is still unsuccessful, and therefore the teacher attributes failure to external factors.

On the other hand, teachers may implement evidence-based practices in response to concerning needs of students, responding with teaching practices that work, but still not overcoming the level of need in order to meet intended target outcomes. In either case, more research is needed to fully explain this resulting relationship.

Finally, results showed a strong predictive relationship between implementation of evidence-based practices for teaching

reading and writing and perceptions of school support. Because this study did not investigate causation, researchers cannot conclude that school support leads to greater implementation of evidence-based reading and writing teaching practices, but this linear relationship is certainly encouraging to school districts as they provide various supports for implementation of such evidence-based teaching practices.

Limitations

Various factors limit conclusions that can be drawn from this study. First, the study participants represented three school districts of fairly similar demographic factors in one mid-Atlantic state, none of which were urban school districts and none of which had very many ELLs. The sample size was reasonable for this study design but small for broad interpretation to generalizable knowledge. Finally, school districts should limit interpretations from correlational studies to relationships, not to causation.

Implications for future research

Future research might investigate such relationships in larger sample sizes representing more diverse school districts from multiple states. Furthermore, future research might investigate causation between such factors as school support and professional development with gains in self-efficacy or implementation of evidence-based practices, or causation between implementation of evidence-based practices and improvement in student learning outcomes.

Conclusion

In this study, researchers investigated relationships between teachers' satisfaction with achievement of student learning objectives, teachers' attributions of factors impacting achievement, and implementation of evidence-based practices. Researchers found significant relationships between

implementation of evidence-based practices and teachers' attributions of factors impacting achievement of those student learning

objectives. Understanding relationships between these factors may inform professional development priorities of schools and school districts.

Author Biographies

Melinda Burchard is associate professor of special education at Messiah College in Pennsylvania. Her recent research includes evidence-based practices for special educators and self-efficacy for multi-tiered instruction for both pre-service and in-service teachers.

Jennifer Fisler is professor of education and director of teacher education at Messiah College in Pennsylvania. Her professional interests include teacher leadership and educational assessment. She recently served as director of a multi-year grant implementing co-teaching with student teachers.

Jan Edwards Dormer is associate professor of TESOL at Messiah College in Pennsylvania. She has recently authored the book *What School Leaders Need to Know About English Language Learning*, published by TESOL International Association.

References

- Act 82, Pennsylvania Public School Code of 1949- Omnibus Amendments. Pub. L. No. 684, § 82, PA Stat. 2012-82 (2012).
- Baker, S., Lesaux, N., Jayanthi, M., Dimino, J., Proctor, C. P., Morris, J., Gersten, R., Haymond, K., Kieffer, M. J., Linan-Thompson, S., & Newman-Gonchar, R. (2014). *Teaching academic content and literacy to English learners in elementary and middle school* (NCEE 2014-4012). Washington, DC: National Center for Education Evaluation and Regional Assistance (NCEE), Institute of Education Sciences, U.S. Department of Education. Retrieved from the NCEE website: http://ies.ed.gov/ncee/wwc/publications_reviews.aspx.
- Burchard, M. (2014). An Analysis of evidence-based teaching practices from meta-analyses 2000 to 2014 for kindergarten through middle school. *Pennsylvania Teacher Educator*.
- Chang, M.-L., and Davis, H.A. (2009). Understanding the roles of teacher appraisals in shaping the dynamics of their relationships with students: Deconstructing teachers' judgments of disruptive behavior/students. In P. Schutz and M Zembylas (Eds.) *Advances in Teacher Emotion Research: The Impact of Teachers' Lives*. New York, Springer. 95-125.
- Council for Exceptional Children: Division for Learning Disabilities and Division for Research. (2000). The Alert Series What is It? *Current Practice Alerts, 1*, 1-4. Retrieved April 16, 2015 from <http://teachingld.org/alerts#the-alert-series>
- Dweck, C.S. (2000). *Self-theories: Their role in motivation, personality, and development*. Philadelphia: Psychology Press.
- Every Student Succeeds Act (ESSA) Act of 2015, Pub. L. No. 114-95, § 1177, Stat. 1802 (2016).
- Institute of Education Sciences. (2014). *What Works Clearinghouse Practice Guides*. Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieved from: <http://ies.ed.gov/ncee/wwc/publications/practiceguides/>.

Appendix A

Questionnaire about Evidence-Based Practices and Attribution

General Practices

Please check all of these evidence-based practices YOU CONSISTENTLY used in **general teaching practices** during the 2015-2016 academic year. Please, check all that apply.

- Graphic Organizer** (visually graphing relationships between concepts)
- Mnemonics** (includes first letter mnemonics, peg words, key words, songs, rhyming mnemonics, visual mnemonics, and motions-- any devices to support memory for any learning outcomes including vocabulary, lists, steps in a process, comprehension, etc.)
- Physical materials** students can manipulate (for any content other than math-- this includes anything as simple as little slips of paper or magnets)
- Critical thinking strategy specifically connected to content** (learning a specific method of critical thinking for that specific content. For young children this includes the scientific method in science. As children mature, this grows more specific such as reasoning with primary sources in history, or using a specific problem-solving strategy for a specific data type in computer programming.)
- Self-regulated learning** (students learning to self-monitor and regulate learning or behaviors using steps in a strategy or checklists or other means of self-regulation)
- Virtual reality game** (specifically games that allow a student to interact in a three-dimensional environment)
- None** from this list

Reading Practices

Please check all of these evidence-based practices YOU CONSISTENTLY used in **reading practices** during the 2015-2016 academic year. Please, check all that apply.

- Decoding** (emphasizing word sounding out and identification)
- Questioning strategies** (including questions about main ideas, details, deep questioning routines, etc.)
- Reading comprehension** (instruction or strategies to focus on comprehension)
- Small group reading instruction**
- Text enhancement strategies** (strategies to focus on using text features such as illustrations or bolded terms or headings or subheadings or explicit training in how to use a glossary or other supports)
- Using writing to develop reading** (such as journaling about reading)
- Vocabulary instruction** for reading (explicit instruction in specific vocabulary for reading-related outcomes)
- None** from this list

Writing Practices

Please check all of these evidence-based practices YOU CONSISTENTLY used in **writing practices** during the 2015-2016 academic year. Please, check all that apply.

- Creative imagery instruction** (explicitly teaching students visualization or imagining strategies)
- Peer assistance** (includes any structured intentional use of peers to assist peers)
- Process approach** (explicit process of brainstorming, drafting, revising, editing, to publishing-- for older students may include outlining, etc.)
- Self-Regulated Strategy Development** (explicit scripted strategy routine)
- Writing strategies** (Teaching any other writing strategies other than the process approach or Self-Regulated Strategy Development)
- Product goals** (having students plan outcomes for their writing)
- None** from this list

Math Practices

Please check all of these evidence-based practices YOU CONSISTENTLY used in **math practices** during the 2015-2016 academic year. Please, check all that apply.

- Heuristic math problem-solving** (requires discovery learning and following the trail of reasoning from students who reasoned differently through the challenge)
- Concrete math manipulatives** (using any physical materials students can move for any kind of math content or processes)
- Sequencing word problems to **highlight specific math features** of word problems (explicitly teaching patterns in wording of word problems matched to specific strategies)
- Word problem solving interventions** (any other specific strategies explicitly targeting how to solve word problems that is different from highlighting specific math features in the text)
- Verbalizing reasoning** (communicating math reasoning aloud)
- Visual representations** of math by the children (the children draw or otherwise visually represent their math reasoning, including use of hash marks)
- None** from this list

Special Education Practices

Please check all of these evidence-based practices YOU CONSISTENTLY used in **teaching children with disabilities** during the 2015-2016 academic year. Please, check all that apply. Formative evaluation (using ongoing assessment of student learning to guide instructional practices)

- Functional Behavior Assessment** (the process of examining components of behavior such as antecedents or triggers, setting demands, observable behavior, consequences, and functions of the behavior)
- direct instruction** (small d, small i, meaning explicit instruction as opposed to discovery learning)
- Direct Instruction** (capital D, capital I, meaning explicit instruction that follows a script for what the teacher says and does)
- Class-wide peer tutoring** (A structured system of pairs of tutors using stronger students in any specific content to tutor those needing help)

- Cognitive strategy instruction** (emphasizing strategies to develop thinking and steps to problem-solve)
- Fluency instruction** (focusing on reading with speed accuracy and expression)
- Phonics instruction** (focusing on letter-sound correspondences and their use in spelling and reading)
- Picture Exchange Communication System** (children pointing to or exchanging picture icons to express needs or wants or responding to such representations for receptive communication or visual scheduling)
- Video-based interventions** (videos typically demonstrating how to do something or how to socialize, similar to social stories or task analysis, but on video)
- Explicit instruction for secondary** (middle/high school) content learning outcomes (for students with disabilities or who struggle)
- Mnemonic strategies for secondary** (middle/ high school) content learning outcomes (for students with disabilities or who struggle)
- English interventions for secondary** (middle/ high school) content learning outcomes (for students with disabilities or who struggle)
- Interventions for students with disabilities for **high school content learning** outcomes
- Interventions for students with disabilities **taught by a special educator for secondary** (middle/high school) content learning outcomes
- Combined social studies and science** interventions for secondary (middle/ high school) content learning outcomes (for students with disabilities or who struggle)
- Classroom learning strategies for secondary** (high school) content learning outcomes (for students with disabilities or who struggle)
- Social studies interventions for secondary** (middle/ high school) content learning outcomes (for students with disabilities or who struggle)
- Interventions for students with disabilities in the **special education setting for secondary** (middle/high school) content learning outcomes
- Interventions for students with disabilities for **middle school content** learning outcomes
- Spatial or **Graphic Organizers for secondary** (middle/ high school) content learning outcomes (for students with disabilities or who struggle)
- Study aids for secondary** (middle/ high school) content learning outcomes (for students with disabilities or who struggle)
- Science interventions for secondary** (middle/ high school) content learning outcomes (for students with disabilities or who struggle)
- Peer Mediation for secondary** (middle/high school) content learning outcomes (for students with disabilities or who struggle)
- Interventions for students with disabilities in the **general education setting for secondary** (middle/high school) content learning outcomes
- None** from this list

ESL Practices

Please check all of these teaching practices YOU CONSISTENTLY used in **teaching English language learners** (*i.e. your instruction was NOT the same as for native English speakers*) during the 2015-2016 academic year. Please, check all that apply.

- Vocabulary instruction** (focusing on one set of academic vocabulary words intensively across several days using a variety of instructional strategies).
- Integrate oral and written English Language instruction** into content area teaching.
- Provide regular **structured opportunities to develop written language** skills
- Provide **small group instructional interventions** for ELLs struggling in literacy and English language development
- None** from this list

What data did you gather to assess achievement of your Student Learning Objective?

Were you satisfied with the outcome of your Student Learning Objective?

- Yes, fully satisfied
- Yes, mostly satisfied
- No, not satisfied

Please rate the importance of each factor in achieving any satisfaction with the outcome of your Student Learning Objective:

	not important	minimally important	important	very important
students' prior knowledge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
my own prior knowledge or skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
my own teaching actions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
students' motivation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
my own motivation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
unanticipated events	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
support in the building or district	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please rate the importance of each factor in any dissatisfaction with the outcome of your Student Learning Objective:

	not important	minimally important	important	very important
students' lack of prior knowledge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
gaps in my own prior knowledge or skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
my own teaching actions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
students' lack of motivation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
my own limited motivation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
unanticipated events	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
limited support in the building or district	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>