

# Teaching Students with Disabilities



# Teaching Students with Disabilities:

*Best Practices for Student  
Success*

Edited by

Jeffrey P. Bakken

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Teaching Students with Disabilities: Best Practices for Student Success

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# CHAPTER 1

## TEACHING STUDENTS WITH DISABILITIES: WHAT DETERMINES BEST PRACTICE?

JEFFREY P. BAKKEN

### **Abstract**

This chapter is the introductory chapter for this book on best practices for students with disabilities. The chapter begins by discussing the importance of implementing best practices and how this is done using the daily lesson plan components when presenting the lesson to be instructed. Next, the importance of using corrective feedback with students is detailed. This is followed by a discussion on high leverage practices and the importance of considering these when we work with students with disabilities. After this, research in special education is highlighted and the process the field went through to get information about best practices/effective interventions is described. Finally, evidence-based practices are described and the support of these practices being implemented by special education teachers is the focus of this discussion.

**Keywords:** Daily lesson plan components, corrective feedback, high leverage practices, research in special education, evidence-based practices

### **Introduction**

Teaching students with disabilities can be a complex task. They often do not learn the same as students without disabilities. Teachers need to have a portfolio of teaching strategies in order to meet the demand of teaching these students. Strategies, however, can have various outcomes depending on the age of the student, type of disability the student is encountering, and the intensity of the disability. It is crucial that teachers understand and implement best practices to their students that will have the most impact on their educational success. More than anything else, improving educational

outcomes for students who struggle in school depends on providing teachers who can deliver effective instructional practices (Ball & Forzani, 2011). As teachers of students with disabilities, one of our chief responsibilities is to promote student achievement.

## Presenting the Lesson

Before we address specific strategies, one must address the specifics of actually teaching a lesson. The act of teaching students with disabilities is fundamental to their learning of material. Teachers typically present concepts in small, easily understood chunks, but proceed at a rapid enough rate so that students are not bored. For new teachers this must be learned (i.e., learning what to teach, how to teach it, and at what rate to progress). Each concept logically follows from the preceding one so that students can follow along with instruction from the teacher. At intervals, the instructor checks for understanding through questioning or small group or individual work to ensure that no one is lost. The presentation is peppered with enthusiasm and appropriate language and the teacher not only shows the students examples of what is being taught (i.e., like a math problem) so they can see what is required, but the teacher also verbally talks through the steps of the strategy so the students can hear the important steps of the process. This is critical that the student can see and hear what is going on with the instruction. Master teachers also demonstrate metacognitive strategies, such as mnemonics or comprehension monitoring, to aid the recall of their students. Next, a sequence of stages of an instructional lesson will be provided.

## Introducing the Lesson

This section includes behaviors that set the stage for learning. The teacher identifies key concepts that are to be learned in the lesson, alerting students to what is important and how those concepts relate to previous learning. No matter the subject area or the strategy being implemented this process is critical and foundational in order for students with disabilities to learn. This is one way a teacher can be effective using the daily lesson plan components (Bakken, 1998) which are comprised of five different steps.

**Daily review.** The first step is the daily review. This is the beginning of the lesson and is a review of information that was instructed the previous day. This is a check for student understanding of what was previously taught to them. It could consist of a short quiz, problems done at the board, or some



other form of review. It is critical to check that all students understand the concepts that were previously taught. If students do not do well it may indicate that reteaching the concept may be needed. If students do well on the content, then the teacher may move forward with the next lesson.

***Presentation of new (old) material.*** This is the second step of the daily lesson plan. The presentation of material for the lesson. If the daily review goes well the next lesson of new material can be taught. If the daily review goes poorly, then reteaching of the previous concepts may be warranted. It will not be beneficial to students to teach new material if they haven't mastered what was already taught. This is especially true in mathematics where lessons often build off each other as they are hierarchical in order. The teacher should present the new material to the students incorporating teacher modeling and talking through the steps that are needed for this skill or concept to be taught. The teacher should provide a number of examples to the students where they see what is required of them and also hear the process the teacher is going through to solve the problem. After sufficient instruction with examples provided to the students, where they can see and hear what is required, the teacher may move forward to the next step in the daily lesson plan.

***Guided practice.*** This is the third step of the daily lesson plan. Guided practice is where the students do some task together with teacher guidance to check and see if they comprehend what was taught. This is where the teacher checks for understanding before they move to the next step. It could be small group work, paired work, or individual student work. In math, the teacher might give the students a problem that they need to solve. After a short time, the teacher would ask the students for an answer. After a student responds with an answer the teacher could then ask the class who agrees with that answer by having the students raise their hand. The teacher can scan the class and see who agrees or disagrees and get an idea of student understanding. After a number of problems, the teacher can then assess if the class understands what was taught. If students are appearing to have some issues, reteaching can occur. If most of the students understand what was taught they can proceed to independent practice and those who are still having trouble can be instructed in a small group from the teacher. For this activity the teacher needs to be aware that there can be a difference between small group and individual work. For individual work, everyone has to come up with their own answer. For small group work, the group has an overall answer and everyone in the group may have not come up with the correct answer. If the small group work is not structured and monitored correctly, the teacher might assume all students know the information when

in reality everyone in the small groups do not know how to complete the task. Teachers need to be mindful of this when they develop guided practice activities.

***Independent practice.*** This is the fourth step of the daily lesson plan. Independent practice is where the students complete something independently to show that they know and understand the concept. In math, they may have a worksheet with different types of problems that they need to solve. These problems should be based on what the teacher instructed that day. It could also be a review of a couple of days of instructional work the students' have encountered. Students could also do something that is on a computer, laptop, or iPad. No matter what the format is, this step is very important to give the teacher feedback on student understanding.

***Formative evaluation.*** This is the fifth and final step of the daily lesson plan. Formative evaluation is the last step and an important step in this process. This is where the teacher evaluates the independent practice for understanding. It can be graded or not graded, but the key aspect is the teacher is evaluating if students in the class have understood what has been taught. Typically, a score above 80% for all students is what is suggested. If the teacher can collect this at the end of class, then they can look it over that night and it will help them prepare for the next day's lesson.

Understanding the importance of these daily lesson plan components will supply the teacher structure to follow when teaching basic or complex skills and information. Following this format daily will also help students with disabilities as the format of the delivery of information will be consistent from day to day. Knowing this, students can concentrate on the information to be learned versus trying to understand the format and not knowing what to expect from day to day.

## **Corrective Feedback**

This is not a part of the daily lesson plan components, but must also be considered by the teacher and is critical to the success of students. Corrective feedback is a form of performance feedback used to improve student achievement. Teachers provide feedback to students to reinforce expectations and to correct student errors during lessons. Feedback is often noted as the single most powerful tool available for improving student performance. Classroom teachers use corrective feedback as a teaching technique every day. The feedback may be as simple as giving praise, returning assignments the next day, immediately correcting student

misconceptions, or as a component of active student responding. What must be noted is that corrective feedback can be in the form of positive or negative statements. How the teacher is responding and interacting with students is critical to their success. The tone, style, and directness of the teacher's voice can have an impact on the students. For example, if a student gets a problem wrong the teacher may respond with "well, you made a good attempt at this problem with great effort, but it is not exactly right. You did the first two steps correctly, but then there is an error. Let's look at where your error occurred and what you could have done differently." Here the student answered incorrectly, but the teacher still had a positive response to the student. For the same example a teacher could respond with "That is wrong. Who has the correct answer?" This is a negative response and now there is a good chance the students will not respond in the future because they do not want to get called out in front of their peers. They also might not be an active participant in the future and we know learners that are active fair far better than inactive learners. So, the implementation of corrective feedback by teachers to students is very important in the teaching process in order for students with disabilities to learn.

## High Leverage Practices

What strategies or practices should be implemented in the classroom to benefit the learning of students with disabilities? How do teachers decide which strategy or practice might be most effective? One of the biggest issues in the field of special education is the significant gap between research that documents the effectiveness of practices or interventions and the actual instruction that occurs in typical classrooms by classroom teachers (Carnine, 1997; Cook & Schirmer, 2006). Interventions with research supporting their effectiveness to positively impact student performance for some reason are not being implemented commonly by teachers in classrooms.

In partnership with the CEEDAR Center, the Council for Exceptional Children has developed and published a set of high leverage practices (HLPs) for special education teachers and teacher education candidates. The HLPs are organized around four aspects of practice that include: a.) collaboration, b.) assessment, c.) social/emotional/behavioral, and d.) instruction. These aspects are very important to teachers of students with disabilities.

"From these four aspects of practice, there are 22 practices intended to address the most critical practices that every K–12 special education teacher should master and be able to demonstrate. The selected practices are used

frequently in classrooms and have been shown to improve student outcomes if successfully implemented” (<https://highleveragepractices.org/about-hlps>).

HLPs are a relatively basic concept in the field of education. HLPs are a list of key practices that all teachers should learn and be able to implement when teaching students of all backgrounds and ability levels, including those with disabilities. It will not only benefit the teacher by being consistent with all students in all of their classes, but it will also be beneficial for all of their students, especially those with disabilities. Teaching, of course, is one of the most difficult professions as students are now more diverse in their learning needs than ever before. HLPs can help teachers create a supportive classroom environment with positive academic, behavioral, and social outcomes for all students.

HLP practices are the fundamentals of teaching and should be incorporated in to teachers’ repertoire of teaching skills. These practices are used constantly and consistently and are critical to helping students learn important content. The HLPs are also essential in order to support students’ social and emotional development. These HLPs can be used across subject areas, grade levels, and contexts in all types of environments. These practices will not only make teachers better, but they will help students learn the material that is being instructed to them. See Table 1 for a list of HLP categories and elements of each category.

**Table 1.** High-Leverage Practices for K–12 Special Education Teachers

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### *Collaboration*

1. Collaborate with other professionals to improve student success in the classroom.
2. Organize, facilitate, and schedule effective meetings with other professionals and families.
3. Collaborate with families and secure needed services to support student learning.

### *Assessment*

4. Use multiple sources of assessment information to develop a comprehensive understanding of a student’s strengths and needs.
5. Interpret and communicate assessment information with stakeholders to collaboratively design and implement educational programs and lessons.

6. Use student classroom assessment data, analyze instructional practices, and make necessary adjustments that improve student outcomes in the classroom.

### *Social/emotional/behavioral*

7. Establish a consistent, organized, and respectful learning environment for the students.
8. Provide positive and constructive feedback to guide students' learning and behavior (behavior focus) in the classroom.
9. Teach social behaviors to students with disabilities.
10. Conduct functional behavioral assessments to understand why the behavior is occurring and to develop individual student behavior support plans.

### *Instruction*

11. Identify and prioritize long- and short-term learning goals.
12. Systematically review and design instruction toward a specific learning goal.
13. Adapt curriculum tasks and materials for specific learning goals.
14. Teach cognitive and metacognitive strategies to support learning and independence.
15. Provide scaffolded supports for students with disabilities.
16. Use explicit instruction for students with disabilities.
17. Use flexible grouping for students with disabilities.
18. Use strategies to promote active student engagement in the classroom.
19. Use assistive and instructional technologies to aid learning tasks.
20. Teach students to maintain and generalize strategies across different content areas and in different classrooms.
21. Provide intensive instruction for students with disabilities.
22. Provide positive and constructive feedback to help guide students' learning and behavior.

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*Note: This information is adapted from <https://highleveragepractices.org>*

## **Research in Special Education**

There is a disconnect between research that is found to be effective and what teachers are doing in their classrooms. Why is this the case? One thing is for sure; the field of special education has worked diligently implementing

research to develop interventions that are effective or best practices. This next section will outline the field of special education and the research that has been implemented to get us to the point of research that focuses on best practice. Over the years, research in special education has been very important to advancing the field. Many different individuals were involved in order to make this happen and to continue advancing the knowledge about special education and students with disabilities. At first, the research helped document deficiencies of students with disabilities. Research then focused on investigating the impact and effectiveness of strategies for students with disabilities in controlled settings. Next, the focus moved towards investigating strategies for students with disabilities in classroom-based settings. Research then began to investigate the effectiveness of different strategies for students with disabilities to see which was most effective in different environments with different types of students. Finally, some researchers began to summarize research of the topic related strategies (i.e., reading comprehension for students with learning disabilities) to inquire which strategies were documented to be the most effective for certain populations. This research will be discussed next.

### ***Characteristics Research***

Characteristics research investigated students with disabilities to document deficiencies of this specific population. The goal was to document and differentiate the learning behavior of students with disabilities as compared to their peers that did not have a disability. For example, Bos and Filip (1984) investigated the comprehension monitoring skills of students with learning disabilities compared to average seventh-grade students. Students were required to read expository passages with text inconsistencies under a standard condition and a cued condition (i.e., where students were cued to look for text inconsistencies). Results indicated that the students without the disabilities spontaneously activated comprehension monitoring strategies in which they figured out there were text inconsistencies regardless of the condition. Students with learning disabilities, however, only activated these strategies when they were cued to do so. This study supported the fact that students with learning disabilities were inactive learners. This study was very important to the field as it showed that this population would not activate strategies to be successful, thus they would need to be taught strategies in different areas to be successful. This study and others like it paved the way for the need and the importance of research on interventions for students with disabilities.

### ***Intervention Research***

Intervention research focused on teaching students with disabilities interventions knowing that students do not spontaneously implement them on their own when needed. The focus of this research was trying to answer the question: what would be the outcome if interventions were implemented with students with disabilities? Scruggs and Mastropieri (1986) investigated the use of mnemonic strategies with students who had mental disabilities. This strategy transforms stimuli into a more meaningful representation to enhance its recall. They wanted to know if mnemonic strategies could be implemented with this population to help them learn. They reviewed several applications of mnemonic strategies with students with learning difficulties. They used mnemonic pictures (pictures and words) to teach native-language vocabulary, numbered or ordered information, and digit series. Results indicated that these findings suggested that mnemonic strategies have a great potential in enhancing the learning for these individuals. This research was important in that it showed that students with disabilities could be taught interventions to improve their learning on academic material. This research and other intervention research paved the way for other researchers to investigate the use and implementation of other strategies with other students with disabilities.

### ***Interventions for Different Types of Students***

Could interventions be appropriate for students with different types of disabilities? This research investigated if certain interventions worked with students with different types of disabilities or on different levels of a disability. Sinatra and Venezia (1986) investigated implementing a strategy with 70 adolescents attending a special education secondary school and categorized into three intelligent quotient (IQ) groupings. Students either had an IQ greater than 90 (and were identified as learning disabled), an IQ from 70 to 89 or an IQ less than 70. All students participated in a visual literacy approach to writing and reading development. Dependent measures included narrative and descriptive writing samples and the *Metropolitan Achievement Test* where reading comprehension scores were obtained at the beginning and end of the school year. Results indicated that students with an IQ greater than 90 significantly improved in reading comprehension and in narrative and descriptive writing ( $p < .01$ ). Students with an IQ of 70-89 also performed significantly better ( $p < .01$ ) on both post-test narrative and descriptive writing, but pre- to post-treatment differences in reading comprehension did not reach significance ( $p > .05$ ). Students with an IQ of

less than 70 scored at significantly higher level ( $p < .05$ ) on post-test narrative compositions transcribed verbatim by their teachers. Gender had no impact on the results. This study verified that interventions could be effective on different levels for different types of students with disabilities. Research investigating the use of interventions with different types of students with disabilities is very important to our field because it shows that interventions are not necessarily specific to certain types of disabilities.

### ***Intervention vs. Typical Classroom Engagement***

Research over time showed the field that interventions could be effective at improving learning for students with disabilities. Most of this research, however, was not conducted in a natural setting – a classroom. Often times these studies were conducted in a laboratory setting, a university setting or someplace other than a school. This was the next step in the research process -- could these research-based interventions be taught in a classroom? Mastropieri, et al. (1992) taught 19 students with learning disabilities (mean age 14 years 3 months old) from two self-contained classrooms and one resource program in an inner-city school. These students were taught the states and capitals of the 50 United States. This research implemented a counterbalanced design across classrooms over five weeks where each student participated in both conditions of treatment. Students were taught either a complex mnemonic strategy or a more traditional procedure. Students had to recall the state name when given the capital or the capital name when given the state name. Students scored higher on items taught mnemonically than on items taught traditionally. Of importance was that students in the mnemonic condition maintained an advantage whether the information was provided forward (capital) or backward (state). Students also maintained their recall on a delayed test. Finding out if interventions were effective in classrooms was very important to the field and led the way to many more research-based studies investigating the implementation of strategies to increase the academic performance of students with disabilities.

### ***Intervention vs. Intervention***

The next step in the research process was to compare interventions with the same population to see which, if any, was more effective. This research was important to the field for a variety of reasons, but mainly to help narrow down the most effective strategies to teach certain types of content to students with disabilities. Bakken, et al., (1997) compared the effects of comprehension-fostering strategies on science and social studies texts with



54 eighth-grade students with learning disabilities who were randomly assigned to one of three conditions: (a) text-structure-based strategy condition, (b) paragraph restatement strategy condition, or (c) a traditional instruction condition. In the text-structure-based condition, students were taught to identify three types of passages (main idea, list, and order) and to apply passage-type specific reading strategies. In the paragraph restatement condition, students were taught to apply a paragraph restatement strategy to all three types of passages. In the traditional instruction condition, students were taught to read passages, answer comprehension questions, and review responses which might normally happen in a typical classroom. After instruction, students read and studied unfamiliar science and social studies passages and were given immediate, delayed, and transfer tests. Results indicated that text-structure-based reading strategies had a significant effect on (a) recall of central and incidental information over traditional instruction on immediate, delayed, and transfer tests; and (b) recall of central, but not incidental, information over the paragraph restatement strategy on all measures. Moreover, the paragraph restatement condition statistically outperformed the traditional instruction condition on all measures. Regardless of instructional condition, all students reported that the strategies were beneficial and that others should learn these strategies. Findings indicated that eighth-grade students with learning disabilities can learn, apply, and transfer complex text-structure-based strategies. And although the text-based strategies were the most effective, the paragraph restatement strategies also improved comprehension of expository text.

### ***Reviews of Research***

The last research area to be discussed include reviews of research. The focus of this research is to review research in a specific area with a specific population to summarize not only what has been done and with who, but also to compare the results of the individual studies. Two examples of this type of research are studies done by Mastropieri, et al. (1991) and Mastropieri et al. (1996). Mastropieri et al. (1991) reviewed the published intervention research in mathematics with subjects classified as mentally retarded. Twenty-five studies were located, reviewed and synthesized. Research was conducted in three major areas: basic skills and concepts; rule learning and problem-solving; and applications, including use of time, money, and measurement skills. Results of this study were discussed in relationship to instructional practices that have associated efficacy data, as well as to future research issues. In the study by Mastropieri et al. (1996) the best practices for facilitating reading comprehension for students with

learning disabilities are described and summarized. These best practices were derived from the results of an extensive literature review of research in reading comprehension with students with learning disabilities. An analysis of all relevant literature revealed consistently high effects for some reading comprehension strategies. Studies that implemented teacher-led questioning and self-questioning strategies had the strongest outcomes. These were followed by text enhancement strategies, and, finally, strategies involving basic skills instruction and reinforcement. The review of specific areas of research in special education has been very important to our field.

### **Evidence-based Practices**

The term *evidence-based practice* (EBP) (Odom et al., 2005) has been developed to refer to practices or strategies that have been shown to be supported by credible research. Qualitative and correlational studies provide important insights into teaching and learning, but they cannot determine whether a practice is evidence based or not, that is, whether a practice or strategy causes a desired change in student learning or outcomes. Teachers should be using strategies in their classrooms that are supported by research. At the most basic level, teachers must choose to devote their time and energies to implement EBPs for students with disabilities (Cook, Tankersley, & Harjusola-Webb, 2008) to increase student learning. Special educators recognize that students with disabilities have unique learning needs and understand that no single approach, regardless of the evidence base supporting it, works for all children (Cook, Tankersley, & Harjusola-Webb, 2008) so they must have a repertoire of teaching strategies to meet the unique characteristics of all students.

Using educational practices that have been shown to improve students' learning and behavior outcomes through reliable, trustworthy research seems to be both an essential and important goal for the field of special education (Cook, Tankersley, & Harjusola-Webb, 2008). EBPs are instructional techniques with meaningful research supporting their effectiveness that represent critical tools in bridging the research-to-practice gap and improving student outcomes (e.g., Cook, Smith, & Tankersley, 2011; Slavin, 2002). EBPs are supported by research through many different research studies that provide data indicating that they are effective. Evidence-based practices are instructional techniques or strategies that show (through extensive research support) they are very likely to improve student learning and outcomes in the classroom. Evidence-based practices are typically supported by research findings of multiple, high-quality,

experimental research studies, possibly with different types of students with disabilities and with different ages of students.

Effective teaching in special education requires an awareness of the research evidence but also the application of knowledge acquired through being a teacher for a number of years. This accumulated knowledge is gained largely through teaching experience (i.e., professional wisdom) (Cook, Tankersley, & Harjusola-Webb, 2008). One of the guiding factors of special education is that instructional decisions are based on the individual needs of the learner and what they should be taught to be a successful learner. Students with disabilities can be a very diverse group of learners, and no single instructional approach, even an evidence-based one, will meet all of their needs all of the time. To meet the needs of this diverse group of students in their classrooms, special educators cannot decide to simply follow a list of EBPs that has been provided to them. Rather, they must exercise their professional knowledge and wisdom to (a) carefully select EBPs to implement to their students, and (b) with the selected EBPs, be able to adapt and/or modify them to meet the individual needs and goals of specific students with disabilities in their classroom (Cook, Tankersley, & Harjusola-Webb, 2008). Similarly, Speece, MacDonald, Kilsheimer, and Krist (1997) noted, "We learned that the path from research to practice is not direct and that application requires fitting research-based techniques to the local situation" (p. 186).

Teachers will have to use their own professional knowledge related to their students' needs and goals, their own teaching expertise which includes strengths and weaknesses, and the teaching environment they are in to decide which EBPs to choose and implement and how to adapt or modify EBPs to maximize their effectiveness (Cook, Tankersley, & Harjusola-Webb, 2008). Although there is a high likelihood that EBPs will be effective with students with disabilities, some effective interventions supported by research do not work for everyone and not all students will necessarily respond to any single intervention (Landrum & Tankersley, 2004). Regardless of the instructional method being used by the teacher, they will have to make a multitude of decisions regarding their interactions with students with disabilities and the delivery of instruction they have chosen. How a teacher chooses to instruct their students can often be the difference between having an effective lesson and one that falls short and does not benefit students in the classroom. The literature on effective teaching focuses on a number of techniques teachers implemented with students that resulted in high academic outcomes. Teachers whose students perform well academically typically follow a very common theme. These

teachers tend to pace instruction appropriately, emphasize academic instruction, preview instruction and review previous instruction, monitor student performance, circulate around and scan the instructional environment, recognize appropriate behavior, exhibit enthusiasm, observe behaviors in the classroom (how are students responding), and use wait time after questions (Brophy & Good, 1986; Doyle, 1986). This ties in nicely with the daily lesson plan components that were previously mentioned in this chapter. The art of teaching then, is composed of the teacher being able to choose effective teaching techniques and the ability to instruct, monitor the effectiveness of learning, and adjust teaching strategies for students with disabilities in their classrooms.

Concluding that a practice is evidence based requires that the research studies supporting it not only exhibit experimental control but also are of sufficiently high quality for the results to be trustworthy. Educational research does not provide absolute proof that an intervention is effective all of the time or with all kinds of students with disabilities. Instead, the findings of an experimental study can either add support or weaken the assumption that an intervention causes meaningful changes in student learning and outcomes. The more high-quality experimental research studies that support a practice, the greater the confidence one has that it caused the desired changes in student learning and outcomes. Gersten et al. (2005) suggested that for a practice to be considered evidence based a total of two high-quality group experimental studies need to support this intervention. In regards to single subject research, Horner et al. (2005) recommended that for a practice to be considered evidence based the technique must be supported by a minimum of five high-quality single-subject studies that (a) were conducted by at least three different researchers in at least three different settings, and (b) included a total of at least 20 participants. The essential steps in determining whether a practice is evidence based seem to be (a) locating the high-quality, experimental research that examines the effectiveness of the practice or strategy and then (b) determining whether there is a sufficient quantity of evidence showing that the practice or strategy causes improved learning and outcomes for students.

We know that EBPs are important and that the best interventions need to be implemented that represent the best practices in the field. See Table 2 for a summary of some issues related to evidence-based practices in special education.

**Table 2.** Summary of Issues Related to Evidence-Based Practices in Special Education

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An evidence-based practice in special education is an instructional strategy or technique supported by a body of trustworthy research demonstrating that the practice is very likely to meaningfully improve learning and outcomes for students with disabilities.

1. Special education does not have a list of recognized evidence-based practices, even though the Council for Exceptional Children is currently working on identifying EBPs.
2. The type, quality, and quantity of research supporting a practice are considered when determining whether a practice is evidence based and it varies based on the type of research study that was implemented.
3. Experimental studies (i.e., group experiments, quasi experiments, and single-subject research) that demonstrate experimental control yield the most conclusive findings related to whether a practice causes desired changes in student learning and outcomes.
4. Multiple high-quality, experimental studies are needed to conclude that a practice is evidence based.
5. Evidence-based practices are not guaranteed to work for every student with disabilities and in every setting.
6. Teachers will not be mandated to only use evidence-based practices, but they should prioritize evidence-based practices to maximize student learning and outcomes.
7. Professional development and training might be needed in order for teachers to adopt and implement evidence-based practices in their classrooms.

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*Note: This information is adapted from Cook et al., 2008.*

## Conclusion

This chapter began by discussing the importance of implementing best practices and how this is done using the daily lesson plan components when presenting the lesson to be instructed. Next, the importance of using corrective feedback with students was detailed and the importance of incorporating this into instruction to benefit students with disabilities is highlighted. This is followed by a discussion on high leverage practices and the importance of considering these when we work with students with disabilities. Research in

special education is highlighted next and the process the field went through to get information about best practices/effective interventions is described using previous research studies as examples for the research that has been implemented. Finally, evidence-based practices are described and the support of these practices being implemented by special education teachers is detailed. It is the hope of this author that this chapter sets the foundation for this book and that this book provides detailed information about best practices in special education across the different disability types from students with high incidence disabilities to those with low incidence disabilities as well as chapters that focus on specific academic content and other professionals that work with students with disabilities.

## References

- Bakken, J. P. (1998). Powerful yet simple: Being an effective teacher using the daily lesson plan. *Quality in Higher Education*, 7 (5), 1-2.
- Bakken, J. P., Mastropieri, M. A., & Scruggs, T.E. (1997). Reading comprehension of expository science material and students with learning disabilities: A comparison of strategies. *The Journal of Special Education*, 31 (3), 300-324.
- Ball, D. L., & Forzani, F. (2011). Building a common core for learning to teach: And connecting professional learning to practice. *American Educator*, 35, 17–21, 38–39.
- Bos, C. S., & Filip, D. (1984). Comprehension monitoring in learning disabled and average students. *Journal of Learning Disabilities*, 17(4), 229–233. <https://doi.org/10.1177/002221948401700409>
- Brophy, J., & Good, T. L. (1986). Teacher behavior and student achievement. In M. C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed., pp. 328–375). New York: Macmillan.
- Carnine, D. (1997). Bridging the research-to-practice gap. *Exceptional Children*, 63, 513–521.
- Cook, B. G., & Schirmer, B. R. (Eds.). (2006). *What is special about special education: The role of evidence-based practices*. Austin, TX: PRO-ED.
- Cook, B. G., Smith, G. J., & Tankersley, M. (2011). Evidence-based practices in education. In S. Graham, T. Urban, & K. Harris (Eds.), *APA educational psychology handbook* (Vol. 3). Washington, DC: American Psychological Association.
- Cook, B. G., Tankersley, M., & Harjusola-Webb, S. (2008). Evidence-based special education and professional wisdom: Putting it all together. *Intervention in School and Clinic*, 44(2), 105-111.