



# Graphic Organizers

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ship in helping children organize information despite “ability level” or developmental understanding. Further analyzed are ways specific academic skills are impacted through the use of Graphic Organizers in accordance with learning styles and age related behavioral processes. Also presented are implications for classrooms and applications that include roles and impacts on certain groups including students, teachers, and administrators. Solutions are offered to help professionals develop the most effective programs through consistent, research based methodologies and philosophies.

## [Overview](#)

Graphic organizers serve as a visual framework (Ausubel, 1960) that offers teachers and students multiple and differentiated opportunities to utilize a tool to develop concepts, organize language, and better understand subjects, in order to apply information to achieve a variety of purposes and outcomes. Graphic organizers, or concept maps (Novak & Gowin 1984), help students sort, simplify, show relationships, make meaning, and manage data quickly and easily (Crawford & Carnine, 2000). Bromley, Irwin-DeVitis, and Modlo (1995) defined graphic organizers as a visual representation(s) of knowledge. Organizing information graphically allows students to structure information or arrange aspects of a concept or a topic into a pattern using labels (p. 6). Essentially and meaningfully, graphic organizers enable students to sort data, illustrate relationships, make meaning, and manage data quickly and easily before, during, and after reading and during classroom or group discussions. Graphic organizers are useful for reading difficult material, accentuating information, honoring cultural diversity, meeting needs of special populations, and supporting language learning. In addition to facilitating understanding for multiple subjects, graphic organizers help students with learning disabilities or academic deficits make sense of information in multiple disciplines.

Graphic organizers are useful for multiple reasons. First, the reality of public education classrooms is that learning needs for all students spans a wide-ranging spectrum. Second, to educate all students in the least restrictive environment typically mandates that both special education students and general education

## [Abstract](#)

An overview of Graphic Organizers and their role and impacts on student learning in public school education environments is presented. Also presented is a brief overview of the current research pertaining to Graphic Organizers, their role in helping children analyze and synthesize information, and their relation-

## Keywords

Concept Map

Differentiated Instruction

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Meaningful Verbal Learning

Semantic Map

students will be educated in a general education classroom. Third, the mandate for least restrictive environment results in the expectation that all students will learn the same curricular content (Baxendell, 2003, p. 46). As a result, teachers are often called upon to decide specific instructional tools for use with all students. Based on present research, teachers have access to multiple research-based techniques, strategies, and devices that allow them to meet their students' varying needs (Fisher & Schumaker, 1995). Choosing optimal instructional devices for students with special needs can be difficult, because students with special needs may experience difficulty understanding, organizing, or recalling important facts or details or discipline content (Fountas & Pinnell, 2001).

Graphic organizers are a specific instructional organizational tool available to teachers that are commonly utilized in many classrooms (Egan, 1999). Instructional researchers that formulated the use of graphic organizers recommend key principles in designing effective graphic organizers which include coherence, consistency, and creativity (Baxendell, 2003, p. 46). A wealth of research can be accessed that describes the benefit and positive impact that graphic organizers have on students' ability to comprehend and organize information in multiple subject areas including, but not limited to, reading, science, social studies, and math.

## Applications

### Graphic Organizers & Reading

In order for students to learn to read effectively, students must be able to generate meaning from the text or comprehend their reading (Duke & Pearson, 2002; Pressley, 2000). Learning to read can be a daunting task for many children, especially those with disabilities (LD, Bryant, Vaughn, Linan-Thompson, Ugel, & Hamff, 2000; Gersten, Fuchs, Williams, & Baker, 2001). The most successful reading teachers are those that understand that reading can be a complex and difficult process (Vaughn & Edmonds, 2006, p. 131). Graphic organizers have been recommended as helpful instruments for teaching students to read.

Graphic organizers "can include such practices as semantic mapping, semantic feature analysis, cognitive maps, story maps, advanced organizers, visual and spatial displays, and Venn diagrams. As a result of these organizers, students can connect

ideas and concepts and improve their text comprehension" (Vaughn & Edmonds, 2006, p. 134). Mounting evidence indicates individuals with learning disabilities can dramatically benefit from graphic organizers utilized to facilitate comprehension of expository text (Kim, Vaughn, Wanzek, & Wei, 2004). The most effective graphic organizers that can be used to help children improve reading comprehension are those graphic organizers that relate to the instructional text or the unit that is being taught (Vaughn & Edmonds, 2006, p. 135). A semantic map can be used to provide "an overview of key vocabulary and concepts" (p. 135). A concept map can be "used to extend understanding of central ideas by determining how they are defined and their characteristics" (Vaughn & Edmonds, 2006, p. 135). Graphic organizers can be used to facilitate learning for other subjects, as well.

### Graphic Organizers & Science

No Child Left Behind (NCLB) has required that "students with disabilities must be assessed in science once during each grade span (3 - 5, 6 - 9, and 10 - 12), along with all other general education students starting with the 2007 - 2008 school year. While appropriate testing accommodations must be offered, research indicates that instructional issues play a vital role in helping students with disabilities learn" ("Science for Students," 2007, p. 65). For students with disabilities, multiple issues with organization, memory, reading, and writing makes information difficult to grasp and retaining complex material a challenge. According to ERIC (2003), in order to teach students with disabilities, students may need modifications such as "advance and graphic organizers, instructional scaffolding, additional practice and time to complete assignments, and /or alternative media (e.g., large-print materials, audiotapes, or electronic materials)" ("Science for Students," 2007, p. 65). Along with science, graphic organizers also improve understanding in social studies.

### Graphic Organizers & Social Studies

Specific types of graphic organizers empower social studies teachers and students to control a large amount of reading, manage a multitude of ideas, and consider various perspectives associated with learning social studies, especially citizenship and government, economics, geography, and history (Flood & Lapp, 1988). Graphic organizers provide practical classroom tools that immediately engage students and connect them with content and processes while working independently, with partners, in small groups, or as a whole class (Hew et al. 2004). Teachers or students can create graphic organizers as tools to process or integrate into the product; they can be created on paper, on a board, or with computer software. According to researchers, students using graphic organizers are more motivated, demonstrate more efficient short-term recall, and demonstrate more significant long-term achievement when organizers are used effectively in social studies. It can be argued that graphic organizers empower students to take responsibility for their own learning, facilitate and personalize meaning, share information with others, and make group presentations (MacKinnon & Deppell, 2005). From the research, graphic

organizers can be used in social studies in three different ways.

First, graphic organizers can be used before reading and discussion as a way to pre-assess knowledge, introduce or preview a new topic, brainstorm ideas, and motivate student interest. Second, graphic organizers can be utilized during reading and discussion to provide an instrument for note taking, retaining information, checking progress, extending learned information, evaluating learned information, and renewing interest. Third, graphic organizers can be used after reading and discussion to review, reinforce, or assess learning, establish the foundation for future projects and activities, and serve as an evaluation tool (Vacca & Vacca, 2001). Graphic organizers offer teachers and students opportunities to recognize what is known, dispel misinformation and misconceptions, brainstorm new possibilities, predict outcomes, process information, share ideas, and see their outcomes in simple and easy-to-recall representations (Keppell, 2001).

### Graphic Organizers & Math

Mathematics literature content is difficult material for students to read. There are “more concepts per word, per sentence, and per paragraph than in any other subject” (Brennan & Dunlap, 1985, Culyer, 1988; Thomas, 1988). One strategy that is useful for teaching problem solving in mathematics is the use of graphic organizers (Clarke, 1991; Flood, Lapp, & Farnan, 1986; Piccolo, 1987). This strategy for teaching mathematics involves five steps. First, the student must restate the problem question. Second, the student must decide which information is necessary for solving the problem. Third, the student can utilize the graphic organizer to determine what information is necessary for solving the problem. Fourth, the student performs the calculations necessary for solving the problem. Finally, the graphic organizer leads the student through a holistic overview of the problem-solving process. During this step, the student determines whether the computed answer is reasonable. In order to make this determination, the student must review the previous steps in the graphic organizer and compares the data and the solution (Braselton & Decker, 1994, p. 276). After engaging in independent practice with the graphic organizer, results demonstrated that students of all ability showed a marked improvement in problem solving (p. 278). The strength of the graphic organizer is the integration of both language and math skills that produce an effective strategy to be used for multiple problem solving situations (p. 281). From these results, it can be determined that graphic organizers help all students and all learners in various situations. These strategies can also be used for students with learning disabilities.

### Graphic Organizers & Students With Disabilities

According to Grumbine and Alden (2006) six criteria should be utilized for teaching students with disabilities. Each of these six areas could be utilized in creating well constructed, creative, and thoughtful graphic organizers aimed at improving instruction and learning. These criteria include: (1) Teachers who recognize and teach diverse learning styles improve learning for all students. (2) Explicit instructions of skills and strategies support content learning in all disciplines. (3) Clearly organized instruction and

assessment facilitates learning. (4) Explicit objectives for instruction and assessment maximize learning. (5) Consistent feedback improves learning. (6) Students who develop self-knowledge while they are learning content sustain their learning.

## Further Insights

### Students

For students, the uses of graphic organizers are numerous and well supported. Based on research, graphic organizers contribute to positive learning for all students in both general education and special education environments. Graphic organizers can also be a measure of a student’s development and facilitate development in the student’s thinking and level of maturity.

According to McMackin and Witherell (2005), Vygotsky’s (1978) zone of proximal development addressed both “the need for teachers to evaluate where students are developmentally” (p. 245) and facilitate ways for helping them develop. Vygotsky stated, “what is in the [child’s] zone of proximal development today will be the actual developmental level tomorrow—that is, what a child can do with assistance today she will be able to do by herself tomorrow” (cited in McMackin & Witherell, 2005, p. 245). They claim that through the use of “tiered organizers, the sequence of instruction and application of a skill is basically “built in.” After students are successful at one level, they could be encouraged to try the next level of graphic organizer” (p. 245). Each level could then become a measure of student success, and each level would ensure that learning would continue to take place.

Additionally, graphic organizers would allow differentiated instruction to take place for all students. McMackin and Witherell explain that, according to Tomlinson (1999), “instruction can be differentiated in three basic areas that include content, process, or product. When differentiating through content, students are given different materials at an independent level at which they can work to achieve successful understanding. These content ensure that learning is at each student’s “just right” level” (2005, p. 243). Differentiating through this process focuses on modifying instructional methodologies. All learners taught in the instructional mode allow student to grasp important concepts successfully:

When differentiating through product, the follow-up assignment or response is leveled or “tiered,” enabling students to complete assignments that are at their “just right” level” (McMackin & Witherell, 2005, p. 243).

Graphic organizers allow teachers to differentiate instruction for all students. Differentiated instruction allows all students to be motivated and successful. Therefore, graphic organizers should benefit all learners while enabling them to be successful and motivated learners (McMackin & Witherell, 2005).

### Teachers

Graphic organizers visually depict relationships and interconnectivity for multiple ideas and between multiple subjects. For teachers, graphic organizers serve as an efficient model of utility

and organization. Teachers can easily design graphic organizers based on lessons for various disciplines. The graphic organizer allows teachers a handy and efficient guide for lesson design, because the teacher can evaluate the objectives to be taught and ways for assessing materials through a visually appealing and creative methodology. After reviewing the research illustrating the benefits of graphic organizers for all students, teachers should be utilizing them across the curriculum.

For teachers who do not understand how to utilize graphic organizers or develop graphic organizers for specific purposes, professional training is recommended. For teachers who do not see the connection between helping students graphically organizing information and differentiating instruction, additional training in using graphic organizers might also be a recommended intervention. Also, at the present time, numerous books and software are available to help teachers in their success with this task. Graphic organizers are a proven methodology to create success in a general classroom environment while allowing differentiation strategies for all students. Clearly, graphic organizers facilitate a “system of diversity” for the classroom environment that is highly recommended in a culture of unique and diverse learners.

### Administrators

According to studies beginning in 1960, research suggests that graphic organizers are a proven method for helping students categorize information, learn in different subject areas, remember facts, and offer success in systematically connecting their learning. Graphic organizers offer all individuals a different way of classifying and understanding information. For use in both general and special education classrooms, graphic organizers offer differentiation strategies to facilitate learning for all kinds of learners.

Acting as an instructional leader for staff, administrators play a central role in facilitating research based educational strategies. For administrators who have not examined the research surrounding the use of graphic organizers in facilitating classroom success in multiple subject areas, then research should be considered. While multiple methods of teaching have come and gone, historically at this present time, brain research and knowledge about ways the brain learns and connects information dramatically informs instructional models. If administrators are not seriously engaging in study that examines these instructional models, it is highly recommended that administrators conduct research and work collaboratively with staff to facilitate classrooms of success underscored by creating a “system of diversity” to offer the most for all students.

The final recommendation for administrators is to provide professional development that is ongoing, sustainable, and meaningful to staff. Today, students within this culture require visually appealing, creative, and in-depth ways of finding meaning in the massive amount of information now available to them. Educators must offer differentiated strategies for grappling with information to discern layers of truth, because otherwise this generation will be lost to the malaise of unstructured, unbalanced, and undisciplined information that is all too readily available

from irresponsible sources. Students and teachers both must be offered ways of making sense. In their role, administrators must be able to make sense and lead others toward sense making.

## Issues

### Overcoming Barriers to Using Graphic Organizers

One of the main barriers that preclude the use of graphic organizers in classrooms is that teachers may not know how to use them or realize their benefit. Graphic organizers can be designed for a variety of purposes, and multiple graphic organizers are available both on-line and from curriculum books easily purchased at educator supply stores. However, before graphic organizers can be utilized their use must be informed by purpose and established objectives. Without prior knowledge and an essential question that is aimed at helping students determine the relevance of the information that is being studied, educators may feel frustrated, because the graphic organizer may not produce the results the educator envisioned. To overcome barriers to use, educators need to know what the outcome should be in order to help students find success.

Another potential barrier to overcome is that teachers might see the graphic organizer as a fad just like the multitude of other fads that have come and gone in education. Educators may not understand the impact of research in formulating best practice in the classroom environment. To better understand and to prosper an informed perspective, educators should consider researching the positive impact of graphic organizers in a classroom environment.

The last potential barrier to using the graphic organizer is that the graphic organizer may not seem rigorous enough. They may seem like they only “scratch the surface” of a given subject. In fact, graphic organizers can be used for a variety of purposes. They can be used to “set the stage” for learning, as an instrument for collecting data, or in assessing a student’s learning. Again, the primary issue in the graphic organizer’s facility is that the teacher must know the primary objectives and expectations for student learning. For example, educators must be able to look at key text then sort, connect, and categorize the text to discern the objectives and outcome in order to form essential questions that students answer.

## Conclusion

Graphic organizers offer educators numerous benefits both to students and educators. Their use enables teachers to differentiate instruction more effectively to meet the educational needs of all students. When given a graphic organizer to complete that is framed by clear objectives and outcomes, all students can successfully categorize specific attributes of information that is presented in an educational setting. Depending on the needs and ability level of the student the level of expectation can be modified or adjusted. Their use is highly recommended and supported by research.

Graphic organizers are proven and effective educational interventions that offer creative and motivating instruments for teaching students. They maximize learning, because students must be fully engaged in their instruction, because they are looking for information and using a visual graphic to make the instruction make sense to them as learners. The last benefit of using the graphic organizer is their potential in creating “system of diversity” in America’s public schools.

## Terms & Concepts

**Concept Map:** A concept map can be identified as an instrument that can be used to extend understanding of central ideas by determining how they are defined and their characteristics specifically in text.

**Differentiated Instruction:** Differentiated instruction can be identified as a means of educating students by matching curriculum with the student’s individualized level of development and ability.

**Graphic Organizers:** Graphic organizers can be identified as a concept maps or visual representation of ideas that helps students sort, simplify, show relationships, make meaning, and manage data quickly and easily

**Meaningful Verbal Learning:** Meaningful verbal learning can be described as the acquisition of ideas connected to other ideas.

**Semantic Map:** Semantic maps can be identified as instruments that can be used to provide an overview of key vocabulary and concepts from text.

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