High Impact Study Skills for Diverse PreK-12 Subgroups

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As educators, we know students from all sections of the population who are bright, but do not do well academically (Grade Power Learning, 2018). This is particularly true with students from underrepresented populations or whose parents are not college graduates. Significant reasons for this are because they do not know how to study effectively, how to get organized to study, how to complete assignments beyond the simplest level, and how to comprehend and retain information (Kern, 2008). This occurs across all racial and economic lines. Thus, the problem addressed in this study/paper has been to identify successful study skills that would be effective with diverse subgroups.

The objectives of this study were to:

- *Determine study skills that had been used successfully by current teachers in the field across various ages and subgroups; and*
- *Increase student learning across subgroups through the identification of successful study skills techniques to help close the achievement gap.*

This project sought study skills that were successful as identified by actual teachers in the field. Teachers in the Northeast Texas arena were queried via blind survey research to identify techniques they had utilized successfully with their varying subgroups. Those results have been tabulated, analyzed, and presented.

This project consists of two groups of Northeast Texas teachers using the same survey (Appendix), but delivered by different methods. The first was an open-ended survey presented by principals at ten different campuses (3 elementary, 4 middle schools, and 3 high schools), with superintendent permission, face-to-face in faculty meetings. The same survey was subsequently sent electronically to ten additional campuses (3 elementary, 4 middle schools, and 3 high schools) via Survey Monkey with principal and superintendent permission. Responses were also returned via Survey Monkey. The responses from both surveys were collected and analyzed. Since the survey, as shown in Appendix A, was the same, the only difference was method of delivery.

Keywords*:* achievement gap, study skills

An achievement gap exists between various subpopulations. While there are different reasons this may occur, divergent levels of intelligence are not necessarily a primary cause (Grade Power Learning, 2018). Some students come to school knowing how to study better than others. Lack of this knowledge is particularly true for children of color, from impoverished, or with various handicaps (Kern, 2008). Schools, traditionally, have done little in the way of a formalized program to teach study skills at the elementary, middle, or high school levels.

This study was undertaken with practicing teachers using survey research to determine the best study skills they have successfully used with multiple subgroups. The results were gathered, analyzed, and categorized.

Literature Review

The literature is rich with examples of study skills for different population sets. The following review will address each subgroup targeted in this study.

Study Skills Effective with Most Students:

Study skills that are successful with the dominant population can also be applied, adapted, and targeted towards various subgroups (Entress and Wagner, 2014). Success in school requires studying outside of class. It also requires teachers to do more than just present the information. An effective teacher must be able to present information in such a way that the students experience success. In conjunction with that, teachers must teach study skills and encourage students to practice the skills at home. (Entress and Wagner 2014).

Entress and Wagner (2014) understand that students who already possess excellent note-taking and organizational skills, already surpass those students who do not. They assert that re-reading notes simply will not adequately prepare all students for mastery of their learning objectives. Students should be taught how to study and take notes. Additionally, they should be taught meta-cognitive skills. Entress and Wagner identified several techniques to assist students move information into long-term memory. Cramming for a test the night before is not the solution. Therefore, they suggest that:

- Students must actively engage with the information they are reviewing;
- Student attention must be sustained; and
- Students must frequently self-assess.

By actively engaging, students should use multiple senses such as writing or talking about the information they are trying to learn. Creating and playing games that require processing information is effective. To sustain attention, they further suggest adding a study partner or pictures to the games. The pictures should be student-generated to cause students to connect and have ownership with the material in a way that their brains understand. A way to self-assess throughout the studying process is to take breaks and informally test themselves. This cuts the information into smaller, more manageable pieces. Students can, thus, see what they have mastered and what they still need to learn (Entress and Wagner 2014).

A recommended study tool is to have students create note cards with new vocabulary. Entress and Wagner (2014) suggest that students write the word, the definition, draw a picture, and use the word in a sentence on the back of the card. Teachers can boost the students' learning by modeling how this process works. Another study tool is the utilization of a crib sheet, used to prepare for an exam and covers significant material. Students are told to condense,

consolidate, then rewrite their targeted information on a small space such as an index card. The most important information should be on the crib sheet, and it should be limited to one page (Entress and Wagner, 2014).

In addition to explaining how to study, explain how not to study. Re-reading notes a few times the night before a test is ineffective. Students do not understand the deeper concepts when they cram for a test, nor can they recall every detail (Entress and Wagner, 2014).

Study Skills Effective with Diverse/Underrepresented Populations:

The need for a language-rich environment is critical. The rise of Pre-K programs in the United States over the past few decades shows the tremendous effort to get children ready for school. The majority of the Pre-K programs are designed to serve disadvantaged students and English Language Learners (Brown, C., 2013). Policymakers are trying to close the achievement gap by serving these groups. Children living in poverty are, thus, at a disadvantage starting out.

Study Skills Effective with African-American Students

Though high academic expectations are the standard that all educators have for their students, many students are encumbered with an array of challenges that obstruct their paths to successfully reaching those high academic and social benchmarks. What is more, multiple researchers note that African-American learners in public schools encounter additional challenges including cultural insensitivity from teachers and others (Ladson-Billings, 2006; Henfield & Washington, 2012), racially-biased assessments (Ford & Helms, 2012), and disproportionate disciplinary actions (Arcia, 2007; McElderry & Cheng, 2014; Diamand & Gomez, 1997). African American students have traditionally faced numerous barriers to academic success. These include poverty, discrimination, and low-performing schools. These types of barriers can place them at increased risk for school failure and/or special education placement (Gardner & Mayes, 2013). To promote success among African American students, educational leaders must be armed with a comprehensive understanding of all the factors that elevate or hinder students' success.

Though it is imperative to recognize and understand the barriers these learners encounter in education, it is perhaps more important for teachers and administrators to understand how to lead these students to success. Brown, K. (2008) found that one effective strategy teachers can use in the classroom to increase the achievement of African-American learners involves incorporating cultural artifacts; students can use their heritage to relate to these. Another high-yield instructional practice to use with African American learners is the use of collaborative learning strategies (Sullo & Thomson Gale, 2008). As minority students tend to primarily interact with other minority students of their own ethnicity, a subgroup is created. That group of students can become isolated from the mainstream culture and begin to feel isolated themselves. However, the use of collaborative learning strategies can aid students in interacting with students of various backgrounds and ethnicities to create a more inclusive, welcoming learning environment (Sullo & Thomason Gale, 2008).

Study Skills Effective with English Language Learners (ELA)

A student whose primary language is not English will struggle academically until he or she masters the English language. Students learning English as a Second Language (ESL) need many strategies to help them learn the target language. Paige & Magpuri-Lavell (2014) understand that ESL students will not be able to keep up academically with their peers until the language gap is closed. They report one strategy used by middle and secondary teachers is whole-class choral reading. This strategy allows all students to read aloud from the same text, at the same time, in unison with the teacher. Students of all levels benefit from this reading strategy because it is a "deliberate practice" (Paige & Magpuri-Lavell, 2014).

Another strategy they report is paired, or buddy, reading. This strategy allows the teacher the opportunity to pair an ESL student with a peer who is a fluent reader. This technique has been used by teachers for many years and is quite effective (Paige & Magpuri-Lavell, 2014). A third strategy Paige & Magpuri-Lavell (2014) recommend for ESL students is syllabic analysis. This technique allows students to decode a word they do not know by identifying the syllables. Thus, breaking words down, or chunking them, helps readers look at the parts of the word that they may already know, such as the meaning of a root word. The researchers have also identified morphemic analysis as an effective strategy for ESL learners. This strategy allows students to identify meaning in prefixes and suffixes to help build word meaning. This assists with both reading comprehension and fluency, as students are able to identify the smaller pieces of words.

Another study by Varatharajoo, Asmawi & Abedalaziz (2015) focused on morphemic knowledge. The researchers found that to acquire vocabulary in any language students must be able to build meaning or they will not be able to understand a complete sentence. Therefore, students must have explicit vocabulary instruction. One way for students to build a larger vocabulary is with morphological knowledge. Students learn the meaning of morphemes so they can build the word into something meaningful. Once the meaning of a morpheme is learned, the student can construct multiple words with more complex meanings.

A study by Milnes and Cheng (2008) in Canada found almost 46% of immigrants spoke neither English nor French as a first language. In their study, they learned that teachers made adjustments or modifications for ESL students. They interpreted test answers and allowed extra time for students to complete work. They also used incentives for even small increments of progress and rewarded the students with praise and other reinforcements.

Study Skills Effective with Special Needs Students

Cahill (2008) found that a special needs student in middle school did better when allowed to have some control over developing an organizational system. Cahill (2008) also found that strategies based on self-regulated learning allow students to choose their own learning goals, as well as develop and execute action plans related to these goals. Students must know what the performance expectations are when they begin a task. Providing a rubric and showing examples helps special needs students understand what is expected of them.

Another strategy to help a special needs student could be to have students list the steps required to reach the goal, whatever the goal may be (Cahill, 2008). Students can be taught metacognitive skills and self-evaluate as they work towards their goals. Safran (2002) suggests that students with special needs, especially those who have Asperger's syndrome, should closely follow a routine and be allowed to sit in a quiet space if possible. Memory games using self-

made flash cards are also good for study purposes with struggling students. This strategy helps students learn new vocabulary by matching the words with the definitions to further develop their concentration and memory skills (Entress & Wagner 2014).

Study Skills Effective with Gifted and Talented Students:

With 6 – 10% of Pre-K-12 students identified as gifted learners, teachers will undoubtedly have some of these students in their classrooms. Kelemen (2015) emphasized the need for teachers to attend professional development to augment the necessary skills to teach the gifted student.

Teachers will need to find creative ways to keep gifted and talented students engaged in the learning process. Teaching a gifted student in a regular classroom can, therefore, be a challenge. Adams (2015) has five suggestions to meet the needs of gifted learners:

- Build community in the classroom so the students feel like they belong.
- Assess often, and be ready for enrichment.
- To the maximum amount possible, let gifted and talented students take charge of their own learning.
- Honor students' interests. Allow them to explore and investigate their interests independently.
- Involve parents. Encourage them to work with their child and to get involved with the school. Teachers can provide learning extensions to the lesson to keep the student engaged both on campus and at home. Parents can reinforce the working relationship by providing information about the child which can assist the teacher.

Study Skills Effective with Early Childhood Learners

According to the Albert Shanker Institute (2009), advances in cognitive science show that very young children are capable of much more academically than was previously imagined. The impact of a Pre-K program for a young child cannot be overstated. The Institute acknowledges that a quality Pre-K experience helps to create the educational foundation for the kinds of knowledge, skills, and behaviors that children will be expected to master in school and in life. They further suggest curriculum should include opportunities for active language instruction, including challenging "read aloud," daily reading and discussions of books, new concepts, and new vocabulary. A language-rich environment is crucial for the Pre-K learner. The Institute explains: when children are exposed to adults who talk with them regularly about a broad variety of subjects, they become better at speaking and comprehension in general (2009). Thus, early childhood children, as well as all other children, benefit from hearing the spoken word as a form of communication in multiple formats.

Alphabet knowledge is also crucial for early childhood learners. It is the foundation for learning to read and write (Jones et al. 2013). The need for vocabulary instruction cannot be emphasized enough. Young children are adept at learning new words when exposed. They acquire these words from various sources such as read aloud storybooks, television, listening to others speak, and actual conversations of their own (Christ and Wang 2010). The key is exposure.

Study Skills Effective with Elementary and Intermediate Students

According to Ozsoy, Memis, & Temur (2009), study skills are usually defined as a student's ability to manage time and other resources to complete an academic task successfully. Elementary and intermediate school students often do not possess the skills to be able to determine how much time they will need to complete a specific assignment, task, or project. Students who do have metacognitive abilities are able to regulate their learning. Most students this age do not inherently know how to study or create good study habits for themselves. They need guidance (Ozsoy et al. 2009).

Schunk (2004) also reported that elementary aged students should be taught how to study. These skills can be embedded in the daily classroom routines. Lee et al. (2008) found that strategic note-taking is an effective learning tool for both general education students and special needs students. In their study, Lee et al. (2008) examined students with different levels of background knowledge to see how effective the students' note-taking strategies were. They found that even the students who had prior knowledge benefitted from prompts from the teacher about the specific important notes to take during a class discussion. Overall, they found children seemed to have great potential in applying note taking learning strategies when shown how.

Students remember information better if they are taking full or partial notes or if they are given an outline of pertinent material where a set of notes is handed to them. Sometimes key words can be omitted and students must fill in those blanks, either from paying attention to the teacher, or looking up the answers. This prevents their short-term memories from being overloaded. This is based on cognitive load theory (Sweller and Chandler 1991). Ozsoy et al. (2009) concluded in their research that metacognition is not only important for achievement, but also for study habits and attitudes of students. These habits should also carry over into other aspects of students' lives.

Study Skills Effective with Middle School Students

Students in the middle school years are an often-misunderstood group. An underlying assumption in middle school is that students are old enough to juggle multiple assignments, plan and organize projects, and regulate their time and behavior (Boller, 2008). Cognitively, these students are still developing. Teachers need to be reminded that students are often lacking organizational skills. They may need both direct instruction, guided practice, and support. Modeling how to organize is a good strategy for teachers to use in helping middle school students (Boller, 2008). They can better understand what to do themselves if they see it being done.

A student may seem unmotivated, when actually they don't know where to begin (Boller, 2008). So, they are doing nothing. They are overwhelmed. Many teachers give oral instructions, which may not be the best learning style for all students. Juggling oral language can be a struggle for some students. Providing visual cues, modeling, repeating and reinforcing instructions may eliminate misunderstandings. Teachers can help by breaking down the instructions into smaller tasks and helping the students achieve one task at a time (Boller 2008).

Boller (2008) further explains how to teach students to plan. First, make a list of the materials needed, then talk to others about the project. Ask students to talk through a time line and estimate how long they think it will take them to complete each segment of the project. Then help students develop the project, task, or assignment timeline with benchmarks along the

way. The timeline should provide a clear outline of what needs to be done and when. Teaching the process can be as important as teaching the content (Boller 2008).

McTigue & Liew (2011) explained that motivation for reading and learning, and students' self-efficacy in school often declines in adolescence. A student's self-efficacy is directly tied to their belief that they are capable of achieving that which they set out to achieve. Middle-schoolers undergo major biological, cognitive and social-emotional changes during early adolescence. It is important for researchers and practitioners to be aware of such developmental changes in students' self-concepts and self-beliefs and, thus, react accordingly (Wigfield, et al. 2006). With this in mind, it is critical that teachers directly teach organizational and study skills. Creating a safe classroom environment and providing corrective feedback in a timely manner can also improve a student's self-efficacy (McTigue & Liew 2011).

At Waikiki School, in Hawaii, the focus is to teach metacognition thinking processes directly to students (Matsuoka 2007). Thinking processes are as important as the learning of the content material. Students construct meaning by participating in engaging activities. They also should be encouraged to ask questions, explore problems, and make thoughtful decisions (Matsuoka 2007).

Study Skills Effective with High School Students

In addition to teaching study and organizational skills at the secondary level, teachers must also help their students develop their metacognitive thinking through direct instruction (Schofield 2012). Students often fail to see the relevance that solid study skills will have as they advance to their next academic level, so this must be explained to them (Smith, Teske, & Gossmeyer 2000). According to Smith et al (2000) the student who knows and uses proper organizational skills can often succeed where others fail.

Another way to increase the successful utilization of study skills is through learning/thinking logs (Schofield 2012). This forces students to actively engage in thinking processes. They must be taught to think about their thinking, or, in other words, reflect on what they do and do not know. This will increase their awareness and, thus, improve their learning. As students begin to use their metacognitive processes, they will automatically be able to better evaluate their own learning (Schofield, 2012). Some ways teachers can help students develop their metacognitive processes are by using the following strategies:

- Plan and describe the objective explicitly;
- State the cognitive skills necessary to complete the task;
- Clarify the learning goals;
- Make links to prior learning; and
- Rhetorical questioning (Schofield 2012).

Methodology

Set A

Permission was received from superintendents from ten Northeast Texas independent school districts for surveys (Appendix A) to be passed out by the principals at faculty meetings for teachers to complete. Surveyed were 3 elementary schools, 4 middle/intermediate schools, and 3 high schools. Teachers were asked to submit their personal input on study skills they had used and found to be effective with the subgroups described above. Not all categories fit all teachers. For example, early childhood teachers did not respond to the questions for high school teachers. These, and others like them, were simply left blank. Completed surveys were returned to the principals, and subsequently to the researcher, after the faculty meetings. Results were tabulated for the most commonly occurring strategies and themes.

Set B

With superintendent permission, the same surveys were sent by Survey Monkey to ten additional Northeast Texas independent school districts to determine same or different results. Again, surveys were sent to teachers of 3 elementary, 4 middle, and 3 high schools. The only distinction between the two sets of data was method of delivery: face-to-face vs. electronic.

Results

Strategies and ideas from the two sets matched almost identically regardless of how the teachers were surveyed. These results showed that teachers favored the following methodologies across all subgroups. They could be modified/adapted to effective for all students.

High Impact Strategies Revealed

Small Group Study Sessions

Repeated short study sessions with breaks were more effective than cramming, which was found not to be effective. The brain retains better from spread out vs massed studying. Studying with a friend by asking each other questions or utilizing flash cards over the materials addressed are examples of strategies that were found effective. Students could also teach each other the material. There is no better way to learn material than to break it into small pieces and teach it.

Practice Tests

Finding or developing practice tests for students to use to study and train from were found effective. Creating potential questions that could be on a real test. With older students, let them create the questions. Have the students answer the questions in writing, allowing them to use their notes. This will help them frame responses before they are actually assessed.

Learning Styles

Utilizing different student learning strengths whether they be auditory, kinesthetic, visual, or a combination thereof, asks that teachers analyze each student to determine what their individual strengths actually are. Does each child accomplish more, or learn better, by listening to a teacher teach, by doing something hands-on, or through visual learning? Finding each student's individual strength and use it to their advantage is effective.

Study Spaces

If a student is most successful studying in a quiet place, find one. If they learn better with auditory stimulation, let them use head phones to create the environment they need. If they need to walk around, allow them to in a way that is not invasive or distracting to other students. Listening to taped or similar YouTube lessons can enrich some students. Others may find them distracting. Use what works per student. The Study Space should include everything the student requires including a computer or headphones, pens, pencils, highlighters, magnifying glasses, manipulatives, or anything else needed for the student to be successful.

Collaborative Learning

Collaborative learning, or any of its modified forms, was recommended by the teachers. It breaks learning down where each student has their own role and responsibility. Collaborative learning is particularly helpful for slow or struggling students because they are working in a group environment. Students can learn from their peers. In this way, students can work from their individual strengths, benefit from others, and be successful.

Project Based Learning

Project Based Learning is recommended for students who have a specific learning interest or who prefer to work alone or in a small group. PBL must be structured and highly planned. Guidelines, objectives, checklists, benchmarks and timelines must be developed and utilized. Problem Based Learning can be a large undertaking, but for many it is a successful work and study tool.

Comprehension Skills

Comprehension skills can be difficult to teach. Teachers say students should work for shorter periods of time and take "mini-breaks," then repeating the process. For many students, there is only so much new learning that they can absorb at one time. The "mini-breaks" can serve as a "reset" button to clear their minds so they can focus again.

Goal Setting, Timelines, and Calendars

Teachers suggested teaching students to set learning goals with steps for accomplishing them and time lines. Reward them when they master something early or on time. Productive utilization of time management is a key to successful teaching and learning.

Miscellaneous Other Study Skills Related Recommendations

- Study skill one-on-one instruction with an instructor either before, during, or after school;
- Tutorials with a parent or other external person;
- Study games. Teachers suggested checking the Internet for those that are content and age appropriate.
- Teach mnemonics and acronyms;
- Be as hands-on as possible;
- Utilize positive reinforcement in abundance;
- Do what works for your students even if others think it is odd;
- Teach students to believe in themselves;
- Believe in yourself as a teacher; Don't let the rat race beat you down.

Conclusions

This study of what actual teachers perceive as effective study skills for diverse groups of students utilized two different methods. The only distinction was method of delivery. Tabulations showed both groups of teachers recommending the same strategies and themes of study skills and potential delivery models. The conclusions do merit consideration for working with diverse students from Pre-K through high school.

Recommendations

It is recommended that this study be replicated on a larger scale with the intent of continued improvement of study skills methods and delivery for greater student learning success.

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Appendix
High Impact Student Study Survey

From your teaching experience, what are:

1. Study skills that have been particularly effective with most students:
2. Study skills that have been effective with special needs students:
3. Study skills that have been effective with African American students:
4. Study skills that have been effective with any other diverse/under-represented populations:
5. Study skills that have been effective with gifted and talented or particularly bright students:
6. Study skills that have been effective with English Language Learners:
7. Study skills that have been effective with early childhood learners:
8. Study skills that have been effective with elementary or intermediate school students:
9. Study skills you have utilized, or seen utilized, that have been effective with middle school students:
10. Study skills that have been effective with high school students:

Thank you for participating in our study!