

NASET Special Educator e-Journal

August 2024

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Special Education Legal Alert

Perry A. Zirkel

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This month's update identifies a pair of recent court decisions that illustrate key Section 504 or Americans with Disabilities Act (ADA) differences from the IDEA, here for child find and FAPE. For previous monthly updates and related publications, see perryzirkel.com.

On June 4, 2024, the Third Circuit Court of Appeals issued an officially published decision in *B.S.M. v. Upper Darby School District*, addressing child find claims under Section 504. In kindergarten, the school district conducted an IDEA evaluation limited to speech/language and determined that the child was eligible for an IEP for speech/language impairment (SLI). End-of-year testing revealed reading and math scores below grade level. In grades 1 and 2, her regular assessments revealed math and reading scores that continued to be below the benchmarks. A private psychologist diagnosed the child in grade 2 with "Other Specified Depressive Disorder," but the parents did not share this information with the district as part of the IDEA reevaluation, which determined that she was no longer eligible as SLI. In grades 3 and 4, her academic and emotional struggles continued. Based on another private evaluation, which yielded a diagnosis of "Disruptive Mood Regulation Disorder," the district conducted a comprehensive evaluation and determined that the student did not qualify under the IDEA. Instead, the district provided her with a 504 plan for her social-emotional needs and math weaknesses. Near the end of grade 4, after increased emotional difficulties and a third private evaluation, which concluded that the student was eligible under the IDEA category of specific learning disability but not emotional disturbance, the parents filed for a due process hearing. The hearing officer ruled that (a) the district did not violate child find; (b) the child was not eligible under the IDEA; and (c) the 504 plan was too general, resulting in an award of 1 hour per week until the district's development of an appropriate plan. The parents appealed to the federal district court, which affirmed the hearing officer's rulings. The parents appealed to the Third Circuit, contending that the hearing officer and district court erroneously conflated the child find claims under the IDEA and Section 504. The district counter-argued that fulfilling the requirements of IDEA meets the parallel and generally shallower requirements of Section 504.

Do IDEA hearing officers have jurisdiction for Section 504 claims?	Not in most states, in which a Section 504 hearing is a school district obligation, but Pennsylvania (which is where this case arose) is one of the few exceptions.
Is the district's two-for-one counter-argument legally correct?	No. This assertion correctly applies to several issues, such as FAPE, but not for the limited differences from the IDEA, such as the broader definition of disability

	under Section 504.
What did the Third Circuit rule with regard to the parents' child find claim under Section 504?	Without deciding this factual question, the Third Circuit sent the case back to decide whether the district had reasonable suspicion of the child's eligibility under Section 504 prior to the end of grade 4.
It is regrettable that the adjudication process has taken three years without a definitive decision, but this case serves as a weighty reminder of the need for both parents and districts to be aware of the significant differences as well as substantial commonalities in scope and depth between the IDEA and Section 504. For a comprehensive comparison, see https://perryzirkel.com/wp-content/uploads/2024/01/zirkel_idea-504-ada-comparison-12.15.23.pdf	

Also on June 4, 2024, the Third Circuit Court of Appeals issued another officially published decision, *Le Pape v. Lower Merion School District*, which concerned the ADA in relation to K–12 students. In this case, a 23-year-old former student in the defendant district had an IEP based on the eligibility categories of autism, intellectual disabilities, and SLI. Based on his nonverbal status, the IEP provided for communication via a Bluetooth keyboard and an iPad, visual scripts, and picture-exchange protocol. The student had the ability to type dictation but not his own thoughts. At the start of grade 10, his parents requested revision of the IEP to incorporate a technique known as “Spelling to Communicate” (S2C), in which a non-speaker points at letters on a laminated alphabet board (“letter board”) held by a communication support person. The district declined based on the lack of published research support. After the parents repeated their request, district representatives conducted two outside observations of the student using SC2, interviewed its inventor, tried it out with the student and his special education teacher, and—despite finding the procedure to be questionable—revised the student’s IEP for training of its staff in SC2. At the start of grade 11, 5 staff members, including 2 of the student’s teachers, participated in the training. They concluded that SC2 was not a communications tool but instead the support person indirectly providing the answers. At the same time, the student exhibited increased aggressive and self-injurious behaviors, which his treating psychiatrist attributed to the lack of access to the letterboard at school. In October, the parents stopped sending him to school. After 6 weeks of non-attendance, the district reluctantly agreed to revise the IEP to allow the student to bring his own letterboard and communication partner to school. His parents rejected this provision; continued his education at home with private tutors who used SC2; and filed for a due process hearing. The hearing officer ruled that the district did not deny FAPE under the IDEA, Section 504, or the ADA. The parents then filed an appeal in federal district court, adding a claim for a jury trial and money damages for intentional discrimination under Section 504 and the ADA. After complicated proceedings, the court (a) affirmed the hearing officer’s IDEA FAPE rulings, and (b) rejected the Section 504/ADA intentional discrimination claim based on lack of preponderant proof of SC2’s effectiveness in the record of the due process hearing, despite the court’s subsequent admission of additional relevant evidence. The parents’ appeal to the Third Circuit included the ADA effective-communications regulation, which requires giving “primary consideration” to the preference of the individual with disabilities.

Did the parents’ fulfillment of the IDEA’s exhaustion provision extinguish or subsume their Section 504 or ADA claims that are different from those under the IDEA?	No. The Third Circuit explained that the parents’ intentional discrimination claims in this case were independent of their FAPE claim and thus were not subject to being extinguished by the hearing officer’s adverse FAPE rulings.
Did the lower court err as a matter of law by not considering the evidence admitted during the appeal of the hearing officer’s decision as to the comparative efficacy of SC2 and the district’s communications methods?	Yes. Because the parties sought summary judgment, the Third Circuit reversed for a jury determination of the open factual issue of whether, based on the <i>entire record</i> , the district provided an effective method of communications after giving primary consideration to the student’s preference.

This decision, like the one on the first page of this monthly update, is belated and inconclusive, but also a reminder of the need for careful consideration of the nuanced differences between Section 504 or the ADA and the IDEA. SC2, like earlier case law concerning the controversial technique of Facilitated Communication, requires due care for not only professional norms but also requirements beyond FAPE under the IDEA that, in this case, were for effective communications under the ADA.

Buzz from the Hub

Frequently Asked Questions: Social Security Administration, Supplemental Security Income, and Social Security Disability Insurance – Can I work if I receive social security benefits?

This FAQ provides people with disabilities and their families an overview on social security benefits and answers common questions about these benefits and employment.

<https://leadcenter.org/resources/financial-toolkit-frequently-asked-questions/>

Summer Learning Tips to Go! Text Messaging Service

The Summer Slide is real! While we are all looking forward to the long days relaxing and making the best memories with our children, we must remember to sprinkle in some fun learning throughout our summer adventures. We found the perfect resource for families to do just that and avoid the summer learning loss! Sign up for summer learning tips sent right to your phone, in English or Spanish, from Start with a Book.

<https://www.startwithabook.org/reading-tips-text-messages>

Cartoons Available with American Sign Language

The ED-funded Bridge Multimedia now has some of children's favorite Public Broadcasting Service cartoons available in American Sign Language, thanks to ED's Office of Special Education Programs funding. Check out full episodes of "Alma's Way," "Daniel Tiger's Neighborhood," and more.

<https://pbskids.org/videos/american-sign-language-full-episodes>

Unstuck: The Special Education Podcast

Discussions between two professionals related to current trends and topics affecting the world of special education. They pull from a combined 40 years in the field to share stories, insight and potential solutions.

<https://podcasts.apple.com/us/podcast/unstuck-the-special-education-podcast/id1604000975>

Special Education Inner Circle

The Special Education Inner Circle podcast is hosted by Catherine Whitcher, M.Ed., founder of the Master IEP Coach® Mentorship + Network. Get your notebook ready as Catherine brings you real-world strategies for everyone at the IEP table. With her family's experience in the disability community and her journey from Special Education classroom teacher to IEP expert, Catherine knows what it takes to prepare students and families for the future. Get ready to be inspired and learn actionable steps you can take immediately to change your special education experience.

<https://podcasts.apple.com/ca/podcast/special-education-inner-circle/id1484686234>

Commemorating the 25th Anniversary of Olmstead

ICYMI: On June 20th The U.S. Department of Justice and the U.S. Department of Health and Human Services' Administration for Community Living and Office for Civil Rights celebrated the 25th anniversary of the landmark Olmstead v. L.C. Supreme Court decision, which ruled that unjustified segregation of people with disabilities is a form of unlawful discrimination under the Americans with Disabilities Act (ADA).

<https://www.youtube.com/live/EYsDx5ogzLc?feature=shared>

Meta-Cognitive Notetaking Strategy: Its Influence on the Performance of the Upper Primary Students in Reading

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Abstract

The study delved into the influence of metacognitive note-taking strategy on the performance of the learners in reading. This focused on the application of the approach in reading instruction so as to develop the learners' reading comprehension skills. The duration of the study is limited to two quarters of the school year 2022-2023. This involved 22 fourth-grade students in Buenavista Elementary School, Basey II District of Samar Division. The pre-experimental design, utilizing a single group pretest-posttest method was employed in this investigation. The instrument used was a 30-item achievement test in English covering the most essential competencies (MELCs) based on the curriculum adopted in public elementary schools. This was administered to the learners to determine whether there is an improvement in the participants' reading performance via pretest and posttest scores and gains. The data were treated via mean, percentage and t-test of significant difference. The results revealed moderate to high improvement in the learners' reading performance, demonstrated by the significant difference in the pretest and posttest scores as well as in the gain scores. This implies that the metacognitive note-taking strategy positively impacted the learners' performance in reading. The use of the method in classroom instruction, not only in reading, but also in other fields of discipline is recommended.

Key words: metacognitive strategy, note-taking, reading performance

1. INTRODUCTION

Across the world, schools prioritize the development of reading skills for learners, as reading is fundamental for finding, understanding, expressing, and sharing information. It should be developed at a young age, as it functions as gateway to learning almost everything (Keyser, 2021). Reading skills are also important for academic success, as they allow children to access and grasp the curriculum, improve communication and language skills, and open doors to new worlds. Reading is fundamental at all levels of the educational system, as all subjects involve reading, leading to better academic performance (Cimmiyotti, 2013). Therefore, developing reading skills among children is vital in the teaching-learning process, for it serves as the foundation of learning.

School systems face the challenge of producing readers, who must be able to read and comprehend. Teachers have a significant responsibility to nurture and develop students'

reading skills, from decoding to understanding and applying the takeaways. To address poor reading performance, the Department of Education launched programs like the "Every Child a Reader Program (ECARP)" in 2001 and DepEd Order No.45, series of 2005. This mandates that every child must be a reader by the beginning of school year 2002-2003 and every child that should be promoted to the next level should have mastered basic reading literacy skills. Teachers are expected to identify and initiate appropriate interventions and instructional materials to address the needs of learners with reading difficulties (Caliwag, 2014). Teachers have been working to identify and practice strategies, approaches, and techniques in teaching reading to support and assist learners with reading problems.

Reading is a crucial aspect of basic education, and schools are investing significant effort in teaching students to read, as it is a subject included in high-stakes standardized tests (Acadedios, 2015).

The Philippines is facing a significant reading literacy issue, with the country ranking lowest in reading comprehension among 79 countries in the 2018 Programme for International Student Assessment (PISA) (San Juan, 2019). Additionally, fifth-grade students in the Philippines are falling behind their counterparts in Southeast Asian countries in reading, writing, and mathematics. The Southeast Asia Primary Learning Metrics (SEA-PLM) 2019 study, conducted by the Southeast Asian Ministers of Education Organization and UNICEF, revealed that most Grade 5 students in the Philippines had a reading proficiency level equivalent to that in the first years of primary school (Balinbin, 2020). The results suggest a need for intensified practices to improve reading comprehension skills among learners.

The Department of Education has been focusing on improving students' reading literacy through various initiatives, including research through the Research O'clock forum, action research, and multi-grade classroom teaching. These interventions include using localized contexts to enhance the reading skills of first-grade learners, using reading modules with frustration reading levels, and utilizing localized materials in information and communication technology-based reading interventions (Malipot, 2020). These initiatives have been implemented in schools as mandated by DepEd through DepEd Order No.43 which accentuates the contextualization of the curriculum and localization of learning materials across learning areas (Bee, 2014).

However, despite the many interventions that the public schools have adopted, the problem on low reading level among students still remains. The schools within the division have also implemented different programs and projects initiated and directed by the education sector, yet, reading proficiency reports still bear a number of learners under frustration level. For instance, in Buenavista Elementary School, the teachers face the challenge to improve the poor reading comprehension skills of the learners in some classes. The pretest result in reading of the fourth-grade class, which is identified through Philippine Informal Reading Inventory (Phil-IRI), revealed that around 27% percent of the learners belongs to the frustration level. Taking into account the goal of the educational sector, that is, to produce functionally literate learners, this matter has to be addressed although the percentage of the frustration readers in the school is not too high. Thus, there is a need to adopt strategies that will help the learners improve their reading comprehension skills.

The influx of technology has led to the use of various teaching strategies, including multi-media, which has led to improved learning outcomes. Learners are exposed to viewing materials, printed modules, and other tools that maximized the availability of

technological products. Apparently, the traditional methods are gradually faced out. Despite the benefits of technology in education, poor performance among learners comes as ceaseless pressing issue and is often due to reading difficulties and poor comprehension skills of the students.

Contemplating on this, the researcher considers using metacognitive notetaking as a technique to improve retention and comprehension levels. This strategy involves teaching students to be more active while reading in order to monitor their understanding (Carroll & Ganus, 2012). This present study aims to identify the impact of this technique on the reading performance of the learners.

1.1. Theoretical Framework

Theories serve as spring board of any studies. These provide explanation and meaning of the research. Thus, this study considers few theories to support its context. First, this takes into account the reading comprehension theories namely Proposition Theory and Schema Theory. The proposition theory argues that the reader constructs main and broad ideas as they process the text. These ideas are then prioritized so that the ones that the reader believes are most important are given the highest priority to be committed to memory (Ngabut, 2015). On the other hand, Schema Theory is primarily based on the context of schema, which is known as the existing knowledge that a person has about the people, places, things and events around them. Schema theory purports that meaning is made when connections are made between the text and the reader's existing knowledge (Shen, 20008).

The mentioned reading comprehension theories suggest that significant ideas are stored in memory during text processing. Readers must establish connections between real settings and the text to find meaning. Note-taking can help readers remember important details and jot down important information, enhancing their understanding of the text. From this point, these theories have significant bearing on this recent study.

This paper acknowledges the Metacognitive Theory, a knowledge theory that focuses on how humans can actively monitor and regulate their own thought processes. Metacognition, a concept created by John Flavell in the 1970s, encompasses all processes involved in regulating our thinking, such as planning, tracking progress, and assessing our knowledge (Drew, 2022). In this study, metacognition is applied to students' critical thinking, where they write down and delineate important ideas from reading texts, and evaluate their own learning by specifying what they learned and what they still need to know.

This study also acknowledged the generative theory, which suggests that note-taking is a cognitively active process that promotes memory preservation through cognitive restructuring. It employs two retention mechanisms in cognitive psychology, which are the levels of processing theory and the self-reference effect (Schoen, 2012). The levels of processing theory suggests that deeper levels of processing enable more complex encoding and retention by forming associations between new information and past knowledge (Roediger, Gallo, & Garcia, 2002). In addition, information is better remembered when it is associated with one's self during encoding (Burns, 2006). The generative nature of note-taking that results from active retention strategies allow the learners to deeply encode information. Hence this is proposed to enhance retention through increased organizational processing.

Notetaking is a useful technique for improving reading comprehension. It allows readers to process text by identifying important parts, which helps in enhancing their understanding. Thus, this study aims to investigate how note-taking can aid in improving the learners' reading performance. The note-taking process was done in a meta-cognitive format, rather than the usual note-taking that transpired in class. By focusing on this aspect, learners are expected to enhance their reading skills and improve their overall reading experience.

1.2 Conceptual Framework

Bhasin (2022) emphasized that the conceptual framework of the study describes the expected relationship between variables, indicating what will be discovered through the investigation. It specifies relevant variables and their connections, as well as the flow and interconnection of these variables. In connection to this, the figure below illustrates the road map of the study.

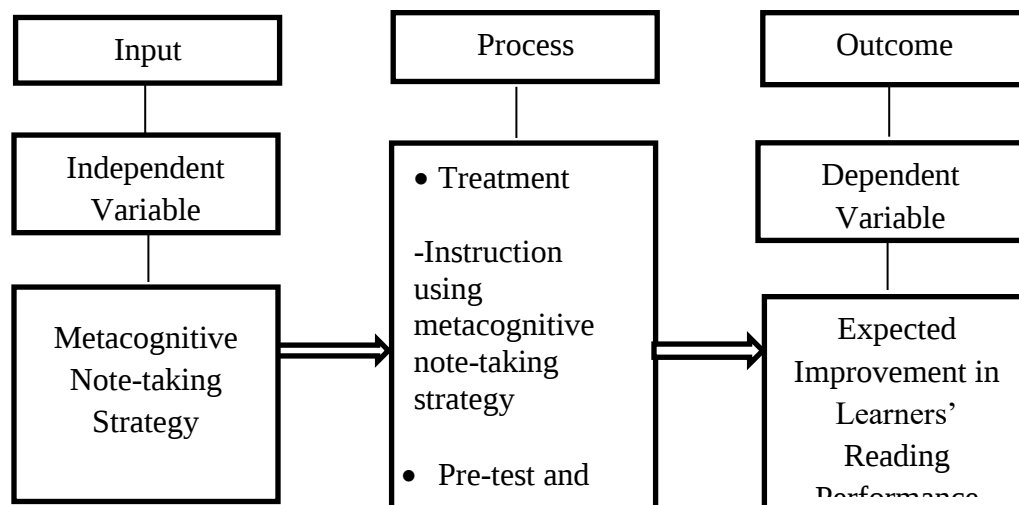


Figure 1

Paradigm of the Study Concept

The figure shows the adoption of IPO flow or research. Canonizado (2021) explained that the IPO model of research represents the summary of various related articles that explains the processes involved. The input is the introduction of the metacognitive note-taking strategy in teaching, which served as the independent variable. The process includes the use intervention in instruction given to the 4th-grade students as well as the pre-test and post-test in reading that determines the influence of the independent variable on the dependent variable (learners' performance in reading). With the intervention, the expected outcome is the improved performance of the learners in reading.

1.3. Research Questions

This study investigated the influence of metacognitive note-taking strategy on the performance in reading of the fourth-grade learners in Buenavista Elementary School, Basey II District, Samar Division. Specifically, this sought answers to the following questions:

1. What are the mean pretest and posttest scores of the learners before and after the application of metacognitive note-taking strategy in reading instruction?
2. Is there a significant difference in the mean test scores of the fourth-grade learners?
3. Is there a notable improvement in the performance of the pupils from the pretest to posttest?
4. What is the implication of the results of the study on teaching reading?

1.4. Hypotheses

Jansen (2020) reiterated that a research hypothesis is a statement about the expected outcome of a study. This identifies the variables being assessed in the study and provides functions as a guide in the investigation process. Thus, it is also imperative to specify the hypothesis in this study as follows.

- H₁ There is a significant difference between the mean pre-test and post test scores of the fourth-grade students in reading comprehension.
- H₂ There is an improvement in the reading level of the Grade 4 students after the application of the meta-cognitive notetaking approach in teaching reading.

1.5. Significance of the Study

This study addresses the issue on the poor reading performance of the learners by implementing a meta-cognitive notetaking approach, in expectation of improving the learners' reading proficiency level. Since this is a common and primary issue in many schools within the division, the results will be significant for various stakeholders. First, the administrators can use the findings to encourage teachers to innovate and adopt strategies like meta-cognitive notetaking to meet the learning needs of the learners. Second, the results offer insights to the teachers relative to the effectiveness of metacognitive note-taking approach, which they can use to assist struggling readers and can potentially apply the approach to other groups of learners. Third, the students, who are the primary beneficiaries, can benefit and utilize meta-cognitive notetaking to enhance their reading comprehension skills. Lastly, future researchers, especially educators, can use the findings of this study as a foundation for further investigation.

1.6 Scope and Limitation

This study investigated the influence of the meta-cognitive notetaking approach on the performance of fourth-grade learners in Buenavista Elementary School, Basey II District, Samar Division. This delved into the effect of the meta-cognitive notetaking approach on the reading performance of the upper primary learners. It involved a single experimental group of fourth-grade class with learners exhibiting poor performance in reading. The study was

conducted within the two quarters of school year 2022-2023, during which pretests and posttests were administered to assess the changes in reading comprehension level and their overall performance. The intervention involved regular implementation of meta-cognitive note-taking strategy in reading instructions. Data were collected through reading achievement tests and observational notes.

The limitation of the study is primarily on the design. This used a one-group pretest-posttest design with no control group for comparison purposes. This may have an influence on the internal validity of the findings. Second, the duration of the study is only for two quarters or 22 weeks of the academic year. This may be insufficient to delve into the long-term effects of the intervention. Furthermore, the study is conducted in a single setting, which might make the findings less applicable in other situations. Also, the results of the study may be impacted by other factors such as teacher implementation, student participation, and external influences on reading performance, and relying solely on standardized assessments may miss important reading comprehension and skill development components.

2. REVIEW OF RELATED LITERATURE AND STUDIES

This section aims to contextualize the study within the existing knowledge and literature on the topic so as to establish the relevance of the gap addressed by the recent investigation. It explored related literature and studies that provide a framework for this recent endeavor.

The Importance of Reading

Johnson (2017) defines reading as the ability to interpret written symbols and understand printed material through continuous experiences. The National Reading Panel, initiated by the US Congress and the National Institute of Child Health and Human Development, has identified five essential elements of reading instruction: phonemic awareness, phonics, vocabulary, comprehension, and fluency, which learners must master to improve their reading performance.

Reading and comprehension are crucial skills for students to understand how society works and survive the challenge of getting information, usually presented through text. Research shows that reading aids mental development and can lead to frustration in learning when skills are insufficient. Key aspects of reading include recognizing what is being read, interpreting ideas, injecting meaning into printed words, applying different thought processes, and integrating words and paragraphs. Reading is a complex process that cannot be isolated if the aim is to help learners find fulfillment in their reading endeavors (Suson et al., 2020).

Palani (2012) believes that reading is a crucial skill for thinking, evaluating, judging, imagining, reasoning, and problem-solving. It allows individuals to build or fix things, experience stories, find trust, and boost their own ideas or beliefs. Thus, reading provides essential information for daily survival and growth (Issa et al., 2012).

It is from these points that the researcher aimed to address the issue on low reading performance level of the fourth-grade learners in Buenavista Elementary School. Looking into the significance of reading in education and in students' academic achievement, there

must be a continuous search for innovation to mitigate the problem on reading performance. Hence, this study was conducted.

Significance of Reading Comprehension

Reading and understanding texts are crucial in primary education as they significantly impact learning in areas like total communication, mathematics, and sciences. This development impacts personal and social development. Students must develop decoding abilities and understand written messages to acquire knowledge and achieve learning (Cunha & Capellini, 2016).

The importance of understanding the character of effective reading instruction within the primary grades cannot be overstated (Ankrum, Genest, & Morewood, 2017). Reading and comprehension are very essential skills in education, as they impact the overall personality of the reader and lead to lifelong learning. It is necessary for the learners to build deciphering capacity and become competent and skilled readers. Reading comprehension is a complex process that involves various cognitive and linguistic aspects, making it a highly important skill in the reading process (Cunha & Capellini, 2016).

Teachers can choose various teaching methods, but what is most effective remains a concern. Understanding theories which explain the nature of learning to read could be used as the basis for improving the techniques of teaching reading to learners (Suson et al., 2020). In this study, the researcher explores the significance of meta-cognitive notetaking in teaching reading to improve students' performance. It highlights the need for additional interventions to help the “frustration” readers improve their reading comprehension level.

Meta-cognitive Notetaking

Meta-cognitive notetaking is a strategy that encourages self-monitoring while reading, which allows the learners to reflect on their reading by asking questions, making connections, and finding meaning. This strategy encourages active reading and creating own notes using a specific format that enables the students to thoroughly process the text they read (Carroll & Ganus, 2012). It was further explained that this approach can make the time in taking notes more effective because it is based on how a student learns. In this process, the learners are required to write a short summary of what they've read and their reflections after they have taken down notes about what were presented to them. The reflection part helps the learner review and associate with how he experienced what happened that will make it easier to remember. This column in the meta-cognitive notetaking format acts as a key and index aiding recall. The part that allows the reader to summarize the important details found in the reading text and what he wants to remember will also facilitate retention. All these keep the reading endeavor active and metacognitive. The approach therefore is a helpful way to let the readers understand and find meaning in what they read.

This study focuses on the use of meta-cognitive notetaking as an intervention to enhance the reading performance of the fourth-grade at Buenavista Elementary School. Despite the usual application of standard notetaking techniques in instruction, this approach is yet to be implemented in the school setting, specifically in the upper elementary level. Also, very few studies have tackled this intervention. Hence, this recent study aims to determine its effectiveness in improving reading skills among the upper primary students.

Related Studies

This study is anchored on the concepts of few similar researchers that have significant bearing on the topic, specifically relating to notetaking, reading and meta cognitive notetaking.

The study of Parvane et al. (2013) revealed that over 99% of university students take notes from lectures, and 94% consider note-taking an essential aspect of the educational experience. Researchers have found that note-taking is widely accepted by instructors and teachers as a valuable tool for increasing retention (Haghverdi, 2010).

Other researches show that taking and reviewing class notes positively impacts student learning, with studies confirming that students recall more lecture material if they record it in their notes (Bligh, 2000).

Cirera (2017) highlighted in her study the benefits of note-taking in English learning which accentuates its role in comprehension, efficiency, and development of listening skills. Students can use this technique to create narrative, expository, and informational writings, thereby enhance their performance in English. The meta-cognitive note-taking technique helps learners enhance their cognitive skills while learning, ultimately improving their English performance.

This study also considers results of other scholarly work that investigated the significance of reading. The studies by Nyarko et al. (2018) and Palani (2012) show a positive relationship between reading proficiency and academic performance. They also highlight that effective learning reflects the students' reading skills. Constant reading not only improves vocabulary but also enhances comprehension of concepts, which is vital for understanding and for the overall school performance.

A recent study by Sari (2017) underscores that reading is very important not only in English classes but also in other subjects like mathematics, as it enhances our knowledge of the material we have learned.

Suson et al (2020) also explained further in their study that experts claimed that both academic processes, particularly reading comprehension, share cognitive processes, such as predicting outcomes and sequencing events. They also pointed out that reading skills are important for both comprehension and academic achievement. Their study revealed that differentiated instruction boost the reading ability of the students.

In connection to the significance of reading and reading comprehension in the educational setting, it is imperative that teachers should identify appropriate technique to address the concerns relative to poor reading performance of the learners. This study aims to address the gap in addressing reading problems in schools by focusing on the impact of note taking and meta-cognitive notetaking on fourth-grade students' reading performance. The research emphasizes the importance of note taking and meta-cognitive notetaking in improving learners' learning habits. This also has for its purpose to enhance reading comprehension skills and improve reading performance through the application of metacognitive note-taking strategy in reading instructions.

3. METHODOLOGY

This section provides the details of the process and procedure of the study. This presents the research design, setting, respondents and sampling procedure, instrument and data gathering procedure, instrument validity and reliability, and statistical treatment.

3.1. Design

This study used a pre-experimental design, specifically a one-group pretest-posttest approach to evaluate the effectiveness of the metacognitive note-taking strategy on the reading performance of the upper primary learners. Only one group of students, which is the fourth-grade class of Buenavista Elementary school, was tested before and after the intervention to determine any changes in their reading skills. DeCarlo (2021) explained that researchers conduct pre-experimental designs to assess the effectiveness of their interventions on a small group, aiming to establish evidence for or against the intervention. In this study, the researcher focused on identifying the impact of the metacognitive note-taking approach in giving reading instruction on the performance of a single group of learners.

3.2. Setting

This study was conducted at Buenavista Elementary School, Basey II District of Samar Division. The school has a total of 110 students and 22 of them are in fourth-grade class that the researcher handled.

Buenavista Elementary School (BES) is located in Barangay Buenavista, Basey Western Samar. The school is known for its diverse student population coming from different walks of life. It has a typical learning environment where classrooms are equipped with basic instructional materials and technological tools. However, teachers also tend to provide or secure other needed technological tools and materials in order to meet the learning demands of the students. Similar to other public elementary schools in the division and region, the poor reading performance of some learners is one of the challenges that BES faces. Hence, teachers are also committed to innovate so as to continuously ensure a support system for the learners.

3.3. Participants and Sampling Procedure

The respondents of the study refer to the people who are involved in the investigation process while sampling method is the technique through which few people from a wide population are selected as participants in research. In this study the respondents are referred to as the participants in the experimental process.

3.3.1. Participants

The study involved the fourth-grade class of Buenavista Elementary School who are enrolled in school year 2022-2023. There are 22 students in this class. Their recent reading level status bears that 6 of them belong to the frustration level; 9 are in the instructional level; 7 are independent readers. This data imply that there is a need to adopt an intervention in order to help the learners who are in the frustration and instructional level. This is why the researcher considered the utilization of metacognitive note-taking approach in teaching reading in anticipation of its positive impact on the reading performance of the learners.

3.3.2. Sampling and Procedure

This recent study will use the purposive sampling. This is a non-probability sampling technique where the researcher has the discretion to choose the variables for the sample population based on his knowledge of the context. The selection of the sample is based on their characteristics and objective of the study (Crossman, 2020).

In this study, the participants are already known to the researcher as group of learners who can help meet the goal of determining the effectiveness of the intervention, which is relative to addressing their reading difficulties. All of the students that belong to the fourth- grade class will be used as sample.

3.4. Instrument

Basically, this study used a 30-item achievement test prepared by the researcher. The questions are aligned with the most essential learning competencies (MELCs) in English for fourth-grade learners as directed by the Department of Education (Lego, 2014).

The MELCs covered for the first 2 quarters within the scope of reading skills development are recognizing the parts of a simple paragraph, noting significant details of various text types, identifying the structure, purpose and language features of different text types, using context clues to find meaning of unfamiliar words, and identifying different meanings of content specific words.

The researcher also used observation notes to record the important learning episodes that are influenced by the intervention.

Also, this study used the meta-cognitive notetaking format that requires the participants to write down the topic of the text, their comments, notes, summary and reflection based on the text they processed.

The meta-cognitive notetaking taking form adapted from Carroll & Ganus (2012) is illustrated below.

3.5. Data Gathering Procedure

Prior to the conduct of the study, the researcher sought needed consent from the different concerned offices. Afterwards, the pretest was administered. Both the parents and the learners were informed about the conduct of experimental study. During the 1st and 2nd quarter of school year 2022-2023, the fourth-grade students were taught with the application of the meta-cognitive notetaking technique in their reading or English classes. After the 2nd quarter, the posttest was conducted using similar reading comprehension test. This was done to determine whether there is an improvement in the reading performance of the learners and to assess whether there is a significant difference in the mean scores. The result of the post-test was compared to the pre-test data. Then these were analyzed to identify whether the hypothesis is rejected or accepted.

During the experimental procedure, the participants were assisted by the teacher in completing the notetaking form, which were checked to ensure that the learners did it right. The participants were encouraged to read these notes at home. Within the research duration the teacher-researcher regularly conducted follow-up activities relative to the reading activities given to the learners.

In addition, although this study is basically experimental in nature, which means the results and findings shall rely on the outcome of the experimentation process, the researcher also recorded significant situations or phenomena that are noteworthy along the conduct of the study. These are additional input that were used to describe the implication of the metacognitive note-taking approach on the reading performance of fourth-grade learners. These observations were also used as basis in drawing the conclusion and recommendation in this study.

3.6. Validity

In order to ensure that the instrument measures what is intended to measure, the sample of the achievement test was forwarded to master teachers and other research experts within the district for evaluation and modifications. Likewise, the metacognitive note-taking format was sent to master teachers and school head in the district for checking and necessary adjustments to make sure that this fits the level of the learners and will produce the needed result.

3.7. Reliability

After the evaluation of the instrument, the questionnaire was reproduced for a dry run in order to determine whether this yields a consistent and reliable results.

Also, the meta-cognitive notetaking format was given first to 10 students in another school within the district at the same grade level. They were aided in completing the notetaking form to see if this will obtain the information that are consistent to what is required.

3.8. Statistical Treatment

This study aims to determine the influence of the meta-cognitive notetaking approach on the reading performance of the fourth graders. The experimental process focused on identifying if there is an improvement in the learners' reading performance after the

treatment, based on the pretest and posttest results. Hence, to meet this purpose, the frequency and percentage computations were used. The formula for percentage is,

$$P = (f/n) \times 100$$

where:

P = percentage

f = frequency

n = number of cases or total sample

The number and percentage of the students who belong to the specific reading level before and after the experimentation will be tabulated and interpreted.

To analyze the pre-test and post-test scores, the formula for **mean** was used.

The raw and mean scores of the students were determined in order to have a working description of the learners' performance level. Each correct answer of the learner in the test is given 1 point. Then, the score ranges, ratings and adjectival interpretations were adapted as shown below.

<u>Raw Score</u>	<u>Transmuted Score</u>	<u>Interpretation</u>
26-30	95 – 100	Excellent
21-25	90 – 94	very good
16-20	85 – 89	Good
11-15	80 -84	Fair
6-10	75-79	Poor
1-5	70 – 74	very poor

Also, t-test was utilized to assess whether there is a significant difference between the pretest and posttest mean scores. The study employed 0.05 level of significance of a two-tailed test which means that if it is reached, the researcher customarily rejects the hypothesis and concludes that a real difference does exist.

4. RESULTS AND DISCUSSION

This section presents the results of the experimentation that highlights the pretest and posttest mean scores of the learners from which the acceptance or rejection of the hypotheses is determined.

Pretest - Posttest Performance of the Participants

During the conduct of the study, a 30-item reading comprehension pretest was administered to the group to determine the entry performance at the beginning of the study. Similar type of test was also given after the exposure of the respondents to metacognitive note-taking strategy. Both results of the test were tabulated in the table that follows. This shows responses to problems 1 and 2 of this study.

Table 1

Pretest - Posttest Performance of the Participants

Raw Scores	Pretest		Posttest		<i>t-value</i>	<i>p-value</i>
	F	%	F	%		
26-30			1	4.55%	-10.78553	< .00001
21-25			6	27.27%		
16-20	1	4.55%	11	50%		
11-15	3	13.63%	4	18.18%		
6 - 10	17	77.27%				
1 - 5	1	4.55%				
Total	22	100%	22	100%		
X	8.55 ^a		18.59 ^a			
Sd	2.906		3.261			

* Means with unlike letters differ significantly
 $\alpha = 0.05$

The table shows that during the pretest, 17 pupils (77.27%) got a score within the range of 6–10, which is below the 15 passing score that can be interpreted as ‘fair’ performance. The majority of the pupils at the onset of the study had poor reading comprehension. This clearly shows that most students had difficulty understanding what they were reading. From the result, there are 3 pupils (13.64%) who demonstrated a fair reading comprehension level. While there is 1 pupil (4.54%) who demonstrates a good reading comprehension skill, there is 1 pupil (4.54%) identified with a very poor reading comprehension level as evinced by the score between 1-5.

Additionally, the table presents the posttest results of the study. As reflected, 11 pupils or 50% of the pupils were at a good reading comprehension level. As reflected too, there are 6 pupils who have a very good reading comprehension level, as there are 4 pupils identified as having a fair reading comprehension level. In the result, there is one pupil (4.54%) performed excellently.

To identify the significant difference of the pupils’ result in pretest and posttest, the researcher used t-test analysis on 0.05 level of significance. With a computed t-value of -10.78553 with a p-value of less than 0.0000, the result showed significant difference between the pretest and posttest scores. This indicates that there was a significant difference of the students’ reading comprehension level before and after the exposure instructions using the meta-cognitive note taking strategy, thus accepting the hypotheses emphasizing that there is a variation in the pretest and posttest mean scores.

The findings of the study are supported by the argument of Carroll & Ganus (2012) that meta-cognitive notetaking promotes active reading and self-monitoring, and allows students to process and remember information more efficiently. This is demonstrated by the observed increase in pupils’ reading comprehension level as revealed by the posttest results. The improvement significantly implies that the metacognitive notetaking method was effective.

Also, the substantial difference in the pretest and posttest mean scores implies a notable improvement of the reading comprehension skills of the learners after the

experimentation or treatment. The result aligns to the contention of Parvane et al. (2013) and Haghverdi (2010), specifying that note-taking is a substantial aspect of the educational process that essentially influences learning outcomes and increases retention, leading to an improved learners' performance.

Improvement of Pupils' Reading Comprehension Level

The following table shows the gain scores computed from the pretest and posttest scores to determine the improvement level of the pupils in reading comprehension. This corresponds to problem 3 of this study.

Table 2

Pupils' Reading Comprehension Improvement Level

Gain Scores	F	%	Interpretation
16-above			
12-15	7	31.82%	High Increase
8-11	12	54.54%	Average Increase
4-7	3	13.64%	Low Increase
3-below			
Total	22	100%	
Mean	10.04		Average Increase
SD	2.256		

As previously cited, there is a significant difference in the mean pretest and posttest scores based on the computed t-value. Thus, the increase in scores from the pretest to the posttest indicates an improvement in the pupil's reading comprehension. In general, the reading comprehension improvement of the pupils is identified as an "average increase," as shown by the mean gain of 10.04. This suggests that there is a moderate improvement in their reading comprehension due to the application of the intervention.

The low standard deviation suggests consistent student responses to the intervention, as the gain scores are clustered around the mean.

Further, it is revealed from the result that seven (31.82%) pupils had shown a high increase in their scores from pretest to posttest. This indicates that nearly one-third of the students showed a considerable improvement in their reading comprehension after the intervention.

Also, the twelve (54.54%) pupils had exhibited an average increase, which means over half of students had an average increase in reading comprehension scores, indicating moderate benefits from the meta-cognitive notetaking strategy.

On the other hand, three (13.64%) pupils had displayed a low increase in reading comprehension indicative of a smaller percentage of students who experienced a minimal improvement in their reading comprehension scores.

The results show that the meta-cognitive notetaking strategy significantly improved reading comprehension among upper primary learners, with moderate to high gains,

confirming the hypothesis which highlights the potential of metacognitive note-taking strategy to significantly enhance reading performance.

Palani (2012) emphasized the importance of reading in fostering critical thinking, evaluation, and problem-solving abilities, which are all necessary for academic achievement. This is supported by the gains that the learners had in reading comprehension assessment, which shows their better understanding of the lessons. Furthermore, Nyarko et al. (2018) underscored a positive interrelation between reading competence and overall academic achievement. This supports the idea that improved reading abilities achieved through the application of metacognitive note-taking approach leads to better learning outcomes. Finally, Cirera (2017), through her study, accentuated the importance of metacognitive note-taking taking method in reinforcing understanding and learning efficiency among students. This was vouched by the considerable increases in reading performance of the learners in this study after the intervention.

Implication of Results on Teaching Reading

The findings and results of the study laid several implications for teaching reading. The ideas that emerged, which includes results from the observations of the researcher, can be grouped into the following:

1. Effectiveness of metacognitive note-taking strategy

Meta-cognitive notetaking has improved the reading comprehension scores of the learners in the upper primary learners, interpreted as moderate to high increases. This study implies that using metacognitive notetaking in teaching reading aids in enhancing the learners' reading comprehension level.

2. Fostering active engagement

Carroll and Ganus (2012) argued that meta-cognitive notetaking strategies promote active reading and self-monitoring, which enhances the learners' information processing and retention. This suggests that teaching strategies that encourage active engagement and self-reflection can enhance reading comprehension and should be adopted.

3. Responding to the diverse needs of learners

The study reveals that while most students earned an average to high increases in reading comprehension, there is also a lower percentage that earned low scores. This is suggestive of the need for differentiated instruction and additional support for students struggling with this strategy. Hence, teachers should provide supplementary interventions.

4. Promoting the importance of reading comprehension

Reading comprehension is essential in teaching that requires concept analysis and mental processes as argued by Johnson (2017) and Suson et al. (2020). This implies that educational institutions must prioritize the development of reading comprehension skills of the learners..

5. Informed teaching practices

The data suggest the use of metacognitive notetaking approach in reading instruction. Administrators and instructors can utilize these results to push the implementation of such

practices in their schools, so as to attain a widespread improvement in reading comprehension across diverse student demographics.

6. Encouraging continuous professional development

The positive results of this study suggest that ongoing professional growth for teachers can be enhanced by training opportunities relative to the implementation of metacognitive note-taking approach as well as the adoption of creative reading methods.

5. CONCLUSION

After analyzing the data, results, and finding, the following conclusions are drawn:

1. The meta-cognitive notetaking strategy enhanced the reading comprehension skills of upper primary learners.
2. The increase in scores, that is from moderate to high, of the majority of the learners reveal the effectiveness of the metacognitive note-taking strategy in teaching reading.
3. The study indicates that meta-cognitive notetaking strategy encourages active engagement, self- monitoring and reflection, thereby enhances the learners' reading comprehension skills
4. The strength of the strategy and its potential to address diverse learning needs in the classroom are shown by the consistent student responses and alignment with educational theories.
5. The study emphasizes the importance of incorporating innovative instructional methods like meta-cognitive notetaking to enhance reading instruction and improve student outcomes.

6. RECOMMENDATION

Based on the conclusion, the integration or utilization of meta cognitive note-taking approach in teaching reading is highly recommended. This can also be utilized with other classes and in other fields of discipline.

Also, the teachers should undergo training on the proper implementation of the approach to ensure that the teaching-learning process addresses the needs of the students. It can also be suggested that teacher should prepare supplementary materials in order to effectively apply of the approach, thereby ensure an optimum level of learners' progress in reading.

Further study on the use of metacognitive note-taking approach in teaching other fields of discipline is recommended in order to determine its efficacy in other fields.

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About the Author

Richelle D. Paca-anas, who is a dedicated educator at Buenavista Elementary School, has been recognized with multiple LISTO-PRAISE Awards in 2023. LISTO-PRAISE, which stands for Levelled-up Individuals in All Schools for Total Outstanding Outputs—DepEd Program on Awards and Incentives for Service Excellence, is patterned from the Department of Education (DepEd) broader program that honors the exceptional contributions of teachers in a range of roles, thus, one of the highly-regarded recognitions in the educational sector. In line with this, she has been named Most Outstanding TLE/EPP Teacher, Outstanding District Gender and Development Coordinator, Outstanding ICT Coordinator, Outstanding District Publication Writer, Outstanding NEAP-Lunduyan Cohort 1 Scholar, and Most Outstanding Mathematics Teacher, which showcase her exceptional abilities and motivational impact on the Buenavista Elementary School community.

Paca-anas embraced a teaching career marked by diverse accomplishments and ancillary roles that include being a District Gender and Development Coordinator, School-Based Management Coordinator, EPP Coordinator, ICT Coordinator, SIP Coordinator, School Planning Officer, and School Paper Adviser. She holds a Bachelor of Elementary Education with specialization in Special Education from Leyte Normal University and a Master of Arts in Education major in Educational Management from Asian Development Foundation College. Paca-anas is committed to professional growth evinced by her participation in international and national training to enhance her teaching skills and improve students' academic achievements. Her enthusiasm to innovate and contribute to the body of research is manifested through this published scholarly article that favorably influenced the curriculum adjustment and implementation in Buenavista Elementary School.

Impact of Constructivist Teaching Strategy on the Performance of the Learners in Basic Science

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Abstract

The study investigated the effect of the constructivist teaching strategy on the performance of third-grade students in Basic Science at Tingib Elementary School, Basey II District of Samar Division. This is an experimental study, which applied the randomized sampling method in splitting the participants into control and experimental groups. Each group involved 23 learners. A 30-item achievement test that covered the essential competencies in Basic Science was used as an instrument to assess the pretest and posttest scores, gains, and differences between groups. The study focused on the use of constructivist teaching strategies in giving instruction to the experimental group, specifically the inquiry-based learning, project-based learning, hands-on learning maximizing the available technology, collaborative learning, concept mapping, and case-based learning. The results showed a substantial change in the pre-test and post-test scores. This indicates that constructivist teaching approaches increase student outcomes and must be implemented in science instruction. It suggests that educators should receive training in adopting efficient teaching strategies and encouraging innovative, learner-centered teaching approaches.

Key words: constructivist teaching strategy, learners' performance, Basic Science

1. INTRODUCTION

In recent years, the educational spectrum has shifted towards dynamic, interactive teaching methods, promoting active student engagement and recognizing that learners are capable of constructing their own knowledge, rather than being passive receivers of information.

The recent educational culture requires the teachers to deliver high-quality instruction and learning that necessitates a diverse range of knowledge and abilities in teaching and assessment. For the teachers to become efficient, successful, and productive in their field, they must be skilled enough to use instruction appropriately. The success of teaching and learning relies on the use of appropriate instructional strategies that cater to the diverse needs and interests of learners. Using effective instructional strategies enables

learners to connect class concepts with real-life situations, allowing them to demonstrate their knowledge. Teachers also benefit from these strategies as they enable better monitoring and assessment of student performance through various evaluation methods. Likewise, teachers must also use effective teaching strategies to equip the learners with the 21st century skills that are essential in preparing them so as to succeed in school, work and life opportunities (Ross, 2017).

In the Philippines, the Department of Education (DepEd) emphasizes the empowerment of the teachers to carry out quality instruction that caters to the diverse needs of the learners. DepEd Order No. 42 (DepEd, 2016) mandates the utilization of teaching strategies that place the learners at the center of the teaching-learning process and provide them with an opportunity to build learning upon their background knowledge while using own skills, interests, styles and talents (Lego, 2014).

Teachers use various teaching strategies to promote all-round learning, including collaboration, demonstrations, differentiated instruction, hands-off and hands-on techniques, modeling, peer teaching, and problem-based instruction (Cox, 2009). One such approach is the constructivist strategy, which has gained prominence in the past decade and is influenced by the works of Dewey, Montessori, Piaget, Brunner, and Vygotsky. The constructivist teaching approach represents a shift from behaviorism to cognitive theory in education. This method, which emphasizes accommodation and assimilation from experiences, is perceived to be essential in improving the learners' academic performance (Adak, 2017). Hence, this study aims to investigate its effectiveness in improving learners' performance in Basic Science.

1.1. Rationale of the Study

Constructivism posits that knowledge is shaped by the learner rather than existing independently. Constructivism emphasizes that learning is an active process, with students actively participating in the meaning-making process. This approach ensures that the knowledge they construct is not inert but can be used in various situations, making it more adaptable. Constructivists acknowledge that the real world exists, but they contend that students need to grasp it in a variety of ways in order to completely comprehend it. Constructivists emphasize that classroom experiences should foster diverse perspectives, aligning with the claim that education should be inclusive and diverse (Moallem, 2001; Jones & Brader-Araje, 2002).

Constructivism is a growing theory in science education, focusing on the existence of knowledge beyond cognizing individuals and found in books. It is similar to objectivism, where knowledge is found in books and is independent of human thinking. Science is a search for truths and principles related to reality, with objectivity being a crucial aspect. Teachers use a curriculum to ensure students understand science subjects and absorb reality from textbooks. Constructivist epistemology suggests that the only instrument of the knower is their senses, allowing humans to engage with their surroundings and construct a picture of the world (Lorsbach, 2018).

Science is a compulsory subject in schools worldwide, but many students neglect it due to lack of enthusiasm and desire. Conventional teaching approaches, such as mere

lecture and demonstration, are outdated. To improve science education, it is crucial to engage students in meaningful investigations, significant problems, simple experiments, and hands-on experiences. Instilling a scientific attitude and fostering imagination and reason is the best approach. Constructivist theory is essential in this field, as it emphasizes skills like exercise, updating, critiquing, and evaluating knowledge in the modern world (Adak 2017).

Research on students' constructive learning processes, mental models, and misconceptions is crucial for teachers to effectively model scientific reasoning in their students. Fostering the love of science and the development of the learners' skills in this field is very important especially in their early childhood years because similar to literacy and numeracy, these skills have significant bearing on their future academic and career endeavors. For instance, the nation's higher education system is experiencing a decline in quality, leading to skills-jobs mismatch, low productivity in research and development, and a deficient science and innovation culture (Licuanan, 2017). This can be attributed to the foundation that the learners have acquired. So, the emphasis is now placed on the early development stage of learning that serves as an impetus for the teachers to utilize appropriate teaching approach that allow the learners to reach at the optimum level of development.

Studies have also proven the effectiveness of constructivist approach in teaching like in the secondary science, in higher education, and in other fields of discipline, accentuating that traditional methods can no longer thrive with the learning demands in this modern world (Adak, 2017; Cakir, 2008, Kim, 2005; Oakley, et al., 2004). Yet, the application of the approach in the elementary level, specifically in Basic Science is underexplored. Therefore, this study looked into the impact of the constructivist approach on the achievement level in science of the 3rd Graders in public school.

1.2. Theoretical Framework

The context of this study is based on the foundational theories in education and psychology. This is basically anchored on the the Constructivist Learning Theory, that is developed by Jean Piaget. This emphasizes active learning, where students create their own understanding through experiences and reflection. This approach emphasizes interaction with content, hands-on activities, and cooperation with peers (Elliott et al., 2000). This study uses the constructivist method to teach Basic Science with the aim to improve students' performance in the experimental group through these active learning approach.

Also, this study acknowledged the concept of Lev Vygotsky's Social Development Theory strengthens constructivist concepts by emphasizing the importance of social interaction in learning. According to Vygotsky, cognitive growth is primarily a socially mediated process, and learning takes place within the Zone of Proximal growth (ZPD), which is the gap between what a learner can do without assistance and what they can do with instruction and encouragement from a trained partner (David, 2014). In this study, the constructivist teaching style integrates collaborative activities and scaffolding approaches, which are consistent with Vygotsky's theory, to improve student learning and performance in basic science.

This study also recognized Jean Piaget's Cognitive Development Theory, which describes how children move through many stages of cognitive development, each marked by distinct ways of thinking and comprehending the environment. The constructivist approach considers these developmental phases when developing learning activities that are both developmentally appropriate and difficult enough to foster cognitive progress (Cherry, 2017). This alignment guarantees that the teaching approach used in the experimentation is customized to the cognitive capacities of third-graders, thereby enhancing their learning potential.

1.3. Conceptual Framework

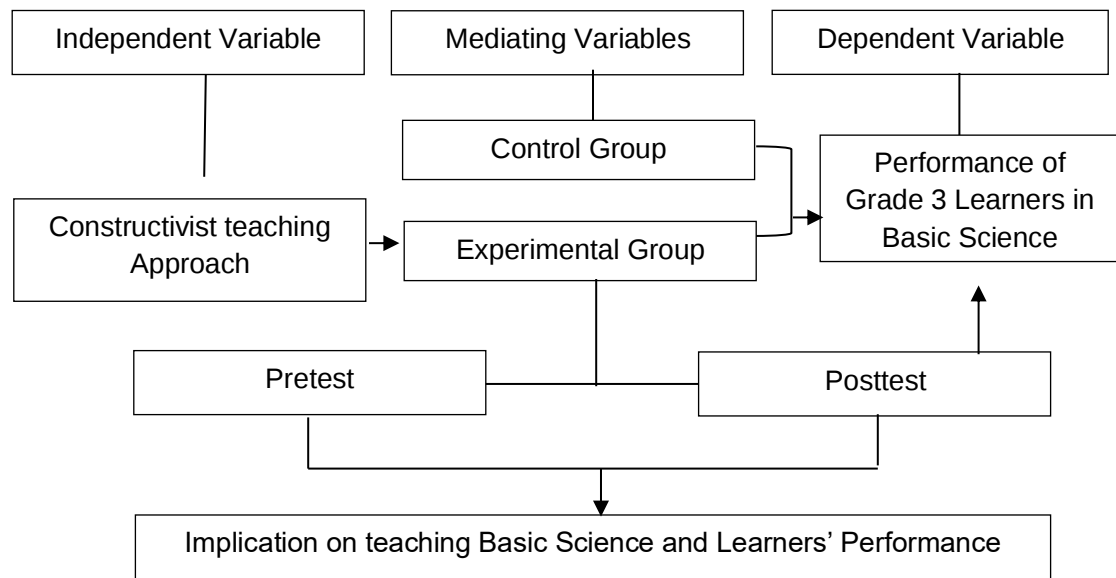


Figure 1. Concept Paradigm of the Study

The figure shows the process by which the constructivist teaching style is intended to impact student performance in basic science. The goal of the study is to give empirical evidence on the usefulness of constructivist teaching approaches by comparing the pretest and posttest results for control and experimental groups. The constructivist teaching approach served as the independent variable used with the experimental group, while the traditional method is applied with the control group. The results of the pretest and posttest of both groups determines whether there is a significant difference in the performance of the learners, thereby give insights on the effectiveness of the constructivist teaching strategy. The framework guides the research process, enabling a planned and methodical examination of the influence of novel teaching practices on educational results.

1.4. Purpose of the Study

As this study aimed to examine the effect of a constructivist teaching approach on the performance of 3rd-grade students in Basic Science at Tingib Elementary School, this has for its purpose to compare pretest and posttest scores, gains, and differences between groups. The results of the study are aimed at providing empirical evidence on the

effectiveness of constructivist teaching strategies in improving student outcomes, offering valuable insights for educators and curriculum developers for the enhancement of the teaching approach in Basic Science and in other discipline.

1.5. Research Questions

This study investigated the impact of the constructivist teaching approach on the performance in Basic Science of the 3rd Graders in Tingib Elementary School, Basey II District, Samar Division for school year 2019-2020.

Specifically, this sought answers to the following questions:

1. What are the mean pretest scores of the pupils in both control and experimental groups?
2. What are the mean posttest scores of the pupils in both control and experimental groups?
3. What are the mean gain scores of the pupils in the pretest and posttest of the control and experimental groups?
4. Is there a significant difference in the mean pretest scores of the two groups?
5. Is there a significant difference in the mean posttest scores of the two groups?
6. Is there a significant difference between the pretest and posttest scores of the two groups?
7. Is there a significant difference in the gain scores of the pupils in the pretest and posttest of the two groups?
8. What is the implication of the results of the study on teaching Basic Science and on the performance of the learners?

1.6. Null Hypothesis

The null hypotheses below were tested in the study:

- H0₁ There is no significant difference in the mean pretest scores of the two groups?
- H0₂ There is no significant difference in the mean posttest scores of the two groups?
- H0₃ There is no significant difference between the pretest and posttest scores of the two groups?
- H0₄ There is no significant difference in the gain scores of the pupils in the pretest and posttest of the two groups?

1.7. Significance of the Study

The significance of this study stems from its potential to provide empirical data on the efficacy of constructivist teaching practices in improving the performance of third-grade students in Basic Science. This study compared standard and constructivist teaching techniques to investigate if active, student-centered learning approaches improve the learners' performance in science. The findings have significant implications for educators

and curriculum makers, directing them toward more effective teaching techniques that promote deeper engagement and improved learning outcomes in Basic Science. In addition, this study serves as a significant resource for additional research, establishing a basis for future studies to examine and develop constructivist teaching approaches across multiple disciplines and educational levels, thereby contributing to the ongoing advancement of educational standards and methods.

1.8. Scope and Limitation

The purpose of this study is to investigate the influence of constructivist teaching practices on the performance of third-grade learners in Basic Science at Tingib Elementary School, Basey II District, Samar Division, during the school year 2019-2020. The constructivists strategies applied in this study are inquiry-based learning, project-based learning, hands-on learning with the use of available technology, collaborative learning, concept mapping, and case-based learning- all are activity-driven, allowing the learners to construct their own knowledge based on the learning experiences. These methods were applied in instructions focusing on particular competencies for 3rd Grade within the 1st quarter, where lesson contents and activities were adjusted based on the learners' aptitude. The lesson contents were also adjusted to fit to the learners' abilities based on the assessment results. The study explicitly compared pretest and posttest results across control and experimental groups to assess the effectiveness of the instructional approaches. However, the study is constrained by its emphasis on a particular and single grade level and topic within a narrow geographical location, which may alter the applicability of the findings to other settings. Furthermore, the duration of the study and sample size may restrict its potential to capture the long-term impact and the broader relevance of the constructivist approach.

2. LITERATURE REVIEW

Teaching is a profession that involves skilled individuals in education who are responsible for pedagogical ideas and practices, and ensuring student development at all levels. The process involves objectives, materials, methods, assessment, teachers and learners' quality. It is a complex process that includes assessment, marking, reporting. Among all the responsibilities of teachers, delivering instruction determines the success of the teaching process. This therefore requires the educators to be equipped with necessary skills that will effectively meet the diverse learning needs of the learners (Ayua, 2017).

The teacher is viewed as an agent of creativity and the center on which the success or failure of any educational program revolves. The teacher is the most important component in the educational system; and that without an excellent teacher, even if all other resources are available, it would be extremely difficult, if not impossible, to achieve the desired goals of the school. This is because no education can surpass the quality of the teacher (Akinwumi, 2007). The true efficacy of a teacher requires understanding of what to teach, how to teach it, when it should be taught, who should be taught, why it is taught, and even where to teach.

Along with the perspective on what makes the teacher effective is the emphasis on the strategy that he applies in instruction. Relative to this, the recent educational system accentuates the adoption of novel teaching techniques, while discouraging the traditional methods in teaching. Japitana (2018) purported that traditional teaching methods that rely on one-way communication between teachers and students may not necessarily result in significant learning outcomes. Throughout the decades, educators have recommended several instructional practices to improve education for all learners throughout the last decades. However, much emphasis is given on the application of constructivist strategies due to its vast significance.

Constructivism is a significant educational theory that significantly influences educators' teaching approaches and is one of the most influential learning theories of our time (Bencze, 2004). It is a cognitive approach that views learning as an active construction of concepts, with teaching playing a supporting role. It aims to address children's pre-instructional conceptions in subject matter, which are resistant to change. The approach allows students to develop new mental structures by building on or restructuring existing ones, allowing them to affect conceptual change. It is a learning approach that encourages active knowledge construction by learners through experiences and interactions with prior knowledge. It encourages learners to connect new experiences with existing beliefs, making them active creators of their own knowledge. Teachers create situations for students to question their assumptions, ensuring learning is possible only when learners are involved (Gupta & Gupta, 2017).

Constructivist teaching strategies encourage active engagement with learning by constructing meaning from experiences, knowledge, and interactions. These strategies help develop higher-order thinking skills, problem-solving abilities, and enhance academic outcomes. Some effective teaching strategies include *inquiry-based learning*, which emphasizes questioning, investigation, and discovery, fostering critical thinking and problem-solving. *Collaborative learning*, which involves group work, promotes peer-to-peer learning, knowledge sharing, and constructive feedback, leading to improved academic outcomes. *Project-based learning*, which involves learners applying knowledge and skills to real-world situations, fosters creativity, problem-solving, critical thinking, and teamwork (Zajda, 2011).

Other constructivist strategies include *case-based learning*, which is seen to improve academic outcomes, including higher achievement and better problem-solving skills. This approach also positively impacted student motivation and engagement. Also, *concept mapping*, as a constructivist approach, is proven to help improve academic outcomes, including better understanding, retention, and problem-solving skills. Both studies highlighted the positive impact of these methods on student motivation and engagement (Akpan & Beard, 2016).

Constructivist teaching practices are increasingly being used in teacher education programs and public schools nationwide, demonstrating significant success in promoting student learning (Gordon & O'Brien, 2007).

In science pedagogy, constructivism serves as a theoretical framework for understanding, focusing on alternative conceptions, conceptual change testing, and cooperative learning. Research by Mintzes, Wandersee, & Novak, (1997) suggests that

students have diverse alternative conceptions about objects and events when they enter formal instruction in science. These conceptions are rooted in personal experiences such as observation, perception, culture, language, and previous explanations of teachers, which are often held onto despite traditional formal instruction, leading to unintended learning outcomes. The research literature on constructivism supports these claims.

Science courses are essential for education as they involve knowledge about scientific phenomena and their application in new situations. However, teaching science faces challenges such as memorizing uncorrelated ideas, lack of investigative activities, and using methods that do not give learners a role. Science supervisors believe that teachers focus on the cognitive aspect and neglect other aspects. To overcome these challenges, a review of the education process, especially teaching methods, is needed. Focusing on how learners learn is crucial, and stakeholders should use activities and opportunities to develop mental and cognitive abilities, attitudes, and skills. Modern theories of teaching and learning, such as constructivism theory, should be utilized to enhance the learning process (Qarareh, 2016).

Science educators should prioritize the quality of students' understandings over surface learning or test scores. Conceptual understanding is crucial and should be a focus, rather than rote memorization. Teachers should focus on the process of science rather than just the content, as students who understand this process are better prepared to acquire science content independently (Cakir, 2008). These viewpoints are emphasized in constructivism context.

Apart from the views mentioned, studies have also shown the advantages that constructivist strategies offer. The study of Kim (2005) revealed that constructivist teaching is more effective in enhancing students' academic achievement, but not in enhancing self-concept or changing learning strategies. However, it can affect motivation to learn academic tasks, cause anxiety, and encourage self-monitoring for test preparation.

Also, the paper of Hudu & Ibrahim (2018) explores constructivism, as a theory that emphasizes the active construction of knowledge by learners rather than passively receiving it from the environment. This highlights the importance of adapting learners' experiences to the world and its role in improving academic attainment.

Researchers have also explored the effectiveness of constructivist approach in various subjects, including social science, science, and language. The studies revealed that students taught through this approach scored higher than those taught using traditional methods (Saran, 2011; Hussein, 2009; Qarareh, 2016; & Miheso, 2002)

Lastly, the study of Adak (2017) revealed that students using the constructivist 7E-model outperformed those using traditional methods, achieving higher scores at all intelligence levels. This suggests that the constructivist approach strategy can enhance students' mastery of higher-order cognitive content.

The literature review emphasizes the importance of teachers in shaping pedagogical practices and fostering student development. It highlights the shift towards constructivist teaching strategies, such as inquiry-based learning, collaborative learning, and project-based learning, concept mapping and cas-based learning, which enhance student engagement, critical thinking, and problem-solving skills. These methods promote academic outcomes and student motivation, particularly in science education. However, there are gaps in understanding the full impact of constructivist strategies on student

learning outcomes, particularly in Basic Science education for 3rd-grade learners. This study aims to address this gap by investigating the specific impact of constructivist teaching on student performance in Basic Science, providing insights for educators and policymakers.

3. METHODOLOGY

This section presents the research process and procedure. This includes the research design, research locale, the respondents and sampling method, instruments, validation of the instrument, data gathering procedure and statistical treatment of data.

3.1. Design

This study used the experimental approach, specifically applying the randomized controlled trials (RCTs) method, wherein the participants were randomly chosen and were assigned into two groups. One group received the intervention or the constructivist instruction, while the other group served as the control group (Ross & Morrison, 2013).

Experimental research is a scientific method involving manipulating independent variables to observe their effect on a dependent variable, while controlling for extraneous variables that could influence the results (Cohen et al., 2017). Researchers intentionally manipulate independent variables to observe their effect on the dependent variable, allowing them to assess causality (Van der Stede, 2014). In this study, two groups (the control and experimental) were used to determine the impact of constructivist approach (which is the independent variable) in teaching Basic Science on the performance of the learners (referred to as the dependent variable in this study).

Both groups were assessed twice at the same time, with the pretest as the first assessment and the posttest as the second.

The diagram of this design is as follow:

R_E	O_1	X_1	O_2
R_c	O_1		O_2

where:

R_E refers to the random assignment of pupils to experimental group

R_c refers to the random assignment of pupils to control group

O_1 refers to the pretest in the experimental and control groups

X_1 refers to the experimental treatment which is the utilization of constructivist approach in teaching Basic Science

O_2 refers to the posttest in the experimental and control groups

The pretest and posttest scores were used as the basis to determine whether there is an improvement in the performance of the participants in the experimental group compared to those in the control group.

The experimental design is illustrated in the flow diagram that follows.

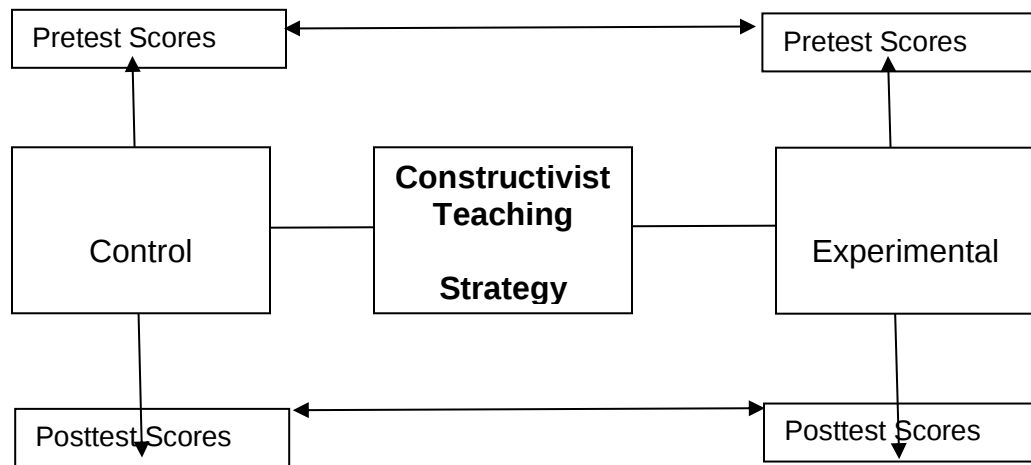


Figure 2. Flow Diagram of the Experimental Design

3.2. Research Locale

This study was conducted at Tingib Elementary School of Basey II District, Basey Samar. The locale is chosen, for a reason that this is where the researcher is currently stationed and that she has a direct contact with the participants.

Tingib Elementary School is located in barangay Tingib, which is a coastal community of Basey that lies on the Western shore of Samar. It is reported in the feasibility study of the district-in-charge that the barangay has higher number of out-of-school youth and the schools face a problem on dropout rate of over 40% and low literacy rate of 15%. Hence, similar to other educational institutions, especially the public schools, Tingib Elementary school shares common problems such as literacy and poor learners' achievement level in the different discipline. This is why the researcher conducted the study in this school with a purpose of determining the effectiveness of constructivist approach in teaching to recommend its application in the classroom instruction.

3.3. Respondents and Sampling Method

The study involved the two classes of 3rd Grade students of Tingib Elementary School enrolled in school year 2019 to 2020. The total number of the Grade 3 learners is 46. After requesting that the learners will be split into two equal groups, the researcher randomly assigned the students into the experimental and control groups. Random assignment is a feature of experimental research that ensures comparison and allows the researcher to arrive at causal inferences about the outcomes of the intervention (Ross & Morrison, 2013). In this study, the learners who were randomly assigned to two classes represent the two groups (experimental and control). They undergo pretest and posttest to identify if there is a significant difference in their performance in Basic Science.

3.4. Research Instrument

The instrument that was used in the study is the Achievement Test in Grade 3 Science. It was a 30-item multiple-choice test prepared by the researcher involving the most essential basic competencies in Science for Grade 3 (Lego, 2014). The basic competencies tested include the following:

- a. Classify objects as solid, liquid, and gas based on some observable characteristics;
- b. Describe changes in materials based on the effect of temperature;
- c. Describe the functions of the sense organs of the human body;
- d. Describe animals in their immediate surroundings;
- e. Identify the external parts and functions of animals;
- f. Classify animals according to their body parts and use;
- g. Describe the parts of the different kinds of plants; and
- h. Compare living with nonliving things

3.5. Instrument Validity

To ensure that the instrument measures what it intends to assess, the achievement test questionnaire was presented to the master teachers and other research experts within the district for evaluation and modification. Then this was administered for a dry run with other 3rd grade classes in the district. The result of the test was used for item analysis to identify the items that are subject for revision so as to improve the content of the test questionnaire.

3.6. Data Gathering Procedure

Prior to the conduct of the study, the researcher obtained the needed consent from the different offices concerned. Upon approval, arrangements were made with the principal regarding the set-up and conduct of the study. The parents were also informed about the study as well as the process.

During the conduct of the study, the student—respondents were pretested using the 30-item achievement test covering the competencies for quarters 1. Within the quarter, the

experimental group was exposed to the constructivist teaching approach, while the control group was taught using the traditional teaching strategy. After the experimentation, the learners in the two groups were post-tested. The data were tabulated, analyzed and statistically treated to answer the research problem and arrive at conclusions and recommendations.

Scoring Method

The raw and mean scores of the students were determined in order to have a working description of the learners' performance level. Each correct answer of the learner in the test is given 1 point. Then, the score ranges, ratings and adjectival interpretations were adapted as shown below.

<u>Raw Score</u>	<u>Transmuted Score</u>	<u>Interpretation</u>
26-30	95 – 100	Excellent
21-25	90 – 94	very good
16-20	85 – 89	Good
11-15	80 -84	Fair
6-10	75-79	Poor
1-5	70 – 74	very poor

To describe and interpret the gain score in the performance of the learners in the test, the following score ranges and interpretation was applied.

<u>Gain Score</u>	<u>Interpretation</u>
16 – above	Very High Increase
12-15	High Increase
8-11	Average Increase
4-7	Low Increase
3- below	Very Low Increase

3.7. Statistical Treatment

The data collected were analyzed via t-test, specifically the independent t-test, where two groups of comparison are independent of each other. This is a parametric statistical test used to see whether a difference between the means of two sample or groups is significant (Kim, 2015). The study utilized 0.05 level of significance of a two tailed test which means that if it is reached, the researcher customarily rejects the null hypothesis and concludes that a real difference exists.

Below are the t-test formulas to be used in order to answer the problems and hypotheses considered in this study.

$$t = \frac{\bar{d}}{S_d / \sqrt{n}}$$

where,

$\bar{d}$ = mean value of differences
 S_d = standard deviation of the differences
 n = number of students

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{S_1^2}{N_1} + \frac{S_2^2}{N_2}}}$$

where,

$\bar{x}_1$ and $\bar{x}_2$ = means for the two groups
 S_1^2 and S_2^2 = variances of the two groups
 N_1 and N_2 = number of participants in each of the two groups

The first formula is the t-test between means for correlated samples that used to identify if there is a significant difference between the pre-test and post test results of each group. The second formula is the t-test between means for independent samples used to determine the significant difference between the performance of the students in the pre-test, post-test and gain scores in the control and experimental groups.

The degree of freedom was computed as follows at 0.05 level:

$$\begin{aligned} Df_{cor} &= n - 1 \\ Df_{uncor} &= n_1 + n_2 - 2 \end{aligned}$$

4. RESULTS, FINDINGS, AND DISCUSSIONS

This section presents the analysis and interpretation of the data gathered after the statistical treatment. The data are presented in accordance to the problems in the study. Responses to questions that can be combined relative to the tabular presentation are incorporated.

Pretest Performance of the Pupils in Control and Experimental Groups

Prior to the conduct of the study, a 30-item pretest was administered to the two sample groups to determine the entry performance of both groups at the beginning of the study.

Table 1

Pretest Performance of the Learners

Raw Scores	Pre-Test				t-value	p-value
	Control		Experimental			
	F	%	F	%	0.11679	.90756
11-15	6	26.09%	3	13.04%		
6 - 10	16	69.57%	18	78.26%		
1 - 5	1	4.34%	2	8.7%		
Total	23	100%	23	100%		
X	8.86 ^a		8.78 ^a			
Sd	2.32		2.71			

* Means with the same letter do not differ significantly $\alpha = 0.05$

It can be gleaned in the table, 16 of the learners in the control group and 18 students in the experimental groups got low scores ranging from 6 to 10, interpreted as “poor” level of performance. Only 26.09 percent of the students in the control group reached the score bracket of 11-15 and 13.04 in the experimental group, which means the learners performed fairly. The mean scores for both the control and experimental groups in the pretest are 8.86 (Sd = 2.32) and 8.78(Sd =2.71) respectively.

To determine the significant difference in the mean scores, the t – test for uncorrelated sample was employed and revealed a computed t-value of 0.11679 and a p-value of 0.90756 at 0.05, which means not significant at $p < .05$. This supports the null hypothesis asserting no significant difference between the mean pre-test scores of the control and experimental groups, thus accepted.

The standard deviations (2.32 for the control group and 2.71 for the experimental group) indicate that score variability within each group is comparable, but somewhat greater in the experimental group.

The result indicates that neither the control group nor the experimental group perform better than the other and that the two groups exhibited the same level of performance in the pre-test. The data also suggest that the two groups were comparable at the start of the experiment.

The result is can be linked to the viewpoint of Ross (2017) emphasizing the significance of instructors providing high-quality education through diverse instructional styles that cater to learners' unique needs and interests. He emphasizes the need for effective teaching and learning strategies that relate class topics to real-world situations and enable successful monitoring and assessment of student performance, discouraging the application of traditional method of teaching.

Post-test Performance of the Pupils in Control and Experimental Groups

Similar type of test administered in the pre-test was given to the control and experimental groups after the experimental period. The results of the test for both groups were used to identify the learners' post-test performance. Table 2 summarizes the result.

Table 2

Post-test Performance of the Learners

Raw Scores	Post-test				t-value	p-value
	Control		Experimental			
	F	%	F	%	-9.47855	< .00001
21-25			5	21.74%		
16-20			15	65.22%		
11-15	12	52.17%	3	13.04%		
6 - 10	9	39.13%				
1 - 5	2	8.7%				
Total	23	100%	23	100%		
X	11.35 ^a		18.43 ^b			
Sd	2.82		2.21			

* Means with unlike letters differ significantly
 $\alpha = 0.05$

Table 2 depicts that in the range of scores from 16 to 20, 15 or 65.22% of the learners in the experimental group reached the bracket and 5 learners got a score of 21 to 25, indicating a considerable increase in their achievement level. The performance can be interpreted as “good” and “very good” In contrast, none of the learners in the control group scored within these ranges and their performance levelled up to “fair” score bracket of 11-15.

The result of the t-test for the significant difference between the mean scores revealed a computed t-value of -9.47855 which is less than the p – value of 0.00001 indicating highly significant difference, thus rejecting the null hypothesis that there is no significant difference between the mean post-test scores of the control and experimental groups.

The mean score for the control group is 11.35, whereas the mean score for the experimental group is much higher, at 18.43. This means that the experimental group performed significantly better on the post-test than the control group.

The control standard deviation for control group that is 2.82 indicate higher variability in the learners' scores. While the standard deviation for experimental group, which is 2.21, shows that pupils in this group perform more consistently and with less variability.

The post-test data showed that the experimental group significantly outperformed the control group, which can be attributed to successful application of constructivist teaching strategy, which aligns to the assertion of Ross (2017) and Adak (2017), emphasizing the significance of constructivist approaches in promoting better comprehension and retention of knowledge, leading to increased academic achievement.

Gain Scores of Pupils from Pre-test to Post-test in the Control and Experimental Groups

The performance of the control and experimental groups was assessed through gain scores, comparing and incorporating pre and post-test scores.

Table 3

Mean Gain Scores of the Control and Experimental Groups in the Pretest to Post Test

Raw Scores	Gain Scores			
	Control		Experimental	
	F	%	F	%
12-14	0	0%	4	17.39%
9-11	0	0%	12	52.17%
6-8	0	0%	6	26.09%
3-5	11	47.83%	1	4.35%
2 - Below	12	52.17%	0	0%
Total	23	100%	23	100%
X	2.48 ^a		9.65 ^b	
Sd	1.56		2.23	
<i>t-value</i>	-12.64141			
<i>p-value</i>	< .00001			

* Means with unlike letters differ significantly
 $\alpha = 0.05$

It can be gleaned in the table that there is a greater percentage of the learners in the experimental group that had a gain score of 9-11, which falls between the “average” and high “increase” of scores. Also, 4 learners or 17.39% of those who were in the experimental group gained a score of 12-14, which is a high increase.

On the other hand, 52.17% of the learners in the control group yielded a very low increase of 2 and below.

The table also shows that the control group yielded a gain mean score of 2.48 (sd= 1.56) while the experimental group had a gain mean score of 9.65 (sd= 2.23).

In order to determine the impact of the constructivist strategies on the performance of Grade 3 learners in Basic Science, it was necessary to determine the difference in the gain scores of the control group and experimental groups obtained in the pre test and post test. As evidenced by a computed t-value of -12.64141 with a p - value of < 0.00001 , there is a highly significant difference in the gain scores of the control and experimental groups, which rejects the null hypothesis of no significant difference between gain scores of the control and experimental groups at 0.05 level.

Thus, considering that the experimental group demonstrated a significantly higher mean score compared to the control group, it may be assumed that, if we take the gain scores as the basis, constructivist teaching strategy is instrumental to the improvement of the learners' performance in Basic Science.

The study reveals that the experimental group significantly benefited from the constructivist instructional tactics strategy, resulting in higher gain scores and a significant statistical difference, which supports the argument of Cox (2009) highlighting that adopting successful teaching strategies, including constructivist ones, is crucial for promoting comprehensive learning and enhancing academic achievement.

Key Findings

1. The control and experimental groups had similar performance levels at the start of the study, with mean scores of 8.86 for the control group and 8.78 for the experimental group. There is no significant difference between the pre-test mean scores.
2. The experimental group exhibited a significant improvement in post-test compared to the control group. This is shown by the mean score of 18.43, which is way higher than the mean score of the control group of 11.35. The t-test result indicates a highly significant difference between the two groups.
3. The experimental group had a significant increase in gain scores of 9.65 compared to the 2.48 increase of control group. The t-test revealed a significant difference with t-value of -12.64141 and p-value of < 0.00001 .

Implications of the Study on Teaching Science and Learners Performance

The considerable improvement in performance of the experimental group that used constructivist teaching methodologies emphasizes the need of incorporating these approaches into scientific education. The findings indicate that there is an improved learners' performance. Constructivist teaching practices, such as active involvement, problem-solving, and hands-on activities, collaboration, and concept mapping significantly enhance student engagement and performance, thereby underscoring the importance of good teaching practices in achieving comprehensive learning that aligns to the assertion of Cox (2009).

Also, the study highlights the significance of teaching methods that cater to the diverse learning styles and demands of the learners, emphasizing the role of constructivist strategies in enabling students to develop their own thinking.

In addition, the significant difference in gain scores between control and experimental groups indicates that constructivist teaching practices enhance learners' academic performance in Basic Science, which also confirms the assertion of Cox (2009) that diverse and effective instructional approaches are crucial for improved learning outcomes.

The study highlights the importance of instructors' expertise in using constructivist teaching methods, recommending the inclusion of this approach in Basic Science training due to its proven ability to enhance learning outcomes, enhance comprehension, and enhance retention.

5. CONCLUSION

From the findings of the study, the following conclusions are drawn:

1. The study found that learners who were taught using constructivist teaching strategies showed better performance compared to those in traditional instruction settings.
2. Constructivist strategies are effective in improving the learners' performance.
3. Creative and learner-centered instruction, particularly in Basic Science, improve comprehension, retention, critical thinking, and real-world connections.
4. Teachers' training to enhance their skills and knowledge in implementing constructivist teaching strategies is necessary to help them create a dynamic and engaging learning environments.

6. RECOMMENDATIONS

Based on the conclusions drawn, the following recommendations are formulated:

1. The adoption of constructivist teaching strategies must be prioritized.
2. Educational institutions should allocate resources for professional development opportunities for educators to enhance their competencies and understanding of constructivist pedagogy.
3. Promote innovative and learner-centered strategies in education, especially in Basic Science, to enhance learners' comprehension, retention, critical thinking, and real-world connections beyond academic success.
4. Teachers' training programs should incorporate constructivist pedagogy components to foster dynamic and engaging learning environments that promote student achievement.
5. Similar study may be conducted focusing the use of the constructivist strategies in other discipline and in different setting.

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Salvador, as one of the recognized teachers in the District II of Samar Division in Region VIII, has earned other numerous awards, such as Outstanding Teacher, Outstanding SBM Coordinator, and Most Outstanding Science Teacher at the school and district level. Her dedication to innovation and excellence has been evident through her efforts to spearhead developmental programs for the learners and the school community as well as her contribution to academic research, specifically through this published study that has influenced the curriculum adjustments to enhance student achievement. Salvador's dedication and adaptability, since being an early childhood education teacher up until her recent position, have made her a cornerstone of Tingib Elementary School. She holds a double degree in Elementary and Secondary Education from Leyte Normal University and advanced studies in Basic Science from Eastern Visayas State University. Her skills in classroom management, assessment, and leadership have inspired colleagues and students to strive for excellence.

Book Review: Special Education Leadership as a Personal Journey: Challenging Parallel Systems of Education by Ruth Mclean Turner

By Lournellie Vega Rullán

Ruth Mclean Turner is a seasoned educator and leader with a distinguished background in special education leadership. With over two decades of experience in the field, Turner has dedicated her career to advocating for inclusive and equitable educational practices for students with special needs. Ruth Mclean Turner's "Special Education Leadership as a Personal Journey: Challenging Parallel Systems of Education" is a compelling and insightful exploration of special education leadership. With a blend of personal narrative, scholarly research, and practical guidance, Turner offers a comprehensive examination of leaders' challenges in navigating parallel systems within education. One of the most captivating aspects of Turner's book is her deeply personal approach. Drawing from her own experiences as a leader in special education, she provides readers with a firsthand account of the triumphs and tribulations encountered in the field. Through candid reflections and poignant anecdotes, Turner brings to life the complexities of special education leadership, making the book relatable and engaging. Central to Turner's analysis is exploring parallel systems within education, particularly in special education. She adeptly highlights the disparities and inequities that often exist between mainstream education and special education programs, shedding light on the systemic barriers that hinder the inclusion and success of students with special needs. Moreover, Turner's book is more than just a theoretical exploration. It offers practical guidance for leaders who challenge and reform these parallel systems. Drawing from her experiences and expertise, she presents innovative strategies for fostering collaboration, promoting inclusivity, and advocating for systemic change within educational institutions.

Ruth Mclean Turner's "Special Education Leadership as a Personal Journey: Challenging Parallel Systems of Education" is a thought-provoking and enlightening read for anyone involved in special education leadership. With its blend of personal narrative, scholarly analysis, and practical advice, this book is an invaluable resource for leaders, educators, and advocates striving to create positive change in special education. Turner's passionate call to action resonates long after the final page, inspiring readers to embark on their journey toward a more inclusive and equitable future in education.

Main Themes

Throughout the book, Turner emphasizes the importance of empathy, compassion, and resilience in effective leadership. By centering the experiences and needs of students with special needs, she underscores the transformative power of dedicated leadership in creating more equitable and inclusive educational environments.

A central theme of the book is the examination of parallel systems within education, particularly in special education. Turner delves into the disparities and inequities between mainstream education and special education programs, highlighting leaders' challenges in navigating these complex systems.

Turner also advocates for equity and inclusion in special education, emphasizing the importance of ensuring all students have access to quality education and support services. She challenges readers to confront biases and systemic barriers that hinder the success of students with special needs and offers strategies for promoting inclusivity within educational institutions.

Turner incorporates personal narratives and reflections into the narrative, offering readers real-world examples and insights into the challenges and rewards of special education leadership. These stories humanize the leadership experience and provide readers with relatable experiences to draw upon in their journey.

The book concludes with a call to action, urging readers to take proactive steps toward challenging and reforming parallel education systems. Turner empowers readers to advocate for policy changes, foster inclusive practices, and champion the rights of students with special needs in their communities.

Key quotes

"But it was an exciting time to be a special educator working with general educators to improve learning for all students, not just those with disabilities." (Pg.35). By emphasizing the excitement of the period, Turner suggests that there were opportunities for meaningful change and improvement in education systems. This implies a belief in the potential for collaboration to bring about positive outcomes for students.

"Schools can infect people with mental illness or inoculate them against it." (Pg.43). The quote suggests that schools have a dual role in shaping mental health outcomes. On one hand, they can contribute to the development or exacerbation of mental illness through factors such as stress, bullying, or lack of support. On the other hand, schools also have the potential to provide protective factors that promote mental well-being, such as supportive environments, access to resources, and mental health education.

"That became the beginning of a rewarding series of program evaluation and improvement projects that became characteristics of my consulting career." (Pg.70). Turner describes this moment as the beginning of a significant shift or development in her career. It marked a turning point when she embarked on a new path focused on program evaluation and improvement projects.

"I found a total lack of clarity regarding the roles of the behavioral program staff" (Pg.81). Turner identifies a significant gap or deficiency in the organization or structure of behavioral program staff roles. This suggests confusion or ambiguity regarding the responsibilities and expectations associated with these positions.

"Students can receive the wrong diagnosis, and this decision had sad consequences." (Pg.145). Turner highlights the significant consequences that can result from students receiving

incorrect diagnoses. This suggests that misdiagnosis is not just an administrative error but can have profound and adverse effects on students' educational experiences and outcomes.

“Powerful educators give multiple opportunities for their students to achieve mastery and to be successful.” (Pg. 183). Turner highlights the role of educators in empowering their students by providing them with opportunities to succeed. By offering multiple chances for mastery, educators can foster a sense of confidence and competence in their students, ultimately empowering them to reach their full potential.

Strengths and Weakness

Some strengths of this book include Turner's personal narrative, which may provide readers with a compelling and relatable perspective on the challenges and triumphs of special education leadership, enhancing engagement and empathy. Also, the book may feature thought-provoking reflection questions or prompts that encourage readers to critically examine their beliefs, practices, and assumptions about special education leadership. The book prioritizes issues of equity and inclusion within special education, challenging readers to confront systemic barriers and advocate for more equitable educational practices.

Some of the weaknesses in the book include the failure to adequately represent diverse perspectives, experiences, and voices, which could limit its applicability to a broader range of readers. Readers may also find that the book needs more practical, actionable strategies or recommendations for addressing the challenges discussed, making it difficult to translate theory into practice.

Comparison to Fullan

Turner's book focuses specifically on special education leadership and is mostly targeted toward educators, administrators, and advocates working within the field of special education, while Fullan's book, on the other hand, addresses leadership in a broader educational context and applies to leaders across various educational settings. Turner's book also incorporates personal narratives and reflections, drawing on her experience as a special education leader. Fullan's book will likely be research-driven, integrating theories, case studies, and frameworks to explore effective leadership practices.

Turner's book may offer practical strategies and recommendations for addressing the unique challenges faced by special education leaders, such as navigating parallel systems, promoting equity, and fostering inclusive practices. Fullan's book will likely provide a toolkit of practical strategies and approaches for leading change, including establishing a shared vision, building capacity, fostering collaboration, and monitoring progress. Turner's book concludes with a call to action specific to special education leadership, inspiring readers to advocate for systematic change and promote inclusive practices. Fullan's book concludes by urging leaders to embrace a culture of change, prioritize continuous improvement, and cultivate environments that support innovation and growth. While both books address leadership in education, they differ in their focus, scope, approach, and target audience. Turner's book provides a specialized exploration of leadership within special education, while Fullan's book offers a broader examination of leadership in the context of educational change.

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Book Review: Reimagining Special Education- Using Inclusion as a Framework to Build Equity and Support All Students

By Natalie Lopez

Authors Jenna Mancini Rufo and Julie Causton are highly knowledgeable figures in the field of education. Jenna Mancini Rufo brings a wealth of experience to her role as an inclusive education consultant, having transitioned from a successful career as a public-school leader. She is the founder and proprietor of empowerED School Solutions, a consultancy that specializes in promoting equity and inclusion in educational settings. With a background that includes serving as an Assistant Superintendent, Director of Special Education, State Policy Specialist, Special Education Teacher, and Inclusion Facilitator, Rufo possesses practical expertise in effecting systemic changes to foster inclusion.

Julie Causton is the founder of Inclusive Schooling and has a distinguished background as a former Professor in the Inclusive and Special Education Program at Syracuse University. Over the last two decades, she has dedicated her research and practice to developing and advocating for best practices in inclusive education, particularly focusing on supporting students who present challenges within the educational system. Drawing from her own experience as a former special education teacher, Causton understands the profound impact that a sense of belonging can have on student outcomes. She collaborates with administrators, educators, support staff, and families nationwide, guiding them in creating inclusive environments that benefit all learners.

Reimagining Special Education was written during the initial school closures of the Covid-19 pandemic by authors Jenna Mancini Rufo and Julie Causton. They recognized the urgent need to redefine the educational landscape for special education. In the aftermath of the pandemic, schools faced a pivotal moment where the traditional norms no longer applied, prompting a call for transformative change. The authors highlighted that the essence of education has largely remained rooted in preparing students for the industrial era of the early to mid-1900s, highlighting the necessity for a shift.

Throughout the book, Mancini Rufo and Causton shed light on the persistently low outcomes experienced by students with disabilities, whose educational trajectories have often mirrored negative patterns. They emphasized how placement in special education settings can inadvertently restrict access to high-quality instruction, lower expectations, limit social interactions, and result in negative consequences such as retention, suspension, or expulsion for those without an Individualized Education Plan (IEP).

Delving into the core principles of creating more equitable educational environments and services, the authors offer practical strategies that educators can readily implement. Drawing from their own experiences during the transition to distance learning, Mancini Rufo and Causton reflect on successful practices that supported struggling students while also fostering innovative

learning environments. By exploring what proved effective during remote instruction, they advocate for reimagining educational practices to better meet the diverse needs of all learners and promote inclusivity in schools.

Main Themes

The main themes in "Reimagining Special Education" by Jenna Mancini Rufo and Julie Causton revolve around transforming traditional approaches to special education to create more inclusive and equitable learning environments. Some of the key themes in the book include inclusivity, equity in the classroom, acceptance and understanding, and collaboration.

Inclusion

In *Reimagining Special Education*, the authors advocate for a shift towards 'inclusive' practices that prioritize the needs and strengths of every student, irrespective of their abilities or disabilities. They stress the significance of fostering educational environments that embrace diversity and promote acceptance, thus nurturing a sense of belonging among all learners. On page 13, the authors introduce an inclusive framework comprising six steps.

The first step involves restoring students by designing environments that enable them to recognize their potential and leverage their strengths. The second step entails redesigning instruction and assessments to incorporate differentiated tasks, offering students various avenues to show their knowledge and comprehension. The third step focuses on restructuring intervention and enrichment programs to ensure that access to services is not contingent upon labels. Fourth, the authors advocate for revitalizing co-teaching practices to harness the full potential of educators' talents. The fifth step entails realigning service delivery methods to meet the diverse needs of all learners. Lastly, the authors propose reconceptualizing equity, incorporating disability as another aspect of diversity, and ensuring that students' outcomes are not predetermined by demographic factors.

Equity

Rufo and Causton highlight the need for 'equity' in special education, addressing the disparities within the educational system. They state on page 87 that equity is not only a practice but also a philosophy that acknowledges the uniqueness of each individual. Furthermore, they argue that equity involves perceiving individuals differently in order to treat them fairly. The authors draw attention to the overrepresentation of minoritized groups in special education, due to biased beliefs within the system. They advocate for transforming these biases to promote access and opportunities for students with disabilities. Rufo and Causton share strategies aimed at ensuring that all students, regardless of their backgrounds or abilities, have access to high-quality education and support services. The book emphasizes the importance of fostering a culture of acceptance and understanding within schools and communities. Rufo and Causton encourage readers to value diversity and promote empathy and respect for individuals with diverse needs. They touch base on students of different religious backgrounds, the LGBTQ+ community, and colored students.

Collaboration

The authors emphasize the critical importance of ‘collaboration and partnership’ among educators, administrators, families, and various stakeholders in the reimagining of special education. They state that fostering strong partnerships and collective efforts towards shared objectives can foster more effective and sustainable inclusive practices within schools.

In their exploration of redefining and enhancing co-teaching, the authors cite research findings indicating that students with disabilities often perform better in general education classes rather than being segregated into separate settings. They define co-teaching as a collaborative approach that leverages the strengths of each teacher to enhance student learning. Furthermore, on page 53, the authors delve into several co-teaching models in detail, including duet teaching, one teach one float, parallel teaching, station teaching, among others. They then proceed to examine and share insights into three new models for defining inclusion facilitation on page 69.

Key Quotes

“When we re-story a child, we focus on their strengths, and then provide an environment and instruction to match those assets,”. This quote implies moving away from a deficit-based approach that solely focuses on a child's weaknesses or challenges and instead focuses on their strengths. By emphasizing a child's strengths, educators can create a more positive and empowering learning environment. This approach helps to build confidence and self-esteem in students, as they are recognized for their abilities rather than being defined by their limitations.

“Additionally, we examine our instruction before we assume that a child is typical, gifted, has a disability, and so on.” The quote suggests a thoughtful approach to instruction, where educators take the time to thoroughly assess a student's strengths, weaknesses, learning styles, and potential challenges before categorizing them. This approach shows us that educators should not rely on stereotypes or preconceived notions about students based on limited information or observations. This prevents the risk of overlooking a student's potential or underestimating their capabilities.

“What if instead of viewing disability as a problem that is inherent in the individual, we interpret disability as a result of the barriers that exist in our system and what if instead of focusing on the challenges, our students face on their strengths we call this restoring our students.”. The statement challenges the traditional view of disability as a flaw. Instead, it suggests interpreting disability because of barriers in broader societal and educational systems. This reframing shifts the focus away from viewing disability as a problem of the individual and redirects attention towards the environmental and systemic factors that create barriers to inclusion. Emphasizing students' strengths can foster a positive and empowering learning environment, where students are encouraged to build upon their abilities and talents.

“There is no co-teaching if there is no co-planning.” and *“...collaborative planning is necessary to ensure the success of the consultant teacher”*. Both statements highlight the pivotal role of collaborative planning in driving successful co-teaching practices and supporting consultation efforts. Co-teaching involves the partnership of two or more educators in the same classroom, yet without thorough planning and coordination, this collaboration may fall short in effectively meeting student needs. Collaborative planning ensures that educators synchronize their instructional strategies, objectives, and assessments, enabling them to deliver unified instruction tailored to the diverse needs of all learners. Ultimately, these quotes emphasize the significance of collaborative planning in fostering effective co-teaching practices and the

efficacy of consultant teachers in inclusive educational settings. Through collaboration and planning, educators can seamlessly blend their expertise to cultivate an inclusive classroom setting.

Strengths and Weaknesses

The book *Reimagining Special Education*, promotes a more inclusive approach to special education, stressing the significance of acknowledging and embracing diversity among all students. This emphasis on inclusivity fosters a positive and supportive learning atmosphere for students with disabilities. Furthermore, it highlights the importance of identifying and addressing unconscious biases when encountering students with disabilities in the classroom for the first time. The book provides practical examples and strategies for promoting inclusivity and equity within the classroom setting.

Rufo and Causton emphasize the crucial role of collaboration among educators, administrators, families, and other stakeholders in reshaping special education. This collaborative approach nurtures a sense of teamwork and shared responsibility for the achievement of all students. The authors underscore the benefits of collaborative teaching methods, providing numerous examples of how co-teaching can positively impact students with disabilities. Additionally, they advocate for support facilitation to ensure that students receive the necessary assistance within the classroom environment.

While the book provides valuable insights and theoretical frameworks, certain readers might perceive a lack of concrete, practical guidance on implementing the proposed strategies and approaches in actual educational settings. Including more specific examples and case studies could enhance the book's utility for educators and practitioners. Additionally, the book could benefit from addressing potential pushback on the suggested practices. Exploring how educators can navigate resistance from administration, parents, and the educational community would be valuable in preparing educators to effectively implement inclusive practices despite challenges.

The book primarily delves into general principles and strategies for reimagining special education, yet it may not fully delve into the complex intersectional challenges faced by students with disabilities who belong to multiple marginalized groups. These groups may include students of color, LGBTQ+ students, or English language learners. An enhanced focus on intersectionality could deepen the book's analysis and recommendations.

Given the substantial English language learner population in South Florida, additional support for students who identify with other marginalized groups could be particularly beneficial. In addition, collaboration with parents from these marginalized groups is essential. Recognizing that education begins at home, educators aiming to promote inclusion must establish connections with families to ensure alignment between home and school environments. Strengthening these partnerships can facilitate more holistic support for students, addressing their diverse needs both inside and outside the classroom.

Comparison to Fullen

“Reimagining Special Education: Using Inclusion as a Framework to Build Equity and Support All Students” focuses on transforming special education practices through an inclusive lens. It emphasizes the importance of creating equitable educational environments that cater to the diverse needs of all students, regardless of their abilities or disabilities. However, *“Leading in*

a Culture of Change" addresses broader leadership strategies for navigating organizational transformations. While it may touch on aspects of inclusive practices and equity within education, its focus extends beyond special education to encompass leadership principles applicable across various sectors and contexts. They both use a framework that can be implemented to get their desired outcomes.

"*Reimagining Special Education: Using Inclusion as a Framework to Build Equity and Support All Students*" and "*Leading in a Culture of Change*" both tackle the theme of transformation, but from different angles. In "*Reimagining Special Education*", the focus is on revolutionizing the practices within special education by adopting an inclusive framework. The book delves into strategies and approaches aimed at creating equitable learning environments that cater to the diverse needs of every student, regardless of their abilities or disabilities. It emphasizes the importance of embracing inclusion as a guiding principle to promote fairness and support for all learners. On the other hand, "*Leading in a Culture of Change*" takes a broader perspective on transformational leadership in the context of organizational change. While it may not specifically address special education, the book offers valuable insights into navigating change, fostering innovation, and fostering a culture of adaptability within educational institutions and beyond. It provides leadership principles and strategies applicable across various sectors, aiming to equip leaders with the tools needed to drive positive change.

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Acknowledgements

Portions of this or previous month's ***NASET's Special Educator e-Journal*** were excerpted from:

- Center for Parent Information and Resources
- Committee on Education and the Workforce
- FirstGov.gov-The Official U.S. Government Web Portal
- Journal of the American Academy of Special Education Professionals (JAASEP)
- National Collaborative on Workforce and Disability for Youth
- National Institute of Health
- National Organization on Disability
- Substance Abuse and Mental Health Services Administration
- U.S. Department of Education
- U.S. Department of Education-The Achiever
- U.S. Department of Education-The Education Innovator
- U.S. Department of Health and Human Services
- U.S. Department of Labor
- U.S. Food and Drug Administration
- U.S. Office of Special Education

The **National Association of Special Education Teachers** (NASET) thanks all of the above for the information provided for this or prior editions of the Special Educator e-Journal