Journal of Social, Humanity, and Education (JSHE)
ISSN2746-623X, Vol 3, No 4, 2023, 297-306 https://doi.org/10.35912/jshe.v3i4.1490

Cognitive skill instruction on enhancing retention in pupils with mild intellectual disability

Patricia Kwalzoom Longpoe[1], Rufus Olanrewaju Adebisi[2]
University of Jos, Nigeria[1], Federal College of Education (Special) Oyo, Nigeria[2]
patricialongpoe@gmail.com[1], adebisi.rufus2268@fcesoyo.edu.ng[2]

Article History
Received on 29 April 2023
1st Revision on 7 May 2023
2nd Revision on 12 May 2023
3rd Revision on 26 May 2023
4th Revision on 31 May 2023
5th Revision on 15 June 2023
Accepted on 16 June 2023

Abstract
Purpose: This study aimed to determine the effectiveness of cognitive skill instruction on pupils with mild intellectual disability retention in spelling exercises, retaining poems, and letter recognition.
Research methodology: Research questions and hypotheses were formulated as a part of the methodology. This study used a non-equivalent pre-test, post-test, experimental, and control group design. Working memory is the cognitive skill chosen by the researchers. Flash cards, 100 frequency words, and the working rating scale were used to measure working memory in order to examine the cognitive skills of retention of pupils with mild intellectual disability. The study included ten (10) pupils. While the other five pupils comprised the control group, they did not receive any intervention strategy. Five of the ten pupils were in the experimental group and received an intervention package. The instrument was reliable with a reliability index of 0.85 and was valid for its intended use in measuring the required area. Six weeks were spent on the treatment. The t-test for independent samples was used to examine the treatment results.
Results: The study's findings showed that parents had an impact on their children's cognitive development and abilities, and special educators had a significant impact on a child's ability to remain in school.
Limitations: The researchers suggest that cognitive skill instruction should be implemented in educational settings.
Contribution: This research will provide special educators, parents, and the government with information on how well cognitive skills can help students with mild intellectual disability retain information.
Keywords: *Cognitive Skill Instruction, Retention, Mild Intellectual Disability*
How to Cite: Longpoe, P. K., & Adebisi, R. O. (2023). Cognitive skill instruction on enhancing retention in pupils with mild intellectual disability. *Journal of Social, Humanity, and Education,* 3(4), 297-306.

1. Introduction

The term intellectual disability (ID) refers to both intellectual impairment and deficits in cognitive, social, and practical adaptive functioning. All three of the following requirements must be satisfied before someone is considered to possess ID: Clinical evaluation and individualized, standardized intelligence testing must both show deficits in intellectual abilities such as reasoning, planning, abstract thought, judgment, academic learning, and learning from experience. They must also fail to meet developmental and sociocultural standards for social responsibility and personal independence because of deficits in adaptive functioning. Adaptive impairments limit functioning in one or more daily tasks, such as social interaction, communication, and independent living, in a range of contexts, such as the

home, school, job, and community, without ongoing support. Intellectual and adaptive deficiencies begin during the formative stage (Anderson et al., 2017).

The ability of a person to mentally process information is known as cognitive functioning. According to the definition of cognition, which refers to the ability of an individual to perform the various mental activities most closely associated with learning and problem-solving, such as verbal, spatial, psychomotor, and processing-speed ability," cognition primarily refers to things like memory, speech, and the capacity to learn new information (National Center on Educational Outcomes, 2017). It is generally accepted that the brain is capable of learning new skills in the aforementioned domains during early childhood and that cognitive development takes place between the ages of three and eight. Numerous restrictions faced by pupils with mild intellectual disabilities adversely affect their academic performance. Low levels of perception, language, and reasoning are among these restrictions. When we talk about cognitive talents, we are talking about a process in which knowledge acquisition, information manipulation, and reasoning skills are required. Recalling information about the abilities of pupils or learners is simply referred to as retention. In a nutshell, the researchers concentrated on cognition skill instruction as a way to effectively increase retention among pupils in Oyo East, Oyo State, who have mild intellectual disability.

2. Literature Review

High-level perception, language, and reasoning are examples of cognitive processes that are the mental functions of knowing. There are two types of cognitive processes: crystallized and fluid. While fluid processes are used when a problem needs to be solved with a novel, flexible strategy such as reasoning, crystallized processes involve the application of well-established knowledge and well-practiced routines such as vocabulary knowledge. Working memory is much more important for fluid processes than for crystalline processes. A person with aphasia is likely to have poor declarative and non-declarative memory of words. Impaired declarative and non-declarative memory in a specific knowledge domain is often associated with impaired cognition. However, declarative memory can be severely compromised without any negative effects on cognition, except in cases where cognition depends on the creation of new declarative memories.

Attention, memory, executive function, and convergent and divergent thinking are some of the cognitive processes studied in children with and without impairments. The "critical-thinking, problem-solving, and analytical skills" needed for higher education and employment were the driving forces behind the creation of the common core standards, which are crucial for learning both inside and outside of the classroom. Any task, whether simple or complex, requires cognitive skills, which are brain-based abilities. They have more to do with the methods by which we learn, remember, solve issues, and pay more attention than they do with any actual information. For instance, picking up a phone and answering it requires motor skills (lifting the receiver), language skills (talking and understanding language), social skills (interpreting voice tone and interacting with others appropriately), perception (hearing the ring tone), decision-making, and language skills (SharpBrains, n.d.). Cognitive processes are supported by neural networks. For instance, memory function is predominantly controlled by the frontal lobes and some areas of the temporal lobes (behind the forehead).

A possible sign of traumatic brain injury is decreased cognitive function, which is linked to damaged neuronal networks and regions (SharpBrains, n.d.). The study of cognitive development focuses on how a child develops in terms of information processing, conceptual resources, perceptual skills, language learning, and other characteristics of a fully formed adult brain and cognitive psychology. There are known qualitative differences between how children process their waking experiences and how adults do the same (e.g., object performance, understanding of logical relations, and cause-effect reasoning in school-age children). Cognitive development is the process by which one develops the ability to actively think, understand, and communicate ideas in adulthood. Cognitive development is the process by which a person learns to perceive, analyze, and comprehend their environment. Both inherited and environmental factors have an impact. There were four stages in the development of cognitive information. These are intelligence, memory, language, and reasoning. The rate of enrolment of students with impairments in college is still 50% lower than that of their classmates without disabilities, despite

an increase in the number of such students (Tinto, 2012). Despite the fact that fewer disabled students than their typical peers enroll in college, this is not because they have a lower chance of doing well in school. According to Froese and Straw (1981), people evaluate their educational level and intelligence based on how well they can spell. As a result of this social stigma, Hodges contended that spelling ability is a crucial element of literacy.

According to Buckey (2001), learning to spell progresses through five developmental phases. Youngsters develop at their own pace and undergo predictable stages. The question then becomes how to achieve this objective in the most efficient way, rather than whether to teach spelling as an integrated, developmental component of language arts.

1. Prephonemic spelling: The child scrawls, creates letters, and ties them together without understanding what the letters mean or how they sound.
2. Early phonemic spelling: The child attempts to match letters to phonemes.
3. Phonetic spelling: The child can represent the majority of phonemes and understand the notion of a word, but is still learning to read.
4. Transitional spelling: As the child reads and writes, more norms and patterns emerge, and the child starts to employ spelling patterns and rules but not always correctly.
5. Standard spelling: The child correctly spells the majority of basic words, and is prepared to move on to irregular spellings, homonyms, contractions, etc.

To increase knowledge through the sharing of stories and social connections attributed to social communication, individuals are given the opportunity to recount their experiences in their own lives while reciting poetry from students with intellectual disabilities (Ryndak, Morrison, & Sommerstein, 1999). This link should not be taken lightly, as many of the project participants were notably more sociable and talkative, and they eagerly anticipated the next chance to share personal stories and establish the required connections between the author, poem, and reader. Buckley and Bird (1993) mentioned the lack of published data on reading development and accomplishments of pupils with mild intellectual disabilities (Buckley & Bird, 1993). Teachers who have received training in using scientifically based reading strategies presented the tutoring model that was created for pupils with mild intellectual disabilities. Phonological awareness, phonics, sight-word fluency, vocabulary and comprehension, and progress monitoring were covered in separate reading block segments as part of the tailored delivery of these services. There are few recommendations for children with developmental disabilities, specifically Down syndrome, to access regular curriculum and crucial learning practices for success. Over half (53%) of special education teachers reported that their school district lacks a clear plan to ensure access to the general curriculum, and a significant portion (85%) believed that their severely disabled pipils should not be held to the same standards as pupils without disabilities (Lee et al., 2016). The importance of technology in gaining access to the general education curriculum has been recognized in a substantial amount of research and practice on learning methodologies for pupils with significant cognitive limitations (Hall, Meyer, & Rose, 2012). For learners with learning disabilities, Deshler and Co.'s work with curriculum adjustments has been important (Deshler et al., 2004), but little has been done in this area for those with cognitive disabilities.

Children frequently first learn to recognize the letters in their name, and from there, they learn that letters combine to form meaning. Pupils with learning disabilities frequently do not do so. Anywhere along the chain, reading fluency can be the beginning of a reading disability. This can often begin in the beginning. Researchers have discovered that when spelling exercises are used in the classroom, students progress through four main stages of spelling strategies. Students employed one of the following four procedures when faced with an unknown word: sound-to-letter mapping (APL for "apple"), sound-to-letter representation (PLES for "please"), sound-pattern representation (EEL for "peel"), and meaning-pattern representation (adding a suffix for past tense). According to (Joseph & Seery, 2004), many educators and academics undervalue the capacity of students with intellectual disabilities to learn and generalize reading skills. Although there is still little research on higher-level literacy instruction for pupils with intellectual and developmental disabilities (i.e., literacy instruction that goes beyond a functional skills approach), numerous studies have revealed that these students have learned to decode words, comprehend narrative and expository texts, and write for expression (Allor,

Champlin, Gifford, & Mathes, 2010; Conlin & Gathercole, 2006; Parette, Hourcade, Boeckmann, & Blum, 2008). Until recently, it was challenging to define what constitutes effective evidence-based literacy training for children with intellectual and developmental disabilities (Lemons, Mrachko, Kostewicz, & Paterra, 2012). This challenge is largely a result of the fact that this student demographic has largely been excluded from studies on the best reading methods.

Additionally, conventional wisdom holds that pupils with intellectual and developmental disabilities might require instruction that is qualitatively different from that of their peers who do not have labels for disabilities. On some level, it is reasonable that all children, regardless of their diagnosis of a handicap, should benefit from the same kind of effective training that is effective for other difficult students. Researchers have recently tested this theory, and its outcomes are encouraging. In spelling exercises, word decoding often involves a core deficit in reading disability (RD). Many of the same deficiencies that affect word decoding in RD, such as poor phonemic awareness and inadequate knowledge of letter-sound correlations, also affect word decoding in RD. For these students, spelling can be particularly challenging for various reasons. Some children struggle with letter orientation, but students with learning disabilities frequently struggle with left-right orientation.

We observed that students with learning disabilities frequently exhibited poor muscle tone and coordination. The development of stroke skills in students with learning disabilities can benefit from multisensory teaching methods. Focus on only one or two tricky letters, such as b and p, g and q, or r and n. For your letter bases, consider using a ruler.

1. Sand writing in a dishpan or wading pool with wet sand. As you call out the letters, have the children practice making the correct ones. Next, let each child call out a letter for the other children to make.
2. Before writing a pudding, everyone should ensure that their hands are clean. Spoon out some chocolate pudding (or another favorite), tape some waxed paper or clear plastic wrap to a table, and encourage the students to spread the pudding out like finger paint and write letters as you call them out.
3. Make sure you have plenty of paper towels available.
4. Sidewalk writing: Have your students write the letters in a sidewalk chalk while you shout the alphabet.

Letter tag 5. Draw letters you want to concentrate on a playground with a firm surface. Everyone positioned there was secure when you shout one letter. Students must go to a different letter when you call out a different letter for them to be safe. The goal of this study was to ascertain how enhancing retention in individuals with mild intellectual disability is impacted by cognitive skill instruction.

3. Research Methodology

This study used a quasi-experimental design, more specifically, a pretest-post-test non-equivalent two-group design, where the pretest is used to see whether the groups are similar on the variables under study before exposing them to intervention. A pre-test score is frequently used to determine if the groups are initially equivalent to the outcome (dependent) variable of interest. Pupils between the ages of 5 and 14 years comprised the population of the study, which included pupils with mild intellectual disabilities diagnosed with cognitive problems from the special school, Durbar School for the Handicapped, Oyo. The sample of children used for the study included all 10 children, who were identified in the population as having low retention and cognitive problems. Five (5) pupils were used in the experimental group and five (5) pupils were used in the control group using a simple random sampling technique. The researchers selected the pupils by grouping them into different numbers, which were written in a ballot paper. The total number of ten (10) respondents were included in this study.

Three sets of instruments were used by the researchers for the collection of data in this study: the Working Memory Rating Scale (WMRS), flash card, and 100 high-frequency words. The validity of the instrument was determined by experts in the field of special education. The reliability indices are 0.85, 0.87, and 0.91, respectively. This showed that the instruments were reliable for the study. Two groups were used: the experimental and control groups. In the experimental group, the researchers used intervention strategies of cognitive skill instruction in experimental group, and the researchers taught

the control group without intervention strategy. Both groups were pre-taught and post-taught to check the effectiveness of cognitive skills on the instruction retention performance of pupils with mild intellectual disabilities. This experiment took two weeks to complete. To answer the research questions and test the formulated hypotheses. Statistical Package for the Social Sciences (SPSS) software was used.

3.1. Research Question

1. 1.What are the pretest and posttest classroom performances of pupils with mild intellectual disability?

3.2. Hypotheses

1. There was no significant mean difference in pretest and posttest spelling exercise scores for pupils with mild intellectual disability in the experimental group.
2. There was no significant mean difference in pre-test and post-test recitation exercise scores for pupils with mild intellectual disability in the experimental group.
3. There were no significant mean differences in pre-test and post-test letter recognition scores for pupils with mild intellectual disability in the experimental group.
4. There was no significant mean difference in retention between the experimental and control groups of pupils with mild intellectual disability.

4. Results and Discussions

Research Question 1: What are the pre-test and post-test classroom performances of pupils with mild intellectual disabilities?

Table 1. Mean Difference of Classroom Performance of Pupils with Mild Intellectual Disabilities

Group	**Retention**		$\bar{x}$ **Diff**	**Spelling**		$\bar{x}$ **Diff**	**Letter Recognition**		$\bar{x}$ **Diff**	**Recitation Exercise**		$\bar{x}$ **Diff**
Experimental	Pre	Post		Pre	Post		Pre	Post		Pre	Post	
1.	15	30	22.4	19	24	21.4	20	25	22.4	10	20	14.9
2.	30	35	32.4	20	28	23.9	22	38	29.9	15	21	17.9
3.	25	28	26.4	22	35	28.4	25	33	28.9	20	35	27.4
4.	20	29	24.4	15	28	21.4	20	40	29.9	25	40	32.4
5.	21	32	26.4	30	35	28.9	19	29	23.9	19	32	25.4
Control												
6.	19	20	19.4	18	20	18.9	18	20	18.9	12	16	13.9
7.	20	22	20.9	25	28	26.4	20	23	21.4	24	30	26.9
8.	12	15	13.4	29	32	30.4	12	16	13.9	16	19	17.4
9.	8	10	11.4	13	15	13.9	23	25	23.9	28	31	29.4
10.	10	12	10.9	14	16	14.9	17	26	21.4	13	15	13.9

The above table clearly shows the value of each pupil with mild intellectual disability on spelling exercise, letter recognition, recitation, and recognition with their mean difference. From the table, it can

be seen that the mean difference for item 1 is 22.4, for item 2 is 32.4, item 3 is 26.4, item 4 is 24.4 and item 5 is 26. 4 which the test based on experimental group, likewise, the mean difference for item 6 is 19.4, item 7 is 20.9, item 8 is 13.4, item 9 is 11.4 and item 10 is 10.9 which was based on the control group. In the spelling exercise, the mean differences for the items that were tested based on the experimental group were 21.4, 23.9, 28.4, 21.4, and 28.9, respectively; in the control group, the mean differences were 18.9, 26.4, 30.4, 13.9, and 14.9, respectively. In the letter recognition section, the mean differences for the experimental group were 22.4, 29.9, 28.9, 29.9, and 23.9, respectively, while the mean differences for the control group were 18.9, 21.4, 13.9, 23.9, and 21.4, respectively. Lastly, for the recitation exercise, the mean differences were 14.9, 17.9, 27.4, 32.4, and 25.4, respectively, in the experimental method, and in the control group, the mean differences were 13.9, 26.9, 17.4, 29.4, and 13.9, respectively.

4.1 Hypotheses Testing

Hypothesis 1: There is no significant mean difference in pretest and posttest spelling exercise scores for pupils with mild intellectual disability in the experimental group.

Table 2. Analysis of spelling exercise mean scores of pupils with mild intellectual disability in the experimental and control group

Group	**N**	$\overline{x}$	**S.D**	$\propto -level$	**df**	**T-value**	**-P-value**
Pre test	5	79.4	20				
				0.05	8	3.28	0.011
Post test	5	11.2	14.1				

Decision Rule: Reject the H_0 if t- value is greater than critical value at $p<0.05$
The estimated value exceeds the critical value (3.28, P=0.0110.05). As a result, the means differed dramatically at the level of significance. The mean score on the spelling exercise for pupils with mild Intellectual Disability in both the experimental and control groups differed significantly between the pre-test and post-test. This indicated that the experimental group outperformed the control group in the spelling test. The study found that teaching pupils with mild intellectual disability spelling exercises improved their cognitive functions.

The study found that pupils in the experimental group's pre-test and post-test exercises served as the foundation for spelling tests given to pupils with mild intellectual disability. Because the data results in this area are very similar, it is reasonable to conclude that pupils with mild intellectual disabilities should receive extra care and attention when practicing spelling. Numerous educators and scholars have studied the potential of pupils with intellectual disabilities to comprehend and generalize their literacy abilities (Joseph & Seery, 2004). According to this study, spelling exercises greatly enhanced the cognitive functions and capabilities of students with mild intellectual disabilities. This was shown by the variation in the mean spelling exercise scores between the pre- and post-tests.

Hypothesis 2: There is no significant mean difference in pre-test and post-test recitation exercise scores for pupils with mild intellectual disability in the experimental group.

Table 3: Analysis of Pretest and Post Test Recitation Exercise Mean Scores of Pupils with Mild Intellectual Disability in The Experimental and Control Group

Group	**N**	$\overline{x}$	**S.D**	$\propto -level$	**df**	**T-value**	**P-value**
Pre test	5	92.4	16.5				

				0.05	8	6.28	0.000
Post test	5	114	11.1				

Decision Rule: Reject the H_0 if t- value is greater than critical value at $p<0.05$
The estimated value was above the critical value (6.28, P=0.000.05). Mean values differed significantly at different levels of significance. For pupils with mild intellectual disability in both the experimental and control groups, the mean score on the recitation exercise differed considerably between the pre-test and post-test. This indicated that the experimental group outperformed the control group in terms of recitation activities. The use of instructional materials and the control group were the two groups that the research was divided into, as is evident from this section. The results revealed that the mean pre-test and post-test scores of the experimental and control groups were comparable. After conducting the research, it became clear that the field procedures were not very different. Recitation exercises are essential for enhancing one's cognitive abilities because how will one control their cognitive powers? Essentially, Ryndak et al. (1999) added that recitation with individuals with intellectual disabilities is an opportunity for such individuals to relate experiences from their own lives, deepening their understanding through the sharing of stories and social connections attributed to social communication.

Hypothesis 3:There are no significant mean differences in pre-test and post-test letter recognition scores for pupils with mild intellectual disability in the experimental group.

Table 4: Analysis of Letter Recognition Mean Scores of Pupils with Mild Intellectual Disability in The Experimental and Control Group

Group	**N**	$\overline{x}$	**S.D**	$\propto -level$	**df**	**T-value**	**P-value**
Pre test	5	78.8	23.9				
				0.05	8	4.48	0.002
Post test	5	134	13.7				

Decision Rule: Reject the H_0 if t- value is greater than critical value at $p<0.05$
The estimated values exceeded the threshold limit (4.48, P=0.002, and P = 0.05, respectively). As a result, the means differed dramatically at the level of significance. The letter recognition mean score for pupils with mild Intellectual Disability in both the experimental and control groups differed significantly between the pre-test and post-test. This indicates that the experimental group outperformed the control group in terms of letter recognition.

According to this study, students in the experimental group with mild intellectual disabilities had higher letter recognition scores. This study unequivocally demonstrates the significance of letter recognition. Correct letter recognition is a clear indicator of a disability. Based on research conducted on both pre- and post-test samples, it was concluded that using instructional aids or materials to teach letter recognition helps pupils with intellectual disabilities develop their cognitive abilities. Letter recognition refers to the scores of the experimental and control groups for pupils with mild intellectual disabilities. It has been conclusively demonstrated through research on pupils with intellectual disabilities using control and experimental techniques that letter recognition improves academic performance and increases retention. For instance, how would a person remember, keep, or retain something if they are unable to recognize a letter? Finally, Webster (2009) asserts that mastering letter recognition is a prerequisite for learning decoding techniques and word recognition.

Hypothesis 4: There is no significant mean difference in retention between the experimental and control groups of pupils with mild intellectual disability.

Table 5: Analysis of retention mean scores of pupils with mild intellectual disability in the experimental and control group

Group	N	$\overline{x}$	S.D	$\propto -level$	df	T-value	P-value
Pre test	5	112	31.6				
				0.05	8	2.44	0.041
Post test	5	148	11.1				

Decision Rule: Reject the H_0 if t- value is greater than critical value at $p<0.05$
The estimated value exceeds the critical value (2.44, P=0.0410.05). As a result, the means differed dramatically at the level of significance. Because of this, the retention means score for pupils with mild Intellectual Disability in both the experimental and control groups differed significantly between the pre-test and post-test. This indicated that the experimental group outperformed the control group in terms of retention.

This study demonstrated that the combination of recitation, letter recognition, and spelling exercises makes retention active. Retention has a crucial impact on how well pupils with intellectual disabilities perform academically. According to the study, the experimental and control groups' retention means for pupils with mild intellectual disabilities were similar. Research on the retention of pupils with mild intellectual disabilities in experimental and control groups has demonstrated that retention is a factor that fosters the development of cognitive skills, namely the achievement of students' academic goals, such as earning a degree (Levitz, 2001).

5. Conclusion

This study discovered that cognitive development also affects a person's capacity for word recognition, spelling, and reasoning for optimal coherence. This study covered the contributions of fewer scholars to the impact of cognitive skills, such as spelling, recitation, letter recognition, and retention. It was obvious that the absence of any one of the variables might have caused the detrimental impact of cognitive abilities on academic achievement and malfunction. For instance, if a child struggles to memorize a poem, how can they remember it later? Similarly, if a child struggles to spell a particular letter or word, this might affect their academic achievement; if they struggle with letter recognition, their performance will be out of the ordinary. Additionally, students are encouraged to be active because of their teachers' friendliness. For instance, if a teacher never tolerates a pupil who is acting normally, this can harm their academic performance. A similar familiarity between pupils and teachers is necessary for pupils with modest intellectual disabilities to increase productivity and retention in their academic work. The role of recitation must be well performed by the parents as we involved the playway activity, which promotes cognitive development in some students with mild intellectual disabilities. Additionally, parents must be conversant with the needs of their wards and follow their pace. For example, a parent who knows that her ward cannot identify letters cannot jump to the identification of words. In other words, there have been many discussions, yet the researchers arrived at the following conclusions.

1. Children's spelling of words requires proper supervision and care.
2. A special educator should supervise pupils with mild intellectual handicap during their reciting exercise.
3. Parents and special educators require letter recognition for young children.
4. Flash cards must be accessible both at home and in the classroom.
5. Parents and special educators should contribute to the cognitive development of children with intellectual disabilities.

5.1 Limitation

The limitations of this study are as follows:

1. Time constants: A complete understanding of how much time, effort, and other resources are needed to reach pupils with mild intellectual disabilities. This study makes it quite evident that researchers encounter numerous challenges when conducting their work.
2. Being fully aware that pupils with mild intellectual disabilities often deal with severe disabilities makes it difficult for them to provide accurate answers to questions. As validity and reliability are established, it is evident from the study that caregivers and special are the ones who provide accurate data for pupils with mild intellectual disabilities.
3. Given the state of our nation, it would be ideal if the research included areas like the Oyo metropolis or the South West, but the less the researchers cover an area, the more expensive the research becomes.

5.2 Suggestions

The study recommends the following areas for further investigation.

1. Future research should evaluate evidence-based training for pupils with mild intellectual disabilities by using a single-subject experimental method.

2. This field of research requires enthusiastic researchers to support cognitive skills intervention and retention in children with mild intellectual disabilities.

References

Allor, J. H., Champlin, T. M., Gifford, D. B., & Mathes, P. G. (2010). Methods for increasing the intensity of reading instruction for students with intellectual disabilities. *Education and Training in Autism and Developmental Disabilities*, 500-511.

Anderson, D., Lord, C., Risi, S., DiLavore, P., Shulman, C., Thurm, A., & Pickles, A. (2017). American Psychiatric Association.(2013). Diagnostic and statistical manual of mental disorders . Washington, DC: Author. *The Linguistic and Cognitive Effects of Bilingualism on Children with Autism Spectrum Disorders*, 21, 175.

Buckley, S., & Bird, G. (1993). Teaching children with Down syndrome to read. *Down syndrome Research and practice*, 1(1), 34-39.

Conlin, J. A., & Gathercole, S. E. (2006). Lexicality and interference in working memory in children and in adults. *Journal of Memory and Language*, 55(3), 363-380.

Deshler, D. D., Lenz, B. K., Bulgren, J., Schumaker, J. B., Davis, B., Grossen, B., & Marquis, J. (2004). Adolescents with Disabilities in High School Setting: Student Characteristics and Setting Dynamics. *Learning Disabilities: A Contemporary Journal*, 2(2), 30-48.

Froese, V., & Straw, S. B. (1981). Research in the language arts: Language and schooling. *(No Title)*.

Hall, T. E., Meyer, A., & Rose, D. H. (2012). *Universal design for learning in the classroom: Practical applications*: Guilford press.

Joseph, L. M., & Seery, M. E. (2004). Where is the phonics? A review of the literature on the use of phonetic analysis with students with mental retardation. *Remedial and Special Education*, 25(2), 88-94.

Lemons, C. J., Mrachko, A. A., Kostewicz, D. E., & Paterra, M. F. (2012). Effectiveness of decoding and phonological awareness interventions for children with Down syndrome. *Exceptional Children*, 79(1), 67-90.

Levitz, R. (2001). *What's working right now in student retention! Building blocks for retention success–The basis for recruiting success.* Paper presented at the Unpublished report prepared for the National Conference for Student Retention July.

Parette, H. P., Hourcade, J. J., Boeckmann, N. M., & Blum, C. (2008). Using Microsoft® PowerPoint™ to support emergent literacy skill development for young children at-risk or who have disabilities. *Early Childhood Education Journal*, 36, 233-239.

Ryndak, D. L., Morrison, A. P., & Sommerstein, L. (1999). Literacy before and after inclusion in general education settings: A case study. *Journal of the Association for Persons with Severe Handicaps*, 24(1), 5-22.

SharpBrains. (n.d.). What are cognitive abilities and skills, and we can boost them? Retrieved from https://sharpbrains.com/what-are-cognitive-abilities

Tinto, V. (2012). *Leaving college: Rethinking the causes and cures of student attrition*: University of Chicago press.
Webster, J. (2009). Letter Recognition for Reading in Special Education Retrieved from https://www.thoughtco.com/letter-recognition-reading-in-special-education-3111142