

The Effect of Multisensory Instruction on Japanese Elementary School Children Including Learners with Special Needs

特別支援学級児童を含む日本の小学児童における多感覚教育の効果について

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Research utilizing a Multisensory Instructional approach is explored to examine its effectiveness in teaching English as a Foreign Language to elementary school children, between 6 and 12 years of age, including learners diagnosed with special needs. Results revealed that the Multisensory approach was beneficial to both groups in areas of language support. Children without diagnosed special needs who received multisensory instruction exhibited significant and continuous improvement in speaking and listening skills, in addition to tangible progress in skills leading to improvement in reading and writing. Learners diagnosed with special needs displayed spontaneous and active participation resulting to increased motivation and interest in learning. In addition, songs and audio stories enhanced vocabulary recall among children with special needs. This study highlights the effects of multisensory instruction among Japanese elementary school children, including learners with special needs.

Key words: : Multisensory, Learning Disabilities, Special Needs, Language, Children

I .Introduction:

Teaching English in elementary schools has continuously posed challenges for many elementary school teachers due to a lack of proper training and experience. However, the recent inclusion of English among the mainstream subjects in elementary schools has encouraged local teachers to acquire substantial knowledge and training in order to explore the different methodologies of English instruction. Although there has been a momentous shift in the goals and aims of English education in Japan, many local teachers are still not fully aware of the significance and application of the different methodologies pertaining to their classrooms.

Educational psychologists of the late 19th century promoted the theory of using all sensory modalities, including the kinesthetic sense, in the learning environment. The long history of pedagogy has shown that learning experienced through all senses is helpful in reinforcing memory. Therefore, in order to retain information it is very important that different senses of learning be accessed in a lesson. Scientific findings

have also revealed that there is a connection between multi-sensory instruction and memory reinforcement in that learners who engage in multiple-sensory exercises during the learning process are better able to recall learned materials on a short and long term basis. (Logsdon, [n.d.]

Furthermore, research has shown that the multisensory approach works well because of the way the human brain is organized. During the process of learning, information takes one path into the human brain when using the eyes, another when using the ears, and yet another when using the hands and body. By using more than one sense the brain is receiving new information in multiple ways resulting in enhanced learning. Therefore, learners who naturally use multiple sensory learning can benefit a lot from the multisensory approach. (IDA)

Extensive evidence has been documented on the usefulness of the multisensory approach in teaching different subject areas such as Math, Science and Languages to all types of learners, including those with special needs or learning disabilities. As mainstream

classes nowadays include learners with learning disabilities, formal and non-formal educational institutions have tried to work on practical methods on how to address this vital need of the society with regard to families with members with special needs.

This study tried to find effective ways to help schools develop better language curricula that can adjust to meet the needs of different types of learners, including those with special needs. This research could benefit teachers, educators, and specialists involved in teaching learners with learning disabilities and without learning disabilities who are studying alongside each other.

Specifically, this paper aims to describe:

- 1) The basic classroom activities used in multisensory language lessons for both Learners Without Special Needs-LWOSN and Learners with Special Needs-LSN;
- 2) The effect of multisensory approaches in teaching EFL on the development of basic language skills: speaking, listening, reading and writing to elementary school children-including learners with learning disabilities.

II.Literature Review

Many educators have contended, that learners are different from each other, that each learner exhibits different sensory strengths or learning styles. Early studies have revealed that there are three main learning styles common to learners- visual, auditory and tactile - kinesthetic. MacIntosh and Peck (2005, p.8) stated that, "some learners learn best by seeing (visual), some by listening (audio), some by moving (kinesthetic) and some by touching (tactile)." The unique features of multisensory strategies of using different senses have been found to be effective in accommodating students' learning styles. Logsdon (n.d.) reported in her study that, "students learn more easily, faster, and can retain and apply concepts more readily to future learning" [when they use different senses in the classroom].

According to a substantial number of studies reported and drawing on from my several years of experience teaching in Japanese elementary schools, learners with learning disabilities face more difficulties in learning EFL, as compared with learners in the mainstream. It is difficult for them to recall and organize information if they are taught in a conventional way due to learning disabilities. Thus, they need critical "intervention to learn specific skills such as reading, writing, listening comprehension and [expressive language.]" (Sawada,

2005; Logsdon [n.d]).

Staunch advocates of multisensory strategies have documented their effectiveness through the following learners. According to, Birsh (2005), Keller (2001), Curtis, Longo and Moats, (2000), such strategies are useful and beneficial to learners with problems related to language learning including reading, writing and spelling; Nicholls and Syvertson (1995) found multisensory teaching methods effective for learners suffering from ADD or ADHD and Horton (1988, UNESCO) reported that they are also helpful to learners who are slightly visually impaired.

While numerous findings have credited the use of multisensory strategies among learners with learning disabilities, many proponents uphold its advantages for LWOSN. Multisensory instruction has certainly assisted learners who have not benefited or achieved optimally in traditional methods of instruction in all aspects of literacy including decoding, reading, fluency, spelling and handwriting. And it has benefited children for whom regular educational methods and approaches are ineffective, allowing them to remain in the general classroom. McIntosh and Peck (2005, p.11) stated that, "multisensory teaching is essential for many students learning, and is effective and powerful teaching for all students." Logsdon (n.d.) in her study reported that "most students, with a disability or not, enjoy the engaging variety", [that multisensory techniques can offer].

Definition of Terms:

According to the International Standard Classification of Education - ISCED (1997), Learners with Special Needs are "children whose need extends beyond those who may be included in handicapped categories to cover those who are failing in school for a wide variety of other reasons that are known to be likely to impede a child's optimal progress." In this study, learners with learning disabilities are also referred to as Learners with Special Needs (LSN). Learners without learning disabilities are referred to as Learners Without Special Needs (LWOSN).

Multisensory Instruction: According to Birsh (2001), "the principles of multisensory instruction mandate that students with learning disabilities be taught with simultaneous visual, auditory and kinesthetic and or

tactile input; that it be systematic, cumulative and direct; and that teaching be related to student's level of understanding. The content of literacy instruction must include phonemic awareness [auditory]; letter knowledge, sound or symbol relationships [auditory]; decoding [visual ; auditory] spelling, [tactile]; handwriting [kinesthetic] syllable types, fluency and comprehension."

Participants:

Special Needs Class (SNC) :

The class was conducted in an elementary school and composed of 11 children, between 6 and 12 years of age with the following disorders:

- Down Syndrome
 - Learners with Emotional and Behavioral Disorder
 - Learners described as near ADD and or ADHD
 - Learners with Mild Mental Retardation
 - Learners With Mild to Moderate Mental and Emotional Disorder
 - Learners With Emotional and Communication Disorders
- The SNC received 30 lessons at 45 minutes each. (The SNC received less class instruction than the WSNC, due to schedule conflicts of school events and lack of summer classes.)

Without Special Needs Classes (WSNC) :

The classes were held in a private school and were composed of 9 children between 6 and 9 years of age. WSNC received 38-40 lessons including summer classes at 50 minutes each.

III. The Application and Effect of Multisensory Instruction

Multisensory instruction has been extensively researched and explored for teaching basic language skills for remedial learning and has grown in acceptance of its application to other subject areas. In this study, multisensory strategies were specifically applied to other lesson components such as songs, topic presentations, when introducing new concepts and telling stories. The distribution of sensory modalities (audio, visual, kinesthetic, and or tactile) applied for each component in a lesson varied according to the activity and its level of difficulty.

A. Multisensory Teaching of Basic Language Skills

It is suggested that the techniques used in learning the

basic language skills should involve visual, auditory, tactile -kinesthetic and/or articulatory-motor components. This strategy combines two or more senses simultaneously. For example: A visual strategy is used simultaneously with an auditory-strategy and other learning tasks such as kinesthetic and or tactile strategies. The following model was used in the study. Students learn the alphabet letters by feeling, naming, and matching three- dimensional forms or tracing on rough surfaces. Learners learn the identity of phonemes by feeling and seeing the position of the mouth, lips and tongue.(Birsh 2005, p.32)

The actual study utilized 3D tactile alphabet sets made of wood, plastic, foam and cloth. To practice tracing, students used a screen, sand, rice, carpeted floors, and rough walls. To practice forming alphabet letters, students used wire cleaners, rubber tubes, wooden and plastic chips. And to observe mouth, lips and tongue movements, students used small hand- held mirrors. Allen in Birsh (2005, p. 132), mentioned that "some students can learn "to see" accented syllables by using a mirror to notice when their mouths open wider". Spelling practice, sentence pattern drills, intonation practice and the counting of syllables were taught utilizing a multisensory technique of tapping and sweeping, a tactile- kinesthetic strategy. (Greene & Enfield, 1985 cited in Carreker in Birsh 2005, p.27). Finger tapping is a "technique designed to aid the child in isolating sounds and groups of sounds and then remembering them so the child can write them correctly"(1998, The Institute of Multisensory Education). For example, to spell and write /d/-/o/-/g/. With a finger, tap under /d/-tap under /o/, tap under /g/ then sweep a hand under the final word. The child verbalizes each sound as he or she finger taps. Fingertapping was also used to practice counting syllables. Combley, (2002, p. 32) stated that, "speech that is weakly emphasized can be improved by rhythmically tapping out syllables." During sentence pattern drills, sentence pounding, another kinesthetic approach was "used when there is difficulty with the recall of a word in the sentence" (1998,The Institute of Multisensory Education). Students make a fist with one hand and lightly pound the other arm for each word or syllable and then sweep their hand or fist down their entire arm for a fluid pronouncement of the full sentence. For example, for the sentence: I like bananas. Pound the upper arm for 'I', pound the lower arm for 'like', pound a little lower for each syllable of 'ba- na-

nas', then sweep the hand from the upper arm down while saying the full sentence in a fluent manner. This was followed shortly by a simple writing activity using either worksheets or a notebook.

Activities for reading readiness were introduced to both learners with and without special needs using multisensory phonemic awareness and multisensory phonics. Language drills were chanted in rhythm with students using musical instruments, such as maracas, tambourine, castanets and rattles. Campbell (2000, cited in Thompson, 2003) mentioned that, "rote skills are more efficiently learned if chanted to rhythmic music." The activities were embedded in the lessons using tested materials such as literacy manipulatives in order to minimize the conventional method of using flashcards. Manipulatives Used in the Study:

The Toss 'n Learn Blox, by the Institute of Multisensory Education. These are unique semi-hard foam cubes and color coded picture cards of short, long vowels, consonants, and digraphs that students can manipulate to form words.

The Little Red Tool Box Literacy Manipulatives by Scholastics are colored foam tiles of magnetic pictures and letters of short/long vowels, consonants, clusters and word families.

Teaching writing for beginners followed the suggested video model from the Institute of Multi-Sensory Education. First, children practice to write a letter on a dish or tray of colored sand using an index finger. Second, they write the letter on a "guide print" on top of a screen using a green crayon. Next, they trace the letter with an index finger. A left-handed child should trace the letter with his or her left index finger and a right-handed child should trace with his or her right index finger. Children should be able to feel the roughness of the screen during tracing. Finally, they practice writing on a 3-lined paper using a pencil. Students have to verbalize the phonemic sound of the letter to reinforce the audio sensations (audio-strategy), while doing each of the kinesthetic and tactile activities above. Students with difficulty writing a particular letter have to repeat the tactile and kinesthetic activity until they feel confident writing correctly.

LWOSN were encouraged to practice writing letters on the board before class time. Whereas, LSN were introduced to one letter at a time. Guided writing was necessary to avoid incorrect strokes. Soifer in Birsh

(2005,p.44), said that "in contrast to listening and speaking which are natural and automatic ways of perceiving and using language, written form of language must generally be taught and not all individuals are able to do it with ease." The teaching of basic language skills was introduced from the beginning of the 1st semester. Teaching and introducing the basic steps and the sensory materials, could take over 15 minutes or more in the beginning, but once students got used to the materials and depending on the child's skills, the time might be reduced to approximately less than 10 minutes. All classes have shown excitement, curiosity and eagerness to use the variety of materials in this activity.

LSN were expected to spend extra time in the sensory activities due to the differences of learning disabilities among them. McKinney and Feagan (1983, in Harwell, 2001, p.37) reported that, "the 'time-on task' of LSN fell between 30-60 percent while regular students were on task 60 to 85 percent of the time." LSN were required to undergo longer instruction and monitoring during class activities. Careful attention when distributing materials was observed, as some children with emotional disorders easily become agitated. A slight emotional disturbance can impede the child from continuing to another phase of learning activity if his or her emotional state is disrupted. For example, a student's preference on colors, sizes and kinds are considered when using materials to ensure they feel positive, so they can work harmoniously in the group.

Discussion: When learning the basic language skills using multisensory strategies, LWOSN showed varying degrees of improvement on letter naming and recognition, sound recognition, and tangible progress in skills leading to better reading and writing. It was distinctly apparent that fast learners made better improvement than their slower peers. Children who successfully acquired the strategies of learning the basic language skills via the multisensory activities, showed pre-reading readiness abilities by being able to segment and blend letters in a word in a shorter time. The on going classes among students without learning disabilities reveal that, those children who received the explicit teaching of basic language skills have retained what they have learned. In that, when exposed to new vocabulary, they display a higher level of confidence in speaking, reading and writing; and they are now able to read "easy to read" story books. They also exhibit better listening skills as

they show progress in understanding and following instructions on audio CDs.

Among LSN, those identified as near ADD or ADHD, and with mild mental retardation have performed at a higher level than their peers, when naming and recognizing of letters. When presented with family words, children with near ADD or ADHD could identify clusters of similar letters in the group of words and at the same time connect the words to their corresponding pictures with ease. For example, using the following words: dunk, trunk and skunk. The near ADD or ADHD children could identify that clusters of -unk are consistent for all words, while their peers have difficulty grasping the concept. When presented with 3 or 5 letter words, they could easily get the flow of finger tapping and as a result memory and retention were enhanced. In fact at certain times they easily exceeded other LWOSN in this activity. This suggests that these LSN were able to build orthographic memory (memory for patterns of written language) after exposures on phonological awareness activities. (Carreker in Birsh, 2005, p.215)

However, most often students required individual coaching and guidance, as their pattern of learning was quite unstable. Reading and writing were observed as the most difficult tasks for LSN and they required individualized monitoring and extra time to learn and practice the skills. Mercer (1991, in MacBrayer and Lian, 2002) reported that, "the majority of learners with disabilities find reading and writing to be their greatest challenge." Bender (1995, in MacBrayer and Lian, 2002), also found that about 85-90% of Learners with Disabilities have reading disabilities. Due to the considerable time required for the application of teaching the basic language skills among the special needs group, the method of application was revised from the 2nd semester. Multisensory phonemic awareness and multisensory phonics skills were retained with lesser emphasis on reading and writing skills, in order to pave the way for other multisensory activities that incorporate and promote similar target skills.

B. Multisensory Activities Used in Songs, Topic and Concept Presentations and Stories

Songs: During the study, songs were taught frequently using pictures and printed words posted on the board (visual strategy), while listening (audio strategy), moving

(kinesthetic strategy), and singing (oral strategy) to utilize different sensations simultaneously. The selection of songs, were made congruent with the lessons in order that children were exposed to related vocabulary. Task based activities were also introduced when teaching songs. For example, sequencing pictures of events in a song.

Discussion: Songs printed in pictures helped create meaning of printed and spoken words, enhancing deeper understanding of meaning and recall of vocabulary. Songs proved to be very significant in setting the mood of all students especially those with learning disabilities. It was observed that, very loud and fast beat tempo songs could sometimes make LSN very active, often times resulting in disruptions of the mood of the class. However, milder action songs were proven to be accepted. Repetitive listening and singing when teaching a new song was found powerful in the use of vocabulary. This is supported by Backhouse and Ganschow (2004, in Macmillan), on their study using the Suzuki Approach of learning music with dyslexic students, that "repetition, listening, and rhythms are easiest to learn by hearing". Other significant observations were that the SNC, enjoyed sequencing events in a song either presented on the board or by making a mini-book. Children with communication disorders and with Down Syndrome were observed to exhibit mouth movements and utterances as they moved and sang freely without assistance. Thus, the activity has provided an opportunity to use the language freely in their own capacities. To sum up, multisensory music, assisted students in a greater use and recall of vocabulary, and in gaining a better understanding of the meaning of the language while having fun.

Presenting a Topic or New Concept in a Lesson: When presenting a topic and or a new concept in a lesson, concrete materials, visual aids, manipulatives and sight words were used. The variety of materials seemed to increase curiosity, interest and activate the different senses to work hand in hand for better recall of information. Vocabulary building and language structures were frequently presented through chants or rhythm with body movements (oral, audio and kinesthetic strategy). Similarly, multisensory techniques were applied in unison drills and in individualized instructions among all learners. While, multisensory pair work and group work activities were predominantly used with LWOSN, they were minimally used among LSN due to the difficulty in

monitoring.

Discussion: Using concrete objects and vivid colored pictures tremendously assisted students to be mentally prepared for the lesson. By seeing and touching the materials, learning was aroused and students were able to recall related experiences and link them to the lesson. LWOSN learned the skill to connect sight words with concrete materials by trying to distinguish the beginning or ending sounds. This indicates that students have acquired some basic skills for reading and are trying to apply them in the process of learning. Learners with ADD or ADHD inconsistently exhibited similar skills.

The conventional way of drilling in unison (oral) when utilized with musical instruments (audio) as they moved their bodies (kinesthetic strategy) were perceived as stress free and enjoyable to all groups of learners. Similarly, when multisensory techniques were applied in individualized instructions that were structured, direct and rhythmic, were favored by many LSN. In the same manner, it was highly evident that, when multisensory activities were administered in pair work and group work LWOSN were able to develop ways to creatively manipulate the language on their own, and exposed the students to different learning strategies by watching and observing their peers.

Story Telling: Mutsensory teaching of a story followed the following sequence:

- 1) Listening to audio story while looking at a picture book (audio and visual). Audio stories, are powerful materials that allow students to hear varieties of English models, vocabulary and structures. The various sound effects can bring a range of emotion to the listeners to experience the story, helping vocabulary and events to be easily remembered.
- 2) Re-telling the story by the teacher while going over the book to encourage meaningful interaction among the class (audio, visual and tactile-kinesthetic). Re-telling a story can repeatedly expose the children to the vocabulary and help them become more familiar with the target language. It can encourage participation and discussion, and can be a direct way to measure, how much the students recall and understand during the listening process. Body movements, facial expressions and voice alterations are basically helpful for learners in recalling events.
- 3) Listening to and singing the story (audio and

kinesthetic). Many stories nowadays are told through songs , thus, favoring learners with stronger oral, audio and kinesthetic learning styles.

4) Creative mini-drama or play (kinesthetic). Parts of the story are acted out to give the children the opportunity to creatively use and manipulate the target language. Phillips (2002, p.7) mentioned that, "when children dramatize they use all the channels, (sight, hearing, and physical bodies) and each child will draw on the one that suits them best. This means they will all be actively involved in the activity and the language will 'enter' through the channel most appropriate for them." Personalizing the events from the story makes the language memorable and can help the learners overcome shyness and fear and definitely help build their confidence.

5) Easy and simple writing activity (kinesthetic). Hickey (2002) stated that, "simple analysis of the components of a story still stands as a useful support for a budding writer." Varieties of writing activities used in the process, such as: drawing pictures, writing vocabulary and filling in worksheets.

Incorporating all these multisensory activities in a story, demands organized time. However, the availability of many short audio stories has made this activity possible. In this study, Alpha Tales, Character Builders series, and other short classic stories were used successfully in the class.

Discussion: Mutsensory story telling is a potential resource of learning language in a classroom. Students who had difficulty coping with one sensory style could show their ability in another area where they exhibit a stronger sensory style. It was observed that, while some students performed better in mini-dramas, others showed their best in writing activities. Each child was able to explore his or her learning style better due to the opportunity presented for him or her. The use of multisensory stories in the study have aided students to discover, explore and develop their learning styles and strategies to become better learners and users of the language. This eventually helped teachers in identifying children's strengths and weaknesses, in order to find better ways to balance the process of teaching and learning in the classroom.

The process of writing often allowed students to relax and focus themselves after a series of activities. The most favored writing activity was the drawing of events. Children tried to sequence events from beginning, middle

and end. Fast learners without learning disabilities demonstrated their writing skills by writing words to describe each event.

It is often reported and also my experience in the previous years that LSN have difficulty in recalling events of the story. However, in this study, stories presented utilizing different multisensory activities proved these students could recall more of the events and vocabulary. The process provided opportunity to hear and use the vocabulary repetitively, enhancing deeper learning. Listening to the audio stories was preferred by many learners both with and without special needs, due to the varieties of sound effects, that made listening more real, interesting and attractive. Stories told without audio CDs were not perceived as interesting compared to those told with an audio component. During the study, mini-drama was not often fully attained in every lesson with special needs class

due to lack of time. Nevertheless, the process of interaction enabled the children to express their feelings and hear the words in a very personal and meaningful way, helping them recall important events of the story. Adams and her colleagues (1998, in Moats and Farrell, cited in Birsh, p. 33) reported that, the process of “summarizing, questioning, predicting during an interaction among a teacher and group of students was effective in improving comprehension”. Among LSN, learners with near ADD or ADHD and other milder disabilities showed verbal skills by interacting with the text and the teacher. This helped them retain information on a more profound level. Interests in audio stories among learners with learning disabilities was highly evident, in such that prior to the start of lessons, learners would ask what story they would hear that day, and then when it was time to tell the story, they would immediately re-arranged their seats without being told, to set the mood for listening.

Table 1. LSN Responses on the Different Lesson Components Integrated with Multisensory Instruction Techniques

Learning Disorders	Learning of Basic Language Skills	Songs	Introducing a Topic and New Concept	Story Telling
Down Syndrome	1	2	2	2
Learners with Emotional and Behavioral Disorders	1	3	2	2
Learners described as near ADD and or ADHD	2	3	3	3
Learners with Mild Mental Retardation	1	3	2	2
Learners With Mild to Moderate Mental and Emotional Disorders	1	3	2	2
Learners with Emotional and Communication Disorder	1	3	2	2

Note:

3- Very good (Students learn independently; interact by asking and answering questions; participate actively; sing and do very well; manage language task with some difficulty)

2- Good (Students need some assistance; Interact by answering questions; participate well; sing and do satisfactorily; manage language task with more difficulty)

1- OK (Students need constant assistance; mostly answer with assistance; listen only; action only; sing and do with assistance sometime; some difficulties; find language task difficult –need assistance)

IV. Conclusion:

This study showed that the explicit teaching of multisensory instruction made a significant impact on the learning of basic language skills with tangible results leading to better skills in reading and writing among LWOSN. This finding, supports early studies reported by Lyon, Fletcher, Fuchs, and Chhabra (2005, cited in Moats and Farrell, in Birsh 2005, p.30) on the efficacy of structured, systematic, explicit teaching of all language -based skills, features true of multisensory instruction. In addition, current research supports that multisensory techniques empower the skills necessary for language processing of decoding and comprehension that leads to reading. (Birsh, 2005).

However, despite of the success that multisensory techniques enjoyed in the teaching of basic language skills, its power remains ambiguous, "due to lack of empirical data to support the techniques theoretical premises". (Clark, 1988 in Birsh, 2005). Scientific explanation of cognitive and neurological science can help explain this ambiguity based on the design of memory. According to Moats and Farrell (2005, in Birsh, 2005) "conceptions of memory organization, neural activation patterns in language processing on the importance of cognition are consistent with the efficacy of multisensory techniques. And multisensory methods support the connection of oral language with visual language symbols and can involve the use of touch and movement to facilitate conceptual learning in all academic areas.

The latter validates the applicability of multisensory methods to other disciplines in the curriculum, and therefore, supports the result on improved memory recall among LSN when using multisensory methods in other lesson components. In this study, multisensory activities utilized in the lesson components demanded higher learning interests objects or tasks in order to attract students' attention. This definitely stimulated students to participate actively and helped sustain attention and desirable behavior in the classroom.

However, the research was not able to fully attain what early researchers reported on the usefulness of multisensory instruction in learning the basic language skills among LSN group. One major reason that can be cited is that, extra attention was needed in the development of basic language skills among learners with

learning disabilities due to the co-occurring difficulties in learning among them. For this reason alone , a longer study period for LSN is required, to justify the substantial evidence reported by early research on the usefulness of multisensory instruction in learning the language-based skills for remedial and preventive intervention for students with learning difficulties. Other limitation of the study was that, several intended activities related to the learning of the basic language skills for LSN group were not implemented due to the reduced hours of class instruction.

To conclude, multisensory methods thrive even though there is lack of empirical data to support its usefulness in teaching the basic language skills and research is slow. However, with the help of scientific research in the field of cognitive psychology, educational psychology, neurosciences and educational intervention that are progressing through out the years, absolutely more conclusive support for specific techniques and improvement of practice in the uses of multisensory instruction in learning of basic language skills can be achieved. Multisensory instruction is very applicable in other components of language lessons and other academic subjects and is therefore, highly recommended for both learners with and with out special needs.

Based on the results of this research, it is my interest in the future to explore further the effects of multisensory techniques in the development of reading and writing skills among Japanese children.

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