

# Japanese Mathematics Teachers Instructional Management in Handling Learners with Exceptionalities: A Case Study

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**Abstract**— This qualitative study in a single case, conducted in あきただいがくきょういくぶんかがくぶふぞくとくべつしえんがっ 秋田大学教育文化学部附属特別支援学校 (Akita University Faculty of Education and Culture Affiliated Special Support School) and あきたけんりつしかくしえんがっこう 秋田県立視覚支援学校 (Akita Prefectural Visual Support School) in Akita City, explored Japanese Mathematics teachers' instructional management in handling learners with exceptionalities, describing special educators' instructional management styles, approaches, challenges and coping mechanisms. A validated interview guide was utilized to collect data from in-depth interviews and focus group discussion using Creswell's (2003) data recording procedures and Colaizzi's Data Analysis (1978) for data analysis and interpretation. Findings revealed that special education teachers, regardless of gender, lack training as instructional managers and are not confident of the efficacy of the instructional management they employ, thus needing instructional management accountability. On the other hand, special education teachers, who are mostly women, adopt adaptive coping mechanisms and consider team teaching as the strongest anchor of support system.

**Keywords**— instructional management, learners with exceptionalities, instructional management accountability, team teaching.

## INTRODUCTION

Since literacy is a fundamental human right and is an integral and essential tool for making and forming decisions and for participating fully in society, one of the significant challenges facing education has been its targets for literacy and quality learning not just for students in general education classes but also for learners in special education schools. Subsequently, learners in special education schools have unique learning needs necessary to be met through specially designed instruction. Described as adapting the content, methodology, or delivery of education, specially designed instruction meets the exceptional learning needs of the child so that he or she can access the general curriculum and meet the academe's educational standards (LAUSD, 2007).

Special education teachers' instructional management, which pertains to the teaching techniques, methods, strategies employed to facilitate learning in the classroom, is undeniably significant in meeting the learning needs of learners with exceptionalities. Thus, this study journeyed to benchmark with Japanese Mathematics teachers of learners with exceptionalities.

### **Purpose of the Study and Research Question**

This qualitative study in a single case explored the instructional management of Japanese Mathematics special education teachers in handling learners with exceptionalities. Specifically, this study was directed to answer the central research questions: (1) What

instructional management do teachers employ in handling learners with exceptionalities? (2) What are the teachers' difficulties and challenges in handling learners with exceptionalities? (3) How do the teachers overcome difficulties and challenges in handling learners with exceptionalities?

## METHODS

This chapter presents an overview of the methodology used in this study. The focal point of this study was to explore the instructional management of Japanese Mathematics special education teachers in handling learners with exceptionalities. The study gave recognition to the bottlenecks that teachers encountered and their brilliant ways of coping the challenges met daily as Mathematics teachers of learners with exceptionalities. Also, the study correctly observed ethical practices throughout the steps in the research process.

### **Research Design**

This research employed a qualitative study in a single case through a narrative inquiry and was explored on a bounded system or multiple bounded systems over time through detailed, in-depth data collection involving multiple sources of information and reported in a case description and case-based themes (Creswell 2003). This study was freestyle and exploratory with a small sample that provided perceptions and thoughts about the problem and its background.

**Locale of the Study**

This study was conducted mainly in あきただいがくきょういくぶんかがくぶぞくとくべつしえんがっ 秋田大学教育文化学部附属特別支援学校 (Akita University Faculty of Education and Culture Affiliated あきたけんりつしかくしえんがっこう Special Support School) and 秋田県立視覚支援学校 (Akita Prefectural Visual Support School) in Akita City, Akita Prefecture, Japan.

**Informants and Participants Selection**

The purposive sampling strategy was utilized to select information-rich-key informants for the interviews which included seven (7) teachers for the In-Depth Interviews (IDI) and six (6) teachers for the Focus Group Discussion (FGD). They are Mathematics teachers of learners with exceptionalities in a self-contained special education classroom setting. The researcher selected teachers whose teaching practice ranges from five (5) years and above to ensure capacity to provide experiences from the field of teaching and handling students with exceptionalities.

**Research Instruments**

The enhanced researcher-made interview guide was the main instrument used to collect data. Sub-questions were developed before the dry run to determine its flaws and flow. The interview guide was validated by special education specialists from the Philippines to align with the rationale of the study. Since the informants are Japanese teachers, the tool was translated into Japanese by a language expert.

**Data Collection Procedures**

The data gathering methods in the research study included the setting of boundaries for the study, collecting information through a structured in-depth interview as the primary source of data and focus group discussion for clarifications, employing necessary protocols for recording data, and setting a non-threatening atmosphere during interviews. After the data gathering from the in-depth interviews, the focus group discussion was scheduled using the same interview protocol. The data collected from the focus group discussion served as the clarificatory statements of the data obtained from the in-depth interviews. Since the informants were Japanese teachers, an interpreter was requested to assist the researcher in translating questions and responses to achieve data consistency, data saturation, and data accuracy.

**Data Recording Procedures**

The researcher planned the approach to data recording guided by Creswell's (2003) data recording procedures. The researcher diligently followed the observational protocol for recording data and interview protocol for

asking questions and recording. The informants and participants were asked to sign the Informed Consent form allowing the researcher to record the whole account of the interview and discussion with their desired options and limitations. The researcher recorded information from the interview by making handwritten notes and audio-taping. Since the informants were Japanese special education teachers, an interpreter was requested to translate the interview questions and responses. The researcher's structure for taking notes was the basis of the recording of the documents and visual materials.

**Data Analysis Procedures**

Colaizzi's Data Analysis (2009) was employed to analyze the qualitative data obtained. Since the informants were Japanese special education teachers, language experts were requested to transcribe and translate the responses of the informants during the In-Depth Interviews (IDI) and Focus Group Discussion (FGD) from Japanese to English verbatimly. The transcripts were read several times while extracting significant statements. Formulated meanings derived from significant statements were temporarily assigned to the clustered theme and subsequently to an emerging theme. In the data presentation, the researcher coded and quoted the participants and then presented the findings of the study holistically.

**Data Reliability and Validity**

To ensure the reliability of the findings of this study, the researcher checked the transcripts from the recorded audio and notes to make sure that they did not contain obvious mistakes made during transcription and that there were no drifts in the definition of codes and change in the contexts of the codes during the process of coding. This process was accomplished by constantly comparing data with the codes and by writing memos about the codes and their definitions. To guarantee the validity of the findings, the researcher triangulated different data sources of information (Interviews, Focus Group Discussions, and Documents) by examining evidence from the sources and using them to build a coherent justification for themes.

**Qualitative Write-Up**

The necessary procedure in reporting results of qualitative studies is the development of descriptions and themes that convey multiple perspectives from informants and detailed descriptions of the setting or individuals. The writing strategies used in presenting the findings and interpretations of this study were: (1) Use of quotes with varied lengths from short to long embedded passages; (2) The wordings from participants

were used to form codes and theme labels; (3) Quotations intertwined with the researcher's interpretation. (4) Indentation and another special formatting of the manuscript were used to call attention to quotations from participants; and the results were linked directly to the central question, then to the sub-questions.

**Ethical Considerations**

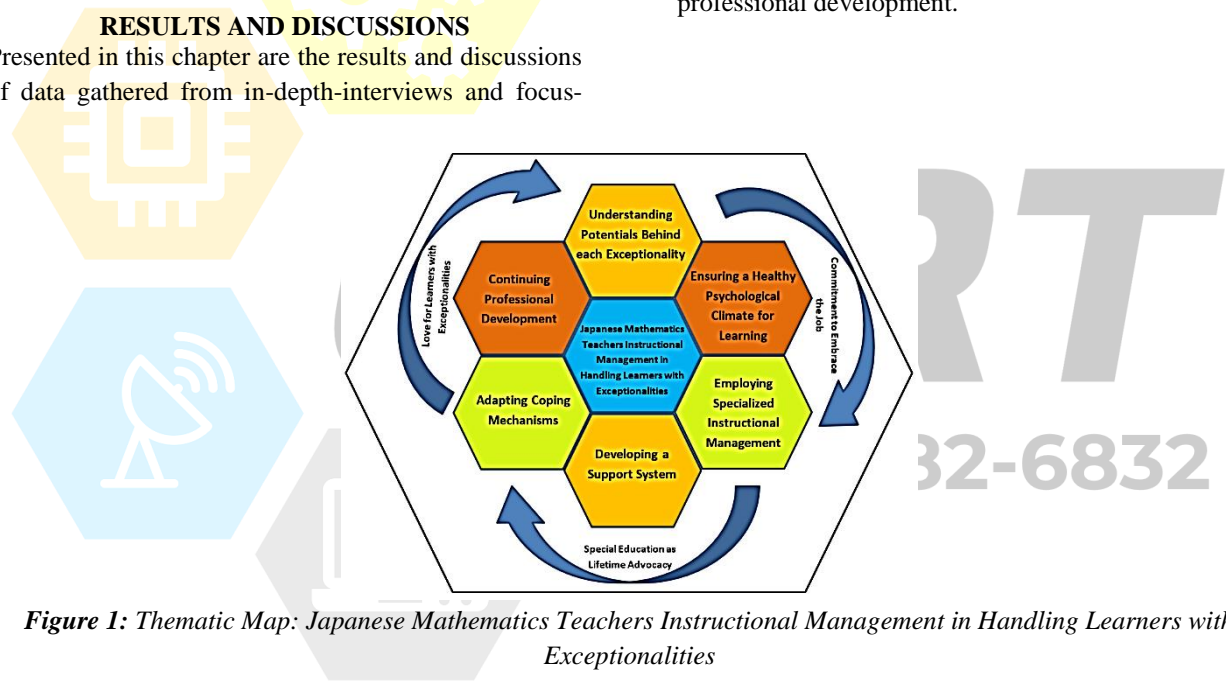
The drive of the study was explained to the informants and participants to gain their support and understanding of the study's pursuit of truthfulness. The researcher assigned codes to individuals and institutions in the data presentation. Informants signed the informed consent approving the quoting their responses. Also, the researcher accorded the informants with the needed respect. Lastly, the researcher did his best to guarantee that the study would cause desirable psychological benefits to anyone who participated in the study.

group discussion on addressing the following qualitative questions, namely: (1) What instructional management do teachers employ in handling learners with exceptionalities? (2) What are the teachers' difficulties and challenges in handling learners with exceptionalities? (3) How do the teachers overcome difficulties and challenges in handling learners with exceptionalities?

From the responses, the researcher discovered various instructional management techniques, methods, approaches, styles, and strategies (for this study). Informants revealed **Six (6) emerging instructional management practices** of the Japanese Mathematics special education teacher in teaching Mathematics, namely: understanding potentials behind each exceptionality, ensuring a healthy psychological climate for learning, employing specialized instructional management, developing support and continuing professional development.

**RESULTS AND DISCUSSIONS**

Presented in this chapter are the results and discussions of data gathered from in-depth-interviews and focus-



*Figure 1: Thematic Map: Japanese Mathematics Teachers Instructional Management in Handling Learners with Exceptionalities*

**Understanding Potentials Behind Each Exceptionality**

Instructional management is those events and procedures involved in the decision to initiate a specific activity for an individual student (Tosti and Harmon, 1973). Informants commonly revealed that since they are dealing with students and children with special needs and varied exceptionalities, there is a need for them to **understand each learner's exceptionality** or exceptionalities. They need to determine the extent of the exceptionality by looking into the details of the disability diagnosis of a developmental physician for each learner. Crafting the Individual Educational Plan (IEP), teachers identify the appropriate and effective

instructional management styles that would address each unique learning preferences of the learners.

To further understand the learners, the teachers communicate with the parents to consult about the learners' behavior at home. Moreover, the teachers want to understand the behavior of the learners inside the classroom by gathering data from the previous teachers so to make the most of the learners' weaknesses and strengths. To address each learner's learning preferences, the teachers prepare learning tasks that suit their developmental stage. Teachers understand that teaching learners with special needs require creativity and patience. When learners have tantrums in the class,

as part of the behavior modification practice, teachers try to understand the cause of the outburst and try to comfort and let the learners feel relax.

In the teachers' and students' day to day interactions, the teachers believe that they can do many things with these exceptional learners. Teachers always try to look for the *beauty behind the exceptionalities* of the learners. They are amenable that they are learning as well from the learners. The learners never fail to impress and amaze the teachers every day.

The teachers noticed that when learners seemed not to accomplish the given tasks but given more time, surprisingly, there are many things that the learners can do by themselves. The teachers realized that despite the learners' disabilities, the strength that they carry with them is amazing. By that, teachers take advantage of the students' exceptionalities, rather than considering those as a hindrance to learning, realizing that being together with kids in school is the best practice to learn from them. *Maximizing the learners' potentials*, the teachers take advantage of the students' cognitive senses. Teachers teach Mathematics with emphasis on "operational activities" and "understanding by verbal explanations." They let some students who can at least speak to be models and be involved in class activities.

Difficult as it may seem, the teachers-informants understood very well that what they are doing is not merely a job but a ministry. Whenever teachers feel difficulty and challenges, they *draw inspiration* from the learners' eagerness to learn and from the happiness they see on the faces of the children. Despite problems, teachers treasure their heartwarming moments with the children and always persevere to teach despite the tiring daily tasks. In other words, teachers *embrace their job* in special education. As they understand the exceptionalities of learners, seek beauty behind each exceptionality, maximize learners' potentials, embrace the job, and find inspiration in every difficulty, the teachers regarded special education as a challenging yet satisfying mission, and they consider it as their *lifetime advocacy*.

#### ***Ensuring a Healthy Psychological Climate for Learning***

The teachers believe that providing a healthy psychological climate for learning is vital as they teach learners with exceptionalities. Since learners with special needs have the tendencies of having tantrums and panic when they are stressed and distracted, it is crucial to foster a calm, comfortable and enjoyable learning environment. Teachers also believe that in

special education, creating a classroom environment that reinforces positive behavior, stimulates attention and imagination and makes teacher expectations clear to the students. Webster (2011) cited that behavior is one of the most significant challenges a special education teacher faces, especially when students getting special education services are in inclusive classrooms.

Informants revealed that to impose *discipline* and to *modify the behavior* of the learners, they see to it that learners will not encounter frustrations that would trigger their tantrums by making learners feel calm while learning with pleasure. In imposing discipline to modify the behavior of learners with exceptionalities, teachers admit that during team teaching, the help of the other teacher is beneficial especially when the children have tantrums. Various school activities are conducted to further reinforce classroom instruction with a variety of opportunities for special education learners to understand the value of discipline. The teachers believe that through these activities, learners will have the chance to interact with others so they will develop their social skills.

#### ***Employing Specialized Instructional Management***

In the in-depth interviews, informants shared that students with learning disabilities are students who are easily distracted causing them not to concentrate on their class works. They had to structure their classrooms in such a way that nothing can disturb the students during sessions. Since learners' attention span is too short, keeping the learners away from distractions is always a challenge to the teachers, and so teachers' creativity in designing lessons with *attention-grabbing activities* is vital.

Special educators ensured that their exceptional learners would have a good time while learning by employing various practical teaching strategies. These strategies gave the learners varied opportunities to learn at their own pace. The teachers usually combine lessons with games. According to them, the same things can be taught differently through games and repetitive activities to shorten the learning time effectively while sustaining learners' attention. With the aim to achieve retention of concepts among learners with disabilities, teachers repetition of instructions or ideas several times was found useful. The teachers believe that by *repetition*, students can quickly learn simple Mathematical operations such as counting.

Another thing that the teachers noticed is that the learners can appropriately respond when given *explicit instructions* that allow them to operate and think by

themselves. For learners with visual exceptionalities, operational learning materials which are teacher-made **graphics models** are most useful. With the use of explicit instructions and graphics models, gradually, students were able to **create mental images** of the concepts taught. The teachers expected that images are crucial to understanding the concepts or idea and students will be able to acquire fundamental ability to solve Mathematical problems. Teachers guide the students to create mental images by allowing them to touch the learning materials used. The process is called "operation" which is understanding through touching tactile materials. Touchable **operational teaching devices** assist the learners in this process. By operating and touching toolkits, students are encouraged to process images by linking the operations to a concept and idea. The students remembered and fixed the mental images that were previously learned, and they were able to create mental pictures of new concepts or idea.

Japanese special education teachers also make use of some Japanese traditional teaching materials such as **Sansusetto** (Mathematics set) and **Sugoroku** (Japanese Life Game) in teaching their learners with exceptionalities. These materials are also tactile. The moment that the learners have created mental images of the concepts through graphics models, tactile materials, and operational teaching devices, the teachers ensure that those conceptual images can be pictured out by the learners through the step called **verbalization of images**. The teachers serve as the learners' guide to doing verbalization of predicting images which will allow the students to predict the result or the solution to the given Mathematical problem. The informants disclosed that verbalization of previously and newly learned images acquired by operation and touching activities lead to deeper understanding.

Usually, special education teachers do not have regular textbooks to be used in teaching. Teachers source out from various references and make handouts and other teaching materials by themselves. Teachers have become creative in producing **well-designed teaching devices** to reinforce their teaching. House and Taylor (2003) cited that instructional aids embody practical discretionary dollars in schools, and usually represent the laidback curriculum in classrooms. As an often-overlooked strategy for improving student achievement, aligning classroom materials with specific data-driven learning needs can be an answer for classroom teachers. Though producing these teaching devices is difficult and taxing, the teachers find motivation from knowing that the learners will have fun in learning with the use of teacher-made learning materials. As part of their being

resourceful and being creative, special education teachers, take advantage of the presence of technology. Through the use of computer-aided instruction, they were able to employ **ICT integration** in their respective classes to make sure that they provide learners with the current trends in instructional delivery.

Aside from integrating ICT in their classes, teachers were also able to use **music as a strategy** to make learning more enjoyable. Music makes students feel relaxed, calm, and motivated. Teachers shared that they prefer to teach using **individualized instruction** since they have students on a wheelchair, with autism, Down Syndrome, and with severe exceptionalities. Special education teachers also see to it that students can relate Mathematical concepts into **real-life situations**. According to the informants, it is significant that students learn Mathematical concepts through examples in real life situations for them to acquire essential yet forthright **life skills** such as counting money, simple tax computation and the like.

#### **Developing a Support System**

Teachers unanimously agreed that the support of parents, other teachers, school head, and regular students is a significant contributory factor for the children to learn best. As part of their efforts to become active instructional managers in handling children and students with special needs, **team teaching** plays as the strongest anchor of support system. For the teachers, team teaching makes work easier that they can work and discuss together in terms of finding ways to make class teaching better. Through team teaching, teachers were able to simplify the massive task they face every day. Teachers considered it as a good strategy because they can work hand in hand to assist children in class activities and they get to benchmark from each other's best practices. Moreover, the approach is effective during group works because if some students have the difficulty to understand some instructions, the other teacher is there to assists.

Aside from learning from other teachers in the school through team teaching, special education teachers share everyone's work in terms of looking after the welfare of every learner. Special educators also consider **peer consultation** as one of the best support systems they have from their fellow teachers. Those teachers who are new in the field admit that they still have many things to learn and they learn many things from veteran teachers.

Parents' support is also vital among special education teachers. **Parents' and teachers' collaborations** are a big help in training the students, especially those who

are intellectually disabled. Parents always visit the school to follow up on their children. They support the learners in every school activity and help in putting into practice the things students learned from school. Klose (2010) cited that close collaboration between home and school is essential for student success and that by raising concerns and working together, teachers and parents lay the foundation for a working relationship that will help children progress.

### **Adapting Coping Mechanisms**

Special educators' work in special education is not easy. Teachers admit that achieving a balance between rigorous tasks of actual teaching and other ancillary services in the school and personal life requires tremendous hard work. Nevertheless, the teachers understand how difficult it is in special education. However, they find meaning in every small achievement of the learners with exceptionalities they are dealing with every day. They foster *adaptive strategies* to become a master of their own emotion not to show their learners that they are having a hard time. The teachers always encourage themselves to persevere despite the challenges and the disappointments they encounter as special educators. A positive self-efficacy amongst teachers is imperative as education moves toward the inclusive education model (McCullough, 2014). One thing that special educators are considering as the best coping mechanism is the strong support system, they have in the school from their fellow teachers serving as reliable confidants for each other.

In the same manner, for the informants, the best coping mechanism is to embrace the job and to consider special education as lifetime advocacy. These are among the essential aspects that give courage to special educators to find joy in what they do with the learners every day.

### **Continuing Professional Development**

A special education teaching environment is a teaching environment with exceptional duties that challenges special education teachers (Tate, 2013). For this reason, in-depth training on special education is vital among special education teachers. In the case of the informants, since training seldom comes, their professional growth is dependent from *benchmarking initiatives* with other special educators and from *self-study*. This finding highlights the importance of considering teachers' training needs in regards to teaching a special population of students.

Teacher efficacy in special education is as crucial as in general education. Previous studies reported insufficiency of professional growth and development

among special educators as one of the substantial barriers blocking to meet special education needs. For the informants, since training does not come as often as they want, they learn from their fellow teachers through *class observations*, *teaching demonstrations*, and *lesson study*. Generally, teachers learn more about effective and efficient teaching strategies and techniques in the school by demonstrating, observing, and making records. Therefore, the researcher recommends that additional professional development training should be available to special education personnel and families, explicitly addressing special education regulations, special education roles and responsibilities, and IEP process.

Summing up, lack of training, lack of instructional materials, lack of parents and other teachers' support, lack of funds, and children's behavior always threatened the demanding roles of the special educators. Special educators overcome them via seeking applicable and workable resources and materials from the internet, settling to adjustments, accepting the situations and facing the challenges, consulting parents, asking help from fellow SPED teachers and from the school head, building rapport among learners, and sourcing out any available instructional resources around them. The teachers of children and students with special needs have many responsibilities, and they are also busy with other functions and roles.

Furthermore, special educators were more focused on how to cope with the difficulties and challenges they encounter each day in dealing with their exceptional learners than being classroom instructional managers. This study brings out the demand for maximizing the instructional management expertise of special education to ensure improvement in the learning outcomes and later increase performance and achievement level of learners with exceptionalities.

On the other hand, findings of this study revealed that special educators lack confidence in how effective their instructional management styles and approaches are in carrying out educational instructions to learners with special needs. This finding is due to the gaps they have encountered which include lack of training, lack of specialized instructional materials, the absence of Mathematics textbooks specially designed for learners with exceptionalities, and students' poor self-esteem and performance. These findings were important as these reflect the actual scenario in a special education classroom and bring to light the teachers' plight and experiences as they strive to cope with their daily life as teachers of learners with special needs.

Therefore, the researcher recommends increase in the awareness of special education of their instructional management accountability. With responsibility placed in the forefront, special education teachers become ultimately responsible for the success of their learners with special needs. Therefore, capacitating teachers is critical for them to become expert in employing appropriate instructional management styles and approaches to create effective special education centers and schools where students and children with exceptionalities excel in any favorable aspect at their own pace of learning. This recommendation is affirmed by the United States' Bureau of Special Education's Annual Performance Report, released in February 2013, stating that "specifically there is a need for training in strategies like co-teaching and differentiated instruction" among special educators. Also, McCullough (2014) reported that there is a significant positive correlation between teacher self-efficacy and professional development, supporting the importance of professional development experiences and the potential impact on teacher self-efficacy.

Rivken, Hanushek, and Kain (2002), Sanders and Horn (1998), and Sanders and Rivers (1996) support this recommendation by confirming that teachers' effectiveness in their instructional management is the most influential school-based factor on student achievement. Therefore, improving teacher effectiveness, specifically in handling learners with special needs, is at the focus of educational reforms designed to address the achievement gaps between learners with exceptionalities and general education students. It is also vital that educators shall take into consideration the preparedness of learners with special needs to go mainstream in general education classes. Teachers' use of effective, appropriate, and proven specially designed instructional management helps meet the Basic Learning Needs (BLNs) and in achieving learners' readiness to face life outside of school.

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