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## Level of Knowledge of Special Education Teachers towards Occupational Therapy

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### Abstract

The implementation of occupational therapy intervention in education is very important and necessary among special education students with learning disabilities. However, in Malaysia, these practices still need to be seen compared to developed Western countries such as the United States. This study was conducted to explore the level of knowledge of special education teachers with learning disabilities about occupational therapy. The objective of this study is to identify the level of knowledge of special education teachers towards occupational therapy, to identify the importance of the level of knowledge of special education teachers towards occupational therapy, and to identify the way of implementing the level of knowledge of special education teachers towards occupational therapy. This study is a survey study involving 210 special education teachers in the Malacca district. The design of this study uses a quantitative approach, which is the filling of questionnaires and document analysis for the data collection process. This study uses Bloom's Taxonomy Model and the Iceberg Competency Model. Overall, the findings of the study show that the level of knowledge of special education teachers towards occupational therapy is at a moderate level (mean=3.39, SD = 0.885, N=210). While the importance of the level of knowledge of special education teachers towards occupational therapy is at a high level (mean=3.69, SD = 0.803, N=210), and the way of implementing the level of knowledge of special education teachers towards occupational therapy is also at a high level (mean =4.01, SD= 0.716, N=210). Finally, this study proves to the special education teachers in Malaysia that knowledge, awareness of the importance and implementation of occupational therapy interventions plays an important role in detecting students' fine and gross motor problems furthermore impacting the development of special needs students.

**Keywords:** Occupational Therapy, Special Education, Teachers, Knowledge

### Introduction

Recently in this worldwide scenario, the WHO (World Health Organization 2021) has revealed their statistics that 1 out of 270 children in this world has autism. The statistics have been gradually increasing globally, including Malaysia. In Malaysia, there is 32.73 million people who live in Peninsular Malaysia, Sabah, and Sarawak (Department of Statistics Malaysia, 2021). From the total population, there is an increase in the population of people with special

needs. Data released by the Department of Social Welfare (JKM) in 2018 has recorded 128,291 children across the country who have been identified as children with special needs.

From the statistics seen, it can be observed that many initiatives and services can be done to help children with special needs. Therapy services are the best initiative that can be done to help children with special needs from various aspects. In the various existing therapy services, occupational therapy is one of the suitable approaches to rehabilitate students with special needs. Occupational therapy is defined as a training with meaningful activities as an effort for individuals of all ages to improve their level of daily functionality and also to prevent the disability of individuals who are facing mental or physical problems (Turner et al., 2002; Norfishah & Hasrul, 2015; American Occupational Therapy Association, 2016). In addition, if occupational therapy is defined from the aspect of art and science, it is a therapy that allows a person to live life more meaningfully through occupational activities (Canadian Association of Occupational Therapists, 2007). Furthermore, several studies have proven the benefits and positive effects of occupational therapy on the level of fine motor ability of students with special physical needs (Case-Smith, 2002; Jackman & Stagnitti, 2007).

However, there is no denying that the special education system in Malaysia is lagging compared to western countries that have come a long way. This is because there is a large gap in the implementation and fundamental evaluation aspects of preparing educational patterns or curricula that contribute to students with special needs (Lee & Low, 2014). Compared to developed countries such as the United States, they have provided many opportunities for collaboration between special education teachers and mainstream teachers, parents, and experts such as therapists, NGO organization, and communities to improve and maximized positive results for the learning process of children with special needs (Margo et al. 2015). In Malaysia, the lack of help, support, and advice from occupational therapy experts has caused a lack of delivery and implementation of information, such as the use of occupational therapy that can be implied in the classroom (Nurul et al., 2021). This has caused the teachers' teaching strategies and techniques to be quite poor due to the lack of knowledge about occupational therapy, which plays a vital role in the development of students with special needs. It can be concluded that the close relationship and the building of cooperation between all citizens, including therapists and special education teachers are significant to maximize the development of students with special needs.

Therefore, the purpose of this study is to identify the level of knowledge of special education teachers towards occupational therapy, to identify the importance of the level of knowledge of special education teachers towards occupational therapy and to identify the way of implementing the level of knowledge of special education teachers towards occupational therapy. This study was conducted to gather information about the level of knowledge of special education teachers regarding occupational therapy by emphasizing the following objectives:

- Identifying the level of knowledge of special education teachers towards occupational therapy.
- Identifying the importance of the level of knowledge of special education teachers towards occupational therapy.
- Identifying the way of implementing the level of knowledge of special education teachers towards occupational therapy

## Literature Review

Based on the review of past studies, several factors are detected as the reason for the lack of knowledge of special education teachers in occupational therapy and the effectiveness of special education teachers in implementing occupational therapy during teaching and learning.

Among the factors is the need for more exposure to special education teachers in occupational therapy. According to the findings of a previous study, a large number of special education teachers in Malaysia lack qualifications in the field of Special Education (Leong et al., 2013). Resources related to occupational therapy knowledge are also minimal. Malaysian special education teachers' exposure to occupational therapy is also less compared to other developed countries such as the United States. (Leong et al., 2013; Masne et al., 2015). The study also shows that special education teachers in Malaysia often find pieces of information about occupational therapy through other teachers or colleagues. In contrast, teachers in Singapore have a higher rate of receiving training from occupational therapists. This study also clearly states the problem for a need of more occupational therapists, which causes the effect of guidance for special education teachers to not reach an optimal level (Leong et al., 2013).

Furthermore, according to Masne et al (2017), there is a high need for parents of autistic children to collaborate between special education teachers and occupational therapists to overcome their child's social, academic, emotional, and self-management problems. They have expressed their concerns in the transcript, stating that teachers have insufficient knowledge of managing and implementing interventions for their children due to difficult-to-control behaviour. The findings of the study also state that to enjoy collaboration in the classroom, special education teachers should be given access to occupational therapy services guided by professional occupational therapists in the classroom to improve their knowledge (Masne et al., 2017).

In addition, there are research findings that have also shown the need for a therapy course for special education teachers throughout their service due to the fact that there are many flaws during the implementation of occupational therapy in the classroom that requires support and suggestions for improvement (Barnhill et al., 2011; Razali et al., 2013; Masne et al., 2017). Through a survey of past studies, there are still many special education teachers who lack knowledge and skills in teaching students with special needs, lack the confidence to deliver effective teaching, and have a low level of meta-subject competence (Ruppar et al., 2016; Toran et al., 2016). The study of Ruppar et al (2016) also studied the preparation of special education teachers in teaching students with special needs. This study shows the constraints of teachers to teach students with special needs because they need specialized knowledge and expert help in therapy services. The findings of the study have found that special education teachers are very willing to carry out Individual Lesson Plans and collaborate with groups of educators. However, they are less prepared to help students in terms of physical and medical needs, such as the lack of knowledge in various therapies and ways to integrate and implement therapy activities during their teaching and learning sessions.

In addition, the findings of Gee and Gonsier-Gerdin's (2018) show that most of the special education teachers are not yet ready in terms of knowledge to teach and only recognize the reality of special education teaching when they start teaching. On the other hand, various new knowledge and skills are acquired through experience during teaching, such as student emotional management, classroom management, effective and collaborative

communication methods with therapists and school administrators, as well as various ways to implement therapeutic interventions in the classroom.

Next, some studies have stated the relationship between the teacher's interest and value in occupational therapy and student performance in various fine motor activities. Through the findings of the study, there are some special needs students whom face fine motor problems and need occupational therapy intervention. This study shows the importance of the role of teachers in using occupational therapy knowledge to implement interventions. The study also found that interventions needs to be guided by occupational therapists so that appropriate strategies are planned to deal with their skill problems. Therefore, the collaboration between teachers and occupational therapists, as well as teacher participation in occupational therapy courses and training is proven to improve students' writing and pencil-holding skills (Therese, 2018).

Furthermore, in the study of Ng & Abd (2020), the constraint faced in the special education system in Malaysia is that teachers do not know the ways and alternatives in planning strategies to implement occupational therapy that is appropriate for students with special needs. This is because the government does not provide guidance, therapy implementation procedure modules, and therapy tools that can be used daily during the teaching process in the classroom.

In addition, according to a study conducted by Mahfuzah (2013), most special needs students has various fine motor problems. However, special education teachers in Malaysia lack knowledge and exposure to ways and techniques to guide students to master fine motor skills. In Malaysia, occupational therapy services are still concentrated in hospitals and health centers but do not involve schools as a whole. The findings of the study have shown that the inability to hold a pencil is the most important fine motor skill problem in special needs students. This problem has disrupted special needs teachers' teaching and learning process in the classroom.

Next, according to the findings of Nurul et al (2021), most Special Education teachers in Malaysia lack knowledge and exposure to occupational therapy and only understand the concept of occupational therapy in general terms. There are non-special education teachers who do not understand the definition and function of occupational therapy for teaching and learning processes in the classroom and only know therapy information through the website or the student's parents. The findings of the study also stated the lack of integration of occupational therapy by the Malaysian Ministry of Education in teaching and learning as well as sending special education teachers to training in services related to occupational therapy. The findings of the study also stated that in Malaysia, collaborations between special education teachers with occupational therapists does not exist and teachers are just starting to realize that this collaboration has a positive effect on their students.

Furthermore, a study conducted by Wilson (2018) has stated the benefits of special education teachers collaborating with occupational therapists to gain new knowledge about occupational therapy. Through the study, occupational therapists often face problems when collaborating with teachers in a school environment. The findings of the study prove that a closer relationship between teachers and occupational therapists can increase their confidence to contribute to problem-solving and adapting to the programming. Special education teachers in the study also strongly agreed with the involvement of occupational therapist services. They realised that increased knowledge about special needs students' development would help them understand developmental differences and whether their students needed adaptation in groups or individual instruction.

It cannot be denied that special education teachers often face problems in the implementation of occupational therapy in the classroom because they do not have basic knowledge and experience about occupational therapy, do not receive training, courses, or workshops related to therapy, is not skilled in using or implementing activities appropriate occupational therapy, have constraints in the classroom, does not have the appropriate therapy tools and so on. All problems related to this knowledge hopefully can be overcome with the services and help from collaboration with occupational therapists. Also, support services and expertise from occupational therapists are expected to help special education teachers increase their knowledge and experience to implement occupational therapy in the classroom and deal with problem factors.

### **Research Methodology**

The design of this study is a survey study, while the approach used is quantitative. Survey research is one of the research methods used in educational research that gathers the views of a sample about an issue or a problem (Chua, 2006). Therefore, this study aims to identify the level of knowledge of special education teachers towards occupational therapy, the importance of the level of knowledge of special education teachers towards occupational therapy as well as the way of implementing the level of knowledge of special education teachers towards occupational therapy.

In selecting the population and sample, the sample size needs to be maximised to minimise sampling error (Tuckman, 1978). Next, the sample size usually needs to exceed 30 percent because when the sample size exceeds the percent, the normal distribution will be met. By increasing the sample size, the population can be better represented and, at the same time, reducing the error.

In this study, the target population consists of special education teachers with learning disabilities in primary schools in Malacca who teach in schools with an Integrated Special Education Program. Also, based on Krejcie & Morgan's (1970) table, if the population number is 456 people, the total sample size is 210. Therefore, the selected study sample consisted of 210 Special Education teachers with learning disabilities from three districts in Malacca. Furthermore, the selection of the study sample was carried out using a simple random sampling method. The simple random sampling method is a sampling process where each member of the population has the same probability of being selected as a study sample (Mok 2009; Rahi, 2017).

The instrument used in this study is in the form of a questionnaire. A set of questionnaires consisting of 31 items was submitted to the study sample to be completed. The items used in the survey are divided into four parts of the construct, firstly demographics, which contain 9 items. The second construct is the level of knowledge of special education teachers towards occupational therapy which contains 7 items, the third construct is the importance of the level of knowledge of special education teachers towards occupational therapy which contains 7 items and finally is the fourth construct, which is the way of implementing the level of knowledge of special education teachers towards occupational therapy which contains 8 items.

Next, this research instrument is an adaptation of the study of (Mahfuzah, 2013; Hanafi et al., 2009). Furthermore, in this study, the Realism Coefficient test was used to measure the validity of the instruments used. If the Cronbach Alpha reliability index obtained is high, this index shows that the questions in the research instrument are consistent and reliable (Chua, 2006). The reliability value of this research instrument has been evaluated and measured with

a value of Cronbach's Alpha coefficient  $\alpha = 0.91$ , which was obtained after conducting a pilot study involving 30 Special Education teachers in several special needs schools in Johor.

### Data Analysis

Numerical data were collected through questionnaires. This study uses descriptive statistics to analyse the data. To conduct a descriptive analysis, the Statistical Package for Social Sciences 26 was used to obtain accurate statistics. Frequency, percentage, mean and standard deviation from the questionnaire can be calculated through SPSS software. Then, a descriptive analysis was carried out on those values and identified the level of knowledge of special education teachers towards occupational therapy. The interpretation of the mean score for the level of knowledge of special education teachers towards occupational therapy has been divided into 5 levels, namely very low, low, medium, high, and very high. The following is an interpretation table of the mean score for the level of knowledge of special education teachers towards occupational therapy.

Table 1

*Mean Value According to Five Likert Scale: Tschannen-Moran & Gareis (2004)*

| Min Score Value | Interpretation |
|-----------------|----------------|
| 1.00-1.80       | Very low       |
| 1.81-2.60       | Low            |
| 2.61-3.40       | Moderate       |
| 3.41-4.20       | High           |
| 4.21-5.00       | Very high      |

Descriptive analysis was used to analyse the findings of the validity test in the instrument. The descriptive analysis includes frequency distribution, percentage, and mean score. The data from the questionnaire was evaluated and written in a coded questionnaire form. Descriptive statistics were used to describe the demographic data of the respondents in Table 2 in the form of frequencies and percentages to provide information about the background of the respondents. While for Tables 3,4 and 5, the researcher has made an analysis of the mean score based on the interpretation of the mean score of (Tschannen-Moran & Gareis, 2004). Therefore, if the mean score data of the needs analysis questionnaire is in the high and very high range for each item, it shows the agreement of the study respondents to the construct.

### Findings

The findings of this study are the result of feedback from a knowledge level analysis study involving 210 Special Education Teachers whom teach in primary schools that have Special Education Integration Program classes. Table 2 below shows a descriptive analysis of the respondents' demographics involving frequency and percentage.

Table 2

*Distribution of Respondents According to Demographics*

| Item  | Category                       | Frequency | Percentage (%) |
|---|--------------------------------|-----------|----------------|
| <b>Gender</b>   | Men                            | 27        | 12.9           |
|   | Female                         | 183       | 87.1           |
| <b>Age</b>  | 20 - 30 years                  | 60        | 28.6           |
|   | 31 - 40 years old              | 66        | 31.4           |
|   | 41 – 50 years old              | 54        | 25.7           |
|   | 51 - 60 years old              | 34        | 14.3           |
|   |                                |           |                |
| <b>Race</b>   | Chinese                        | 51        | 24.3           |
|   | Malay                          | 150       | 71.4           |
|   | India                          | 6         | 2.9            |
|   | Others                         | 3         | 1.4            |
| <b>Religion</b>   | Buddha                         | 36        | 17.1           |
|   | Hindu                          | 6         | 12.9           |
|   | Islam                          | 153       | 72.9           |
|   | Christian                      | 9         | 4.3            |
|   | Others                         | 6         | 2.9            |
|   |                                |           |                |
| <b>Teaching experience</b>                                  | 1 - 5 years                    | 51        | 24.3           |
|   | 6 - 10 years                   | 33        | 15.7           |
|   | 11 – 15 years                  | 63        | 30.0           |
|   | 16 – 20 years                  | 30        | 14.3           |
|   | 21 years and above             | 33        | 15.7           |
| <b>Teaching District</b>                                    | Jasin                          | 21        | 10.0           |
|   | Alor Gajah                     | 63        | 30.0           |
|   | Central Malacca                | 126       | 60.0           |
| <b>Educational status</b>                                   | Diploma / Teaching Certificate | 12        | 5.7            |
|   | Degree                         | 177       | 84.3           |
|   | Masters                        | 21        | 10.0           |
| <b>Teaching Specialization</b>                              | Special education              | 147       | 70.0           |
|   | Not Special Education          | 63        | 30.0           |
| <b>Attendance of Occupational Therapy Courses/Workshops</b> | Ever                           | 45        | 21.4           |
|   | Never                          | 165       | 78.6           |

Table 2 shows the information of Special Education respondents in Malacca from primary schools. The items involved in this study include gender, age, race, religion, teaching experience, teaching district, educational status, teaching specialization, and attendance of occupational therapy courses. In this study, there were 27 male respondents (12.9%) and 183 women respondents (87.1%). The percentage of female teachers is higher when compared to male teachers.

Next, the age range of respondents between 20-30 years old are 60 people (28.6%), 31-40 years old, as many as 66 people (31.4 %), while respondents who are between 41-50 years old are 54 people (25.7%) and finally respondents of 51-60 years



old only have 34 people (14.3 %).

In addition, a total of 36 people (17.1%) are Buddhists, 153 people (72.9%) are Muslims, 6 people (12.9%) are Hindus and 9 people (4.3%) are Christians. In addition, 6 respondents are of other religions.

Furthermore, the teaching experience of the respondents consisted of 51 people (24.3) who taught for 1-5 years, a total of 33 people (15.7 %) who taught for 6-10 years while there were 63 people (30.0 %) who taught for 11-15 years. Next, there are 30 people (14.3%) who teach for 16-20 years and finally, there are only 33 people (15.7%) who teach for 21 years and above.

As for teaching districts in Melaka, there were 21 teacher respondents from Jasin (10%), 63 from Alor Gajah (30%), and 126 from Central Melaka (60%).

Accordingly, it was found that the level of education for the respondents 12 people (5.7%) from a Diploma or Teaching Certificate, 177 people (84.3%) respondents were from a Bachelor's Degree and 21 people (10.0%) were from a Master's Degree.

Furthermore, for the specialisation of teachers, there are 147 people, which is 70.0% in total for those who take Special Education as a course of study at Institute of Teacher Education or University, On the other hand, there are 63 people (30.0%) whom are not Special Education majors.

Finally, there were 45 people (21.4%) who had ever attended an occupational therapy course or workshop, while the other respondents, 165 people (78.6%), had never attended any course or workshop related to occupational therapy.

Next, Table 3 shows the level of knowledge of special education teachers towards occupational therapy.

Table 3

*The Level Of Knowledge Of Special Education Teachers Towards Occupational Therapy*

| No             | Item  | N   | Score<br>Min | Deviation<br>Standards<br>(SD) | Interpretation<br>of Min Score |
|----------------|---|-----|--------------|--------------------------------|--------------------------------|
| 1.             | Do you think you would benefit from occupational therapy services?                        | 210 | 4.20         | 0.763                          | High                           |
| 2.             | Do you feel the need for an occupational therapist referral for your students?            | 210 | 3.62         | 0.730                          | Moderate                       |
| 3.             | Do you know the effectiveness (benefits) of occupational therapy?                         | 210 | 3.86         | 0.763                          | High                           |
| 4.             | Do you know the Types of Prompts used in occupational therapy?                            | 210 | 2.93         | 1,076                          | Moderate                       |
| 5.             | Do you know the various methods and methods of intervention used in occupational therapy? | 210 | 3.09         | 0.999                          | Moderate                       |
| 6.             | Do you know how to conduct early detection for students with fine motor skills problems?  | 210 | 3.04         | 0.935                          | Moderate                       |
| 7.             | Do you know how to conduct early detection for students with gross motor skills problems? | 210 | 3.00         | 0.928                          | Moderate                       |
| <b>Overall</b> |   | 210 | 3.39         | 0.885                          | Moderate                       |

Table 3 shows the overall findings are at a moderate level of knowledge with a mean score value of 3.39 and a standard deviation of 0.885. Through the findings, it has been shown that special education teachers have an awareness that they will find benefits through occupational therapy services through a high mean score on item 1 (mean = 4.20, SD = 0.763, n =210). Item 2 has also supported the findings of item 1 because most teachers have expressed the need for occupational therapist referrals for their students with special needs (mean = 3.62, SD = 0.730, n = 210). On the other hand, item 7 shows the level of knowledge of special education teachers of simple learning problems through the findings of the questionnaire. This can be proven through the lack of knowledge about the effectiveness of occupational therapy in item 3 (mean = 3.86, SD = 0.763, n= 210) and most do not know what types of prompts are always used in occupational therapy in item 4 (mean = 2.93 , SD = 1.076, n= 210). Furthermore, item 5 has shown that most teachers did not know the methods of intervention in occupational therapy that can be used for special need students (mean = 3.09, SD = 0.999, n= 210). Next, in item 6, teachers does not know how to carry out early detection for students with fine motor skill problems (mean = 3.04, SD = 0.935, n= 210) and gross motor in item 7 (mean = 3.00, SD = 0.928, n= 210). From this finding, it proves that most special education teachers have a moderate level of knowledge in occupational therapy. Teachers may know the benefits of occupational therapy, and understand the benefits of referring

special needs students to occupational therapists ,but at the same time are less exposed to knowledge, implementation methods, and specific interventions about occupational therapy.

Table 4 findings the importance of the level of knowledge of special education teachers towards occupational therapy.

Table 4

*The Importance Of The Level Of Knowledge Of Special Education Teachers Towards Occupational Therapy*

| No             | Item  | N          | Score Min   | Deviation Standards (SD) | Interpretation Min Score |
|----------------|---|------------|-------------|--------------------------|--------------------------|
| 1.             | Teachers know when to initiate student referrals to occupational therapy services.  | 210        | 3.11        | 0.768                    | Moderate                 |
| 2.             | Teachers know how to initiate student referrals to occupational therapy services.   | 210        | 3.14        | 0.818                    | Moderate                 |
| 3.             | Teachers know some occupational therapy strategies that can be used in the classroom to help with students fine motor problems. | 210        | 3.24        | 0.784                    | Moderate                 |
| 4.             | Teachers know how to work with occupational therapists in helping students.   | 210        | 3.16        | 0.891                    | Moderate                 |
| 5.             | Teachers know the main factors that lead to effective change for students.  | 210        | 3.29        | 0.779                    | Moderate                 |
| 6.             | Teachers act promptly to make early identification and intervention for students with fine motor skills problems.               | 210        | 3.40        | 0.820                    | Moderate                 |
| 7.             | Teachers act promptly to make early identification and intervention for students with gross motor skills problems.              | 210        | 3.39        | 0.763                    | Moderate                 |
| <b>Overall</b> |   | <b>210</b> | <b>3.69</b> | <b>0.803</b>             | <b>High</b>              |

Table 4 shows the overall importance of the level of knowledge of special education teachers towards occupational therapy is at a high level with a mean score value of 3.69 and a standard deviation of 0.803. However, most of the mean items measured recorded the importance of the teacher's level of knowledge at a moderate level. For the first item, the mean was at a moderate level (mean = 3.11, SD = 0.768, n = 210) and showed a lack of knowledge about the importance of time to make a referral to occupational therapy services. Next, the mean of the second item (mean = 3.14, SD = 0.818, n = 210) proves that some teachers do not know how to initiate occupational therapy service referrals. Therefore, the lack of knowledge about knowledge of occupational therapy strategies that can be used in class to help students' fine motor problems is also at a moderate level in the third item (mean = 3.24, SD = 0.784, n = 210). In addition, the mean of the fourth item (mean = 3.16, SD = 0.450, n = 210) on how to collaborate with occupational therapists proves that teachers lack experience in collaborating with occupational therapists. Next, the average mean of item 5 (mean = 3.29, SD = 0.779, n =

210) shows the teacher's knowledge in detecting the main factors that bring effective changes to students. Furthermore, the mean for the sixth item (mean = 3.40, SD = 0.820, n = 210) and the seventh item (mean = 4.72, SD = 0.450, n = 200) shows that the teacher's knowledge is at a moderate level when making identification and intervention early for students with MBPK fine motor and gross motor skill problems.

Table 5

*The Way Of Implementing The Level Of Knowledge Of Special Education Teachers Towards Occupational Therapy*

| No             | Item  | N          | Score<br>Min | Deviation<br>Standards<br>(SD) | Interpretation<br>Min Score |
|----------------|---|------------|--------------|--------------------------------|-----------------------------|
| 1.             | I will start referring students to occupational therapy services.   | 210        | 4.06         | 0.845                          | High                        |
| 2.             | I will use the knowledge learned from the occupational therapist to implement in learning and teaching.                     | 210        | 4.14         | 0.763                          | High                        |
| 3.             | I will plan some occupational therapy strategies and use them in the classroom to improve my students' fine motor problems. | 210        | 3.91         | 0.714                          | High                        |
| 4.             | I will look for opportunities to work with occupational therapists to help students.  | 210        | 4.19         | 0.800                          | High                        |
| 5.             | I will be able to detect the main factors that effectively change the student's gross motor problems.                       | 210        | 3.89         | 0.600                          | High                        |
| 6.             | I will be able to detect the main factors that bring effective changes to the students' fine motor problems.                | 210        | 3.89         | 0.624                          | High                        |
| 7.             | I will be able to identify and plan appropriate early intervention for my students who have motor skills problems.          | 210        | 3.87         | 0.676                          | High                        |
| 8.             | I will share with parents the knowledge of occupational therapy and how interventions can be implemented at home.           | 210        | 4.01         | 0.709                          | High                        |
| <b>Overall</b> |   | <b>210</b> | <b>4.01</b>  | <b>0.716</b>                   | <b>High</b>                 |

Table 5 shows a high overall mean finding indicating that the majority of special education teachers are willing to carry out various implementation methods for their students by using their level of knowledge of occupational therapy. According to item 1 (mean = 4.06, SD = 0.845, n = 210), teachers are ready to start referring students to occupational therapy services. A high mean value is also shown in item 2 (mean = 4.14, SD = 0.763, n = 210) and

proves that teachers will use the knowledge learned from occupational therapists to be implemented in learning and teaching in the classroom. Furthermore, in item 3 (mean = 3.91, SD = 0.714, n = 210), the teachers showed a desire to plan occupational therapy strategies and use them in the classroom to improve their MBPK motor problems. Next, the highest mean value is item 4 (mean = 4.19, SD = 0.763, n = 210) which shows a high desire from the teachers to get the opportunity to work with occupational therapists to help MBPK. Furthermore, in item 5 (mean = 3.89, SD = 0.600, n = 210) and item 6 (mean = 3.89, SD = 0.624, n = 210), although the detection of fine and gross motor problems requires help from an occupational therapist, the teachers still feel confident that they will be able to detect the main factors that bring effective changes to students' gross motor and fine motor problems if they have a high level of knowledge about occupational therapy. In addition, teachers also have a high desire to identify and plan appropriate early intervention for students with motor skill problems in item 7 (mean = 3.86, SD = 0.676, n = 210). Here it proves that a high level of knowledge about occupational therapy will influence the way teachers implement it in planning the most suitable intervention for students with fine and gross skill problems. Finally, the high mean of item 8 (mean = 4.01, SD = 0.709, n = 210) proves that most teachers would like to share occupational therapy knowledge with parents so that the intervention can be carried out at home.

## Discussion

Special education teachers are referred to as educators who teach students with special needs in special education schools. Therefore, special education teachers play an important role in helping students with special needs to reach their full potential. This study aims to examine and identify the to identify the level of knowledge of special education teachers towards occupational therapy, understand the importance of the level of knowledge of special education teachers towards occupational therapy and to identify the way of implementing the level of knowledge of special education teachers towards occupational therapy. Next, the mean score of the special education teacher's level of knowledge of learning problems was measured in five levels, which are very low, low, medium, high and very high. Therefore, through the reference of the findings of the descriptive analysis, the overall value for the level of knowledge of special education teachers towards occupational therapy is at a moderate level of knowledge, the importance of the level of knowledge is at a high level and the way of implementing the level of knowledge is also at a high level.

Therefore, the results of this study are slightly different from the findings in the country conducted by Mahfuzah (2013) who reported that the level of knowledge of special education teachers with learning problems about occupational therapy is at a high level. However, the findings of this study also show that the implementation of occupational therapy in the aspect of fine motor skills by teachers in schools is still lacking. On the other hand, the findings of the study contradict the study Kirby et al (2005); Jackman & Stagnitti (2007); Leong et al (2013); Masne et al (2015); Ng & Abd (2020); Nurul et al (2021) where the results of the study show that the level of knowledge of special education teachers on learning problems is at a low level of knowledge. The research findings from the article have shown that teachers in Malaysia find much information about occupational therapy from websites, colleagues, or special needs students' parents. However, the findings of this study also show that special education teachers still lack knowledge in handling occupational therapy for students or have no opportunity to collaborate with occupational therapists to obtain new knowledge to enrich the teaching and learning process. In addition. the study of Ruppap et al (2016) also studied

the preparation of special education teachers with learning problems in teaching special needs students. This study states the constraints of teachers when teaching special needs students because they need specialized knowledge and expert help in various fields. The study findings have found that special education teachers are very willing to carry out teaching and learning and collaborate with professionals; however, they are less prepared to prepare and help students regarding physical and medical needs. For example, teachers may have low knowledge of handling occupational therapy and how to integrate and implement these activities in the classroom. With this, special education teachers in Malacca can be considered as a group with moderate level of knowledge towards occupational therapy.

Next, based on the findings of the analysis, the importance of the level of knowledge of special education teachers towards occupational therapy is at a high level, which has proven that even though teachers lack knowledge about occupational strategies and interventions, they understand that occupational therapy plays an important role in the motor development of special needs students. The findings of this study are the same as some previous studies which prove that although most special education teachers are aware of the importance of occupational therapy and face challenges in teaching students motor skills they still do not find relevant training or courses (Hanafi et al., 2011; Izura et al., 2019; Nabilah et al., 2021). Awareness of the importance of occupational therapy may be due to the experience of special education teachers with learning disabilities who teach in special needs classes and make teachers aware of the need for motor skills (Mahfuzah et al., 2013; Norfahada, 2017; Izura et al., 2019). The findings of this study are also supported by overseas studies Rens & Joosten (2013); Patricia et al (2020), who stated the importance of teachers' knowledge about occupational therapy and collaboration between teachers and occupational therapists creates a mutually beneficial relationship.

In addition, based on the findings of the analysis, the way of implementing the level of knowledge of special education teachers towards occupational therapy is at a high level. This means that special education teachers agreed and have the desire to carry out various implementation methods such as starting to refer students to occupational therapy services, using knowledge learned from occupational therapists to implement in learning and teaching, sharing with parents about knowledge occupational therapy and intervention methods that can be implemented at home and so on. The way of implementation is indeed related to the knowledge of special education teachers in occupational therapy because it will affect the teacher's strategy to handle special needs students motor problems. This finding is in line with an overseas study by Truong & Hodgetts (2017) who found that there are various ways of implementing of teachers even though they have not learned much about occupational therapy currently in the world of education and their first exposure is in the classroom. This is one of the problems faced by teachers because the lack of knowledge and exposure will cause teachers to not understand how to detect and often it is not clear about which students are appropriate to refer to an occupational therapist. The teacher's implementation method in the study also includes some strategies such as occupational therapists needing to spend more time in the classroom, taking more time to understand the teacher's perspective and providing two-way activities such as hands-on. The same findings were also found in the study by Strogilos et al (2011); Benson et al (2016) who reported that teachers showed high implementation but needed more time and opportunities to collaborate with occupational therapists to gain knowledge about occupational therapy. In addition, the findings of the Wilson & Harris Study (2018) prove that teachers' confidence in implementing various problem-solving methods and adapting programming for special needs student's problems is

closely related to the teacher's close relationship with the occupational therapist because they can always get the correct information and the right feedback.

In conclusion, after analyzing the the level of knowledge of special education teachers towards occupational therapy, it was found that the level of knowledge of special education teachers in Malacca needs to be improved by providing training or basic courses in the field of motor skills and occupational therapy. Occupational therapy for special needs student also needs to be implemented in the special education system in Malaysia to bring various benefits to special needs student from various aspects, especially fine and gross motor aspects. Furthermore, the collaboration between Special Education teachers and occupational therapists will be able to benefit special needs students because mutual sharing can increase their knowledge and strengthen the teaching profession. Through effective training and collaboration, the implementation of the Special Education teacher's duties will become better and more effective.

### **Study Implications**

This study has several implications for the analysis of the level of knowledge of special education teachers of learning problems with occupational therapy. First, this study is expected to give awareness to special education teachers about the importance and awareness of occupational therapy knowledge and how to implement occupational therapy for special needs student. The second implication is that it is hoped that the information from the findings of this study can provide benefits to various parties, especially to school administrators, the District Education Office, The State Department of Education, and the Ministry of Education Malaysia need to take proactive and continuous steps in planning and implementing appropriate programs on the theme of motor skills or occupational therapy in an effort to increase the level of knowledge of special education teachers towards occupational therapy. The third implication of the study is that it is hoped that District Education Office, The State Department of Education, and the Ministry of Education Malaysia can create professional collaboration between occupational therapists and Special Education teachers. Collaboration in the form of advisory services and knowledge can create a very positive impact on teachers' knowledge. Furthermore, teachers can also receive advisory services and learn strategies and ways to help special needs students who have motor skill problems.

### **Conclusion**

In conclusion, this study was able to examine and identify the level of knowledge of special education teachers towards occupational therapy at a moderate level, identify the importance of the level of knowledge of special education teachers towards occupational therapy at a high level and identify the way of implementing the level of knowledge of special education teachers towards occupational therapy at a high level.

Through the results of the study, it can be seen that the level of knowledge of Special Education teachers at the primary school level in Malacca has much room for upgrading. Indeed, teachers need to have high enthusiasm, interest, and initiative and always try to find strategies and occupational therapy activities in school. Furthermore, through the implementation of this study, the collaboration between occupational therapists and special education teachers plays an important role because the teacher can refer and contact professionals for information and advice on occupational therapy and fine motor skills. Concerning that, the responsible parties, including school administrators, District Education

Office, The State Department of Education, and the Ministry of Education Malaysia need to take steps to improve the level of knowledge of special education teachers towards occupational therapy.

### Contribution

The contribution of this study discusses the results from this study, which is to identify and understand the actual state of the level of knowledge of special education teachers towards occupational therapy in Malacca. Through the understanding of the real situation, this study can also be used to identify and discover the level of awareness of the importance of occupational therapy and what further implementation methods that can be taken by the Ministry of Education Malaysia. Further studies related to level of knowledge of Special Education teachers towards occupational therapy can also be studied within a longer time frame in addition to encouraging collaboration between occupational therapists and Special Education teachers in Malacca.

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