

READINESS OF PROGRAM TEACHERS TOWARDS THE USE OF MULTIMEDIA TEACHING AIDS IN LEARNING AND SPEAKING OF AUTISTIC STUDENTS

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ABSTRACT

This study aims to identify the readiness of teachers of Special Education which is determined by knowledge, skills, and attitudes toward the use of multimedia teaching aids in the learning of autistic students. This study is a survey that uses a questionnaire as the research instrument. This study was conducted on 45 teachers of autism students in primary schools of Hulu Langat, Selangor who were purposively selected. The analysis of research findings is carried out descriptively and inferentially by using The Statistical Packages for the Social Sciences version 27 (SPSS 27) software. Descriptive analysis in the form of frequency, percentage, mean score, and standard deviation to identify the level of knowledge, skills, and teachers' attitudes toward the use of multimedia teaching aids. While the inferential analysis by Pearson's correlation is used to identify the relationship between each variable (knowledge, skills, and teacher attitudes). The findings show that the level of teacher knowledge (mean = 3.08), and attitude (mean = 3.19) towards the use of multimedia teaching aid is at a high level. While the skills are at a moderate level (mean = 2.80). The Pearson Correlation shows a significant relationship between knowledge and skills ($r = 0.833$, $p < 0.00$), a significant relationship between knowledge and teacher attitudes ($r = 0.673$, $p < 0.00$) and they were also a significant relationship between skills and teacher attitudes ($r = 0.556$, $p < 0.01$).

Keyword: multimedia teaching aids, special education, autistic students

1. INTRODUCTION

Based on the international declarations Education for All (EFA) 2015 and Biwako Millennium Framework (BMF) 2002 allocating the government's responsibility to provide education needs to children with disabilities (Singal, 2016). Autistic students are students who find it difficult to focus on learning because they concentrate on their own world (Eren, 2018). Therefore, special care needs to be given to this special group, especially from the learning aspect. To improve the quality of education and the potential of autistic students, the use of multimedia teaching aids (TEACHING AIDS) needs to be implemented in the T & L process (Ntalindwa et al., 2022). The use of multimedia teaching aids software such as audio, images, graphics, animations, and video

clips can fill the needs, and desires and create the motivation and interest of students, especially students with autism (Hanafiah et al., 2020).

The speed of the digital flow of special education in schools under the Integrated Special Education Program (PPKI) is also not separated from the rapid use of multimedia technology. The teacher's ability to use technological materials is an effective teaching and learning pedagogy (Mohamad Thayyib & Mohd Hanafi, 2020). Special education teachers should be prepared with sufficient skills and knowledge in line with current educational needs. The approach of interactive multimedia-based teaching aids in T & L can provide understanding and interest autistic students to learn.

This transformation opens teachers' eyes to being more IT literate and more innovative in delivering information using technology devices. The approach of interactive multimedia-based teaching aids in T & L can provide understanding and interest autistic students to learn (Nora & Rohizan, 2019). In relation to that, special education teachers must change their learning approach in line with technological progress. Exposure to multimedia teaching aids is an exploration of innovation in Education. Teachers should be prepared to increase their potential and improve themselves in line with the development of information technology. Teachers are responsible for diversifying teaching methods using multimedia teaching aids to build an interactive learning environment and produce a competitive generation (Thayyib & Hanafi, 2020).

However, there are not many studies that examine the overall level of preparedness from the aspects of knowledge, skills, and attitudes of PPKI teachers towards the use of multimedia teaching aids in the T & L of autistic students. Most of the previous studies involved mainstream teachers and were limited to aspects of knowledge and skills only (Nurália & Norshidah, 2022). The teacher's attitude toward the use of TEACHING AIDS multimedia is also a factor that affects the use of learning technology (Mufidah Dhamirah, 2022). Therefore, this study aims to identify the level of preparedness among teachers of the Special Integration Education Program (PPKI) which is reviewed from the aspect of knowledge, camp concerns, and attitudes toward the use of multimedia teaching aids in the learning and facilitation (T & L) of autistic students. In addition, this study also aims to identify the relationship between the knowledge, skills, and attitudes of the teacher.

2. METHODOLOGY

This study is a quantitative study with a survey method design. 45 PPKI teachers who taught autistic students in primary schools in Hulu Langat, Selangor were selected purposefully (purposively sampling) to participate in the study. Respondents were involved from various demographic profiles such as gender, school location, age, experience as a teacher of the Special Education Program for Integration (PPKI), and involvement in the preparation workshop for Multimedia Teaching aids in T & L. Data was collected using a set of developed questionnaires in a Google Form link that was distributed through the Whatsapp application. The questionnaire is a closed 4-point Likert scale that covers the respondent's profile, knowledge level, skill level, and teacher's attitude level towards the use of multimedia teaching aids in T & L. The instrument used is an instrument that has very high validity and reliability with Cronbach's alpha >0.9 (Hair et al.,

2006). Then, the data were analyzed descriptively and inferentially using the Statistical Package for Social Science 27 (SPSS 27) software focusing on the use of multimedia teaching aids among special education teachers in the T & L of autistic students. Later, Pearson's correlation inference statistical analysis was conducted to determine the relationship between knowledge, skills, and teacher attitudes.

This study involves most female teachers (84.4%) from urban and rural schools that are almost equal in number. In terms of age, the majority of teachers aged 31 - 40 years, followed by teachers aged 41-50 years, teachers aged less than 30 years, and teachers aged 51 - 60 years. The demographic profile of the respondents also shows that the teachers involved in this study come from various age categories. The percentage of the results of the descriptive analysis shows that the majority of the teachers involved in this study have a Bachelor's degree and were quite experienced in the PPKI field which is more than 3 years. Most study respondents have been involved in multimedia teaching aids preparation workshops in T & L.

3. FINDINGS AND DISCUSSION

The finding of this study consists of four parts, namely the level of knowledge, skill level, and teacher attitude level as well as the relationship between the knowledge, skill, and attitude of PPKI teachers of autistic students towards the use of multimedia teaching aids in T & L.

3.1. Level of Knowledge of PPKI Teachers of Autistic Pupils on the Use of Multimedia Teaching Aids in T & L

The level of teachers' knowledge of the use of multimedia teaching aids in T & L is determined with 10 items as shown in Table 1.

Table 1. PPKI Teacher knowledge against the use of multimedia teaching aids in the T & L of autistic students

Item	Teachers know...	Min	SP	Level
B1	Various multimedia applications to provide multimedia TEACHING AIDS in T & L	3.04	.367	Height
B2	How to apply animation in multimedia	2.53	.505	Simple
B3	How to use a computer or laptop	3.40	.495	Height
B4	Various pre-audio facilities in teaching	3.13	.457	Height
B5	How to use Microsoft PowerPoint to prepare interactive multimedia TEACHING AIDS	3.20	.625	Height
B6	Various web applications in making multimedia TEACHING AIDS	2.87	.344	Simple
B7	How to use LCD/projector	3.20	.505	Height

B8	How to produce interactive learning videos	2.87	.588	Simple
B9	How to Download You tube videos	3.24	.645	Height
B10	How to find various information on multimedia TEACHING AIDS through Internet	3.31	.557	Height
	General Knowledge	3.08	.301	Height

SP=Standard Deviation; mean 1.00 - 2.00 = low level; 2.10 - 3.00 = medium level; 3.10 - 4.00 = high level

Table 1 shows that the items of teachers' knowledge of the use of multimedia teaching aids in T & L are at a medium and high level. Among the 10 knowledge items, 3 items are at a medium level, which is knowledge about how to integrate animation in multimedia, various web applications in creating multimedia teaching aids, and how to produce interactive learning videos. This finding was explained by Ayavaca et al. (2017) that applying animation in multimedia is one of the effective factors in producing interactive teaching videos. This is because animation is an element that makes teaching videos fun and able to attract students' interest in learning. Therefore, it can be understood that when the knowledge of how to apply animation in multimedia is at a moderate level, then the knowledge of how to produce interactive learning videos is also at a moderate level.

While the knowledge that is at a high level is knowledge of various multimedia applications to prepare multimedia TEACHING AIDS in T & L, how to use a computer or laptop, various pre-audio facilities in teaching, how to use Microsoft PowerPoint to prepare interactive multimedia TEACHING AIDS, how to use LCD/projector, how to download YouTube videos, and how to find various information on multimedia teaching aids through the internet. The teacher's knowledge of how to apply animation in multimedia got the lowest mean score compared to other items. While for the item teacher knows how to use a computer or laptop marks the highest mean score (mean score = 3.40, SP = 0.495).

Overall, the PPKI teachers' knowledge of the use of multimedia in the T & L of autistic students is at a high level. The findings of this study are supported by research by Chong and Shaffe Mohd Daud (2017), Nur'alia Mat Nawi and Norshidah Mohamad Salleh (2022) who also found that PPKI teachers' knowledge of Technology and Multimedia was at a high level. This study also found that all teachers know how to use computers. This finding is also in line with the study of Maimun et al. (2017) that teachers' knowledge of computers is high. This is because computers have become an important part of teachers' teaching nowadays. Next, teachers have also learned about various multimedia applications to provide multimedia TEACHING AIDS in T & L and how to use LCD/projector.

3.2. The Skill Level of PPKI Teachers of Autistic Pupils on the Use of Multimedia Teaching Aids in T & L

The PPKI teachers 'level of skills in the use of multimedia teaching aids in T & L is determined with 10 items as shown in Table 2.

Table 2 shows that the teachers' skill items on the use of multimedia teaching aids in T & L are at medium and high levels. Among the 10 skills items, 6 are at a medium level, and 4 are at a high level. Among the skills items that are at a medium level, is the skill in using multimedia applications to prepare multimedia teaching aids in T & L, applying animation in multimedia, mastering pre-audio facilities in teaching, using Microsoft PowerPoint to prepare interactive multimedia teaching aids, mastering web applications in creating multimedia teaching aids, and produce interactive learning videos. While items that are at a high level are the skills of using a computer or laptop, using an LCD/projector, downloading YouTube videos, and mastering the internet. The teacher skills item in applying animation in multimedia marked the lowest mean score compared to other items. While the item on teachers' proficiency in using a computer or laptop gets the highest mean score. Overall, the PPKI teachers' skills toward the use of multimedia teaching aids in the T & L of autistic students are at a moderate level.

Table 2. PPKI teacher skills toward the use of multimedia teaching aids in the T & L of autistic students

Item	Skilled teacher...	Min	SP	Level
C1	Using multimedia applications to provide multimedia TEACHING AIDS in T & L	2.76	.529	Simple
C2	Applying animation in multimedia	2.42	.753	Simple
C3	Using a computer or laptop	3.24	.435	Height
C4	Mastering pre-audio means teaching	2.78	.636	Simple
C5	Using Microsoft PowerPoint to prepare an interactive multimedia TEACHING AIDS	2.84	.673	Simple
C6	Mastering web applications in creating multimedia TEACHING AIDS	2.69	.668	Simple
C7	Using LCD/projector	3.11	.532	Height
C8	Produce interactive learning videos	2.67	.674	Simple
C9	Downloading YouTube videos	3.09	.557	Height
C10	Dominate the internet	3.13	.344	Height
	Overall Skills	2.80	.451	Simple

SP=Standard Deviation; mean 1.00 - 2.00 = low level; 2.10 - 3.00 = medium level; 3.10 - 4.00 = high level

The results of this study are supported by Norhiza, Zamri, and Wan Muna's study (2016) which states that teachers are not yet fully proficient in the application of various techniques in P&P. Another study that strengthens the results of this study is a study conducted by Anas and Sifulnizam (2018), Intan Marfarrina and Simah (2021) which reported that teachers still lack skills in producing learning aids based on animation and are at a weak level. The same goes for research carried by Nur'alia Mat Nawati and Norshidah Mohamad Salleh (2022) which reported that Special Education teachers' skills in the use of multimedia in learning were at a moderate level.

3.3. The Level of PPKI Teachers' Attitudes of Autistic Pupils towards the Use of Multimedia Teaching Aids in T & L

The level of teachers' attitudes towards the use of multimedia TEACHING AIDS in T & L is determined with 10 items as shown in Table 3. Table 3 shows that the items of teachers' attitude towards the use of multimedia teaching aids in T & L are at medium and high levels. Among the 10 items on attitude, 1 item is at the medium level and 9 items are at the high level. Among the skill items that are at the medium level is the item where the teacher feels that the preparation of multimedia teaching aids burdens the teacher and at the same time gets the lowest mean score compared to other items (mean score = 2.56, SP = 0.755). The findings of this study are supported by the study of Mufidah Dhamirah Mihat (2022) who also found that the attitude of teachers towards the use of multimedia in learning is at a high level.

Table 3. Teacher attitude PPKI against the use of multimedia teaching aids in student T & L

Item	Attitude	Min	SP	Level
D1	I enjoy using TEACHING AIDS multimedia in T & L	3.36	.484	Height
D2	I believe multimedia teaching aids makes the subject more interesting	3.40	.495	Height
D3	I believe multimedia TEACHING AIDS can help students to focus	3.31	.557	Height
D4	I am interested in attending the multimedia TEACHING AIDS preparation workshop preparation	3.27	.447	Height
D5	I believe multimedia TEACHING AIDS improves teaching practice	3.31	.468	Height
D6	I want to learn the techniques of producing multimedia TEACHING AIDS	3.31	.468	Height
D7	I enjoy preparing multimedia TEACHING AIDS	3.20	.405	Height
D8	I believe multimedia TEACHING AIDS helps autistic students understand lessons	3.33	.564	Height
D9	I feel the preparation of multimedia TEACHING AIDS burden the teacher	2.56	.755	Simple
D10	Preparation multimedia TEACHING AIDS challenges challenge my knowledge and skills in using multimedia	3.16	.475	Height
Overall Skills		3.19	.314	Height

SP=Standard Deviation; mean 1.00 - 2.00 = low level; 2.10 - 3.00 = medium level; 3.10 - 4.00 = high level

The attitudes of teachers who are at a high level include enjoying using multimedia teaching aids in T & L, believing that multimedia teaching aids makes the subject more interesting, believing that multimedia teaching aids can help students focus, being interested in attending a workshop on preparing multimedia teaching aids in T & L, believing teaching aids multimedia can improve teaching practice, want to learn the techniques of producing multimedia teaching aids, enjoy preparing multimedia teaching aids, believe that multimedia teaching aids can help autistic students understand lessons, and preparing multimedia teaching aids challenges teachers' knowledge and skills in using multimedia. The item with teachers believing multimedia teaching aids makes the subject more interesting is the item with the highest mean score. Overall, the

attitude of PPKI teachers toward the use of multimedia in the T & L of autistic students is at a high level.

The results of this study are also supported by Prospery Mwila (2018) that teachers should use multimedia in building learning techniques to improve student learning outcomes. This positive attitude also makes teachers agree and strongly agree that they enjoy using multimedia teaching aids in T & L, are interested in attending workshops on preparing multimedia teaching aids in T & L, want to learn the techniques of producing multimedia teaching aids and, enjoy preparing multimedia teaching aids.

3.4. The relationship between PPKI Teachers' Knowledge, Skills, and Attitudes toward the Use of multimedia teaching aids in T & L

The findings of Pearson's correlation study on the relationship between knowledge, skills, and teachers' attitudes towards the use of multimedia teaching aids in T & L are shown in Table 4.

Table 4. Relationship between knowledge, skills, and attitude and level of knowledge towards teaching multimedia

Variables		r	Sig. (p)	The strength of relationships
Knowledge	Skills	.833	.000	strong
Knowledge	Attitude	.673	.000	simple
Skills	Attitude	.556	.001	simple

** The relationship is significant at the 0.01 level; r = product moment correlation

Table 4 shows that this study obtains the strength of the Pearson relationship (r) between knowledge and skills showing that the knowledge of special education teachers has a strong positive relationship with their skills on the use of multimedia teaching aids in the T & L of autistic students. This finding is supported by research by Nur'alia Mat Nawi and Norshidah Mohamad Salleh (2022), Chew and Suziyani Mohamed (2021) that also reported that knowledge will affect teachers' skills in using technology.

This research has also found that the knowledge of special education teachers has a moderate positive relationship with the attitude towards the use of multimedia teaching aids in the T & L of autistic students. This finding is supported by the study of Mufidah Dhamirah Mihat (2022) who also reported that knowledge will influence teachers' attitudes toward using technology. Although the knowledge and attitude are at a high level based on the strength of the simple relationship, the high knowledge of the teacher cannot have much influence on the teacher's attitude. This shows that a high (positive) attitude is not enough to increase teachers' knowledge of the use of multimedia teaching aids in T & L. The same goes for workshops that follow which may not be effective.

Skills and attitude was found to have a moderate positive relationship. This finding is supported by a study by Wiana (2018) that also reported that skills will influence teachers' attitudes toward

using technology. The study's findings clearly show that the teacher's skills in using multimedia teaching materials will influence the teacher's attitude to use multimedia applications in helping the T & L process.

4. CONCLUSION

This study has identified that the knowledge and attitude of teachers towards the use of multimedia teaching aids in T & L is at a high level, while the skills are at a moderate level. Therefore, teachers' skills must be improved so multimedia-based T & L can run well. This study also found that knowledge, skills, and attitudes are significantly related. Although this study has been successful in identifying the level of PPKI teachers of autistic students' readiness towards the use of multimedia teaching aids in T & L in primary schools in Hulu Langat, Selangor, future studies are expected to use knowledge and skills test sets. It is hoped that with the findings of the study, information will be obtained that can later be used as useful feedback to relevant parties to improve the level of teacher skills and review the of multimedia teaching aids preparation workshop in T & L, especially for PPKI teachers.

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