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MALAY LANGUAGE TEACHER LEADERSHIP IN MANAGING PEDAGOGY AND THE USE OF INFORMATION AND COMMUNICATION TECHNOLOGY POST COVID-19

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ABSTRACT

The COVID-19 pandemic that hit the world has caused changes in human life including the world of education. Among the changes that occur in education is the management of education that focuses on complete technological dependence. This study aims to identify the leadership of pedagogical management and the use of Information and Communication Technology (ICT) among Malay Language teachers as well as synthesize the influence of pedagogy and the use of ICT on the achievement of Malay Language among students. Questionnaires were distributed to a total of 300 randomly selected high school Malay teachers from the state of Selangor. The findings of the study show that the level of Malay teachers in managing pedagogy and using technology is at a high level. Findings also show that Malay language achievement increased starting in 2020 and 2021. From a multiple regression analysis, it was found that Malay language achievement for the year 2020 was influenced by pedagogical knowledge. Next, the achievement for the year 2021 was influenced by the use of technology. Meanwhile, the overall achievement of Malay Language in 2020 to 2021 was influenced by the leadership of Malay Language teachers in managing pedagogy and the use of ICT. The implications are to increase ICT training for Malay language teachers and non-option teachers, as well as revision of the Malay Language curriculum. Teachers need to be constantly exposed to courses and teaching activities that integrate ICT continuously. Findings also provide guidance to the Ministry of Education to enact or improve the Malay language curriculum and increase the professionalism of Malay Language teacher leadership in managing pedagogy and the use of ICT in Malay language teaching.

Keywords: **Malay Language Teachers' Leadership; Managing Pedagogy; Use of Information and Communication Technology**

INTRODUCTION

The COVID-19 pandemic that hit the world in 2019 resulted in huge changes in human life including the field of education. This situation requires educational institutions to change teaching and learning by adapting to online learning as students are in different places and classes could not be conducted face-to-face (Verawardina et al., 2020, Kirin et al. 2021).

In line with the rapidly developing digital era (Yusof, 2017), online teaching and learning methods are seen as the best way to continuously deliver knowledge in the post COVID-19 era. Emphasis on the use of ICT will be able to improve the quality of learning through the provision of internet access and provide a virtual learning environment for students. Knowledge and skills in the use of digital technology are necessary to improve the effectiveness of the teaching and learning (TnL) process carried out on students which involves the process of data collection and storage as well as the rapid channelling and dissemination of information. However, TnL process with the use of digital technology requires the expertise or skills of teachers (Bahador et al., 2017). This is because there are still teachers who are not yet fully prepared to implement online teaching so there is a need to first adjust (Aufia Aisa & Linta Lisvita, 2020). This scenario increases existing and new challenges for technology-based learning (Bao, 2020; Ebrahim et al., 2020; Zhang et al., 2020).

The application of active learning methods in the classroom (Che In & Ahmad, 2019) and using the medium of the internet is also a factor in the effectiveness of online TnL. However, one of the problems that exists is the limitation of internet access at home. According to a study by Luqman Arif Abdul Karim (2020), there is a difference in the distribution of the internet between urban and rural areas, which is a very large range of 70 to 30. The implementation of online teaching and learning causes teachers to take on the challenge of managing it effectively (Bao, 2020; Basilaia & Kvavadze, 2020; Goldschmidt & Msn, 2020). Teachers need to make plans, considerations and choose appropriate strategies as well as methods to achieve learning goals by managing learning effectively and to consider the wide and stable internet network access (Bilfaqih & Qomarudin, 2015). In addition, teachers also need to choose appropriate platforms such as Google Classroom, YouTube, WhatsApp, Telegram, Zoom, and Google Meet (Unik Hanifah Salsabila et al., 2020). To ensure the smoothness of online learning, parents, students and administrators need to be willing to provide suitable facilities such as laptops, mobile phones, and internet packages. According to Aufia Aisa and Linta Lisvita (2020), online teaching and learning at the time of Covid-19 has an impact in terms of techniques, teaching methods, media and learning activities. The challenge indirectly gives awareness to Malay teachers to continue teaching and learning based on technology during the COVID-19 pandemic.

Pedagogical management, technology and effective leadership practices among Malay language teachers can have an impact on producing excellent students. Referring to Jackson et al. (2010) teacher leadership is the process by which teachers, individually or collectively, influence peers, principals and other members of the school community to improve teaching and learning practices with the aim of increasing learning and achievement of students. A teacher who is capable of leading will give a high commitment to meet the needs of students, deliver clear teaching and learning content in the classroom, make balanced and rational judgments, take risks and try to train students to be role models who are able to stimulate positive actions of individuals around them.

Today's teacher's tasks are increasingly challenging to help each student improve their performance in lessons (Ani Omar, 2016). A quality teaching method that integrates technology will be able to help students follow the lesson well in addition to acquiring knowledge, skills and fostering a deep interest in the students. Effective teaching strategies centre on the teacher himself by using electronic mediums of computer-based technology, software, network systems and internet databases. This includes Learning Management System (LMS) applications, e-Learning, m-learning, Facebook, video streaming, online websites, and YouTube (Syed Chear, 2017; Yusof, 2018) with the application of voice, sound, picture, video and text techniques. Teaching and learning processes like these are able to create a conducive environment and attract students' attention to learn. As explained by Fryer and

Vermunt (2018) the diversity of contexts and different lessons will influence the learning strategies adapted by students based on the developments that occur in the learning process. Therefore, the use of ICT in a thoughtful and planned manner can create a flexible, dynamic, fun and interesting learning environment which can subsequently increase student achievement in Malay language.

Study Objectives

The objectives of this study are specified as follows:

1. To identify the level of pedagogical management leadership among Malay Language teachers in Selangor.
2. To identify the level of use of ICT among Malay Language teachers in Selangor.
3. To synthesize the influence of pedagogical leadership, and the use of ICT on Malay Language achievement in Selangor.

Conceptual Framework

Based on the conceptual framework in Figure 1, there are two variables which are independent variables and dependent variables. An independent variable is a modified variable. While the dependent variable is the variable that is affected by the results of the approach used. The independent variables in this study consist of pedagogical management leadership, and the use of ICT which is measured in the form of a questionnaire. The dependent variable is Malay achievement.

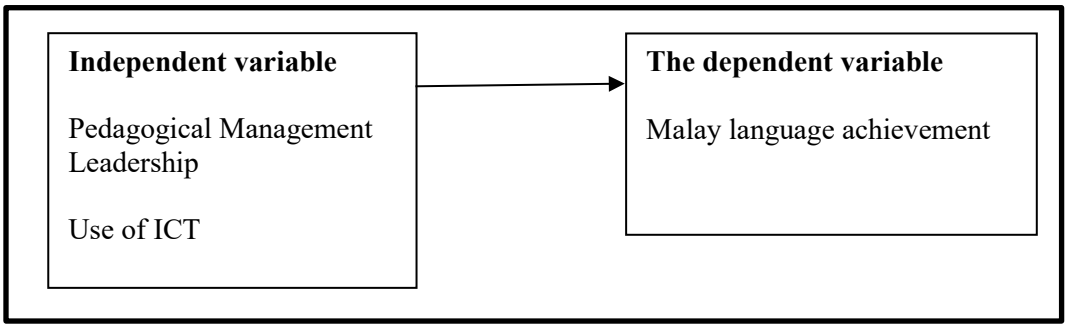

***Figure 1*:** Conceptual Framework

Model

The debate about technology in education has changed from whether it should be used in the classroom to how it should be integrated in teaching and learning generally (Angeli, 2005; Sutherland et al., 2000). Early attempts to use technology in teaching and learning focused on teaching technology skills to pre-service teachers (Angeli & Valanides, 2005; Thompson & Mishra, 2007). However, educators have identified that technology skills alone are insufficient to prepare them well in the effort to use technology in education (Angeli & Valanides, 2009; Chai et al., 2010; Graham et al., 2009). Hardy (2010) asserts that pre-service teachers and in-service teachers agree that technology skills alone are not capable of providing and enabling them to teach effectively using technology.

Therefore, there is awareness among educators where "technology is not a transformative mechanism by itself. Technology is a tool used by its users to reconstruct things from the knowledge possessed by the teacher to the teaching content" (Angeli & Valanides, 2009, p. 157). The success of technology integration as said by Harris and Hofer (2009), is not dependent on the ability to use educational technology alone but rather on the teacher's mastery of curriculum content and pedagogy.

In this study, the Z model has been used to understand the relationship between leadership, pedagogical knowledge

and technology on Malay language achievement. Based on this model, teaching using technology requires knowledge in technology, pedagogy and content to be taught (Mishra & Koehler, 2006). Their emphasis is on how teachers put these constructs together in their teaching. They put these constructs (technology, pedagogy and content knowledge, PPKT) together to form a framework known as Pedagogical Knowledge, content knowledge, technological knowledge, as described in Figure 2.

Figure 2 is a TPACK framework formed based on or as an extension of the pedagogic concept of knowledge content, Shulman (1986), which identifies the distinctive characteristics of knowledge for teaching. The PPKT or TPACK framework has seven constructs: Technological Knowledge (TK), Pedagogical Knowledge (PK), Content Knowledge (CK), Pedagogical Content Knowledge (PCK), Technological Content Knowledge (TCK), Technological Pedagogical Knowledge (TPK) and Technological Pedagogical Content Knowledge (TPCK) (Mishra & Koehler, 2006). A clearer description of the constructs in the TPACK framework will be stated below.

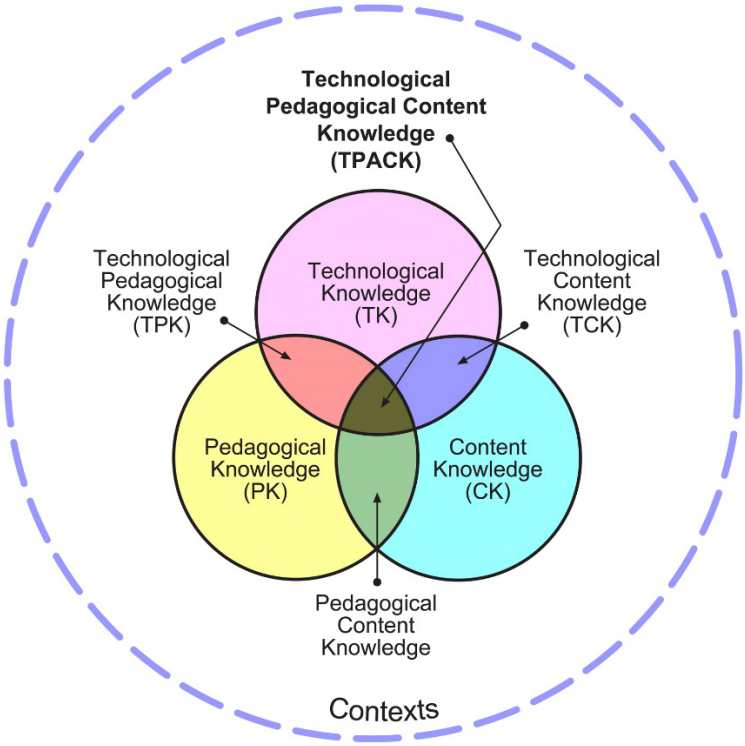

Figure 2: Components of TPACK (adaptation from Misha & Kohler, 2006)

The discussion above shows that teacher pedagogical management leadership is one of the requirements for a teacher to implement teaching and learning by integrating technology. However, Mishra and Kohler (2006) explained that the combination of pedagogical knowledge, content and technology becomes very important to complete the knowledge of teachers to implement effective teaching and learning.

LITERATURE REVIEW

Pedagogical Practice of Malay Language Teachers

Student diversity is a challenge that needs to be addressed by all Malay language teachers in order to plan effective Malay language pedagogy. Pedagogy is the study of the teaching and learning process, classroom management,

school organization and also teacher-student interaction. A Malay teacher needs to have effective pedagogical knowledge using approaches, strategies and techniques in delivering the Malay curriculum and know the content of the curriculum to be delivered taking into account student achievement. Malay language teachers also need to consider the changes that occur in the field of education (Yatim et al., 2020). Therefore, nowadays latest pedagogical approaches and techniques practiced by teachers such as different pedagogical approaches. A study by Sapian, N. A., and Mohammad, W. M. R. W. (2022) found that the level of teacher knowledge is unbalanced due to teacher unpreparedness, teacher acceptance and lack of exposure. The effective aspect of differentiated pedagogy requires the sensitivity of the teacher to understand the student's background while planning the teaching process and activities according to the student's ability level so that the student's achievement can be increased.

According to Subri, M. R., and Yaakub, R. (2021), to be an excellent teacher, pedagogical knowledge in terms of approaches such as communicative, thematic, fun learning, diversifying teaching aids, using technology as well as printed materials and classroom management skills.

Pedagogical Practices during COVID-19 Pandemic

The government has implemented the Movement Control Order (MCO) in phases by enforcing national border restrictions in addition to the closure of almost all economic and social sectors. In the context of education, the closure of schools and higher education institutions (HEIs) led policy makers namely the Malaysian Ministry of Education (MoE) and the Ministry of Higher Education (MoHE) to plan a sustainable strategy for the survival of the existing education system. As a result, the physical teaching and learning process has been changed to Teaching and Learning at Home (PdPR) with the implementation of digital technology or in other words online TnL across various levels of study (Kirin et al. 2021), in line with the development digital era that is rapidly developing. This situation causes educators, namely teachers to be tested by devising various TnL strategies to maintain student involvement, motivation and responsibility (Anim Zalina Azizan, 2020). Various approaches are carried out to ensure the smoothness of the PdPR process such as learning in the form of modules that are supplied by sending printed copies of learning materials directly to learning students and mass media such as KPM's DidikTV (Bernama, 2021b), in addition to the use of social media and 30 technology platforms (WhatsApp, Telegram, Google Classroom, Google Meet, etc.) (Mahlan & Hamat, 2020; Martina et al., 2020).

Teacher Leadership in Schools

In general, the leadership process is an activity that involves two parties, namely the leader group and also the subordinate group (Misdi et al., 2019). The concept of teacher leadership in the classroom is defined as the teacher is the leader while the students are considered as subordinates. This is so because teachers have the expertise and ability to influence their subordinates efficiently, that is in formal or informal situations. Therefore, teachers need to take appropriate measures to influence the students in an effort to obtain the desired results.

Mansor et al., (2018) in the article Teacher Leadership and the Guiding Principles divided 6 dimensions of the teacher leadership model which are; (1) leading improvements in teaching and learning (2) Lead by example (3) Leading in organizational development (4) Leading a culture of collaboration (5) Lead partnerships with the community and (6) Lead by example. While Ciulla (2004) considers leadership to be related to a person or how a person moves others to perform an action whether motivating followers, having a good relationship with followers, relating to organizational goals such as the ability to complete the vision and mission. Ethical leaders can influence the people they lead in an organization. The leader's responsibility is to guide and help the people he leads to improve good values to strengthen the position of the organization. Teacher leadership can raise the atmosphere of the school towards professional development, excellence, teacher autonomy, and openness.

One of the objectives of leadership is to focus on teaching and learning activities. Teacher professional leadership is also associated with educational leadership that includes pedagogical leadership (Fonsén & Soukainen, 2020; Khan

et al., 2021), teacher competence (Manuel Roca-Piloso & Anibal Alonso-Betancourt, 2020), pedagogical models (Andrews & Abawi, 2017; Chihaia & Cretu, 2014). Most scholars describe pedagogical leadership as leadership actions that support the teaching and learning process (Contreras, 2016). The concept of pedagogical leadership also includes the concept of learning and knowledge leadership (Moral, 2018; Stein & Nelson, 2003), distributive leadership (Boe & Hognestad, 2017; Yang & Lim, 2020), transformational leadership (Rojas Carrasco et al., 2020) professional learning communities (Khan et al., 2021; Vijayadevar et al., 2019). This is inevitable, but specifically, 'pedagogy' is defined as the art, method and practice of teaching, especially as an academic or conceptual subject (Andrews & Abawi, 2017). The goal of this leadership is to lead, direct and transform individuals or organizations to achieve a goal (Stein & Nelson, 2003). In conclusion, leadership that is directed towards teaching and learning so that quality education can be achieved is the main focus in educational leadership (Rojas Carrasco et al., 2020).

All teachers, including Malay teachers, have high leadership skills and should be able to manage existing resources efficiently, especially in using information and communication technology (ICT). According to Kaware (2015), ICT is a combination of tools and technology resources used to manipulate and disseminate information and support the learning process in the 21st century. Among the technology equipment that is often used at this time are electronic and digital equipment, namely computers, internet, and multimedia technology. Today, the use of ICT is increasingly important in all fields including the field of education because of the ability to provide a proactive learning and teaching environment (Gabare et al., 2014). In a world that is increasingly using digital equipment, modern institutions, business organizations, governments, courts, sports organizations, educational institutes, universities, etc., there is a great need for the use of graphics, information retrieval, the use of electronic mail (e-mail), the use software, database usage, and others that are information oriented.

According to Raman, K (2019), the government has devised various strategies to cultivate the use of Information and Communication Technology in urban and rural schools. However, existing studies show that the use of ICT among teachers is still at a moderate level and is focused on the same school location. There are differences in the knowledge, skills and attitudes of using ICT among teachers in urban and rural areas.

ICT opens space for educators to apply various teaching techniques, while students are given the opportunity to hold the power of control for a learning session (Zamri & Nur Aisyah, 2011). This shows that ICT is able to create a more interesting learning environment compared to conventional methods that are only guided by textbooks. The ICT-based learning approach is able to have a positive effect on students in their PdP process. This is because of the process of transferring information from a static textbook to a new learning pattern that is more interesting, dynamic and interactive with the help of additional media such as audio, video, animation and graphics. This concept will replace traditional textbooks with electronic textbooks that are more user-friendly. According to Buckley and Smith (2008), the use of simulation through ICT in the learning process can improve students' skills to solve a problem. ICT applications have the ability to encourage students to think critically, solve problems and be motivated in learning. In addition, ICT simulation is able to integrate information more effectively in increasing more interesting learning opportunities. This causes students to have the opportunity to develop thinking skills at a higher level and change their thinking and behaviour in learning in terms of thinking, learning and obtaining information (Mohd Aizani, 2004; Zamri & Nur Aisyah, 2011).

In fact, technology is also a tool for education to promote student learning in the classroom. Teaching based on ICT is also able to improve student understanding with the presentation of teaching content with the help of text, pictures and sound (Shukri Ismail, 2015). In addition, the use of ICT can also maintain focus, improve cognitive ability and social learning skills in a more comfortable atmosphere in terms of their time and ability to learn KOMSAS (Zamri & Nur Aisyah, 2011). This interactive ICT has increased students' interest in their studies and can motivate them to learn. This is because, based on the multimedia features found in TMK, it can help to have high stimulation or motivation. The preparation of training and styling in TMK gives students the opportunity to strengthen their understanding of the short story lesson taught (Ros Azura, 2007). Student interest and motivation in the PdP process can also create positive implications.

The change in teacher teaching pedagogy leadership is very significant since the world was hit by the Covid-19 pandemic because it has a big impact on the country's education system. The teachers need to implement blended teaching and learning through the use of digital media with traditional online methods as the main mechanism for imparting knowledge (Simah, 2021). The use of ICT in PdP is also able to improve students' understanding and achievement in learning, especially understanding the content of KOMSAS lessons more easily (Simah, 2017). Nur Aisyah Mohamad Noor et al., (2012) also agreed that the application of ICT in PdP KOMSAS has created more effective and entertaining learning. This is because the use of this method has successfully demonstrated its effectiveness in increasing students' interest and achievement in learning literary texts. Indirectly, the use of ICT can reduce students' negative perception that learning literary texts is difficult to understand. Research findings by Namiha Yahaya and Suziyani Mohamed (2019) show that the knowledge and skills of preschool teachers in integrating ICT in teaching and learning through the use of software and tools are high. The use of technology makes teaching easier, improves the quality of subjects and makes learning more effective.

A meta-analysis study has concluded that teachers are the main indicators that influence student achievement linked to leadership values. Teachers should practice learning leadership in their profession because a leader should produce people under him to become leaders (Durrant & Holden, 2006). McEwan (2003) sees someone who thinks that teaching is a role outside of the concept of leadership is completely inaccurate. This is because leadership that focuses on teaching requires support and cooperation among other teachers, especially teacher leadership. The value of the teacher's professionalism will be evident with the attributes of ability, skills, and the way of implementing something appropriately in a professional manner.

METHODOLOGY

Research Design

A quantitative approach was used in this study to answer the research questions. The study is carried out descriptively by using the survey method. A questionnaire containing variable items related to pedagogical management leadership and the use of ICT among Malay Language teachers as well as synthesizing the influence of pedagogy, and the use of ICT on Malay Language achievement was distributed to the study respondents to obtain data for analysis purposes.

Population and Sampling

A total of 300 sets of questionnaires were distributed and filled out completely by Malay teachers in secondary schools in the state of Selangor. The study sample was randomly selected with proportional stratification.

This research instrument produced based on adaptations from instruments that had been built by previous researchers (Simah, 2017; Flowers & Algozine, 2000; Grainne and Marti Oliver, 2014; Kofi Acheaw Owusu, 2014; Mohd Jasmi Abd Rahman, 2008; Naffie Mat, 2012; and Rosnaini, 2006). The level of pedagogical leadership and ICT use was measured using a Likert scale based on the agreement and perspective of the respondents. The instrument was validated by three experts from the fields of Malay and Information and Communication Technology.

Content and Construct Validity

Content validity refers to the extent to which the tool for collecting data covers the content of the field being studied (Straub, 1989). The validity of the measurement tool can be improved by evaluating the statements formed based on the review of the test specifications by the panel (Noraini, 2010). Therefore, a total of three panellists were appointed to verify the level measurement tool of this study which covers pedagogical management leadership, use of ICT and Malay language achievement. The panel is Dr. Fadzilah Abd Rahman, Dr. Nor Asiah Ismail and Mrs. Siti

Asiah Jarami. Panel selection is made based on areas of expertise, i.e. having expertise in their respective fields. A panel that specializes in the field of Malay Pedagogical Leadership consists of Dr. Fadzilah Abd Rahman, and Dr. Nor Asiah Ismail. While the panel that specializes in the field of Information and Communication Technology is Pn. Siti Asiah Jarami. The panel listed above is active in the field of teaching and research related to current issues of pedagogical leadership, and ICT in education.

The reliability of research instruments is often estimated by Alpha Cronbach (Hair et al. 2010; Sekaran 2005; Selim, 2003). The purpose is to ensure that this questionnaire has a good reliability coefficient before it is distributed to the study sample. Cronbach's alpha calculates the internal consistency coefficient for each variable using the same data. The value of the reliability coefficient is in the range of 0 to 1. There are many opinions that present the acceptable value of the reliability coefficient in a study. Among them is Nunnally (1978) saying that a reliability coefficient as low as 0.50 is still acceptable. However, a higher value or reliability coefficient is better (Sekaran, 2005) and Hair et al. (2010) also suggested a coefficient of 0.70 and above as a generally accepted reliability coefficient. According to Sekaran (2005), Cronbach's Alpha reliability value obtained less than 0.60 is considered bad. A Cronbach's Alpha value that exceeds 0.60 is said to have good reliability (Lewis et al., 2005). According to Ary et al. (2002), a reliability index of less than 0.40 is considered weak, 0.60 is good and more than 0.80 is very good. In the social science literature, Cronbach's Alpha is widely used because it provides a measure of reliability that can be obtained from a test session or a questionnaire administration (Leech et al., 2005).

Table 1 shows the reliability coefficient based on each construct in the questionnaire for this study. Findings show that the reliability value for each item is above 0.60, and this shows that the data is accepted. This shows that the measurement tool used for this study has a good reliability value and is suitable for all Cronbach's Alpha values for each variable is above 0.60.

Table 1: *Reliability Coefficient Study Based on Variables*

Variables	Cronbach's Alpha
Pedagogical Management Leadership	.926
The use of Technology	.893
Malay Language Achievement	.718

Data analysis

Data were analyzed using SPSS Version 26 software in a descriptive manner that depicts mean values, standard deviations, percentages and frequencies. The level of pedagogical management leadership and the use of ICT among Malay teachers as well as synthesizing the influence of pedagogy, and the use of ICT on Malay achievement are divided into three categories based on mean values, which are high level (3.68 - 5.00), medium level (2.34 - 3.67), and low (1.00 - 2.33).

The Level of Pedagogical Management Leadership Among Malay Language Teachers in Selangor Post-Covid-19

Table 2 below shows the distribution of the level of pedagogic leadership among Malay language teachers in post-Covid-19. The results shows that a majority of 89.7 percent (269), mean 4.15 Malay teachers implement the question and answer method when teaching, as well as 82.0 percent (246), mean 4.00 Malay teachers use the project method in teaching, followed by 81.7 percent (245), mean 4.01 Malay teachers use problem-solving

methods in teaching, 81.3 percent (244), mean 4.01 Malay teachers use collaboration methods when teaching, 75.7 percent (227), mean 3.92 Malay teachers use explanation techniques when teaching, 73.0 percent (219), mean 3.84 Malay teachers implement the 'gallery walk' method when teaching, 71.6 percent (245), mean 4.01 Malay teachers encourage students to implement brainstorming techniques in teaching, 69.3 percent (208), mean 3.72 Malay teachers implement group discussion activities in teaching, 66.3 percent (199), mean 3.73 Malay teachers implement p explanation while teaching, 55.0 percent (165), mean 3.58 Malay teachers implement the hot seat technique while teaching and the lowest percentage is 49.0 percent (147), mean 3.47 Malay teachers implement the role play technique in teaching. An average of 72.7 percent (219), mean = 3.85, the level of Malay pedagogical leadership among Malay language teachers post-Covid-19 is at a high level.

Table 2: *Data Distribution of Malay Language Pedagogy Leadership Level*

No.	Items	Scale					Total **(300)**	**Mean**	SD	Level
		1 SD	2 D	3 N	4 A	5 SA				
1	I implement explanation techniques while teaching.	5.7 (17)	1.0 (3)	17.7 (53)	47.0 (141)	28.7 (86)	**75.7 (227)**	**3.92**	1.00	High
2	I implement the question and answer method while teaching.	4.7 (14)	1.7 (5)	4.0 (12)	53.7 (161)	36.0 (108)	**89.7 (269)**	**4.15**	.932	High
3	I use the project method in teaching.	4.7 (14)	1.7 (5)	11.7 (35)	53.3 (160)	28.7 (86)	**82.0 (246)**	**4.00**	.945	High
4	I implement group discussion activities in teaching.	3.7 (11)	5.0 (15)	22.0 (66)	54.0 (162)	15.3 (46)	**69.3 (208)**	**3.72**	.911	High
5	I use problem solving methods in teaching.	4.7 (14)	1.0 (3)	12.7 (38)	51.7 (155)	30.0 (90)	**81.7 (245)**	**4.01**	.943	High
6	I encourage students to implement brainstorming techniques in teaching.	4.3 (13)	1.0 (3)	13.0 (39)	52.3 (157)	29.3 (88)	**71.6 (245)**	**4.01**	.943	High
7	I implement collaboration methods when teaching.	4.7 (14)	0.3 (1)	13.7 (41)	52.3 (157)	29.0 (87)	**81.3 (244)**	**4.01**	.925	High
8	I implement the 'gallery walk' method when teaching.	4.0 (12)	2.0 (6)	21.0 (63)	51.7 (155)	21.3 (64)	**73.0 (219)**	**3.84**	.917	High
9	I implement the hot seat technique when teaching.	3.3 (10)	6.7 (20)	35.0 (105)	38.7 (116)	16.3 (49)	**55.0 (165)**	**3.58**	.952	High
10	I implement role playing techniques in teaching.	3.3 (10)	7.3 (22)	40.3 (121)	36.7 (110)	12.3 (37)	**49.0 (147)**	**3.47**	.919	High
11	I implement explanation techniques while teaching.	3.3 (10)	7.0 (21)	23.3 (70)	46.0 (138)	20.3 (61)	**66.3 (199)**	**3.73**	.973	High
	Overall Mean						**72.2 (219)**	**3.85**	**.941**	High

1-Strongly Disagree 2-Disagree 3-Neutral 4-Agree 5-Strongly Agree

The Level of Technology Use in the Implementation of Teaching and Learning of Malay Language Teachers Post Covid 19

Table 3 below shows the distribution of the level of technology use in the implementation of teaching and learning of Malay teachers after COVID 19. The results of the study show that the majority of 61.3 percent (184), mean 3.60 Malay language teachers give instructions to students using WhatsApp, as well as 51.0 percent (153) , mean 3.57 Malay language teachers carry out discussions with students using Google Meet, followed by 44.3 percent (133), mean 3.31 Malay teachers deliver lessons offline using Telegram, 42.3 percent (127), mean 3.30 Malay language teachers give training to students using Google Form, 40.0 percent (120), mean 3.15 Malay language teachers give exercises to students using Quizizz 35.6 percent (107), mean 3.14 Malay language teachers give explanations using Google Classroom, 30.3 percent (91), mean 2.87 Malay language teachers give training for students using Kahoot, 29.0 percent (87), mean 2.93 Malay language teachers provide teaching materials using Canva, 27.6 percent (83), mean 2.79 Malay language teachers prepare notes related to teaching topics using MyLink, 26.3 percent (80), mean 2.93 Malay language teachers prepare teaching materials using Slido, 24.7 percent (74), mean 2.76 Malay language teachers use the Padlet application to attract students' interest and respond to the questions asked, 22.6 percent (68), mean 2.70 Malay teachers give training to students using Wordwall, 20.0 percent (60), mean 2.68 Malay language teachers give training for students using Liveworksheet, 21.0 percent (63), mean 2.67 Malay language teachers recording teaching videos using Kinemaster, 15.7 percent (47), mean 2.58 Malay language teachers performing interactive activities using Classpoint, 15.7 percent (37), mean 2.53 Malay teachers assess students' understanding using the SurveyHeart application, 14.7 percent (44), mean 2.55 Malay teachers ask students to respond through Mentimeter, and finally the lowest percentage is 12.3 percent (37), mean 2.52 Malay teachers give training to students using Blooket. An average of 29.6 percent (88), mean = 2.86 shows that the level of technology use in the teaching and learning of Malay language teachers after COVID 19 is at a moderate level.

Table 3: *Data Distribution of the Level of Technology Use in Teaching and Learning of Malay Teachers Post Covid 19*

No.	Item	Scale					Total **(300)**	**Mean**	SD	Level
		1 N	2 R	3 S	4 O	5 E				
1	I give instructions to students using WhatsApp		19.0 (57)	19.7 (59)	44.0 (132)	17.3 (52)	**61.3 (184)**	**3.60**	.985	High
2	I deliver lessons offline using Telegram		23.7 (71)	32.0 (96)	34.3 (103)	10.0 (30)	**44.3 (133)**	**3.31**	.943	High
3	I prepare notes related to teaching topics using Mylink		54.7 (164)	17.7 (53)	21.3 (64)	6.3 (19)	**27.6 (83)**	**2.79**	.987	Average
4	I prepare teaching materials using Slido		45.7 (137)	27.7 (83)	14.3 (43)	12.3 (37)	**26.3 (80)**	**2.93**		Average
5	I prepare teaching materials using Canva		47.7 (143)	23.3 (70)	17.7 (53)	11.3 (34)	**29.0 (87)**	**2.93**	1.05	Average
6	I conduct discussions with students using Google Meet		17.7 (53)	31.3 (94)	27.0 (81)	24.0 (72)	**51.0 (153)**	**3.57**	1.04	High
7	I ask the students to provide a response through Mentimeter		64.3 (193)	21.0 (63)	10.0 (30)	4.7 (14)	**14.7 (44)**	**2.55**	.854	Low
8	I give explanations using Google Classroom		34.7 (104)	29.7 (89)	22.3 (67)	13.3 (40)	**35.6 (107)**	**3.14**	1.04	Average
9	I give training to students using Blooket		64.0 (192)	23.7 (71)	8.3 (25)	4.0 (12)	**12.3 (37)**	**2.52**	.811	Low

10	I give training to students using Liveworksheet	59.0 (177)	21.0 (63)	13.3 (40)	6.7 (20)	**20.0 (60)**	**2.68**	.943	Average
11	I give exercises to students using Wordwall	58.7 (176)	18.7 (58)	16.3 (49)	6.3 (19)	**22.6 (68)**	**2.70**	.958	Average
12	I give training to students using Google Forms	29.0 (87)	28.7 (86)	25.3 (76)	17.0 (51)	**42.3 (127)**	**3.30**	1.06	Average
13	I give exercises to students using Quizizz	39.7 (119)	20.3 (61)	25.3 (76)	14.7 (44)	**40.0 (120)**	**3.15**	1.10	Average
14	I give exercises to students using Kahoot	51.3 (154)	18.3 (55)	22.3 (67)	8.0 (24)	**30.3 (91)**	**2.87**	1.02	Average
15	I implemented an interactive activity using Classpoint	63.0 (189)	21.3 (64)	10.7 (32)	5.0 (15)	**15.7 (47)**	**2.58**	.872	Low
16	I use the Padlet application to engage students in responding to the questions asked.	58.7 (176)	16.7 (50)	14.7 (44)	10.0 (30)	**24.7 (74)**	**2.76**	1.03	Average
17	I assessed students' understanding using the SurveyHeart application	67.0 (201)	17.3 (52)	11.0 (33)	4.7 (14)	**15.7 (37)**	**2.53**	.867	Low
18	I recorded an instructional video using Kinemaster	62.0 (186)	17.0 (51)	13.3 (40)	7.7 (23)	**21.0 (63)**	**2.67**	.976	Average
	Overall mean					**29.6 (88)**	**2.86**	**.972**	Average

1 Never 2 Rarely 3 Sometimes 4 Often 5 Everyday

Level of Malay Language Achievement for All Students in the Level Taught (2020)

Student Achievement in Malay Language Subjects Post COVID 19 Year 2020

Table 4 below shows the distribution of student achievement data in Malay language subject after the pandemic of COVID 19 in 2020. The results show that the majority of 30.3 percent (91) of student achievement in learning Malay language after COVID 19 is in the honours level (66-79), while 28.3 percent (85) of student achievement in learning Malay after COVID 19 is at a good level (51-60), 27.7 percent (83) of student achievement in learning Malay language after COVID 19 is at a moderate level (36-50), finally 13.7 percent (41) of student achievement in learning Malay language after COVID 19 is at an excellent level (80-100).

Table 4: *Distribution of Student Achievement Data in 2020*

Malay Language Achievement Level in 2020	Frequency	**Percentage**
Moderate (36-50)	83	27.7
Good (51-60)	85	28.3
Honours (66-79)	91	30.3
Excellent (80-100)	41	13.7
Total	**300**	**100.0**

Student Achievement in Malay Language Subjects Post COVID-19 Year 2021

Table 5 below shows the distribution of student achievement data in Malay language subjects after COVID 19 in 2021. The results of the study show that the majority of 36.0 percent (108) of student achievement in learning Malay language after COVID 19 is in the honours level (66-79), while 28.0 percent (84) of student achievement in learning Malay language after COVID 19 is at a good level (51-60), 19.3 percent (58) of student achievement in learning Malay after COVID 19 is at an excellent level (80-100), 15.7 percent (47) student achievement in learning Malay after COVID 19 is in the moderate level (36-50), and finally 1.0 percent (3) student achievement in learning Malay after COVID 19 is in the Weak level (0-35).

Table 5: *Distribution of Student Achievement Data in 2021*

	Malay Language Achievement Level Year 2021	Frequency	**Percentage**
	Weak (0-35)	3	1.0
	Average (36-50)	47	15.7
	Good (51-60)	84	28.0
	Honours (66-79)	108	36.0
	Excellent (80-100)	58	19.3
Total		**300**	**100.0**

A Significant Relationship Between Malay Language Pedagogical Leadership with The Use of Technology In the Implementation of Teaching and Learning Malay Language Teachers Post COVID 19

Pearson's correlation r is used to see the significant relationship between all the variables that want to be measured. The justification or assumption of using Pearson correlation r is because:

i. all independent and dependent variables are Likert scale
ii. both independent and dependent variables from ordinal data
iii. both independent and dependent variables are normally distributed (by normality test)

The interpretation of the correlation value in this study uses the value of the Pearson r correlation coefficient as shown in the following Table 6:

Table 6: *Value of the Correlation Coefficient 'r'*

Correlation value (r)	Indicator
0.01 – 0.09	Can be ignored
0.10 – 0.29	Low
0.30 – 0.49	Simple
0.50 – 0.69	Strong
0.70 – 0.99	Very high
1.00	Perfect

Source: Davies, I.I.C. 1971. The Management of Learning. London: C. Gain Hill.

Table 7 below shows the data distribution of a significant relationship between the pedagogical knowledge of the Malay language and the use of technology in the implementation of the teaching and learning of the Malay language teacher after COVID 19. The findings of the study show that there is a significant relationship between the

pedagogical knowledge of the Malay language and the use of technology in the implementation of the teacher's teaching and learning Malay language after COVID 19, r = .436**, sig = .001 (p<.01). The relationship value is moderately high. Because the Pearson r correlation value is positive, it means that the higher the pedagogical knowledge of Malay teachers, the higher the use of technology in the implementation of teaching and learning of Malay teachers after COVID 19.

Since there is a significant relationship between Malay pedagogic knowledge and the use of technology in the implementation of teaching and learning of Malay teachers after COVID 19, then Ho1 fails to be accepted.

Table 7: *Data Distribution of the Significant Relationship Between Malay Pedagogical Knowledge and the Use of Technology in the Implementation of Teaching and Learning of Malay Teachers Post COVID 19*

Variable	Pearson Correlation	Significance Value	Level of Relationship
Malay Pedagogical Knowledge Using Technology in the Implementation of Teaching and Learning of Malay Teachers Post COVID 19	.436**	.001	Moderate High

DISCUSSION

Teachers and school administrators as pedagogical leaders play an important role in determining common goals for the school (Muli et al., 2017). This is in line with the opinion of Misdi et al. (2019), which states that the leadership process is an activity that involves two parties, namely the leaders and subordinates. It cannot be denied that the role of pedagogical leadership will help to gain wide access and high-quality educational opportunities to all students (Reis & Flores, 2014; Rogers, 2019). Pedagogical leadership also creates teachers' professional development beliefs and practices (Khan et al., 2021; Vijayadevar et al., 2019). This leadership approach also involves holistic educational pedagogical leadership (Muli et al., 2017; Reis & Flores, 2014). Most researchers also think that pedagogical leadership cannot be separated from distributive leadership (Heikka et al., 2021; Yang & Lim, 2020), emotional intelligence (Gento Palacios et al., 2020) and professional learning communities (Khan et al., 2021; Vijayadevar et al., 2019; Yaakob et al., 2020). In the context of educational leadership, the competence of educational leadership is very important, high impact to meet the needs of teachers and students as well as organizations in implementing clear teaching and learning content in the classroom, making balanced and rational judgments, taking risks in an effort to create quality human capital. The aftermath of the COVID-19 pandemic has changed the PdP landscape from physical face-to-face methods to face-to-face online showing that pedagogy and technology are very important in the PdP process. The main challenge and initiative of the MoE during the situation is to continue teaching online to face the Covid-19 pandemic is a very effective step (Simah, 2021). In relation to that, the level of pedagogical management leadership among Malay teachers in Selangor, the level of use of ICT among Malay teachers in Selangor and synthesizing the influence of pedagogical leadership, and the use of ICT on Malay achievement in Selangor. This study found that the level of Malay pedagogical leadership among Malay teachers post-Covid-19 is at a high level. Therefore, PdP can be implemented anywhere by using ICT such as the use of Google Classroom, WhatsApp, Facebook and Telegram or various other platforms to help students master learning outcomes. Teaching with the concept of combining traditional and virtual elements or blended teaching is becoming more and more popular for the sake of national education.

The findings of the study show that the level of Malay pedagogical leadership among Malay teachers post-Covid-19 is at a high level. Meanwhile, the level of technology used in the teaching and learning of Malay Language teachers

post-Covid-19 is at a moderate level. Findings also show that the achievement of Malay Language always increases every year starting in 2020 until the year 202. This increase occurs because the level of pedagogical leadership of teachers is at a high level. Although the use of ICT by Malay language teachers is at a moderate level. This finding is in line with the findings of Simah (2021) who found that the combination of pedagogy and the use of technology affects students' academic performance. This finding is also supported by the findings of a study conducted by Dias and Ermer (2013) who said that a teacher should master the existing pedagogy and content to a form that is easier for students to understand. Therefore, pedagogical leadership and teaching approaches that suit the needs of students must be used by teachers to help change students' perceptions of learning. This shows that every teacher and school administrator is a pedagogical leader who plays an important role in determining common goals for the school (Muli et al., 2017). This is in line with the opinion of Misdi et al., (2019), which states that the leadership process is an activity that involves two parties, namely the leaders and subordinates.

CONCLUSION

The transformation of education during the COVID-19 pandemic has successfully equipped teachers and students with all new skills to deal with the challenges of the 21st century in producing a generation that is highly knowledgeable, creative, critical, leader and able to communicate effectively. This is supported by the leadership of teachers who can master technology skills in order to ensure the continuity of the implemented PdP. Teachers should remain enthusiastic to continue to educate and try to deal with problems or constraints that exist in the online PdP implementation process. The study concludes that effective learning does not only occur when online technology is used to enhance the different levels of the learning process, but it also depends on the attitude and behaviour of the teacher in meeting the needs of the students.

However, online teaching must be built on trust and ensure fairness to students, especially from the aspect of the device used. Adopting a strategic approach online can meet the nature of Malay language learning. Dedicated teachers will have contingency and backup plans to deal with technology failures such as slow internet connections and unresponsive platforms so that students' achievement in Malay can be improved.

The study shows that teachers need to be prepared and have high pedagogical leadership in facing technological and pedagogical challenges during Covid-19. Teachers also need to be aware that the teaching process needs to consider the needs and diversity of students so that the achievement and level of mastery of students can be improved. In conclusion, the implementation of the ICT approach in Malay is able to help and train every student to learn optimally even in a new norm situation, including learning from home. The approach that is used online to some extent gives awareness to parents and the community about the existence of technology-based learning alternatives that have been introduced by the MoE in this new norm situation until post-Covid-19.

In summary, the level of achievement among students requires mastery of pedagogical leadership and the use of technology that is thoughtfully applied and planned by teachers in the implementation of teaching and learning.

REFERENCES

Ain Nur Atika Agus, (2021). Tahap Pengetahuan dan Kesediaan Guru Bahasa Melayu Dalam Melaksanakan Pendekatan Terbeza Dalam Pengajaran Dan Pembelajaran Di Rumah Semasa Tempoh Perintah Kawalan Pergerakan. Jurnal Pendidikan Bahasa Melayu, 11(1), 75-87.

Ahmed, V., & Opoku, A. (2022). Technology supported learning and pedagogy in times of crisis: the case of COVID-19 pandemic. *Education and information technologies*, *27*(1), 365-405.

Angeli, C., & Valanides, N. (2005). Pre-service teachers as ICT designers: An instructional design model based on an expanded view of pedagogical content knowledge. *Journal of Computer-Assisted Learning, 21* (4), 292–302.

Anim Zalina Azizan. (2020). Covid-19: Uji teori Connectivism, amalan Cybergogi dalam PdP sepanjang PKP. Dicapai melalui https://news.uthm.edu.my/ms/2020/07/covid-19-uji-teori- connectivism-amalancybergogi-dalam-

pdp-sepanjang-pkp/.

Ani Omar. (2016), Integrasi teknologi dalam pengajaran dan pembelajaran Kesusasteraan Melayu mempertingkatkan keyakinan dan keberhasilan guru semasa latihan mengajar. JPBU *vol. 9.*

Aufia Aisa &Linta Lisvita. 2020. Penggunaan Teknologi Informasi dalam Pembelajaran Online Masa Covid 19. *Journal of Education and Management Studies (JoESM) Vol.3* (No.4): 47-52.

Bahador, Z., Othman, N. & Saidon, M. K. (2017). Faktor-Faktor yang Mempengaruhi Pengintegrasian Teknologi Pengajaran Berdasarkan Model TPACK dalam Kalangan Guru Matematik. Proceedings of the International Consortium of Education and Culture Research Studies, 1(2), 66-73

Bernama. (2021). PdPR perlu diteruskan sehingga situasi Covid-19 selamat. Dicapai melalui https://www.sinarharian.com.my/article/151922/BERITA/Nasional/PdPRperlu-diteruskan-sehingga-situasi-Covid-19-selamat.

Boe, M., & Hognestad, K. (2017). Directing and facilitating distributed pedagogical leadership: Best practices in early childhood education. *International Journal of Leadership in Education, 20*(2), 133–148. https://doi.org/10.1080/13603124.2015.1059488

Che In, F. B. & Ahmad, A.Z.B. (2019). Kajian Keberkesanan Pembelajaran Interaktif Berasaskan Aplikasi Kahoot: Satu Kajian Tindakan Terhadap Kursus Principles of Marketing. *Online Journal for TVET Practitioners, 4*(1), 1-11

Ciulla, J. B. (2004). *Ethics and leadership effectiveness.* In J. Antonakis, A. T.

Cianciolo, &R. J. Sternberg,*The nature of leadership.*Thousand Oaks, CA: Sage.

Contreras, T. S. (2016). Pedagogical leadership, teaching leadership and their role in school improvement: A theoretical approach. *Propositos Y Representaciones, 4*(2), 259–284. https://doi.org/10.20511/pyr2016.v4n2.123

DeMartino, L. (2021). The COVID-19 pandemic and the impact on educational institutions. *Planning and Changing*.

Durrant, J., & Holden, G. (2006). Teachers as leaders of learning. *Teachers leading change: Doing research for school improvement.* Thousand Oaks, CA: Sage.

Fonsén, E., & Soukainen, U. (2020). Sustainable pedagogical leadership in Finnish Early Childhood Education (ECE): An Evaluation by ECE Professionals. *Early Childhood Education Journal, 48*(2), 213–222. https://doi.org/10.1007/s10643-019-00984-y

Fryer, L. K. & Vermunt, J. D. 2018. Regulating approaches to learning: Testing learning strategy convergences across a year at university. *British Journal of Educational Psychology, 88*(1): 21-41.

Gabare, C., Gabarre, S., Rosseni Din, Parilah Mohd Shah & Aidah Abdul Karim. 2014. iPads in the foreign language classroom : A learner's perspective. *The Southeast Asian Journal of English Language Studies 20*(1): 115-128.

Herliandry, L. D., Nurhasanah, N., Suban, M. E., & Kuswanto, H. (2020). Pembelajaran pada masa pandemi covid-19. *JTP-Jurnal Teknologi Pendidikan*, *22*(1), 65-70.

Kaware, S.S. & Sain, S.K. 2015. ICT application in education: an overview. *International Journal of Multidisciplinary Approach & Studies 2*(1): 25-32.

Khan, M. H.,Razak, A. Z. A., & Kenayathulla, H. B. (2021). Professional Learning Community, trust, and teacher professional development in Malaysian secondary schools. Komuniti Pembelajaran Profesional, kepercayaan, dan perkembangan profesional guru di sekolah menengah di Malaysia., 46(1), 25–37. https://doi.org/10.17576/JPEN-2021-46.01-03

Kirin, A., Sharifuddin, A., Abdul Rahim, M. H., Ahmad, S., Khadijah, S. & Sulaiman. A. (2021). Impak Pengajaran dan Pembelajaran Secara Online: Kajian Kes Terhadap Pelajar Sekolah Rendah, Menengah dan Universiti Semasa Pandemik Covid-19. *Advances in Humanities and Contemporary Studies, 2*(1), 127-136.

Luqman Arif Abdul Karim. (2020). PKP: E-Pembelajaran Tidak Segerak Sesuai Di Luar Bandar, Pedalaman. Dicapai melalui https://www.bharian. com.my/berita/nasional/2020/04/677952/pkp-e- pembelajaran-

Mahlan, S.B. & Hamat, M. (2020). Pengajaran dan Pembelajaran dalam Talian Semasa Perintah Kawalan Pergerakan. SIG: e-Learning@CS. https://appspenang.uitm.edu.my/buletin%20jskm/20202/Articles/PENGAJARAN%20DAN%20PEMBELAJARAN%20DALAM%20TALIAN%20SEMASA%20PERINTAH%20KAWALAN%20PERGERAKAN.pdf.

Mallillin, L. L. D., Mendoza, L. C., Mallillin, J. B., Felix, R. C., & Lipayon, I. C. (2020). Implementation and readiness of online learning pedagogy: a transition to COVID 19 pandemic. *European Journal of Open Education and E-*

learning Studies, *5*(2).

Mansor, M., Yusof, H., Yusof, R., Norwani, N. M., Jalil, N. A., Yuet, F. K. C., Noor, M. A. M., & Musa, K. (2018). Teacher Leadership Factors and Teacher Leadership Model Based on the Six Guiding Principles. *International Journal of Academic Research in Progressive Education and Development, 7*(4). https://doi.org/10.6007/ijarped/v7-i4/5383

Manuel Roca-Piloso, P., & Anibal Alonso-Betancourt, L. (2020). Proposal of the pedagogical leadership competence to be developed in the basic education teachers. *Luz, 19*(1), 109–123.

Martina Napratilora, Hendro Lisa & Indra Bangsawan. (2020). Using WhatsApp as a Learning Media in Teaching Reading. MITRA PGMI: *Jurnal Kependidikan MI, 6*(2), 116-125.

McEwan, E. K. (2003). *Ten traits of highly effective principals: From good to great performance*. Corwin Press.

Misdi, N., Sumintono, B., & Abdullah, Z. (2019). Kepemimpinan guru Kolej MARA: Satu kajian kes. *JuPiDi: Jurnal Kepimpinan Pendidikan, 6*(3), 46-63.

Moral, C. (2018). An approach to the concept of leadership for learning. What, who, how and where of the leadership for learning. *Bordon-Revista De Pedagogia, 70*(1), 73–87. https://doi.org/10.13042/Bordon.2018.53235

Raman, K., Othman, N., & Affandi, H. M. (2019). Jurang Penggunaan Teknologi Maklumat dan Komunikasi (TMK) di antara Sekolah Bandar dengan Luar Bandar. *Malaysian Journal of Education (0126-6020)*, *44*.

Rojas Carrasco, O. A., Vivas Escalante, A. D., Mota Suarez, K. T., & Quinonez Fuentes, J. Z. (2020). *Transformational leadership from the perspective of humanist pedagogy.* Sophia-Coleccion De Filosofia De La Educacion, 28, 237–262. https://doi.org/10.17163/soph.n28.2020.09

Mamat, S. (2017). Hubungan Pengetahuan Pedagogi, Kandungan Komsas, Teknologi, Kemahiran dan Penggunaan Teknologi Maklumat dan Komunikasi terhadap Pencapaian Komsas Guru Bahasa Melayu di Kelantan, Malaysia. Tesis PhD. Serdang: Universiti Putra Malaysia.

Mamat, S., Ladin, C.A, Kamaruddin, A.Y et.al (2021). Covid-19: Cabaran dan Inisiatif dalam Mendepani Pelaksanaan Pengajaran dan Pembelajaran Teradun. *Jurnal Sains Insani. 6* (2): 220-226.

Sapian, N. A., & Mohammad, W. M. R. W. (2022). Pelaksanaan Pendekatan Pedagogi Terbeza dalam kalangan Guru Bahasa Melayu: Kajian Literatur Sistematik. *Malaysian Journal of Social Sciences and Humanities (MJSSH)*, *7*(8), e001684-e001684.

Stein, M. K., & Nelson, B. S. (2003). Leadership content knowledge. *Educational Evaluation and Policy Analysis, 25*(4), 423–448. https://doi.org/10.3102/01623737025004423

Sudrajat, T., Komarudin, O., & Zaqiah, Q. Y. (2020). Inovasi Kurikulum dan Pembelajaran pada Masa Pandemi Covid-19. *Jurnal Ilmiah Wahana Pendidikan*, *6*(3), 339-347.

Subri, M. R., & Yaakub, R. (2021). Pengetahuan pedagogi guru cemerlang bahasa Melayu dalam pengajaran komponen sastera: satu kajian kes. *Asian People Journal (APJ)*, *4*(1), 50-64.

Syed Chear, S. L. (2017). Pengajaran dan Pembelajaran Melalui Aplikasi Whatsapp dan Telegram di Universiti Swasta. *Jurnal Pendidikan Malaysia, 42*(2), 1-14.

Unik Hanifah Salsabila , Windi Mega Lestari , Riasatul Habibah , Oqy Andaresta , Diah Yulianingsih, (2020). Pemanfaatan Teknologi Media Pembelajaran di Masa Pandemi Covid-19. Trapsila: *Jurnal Pendidikan Dasar Vol.2*(2), 1-13.

Yahaya, N., & Mohamed, S. (2019). Tahap Pengetahuan dan Kemahiran Guru Prasekolah dalam Mengintegrasikan Teknologi Maklumat dan Komunikasi (TMK) di Bilik Darjah. E-Prosiding Persidangan Antarabangsa Sains Sosial dan Kemanusiaan, Fakulti Pendidikan, Universiti Kebangsaan Malaysia, 24-25.

Yatim, N. A. M., Peng, C. F., & Abdullah, Z. (2020). Tahap pengetahuan pedagogi kandungan guru Bahasa Melayu sekolah rendah. . *Jurnal Pendidikan Bahasa Melayu*, *10*(2), 43-53.