THE RELATIONSHIP BETWEEN TECHNOLOGY ACCEPTANCE MODEL AND DELIMA PLATFORM MANAGEMENT AMONG SECONDARY SCHOOLS' PRINCIPALS IN THE STATE OF PERAK

KHAIRUN NISA BINTI KAMARUDDIN

UNIVERSITI PENDIDIKAN SULTAN IDRIS

2025

THE RELATIONSHIP BETWEEN TECHNOLOGY ACCEPTANCE MODEL AND DELIMA PLATFORM MANAGEMENT AMONG SECONDARY SCHOOLS' PRINCIPALS IN THE STATE OF PERAK

KHAIRUN NISA BINTI KAMARUDDIN

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

DISSERTATION PRESENTED TO QUALIFY FOR A MASTER'S IN EDUCATION (EDUCATIONAL MANAGEMENT)
(RESEARCH AND COURSEWORK MODE)

FACULTY OF MANAGEMENT AND ECONOMICS
UNIVERSITI PENDIDIKAN SULTAN IDRIS

2025

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

UPSI/IPS-3/BO 32
Pind : 00 m/s: 1/1

UNIVERSITI PENDIDIKAN SULTAN IDRIS
SULTAN IDRIS EDUCATION UNIVERSITY

Please tick (√)
Project Paper
Masters by Research
Master by Mixed Mode
PhD

√

INSTITUTE OF GRADUATE STUDIES

DECLARATION OF ORIGINAL WORK

This declaration is made on the .....day of.....20.....

i. Student's Declaration:

I, KHAIRUN NISA BINTI KAMARUDDIN, M20221000473, FACULTY OF MANAGEMENT AND ECONOMICS (PLEASE INDICATE STUDENT'S NAME, MATRIC NO. AND FACULTY) hereby declare that the work entitled THE RELATIONSHIP BETWEEN TECHNOLOGY ACCEPTANCE AND DELIMA PLATFORM MANAGEMENT AMONG SECONDARY SCHOOLS' PRINCIPALS IN THE STATE OF PERAK is my original work. I have not copied from any other students' work or from any other sources except where due reference or acknowledgement is made explicitly in the text, nor has any part been written for me by another person. Insert text here

Signature of the student

ii. Supervisor's Declaration:

I DR. DAYANG RAFIDAH BINTI SYARIFF M. FUAD (SUPERVISOR'S NAME) hereby certifies that the work entitled THE RELATIONSHIP BETWEEN TECHNOLOGY ACCEPTANCE AND DELIMA PLATFORM MANAGEMENT AMONG SECONDARY SCHOOLS' PRINCIPALS IN THE STATE OF PERAK (TITLE) was prepared by the above named student, and was submitted to the Institute of Graduate Studies as a * partial/full fulfillment for the conferment of MASTER OF EDUCATION (EDUCATIONAL MANAGEMENT) (PLEASE INDICATE THE DEGREE), and the aforementioned work, to the best of my knowledge, is the said student's work.

10.11.2025
Date

Signature of the Supervisor

Dr. Dayang Rafidah Binti Syariff M.Fuad
Pensyarah Kanan
Jabatan Pengurusan Pendidikan
Fakulti Pengurusan dan Ekonomi
Universiti Pendidikan Sultan Idris

UPSI/IPS-3/BO 31
Pind.: 01 m/s: 1/1

UNIVERSITI PENDIDIKAN SULTAN IDRIS

INSTITUT PENGAJIAN SISWAZAH /
INSTITUTE OF GRADUATE STUDIES

BORANG PENGESAHAN PENYERAHAN TESIS/DISERTASI/LAPORAN KERTAS PROJEK
DECLARATION OF THESIS/DISSERTATION/PROJECT PAPER FORM

Tajuk / *Title*: THE RELATIONSHIP BETWEEN TECHNOLOGY ACCEPTANCE AND DELIMA PLATFORM MANAGEMENT AMONG SECONDARY SCHOOLS' PRINCIPALS IN THE STATE OF PERAK

No. Matrik /*Matric's No.*: M20221000473

Saya / *I* : KHAIRUN NISA BINTI KAMARUDDIN

(Nama pelajar / *Student's Name*)

mengaku membenarkan Tesis/Disertasi/Laporan Kertas Projek (Kedoktoran/Sarjana)* ini disimpan di Universiti Pendidikan Sultan Idris (Perpustakaan Tuanku Bainun) dengan syarat-syarat kegunaan seperti berikut:-
acknowledged that Universiti Pendidikan Sultan Idris (Tuanku Bainun Library) reserves the right as follows:-

1. Tesis/Disertasi/Laporan Kertas Projek ini adalah hak milik UPSI.
   The thesis is the property of Universiti Pendidikan Sultan Idris
2. Perpustakaan Tuanku Bainun dibenarkan membuat salinan untuk tujuan rujukan dan penyelidikan.
   Tuanku Bainun Library has the right to make copies for the purpose of reference and research.
3. Perpustakaan dibenarkan membuat salinan Tesis/Disertasi ini sebagai bahan pertukaran antara Institusi Pengajian Tinggi.
   The Library has the right to make copies of the thesis for academic exchange.
4. Sila tandakan (√) bagi pilihan kategori di bawah / *Please tick (√) for category below:-*

☐	**SULIT/*CONFIDENTIAL***	Mengandungi maklumat yang berdarjah keselamatan atau kepentingan Malaysia seperti yang termaktub dalam Akta Rahsia Rasmi 1972. / *Contains confidential information under the Official Secret Act 1972*
☐	**TERHAD/*RESTRICTED***	Mengandungi maklumat terhad yang telah ditentukan oleh organisasi/badan di mana penyelidikan ini dijalankan. / *Contains restircted information as specified by the organization where research was done.*
√	**TIDAK TERHAD / *OPEN ACCESS***	

(Tandatangan Pelajar/ Signature)

Tarikh: 11 JUN 2025

(Tandatangan Penyelia / *Signature of Supervisor*)
& (Nama & Cop Rasmi / *Name & Official Stamp*)

Dr. Dayang Rafidah Binti Syariff M.Fuad
Pensyarah Kanan
Jabatan Pengurusan Pendidikan
Fakulti Pengurusan dan Ekonomi
Universiti Pendidikan Sultan Idris

Catatan: Jika Tesis/Disertasi ini **SULIT @ TERHAD**, sila lampirkan surat daripada pihak berkuasa/organisasi berkenaan dengan menyatakan sekali sebab dan tempoh laporan ini perlu dikelaskan sebagai **SULIT** dan **TERHAD**.

Notes: If the thesis is CONFIDENTAL or RESTRICTED, please attach with the letter from the organization with period and reasons for confidentiality or restriction.

ACKNOWLEDGEMENTS

In the name of Allah, the Most Gracious, the Most Merciful. All praise is due to Allah, the Lord of the Worlds, for granting me the strength, patience, and perseverance to complete this thesis. May peace and blessings be upon His Prophet Muhammad. First and foremost, I would like to express my deepest gratitude to my supervisor, Dr. Rosnah binti Ishak, for her invaluable guidance, continuous support, and immense knowledge throughout my research journey. Her encouragement and insightful feedback have been crucial in shaping this thesis. I extend my heartfelt thanks to the Ministry of Education (MOE) for the scholarship and financial support necessary to pursue this research. My sincere thanks also go to the Perak State Education Department for their excellent cooperation throughout the process of obtaining respondents for this study. My deepest appreciation goes to my inspiration, my beloved mother, Noor Asemah binti Mohamed. Her unwavering support, prayers, and belief in me have been my driving force throughout this academic endeavor. To my brothers and sister, thank you for your support and valuable prayers. Your belief in me has been a pillar of strength during this journey. A special note of gratitude to my friends and colleagues for their moral support, stimulating discussions, and for always being there when I needed encouragement. Your camaraderie has kept me sane and laughing through the late nights and endless drafts. And now, a light-hearted dedication to my loyal companion, Kiki, my cat. Your purring presence and occasional keyboard interference have been a constant source of comfort and entertainment. Thank you for reminding me to take breaks and for keeping me company during this journey. Finally, my thanks go to all the people who have supported me to complete the research work directly or indirectly. Your contributions, no matter how small, have been invaluable. Thank you all for your unwavering support and encouragement.

ABSTRACT

This study investigates the relationship between principals' technology acceptance and the management of the Digital Educational Learning Initiative Malaysia (DELIMa) platform in secondary schools across Perak. Recognizing the critical role of ICT in school leadership, this study explores how principals' perceptions and attitudes toward technology influence the management and integration of the DELIMa platform. A quantitative approach using a survey design was employed, with responses collected from 152 secondary school principals. The instrument combined elements of the Technology Acceptance Model (TAM) and the Six Facets of Technology Management, measuring perceived usefulness, ease of use, attitude, intention, actual usage, and management dimensions such as evaluation, integration, planning, implementation, training, and change. Descriptive analyses revealed high levels of technology acceptance ($M = 3.90$) and moderate levels of DELIMa platform management ($M = 3.60$). The Mann–Whitney U test indicated significant gender differences in both technology acceptance ($p = .002$) and DELIMa management ($p = .035$), with male principals reporting higher scores. However, Kruskal-Wallis tests showed no significant differences based on years of experience. A Spearman's rho correlation found a moderate, positive relationship between technology acceptance and DELIMa management ($\rho = .417$, $p < .001$). These findings suggest that principals' acceptance of technology is significantly linked to their effectiveness in managing digital learning platforms. The results underscore the importance of strengthening digital leadership competencies among school leaders and inform the design of targeted professional development programs to enhance the digital transformation of education.

HUBUNGAN PENERIMAAN TEKNOLOGI DENGAN PENGURUSAN PELANTAR DELIMa DI KALANGAN PENGETUA SEKOLAH MENENGAH NEGERI PERAK

ABSTRAK

Kajian ini bertujuan untuk menyiasat hubungan antara penerimaan teknologi oleh pengetua dan pengurusan platform Digital Educational Learning Initiative Malaysia (DELIMa) di sekolah menengah harian di negeri Perak. Kajian ini mengiktiraf peranan penting ICT dalam kepimpinan sekolah dan meneliti bagaimana persepsi, sikap, dan penggunaan teknologi oleh pengetua mempengaruhi tahap pengurusan platform DELIMa. Reka bentuk kajian kuantitatif digunakan dengan pengumpulan data melalui soal selidik melibatkan 152 orang pengetua. Instrumen kajian menggabungkan Model Penerimaan Teknologi (TAM) dan Model Enam Aspek Pengurusan Teknologi, merangkumi dimensi kegunaan, kemudahan penggunaan, sikap, niat, penggunaan sebenar serta pengurusan seperti penilaian, integrasi, perancangan, pelaksanaan, latihan dan perubahan. Dapatan menunjukkan tahap penerimaan teknologi adalah tinggi (Min = 3.90) manakala tahap pengurusan DELIMa berada pada tahap sederhana (Min = 3.60). Ujian Mann–Whitney U menunjukkan perbezaan yang signifikan antara jantina dalam penerimaan teknologi ($p = .002$) dan pengurusan DELIMa ($p = .035$), dengan pengetua lelaki mencatatkan skor lebih tinggi. Namun, ujian Kruskal-Wallis mendapati tiada perbezaan yang signifikan berdasarkan tempoh pengalaman. Korelasi Spearman pula menunjukkan hubungan positif sederhana antara penerimaan teknologi dan pengurusan DELIMa ($\rho = .417$, $p < .001$). Kesimpulannya, tahap penerimaan teknologi yang tinggi dalam kalangan pengetua berkait rapat dengan kecekapan mereka menguruskan platform digital. Kajian ini menekankan keperluan memperkukuh kompetensi digital dalam kalangan pemimpin sekolah dan mencadangkan program pembangunan profesional yang bersasar untuk mempercepatkan transformasi digital pendidikan di Malaysia.

CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

DELIMa	Digital Educational Learning Initiative Malaysia
EPRD	Educational Planning and Research Division (Bahagian Perancangan dan Penyelidikan Dasar Pendidikan)
ICT	Information and Communication Technology
IR4.0	Industrial Revolution 4.0
MoE	Ministry of Education
SPSS	Statistical Package for the Social Sciences
TAM	Technology Acceptance Model

LIST OF APPENDICES

CHAPTER 1

INTRODUCTION

1.1 Introduction

The 21st century is often referred to as the era of Information and Communication Technology (ICT), where progress and innovation are driven by the dissemination of knowledge through digital means. The rapid development and widespread adoption of ICT have significantly transformed various aspects of human life, integrating deeply into our daily routines. In Malaysia, this global trend is evident as society increasingly relies on science and ICT for everyday activities.

Recognizing the critical role of ICT, the Ministry of Education Malaysia (KPM) has taken significant steps to integrate these technologies into the educational sector. Over the years, various initiatives have been launched to enhance the ICT infrastructure and support systems in both schools and higher education institutions.

This effort aligns with global trends, where many countries strive to strengthen the use of ICT in education to stay competitive (Hinostroza, 2018; Yusof et al., 2022; Sokku & Anwar, 2019; Nordin & Daud, 2020)

The Malaysian Education Development Plan (2013-2025) underscores the importance of integrating technology as a key resource for both teachers and students in the classroom. This plan highlights the pivotal role of ICT in improving the quality of education, particularly through the Seventh Shift, which focuses on leveraging ICT to enhance the teaching and learning process (KPM, 2013). This initiative is in line with the "Dasar Pendidikan Digital" policy, aimed at bridging the digital divide and ensuring equitable access to high-quality digital education.

Building on this momentum, the Ministry's goal is to empower teachers and students to utilize ICT as a student-centered learning tool that meets the evolving needs and interests of learners (Ngen, 2017). The integration of ICT in education is expected to enrich the learning experience and cultivate individuals equipped with crucial 21st-century skills, such as innovation, information literacy, communication, and media proficiency (Ang, 2017).

By incorporating technology into the educational framework, Malaysia aims to create an environment that nurtures digitally literate individuals capable of thriving in an increasingly digital world. The "Dasar Pendidikan Digital" outlines strategic initiatives to improve digital infrastructure, develop quality digital content, and enhance digital competency among students and educators. These efforts are designed to empower teachers and students, facilitating more interactive and effective learning

experiences. Ultimately, the objective is to equip learners with the skills and knowledge necessary to succeed in the 21st century and contribute significantly to the nation's development.

The Malaysian Education System is currently experiencing a significant transformation, particularly in light of the ongoing endemic. One of the most notable changes is the integration of technology into the process of teaching and learning. In the 21st century, technology has become a defining feature of modern society and has revolutionized the way knowledge is transferred (Ghavifekr, 2015). Previous studies have consistently shown that the use of technology in education has resulted in significant improvements in the quality of teaching and learning (Rosenberg, 2015; Norliza, 2017; Borokhovski et al., 2018; Yusof et al., 2022; Duan et al., 2022; Bhat, 2023; Ojha et al., 2023). As such, it is clear that technology will continue to play a crucial role in shaping the future of education in Malaysia.

Technology has been integrated into Pedagogy and Practices (PdP) for some time, and the Malaysian Education Development Plan (PPPM) 2013-2025 highlights the use of Information and Communication Technology (TMK/ICT) in PdP as part of the 21st Century Learning (PAK21) agenda. The Ministry of Education Malaysia (MOE) recognizes the importance of PAK21 in achieving international educational standards and emphasizes the need for daily implementation of PAK21 principles in teaching and facilitating activities by teachers.

The effectiveness of empowering ICT initiatives in schools is influenced by various factors, and one significant aspect is the support and encouragement provided

by school administrators. Principals and headteachers, as the key leaders in schools, play a vital role in bringing about the desired outcomes outlined in the Malaysian Education Development Plan (2013-2025), particularly the Seventh Shift focused on ICT integration. Moreover, principals need to understand how technology can improve students' achievement, how to make data-driven decisions, and how much technology staff and technological support are required to carry out the technology policies.(Ghavifekr & Yue, 2021).

According to Noraini et al. (2014), administrators must take the initiative and lead by example when implementing ICT in schools. They need to prioritize this important change and actively contribute to its success. By acquiring ICT competencies, school leaders can effectively understand and implement technology in their educational institutions (Ghavifekr & Rosdy, 2015). This includes being able to evaluate and select appropriate digital tools and resources, integrate technology into curriculum planning, facilitate professional development for teachers on using technology in the classroom, and effectively communicate with various stakeholders about the benefits of ICT integration in education. Moreover, having ICT competencies allows school leaders to stay informed about emerging technologies and trends in education, as well as effectively utilize data and analytics to make informed decisions and drive continuous improvement. In summary, acquiring ICT competencies enables school leaders to effectively integrate technology into their educational institutions, facilitate professional development, communicate with stakeholders, and stay informed about current trends.

School administrators are responsible for creating a positive culture that embraces technology and fosters its integration throughout the school community. They need to plan and implement positive changes, both in terms of the school's culture and technological advancements based on ICT. This requires their commitment, active involvement, and a clear vision for how ICT can enhance teaching and learning. Administrators should allocate necessary resources, provide training opportunities, and support professional development programs to help teachers enhance their digital skills and adapt their pedagogical practices.

As technology continues to advance and play a larger role in our society, school administrators must be proactive in integrating technology into education (Bhat, 2023). They should prioritize providing ongoing professional development for educators to ensure they have the necessary skills and knowledge to effectively incorporate technology into their teaching practices. This includes training on how to use various technological tools and applications, as well as understanding how to align technology with the school's curriculum and instructional goals. Furthermore, administrators should allocate resources to support the acquisition and maintenance of technology infrastructure and devices (Rahman et al., 2020). By doing so, administrators can create an environment that fosters innovation and prepares students for the digital world they will encounter in their future careers.

By actively supporting and promoting ICT initiatives, school administrators can inspire teachers to explore innovative teaching methods and leverage digital tools effectively. They play a crucial role in motivating teachers and creating an environment that encourages the use of technology in meaningful ways.

Administrators should also facilitate collaboration among teachers, sharing best practices and encouraging the exchange of ideas related to ICT integration. Their leadership and efforts contribute to the establishment of a technology-rich learning environment that empowers both teachers and students to thrive in the digital age.

The Covid-19 pandemic has expedited this process. The recent pandemic has compelled all students and teachers in Malaysia to adopt Home Teaching and Learning (PdPR), which has necessitated the introduction of a new initiative by the Ministry of Education Malaysia. The DELIMa Learning Initiative, launched on June 15, 2020, by Ybrs. Dr. Habibah Abdul Rahim, Director General of Education Malaysia, is a rebranding of the existing MOE Digital Learning platform. The aim of this initiative is to simplify and streamline the online learning process by providing a one-stop platform for teachers and students that incorporates various tools such as Google Classroom, Microsoft 365, and Apple Learning Centre. This is a response to the growing need for efficient online learning in the wake of the pandemic.

Digital learning is a learning process that uses digital technology as the main tool to convey information and teach concepts to learners. According to a study presented by Kerres (2011), digital learning has several advantages compared to conventional learning, including providing wider access to information and educational resources, facilitating the communication process between teachers and students, and helping to improve the effectiveness of teaching by providing tools that can help teachers convey information more interactively and engagingly. In addition, digital learning can also help increase student motivation and enhance learners' ability to understand and master the concepts learned.

According to Nurul et al. (2020), in the government's efforts to foster more knowledgeable and future-proof generations, the integration of technology into the education system is of paramount importance. Therefore, emphasis should be placed on the mastery and application of technology in PdP by teachers in all learning areas to support the achievement of educational objectives and increase student engagement in a more meaningful learning environment (Muhtadi et al., 2015). Unfortunately, according to Padmavathi (2017), there are still many teachers who are less skilled and unwilling to accept the use of technology in PdP. This is supported by Ahmad Rizal (2015), who found that some teachers are not willing to accept technology and prefer the conventional method of teaching. Principals need to be more vigorous in addressing the problem of teachers' reluctance. Certain clauses can be used under existing school rules (Omar et al., 2020). Information Communication Technology (ICT) plays a crucial role in transforming the overall school environment, not just in the teaching and learning process, but also in the management and governance of the school. The use of technology in schools should encompass all aspects, including management.

Making decisions is one of the critical tasks for educational managers, including principals, headteachers, or senior school teachers. They are constantly confronted with numerous complex decisions that greatly influence the overall functioning and success of their institutions. These leaders are tasked with managing both human and material resources, necessitating a thorough understanding of effective leadership skills.

It is undeniable that leaders have a strong influence on the quality of administration and the systematic use of ICT (Omar et al., 2020). Previous studies have demonstrated that ICT can improve the quality of organizational management and administration systems to be more efficient and structured (Chika & Wale, 2020). According to Subramaniam et al. (2020), there is a significant need for leadership in the use of technology to ensure it makes a valuable contribution to education. This aligns with Prastiawan et al. (2020) and Amalia et al. (2020), who argue that the practices of current school principals must evolve to address contemporary issues and scenarios. Leaders who are adaptive to the environment, especially digital technology, demonstrate excellent responsiveness to change, including the decision to adopt digitalization (Ageyo & Muchunku, 2020; AlNuaimi et al., 2022)

1.2 Problem Statement

The Introduction to DELIMa 2.0 aims to make it easier for educators to utilize technology . Leaders need to be more adaptive and ready to embrace sudden changes through the implementation of ICT in the organization (Espin et al., 2018). Technology in school is not just for the teaching and learning process, but the management can benefited performing tasks digitally and virtually. The literature has also revealed that technology are useful tools for school management and administrative processes ((Bordalba & Bochaca 2019; Catalão & Pires 2020; Dormann et al.,2019) Leaders need to enrich themselves with ICT competencies to support their role as drivers of ICT integration in a comprehensive way. (Okeke & Dike, 2019).

However, school leaders were also found to have low readiness levels in developing ICT competencies, unable to shift organizational management patterns to digital methods, and lacking in fostering enthusiasm among school members to utilize ICT (Esplin et al., 2018; Al-Harthi & Emam, 2017).

Before the COVID-19 pandemic, ICT levels in schools were low. Many principals lacked an understanding of technology leadership, hindering effective ICT integration by teachers (Alkrdem, 2014). Their ICT knowledge and skills did not meet the standards set by the National Educational Technology Standard for Administrators (NETS-A) (Beytekin, 2014; Ozkan et al., 2017). Studies indicated that many school leaders had low (Sathiamoorthy, 2013) or moderate (Mohd Izham et al., 2014) ICT proficiency. The National Audit Report 2013 noted that virtual learning using VLE FROG in Malaysian schools was implemented in less than 5% of schools (National Audit Department, 2013). The 2019 Smart School Qualification Standard (SSQS) report showed that only 11.9% of secondary schools in Perak achieved a 5-star rating, 48% a 4-star rating, and 40.1% a 3-star rating, with none at a 2-star rating (BTPN, 2019)

However, since COVID-19 pandemic expedited ICT adoption in education, the latest data from the Ministry of Education (MOE) shows significant improvement. A recent study involving 36,341 school leaders in 2021 revealed that 52.9% reached the Basic level, 45.1% the Intermediate level, and 2.0% the Advanced level in ICT proficiency (MOE, 2023). The Training Needs Analysis for Principals and Headmasters based on the School Leaders Competency Standard (KOMPAS 2.0) 2020 found that most competencies in fostering a digital ecosystem in schools are at

an average score of 2.7 out of 5.0. This study indicates that principals and headmasters require training to cultivate a digital ecosystem.

In schools, teachers' confidence in the use of ICT can only be enhanced with the support and encouragement of their leaders. The success of teachers in implementing ICT-led teaching and learning processes is an indicator of the success of a principal's leadership. Basically, principals must equip themselves with corresponding ICT knowledge and skills. ICT knowledge ignites the principal's enthusiasm for integrating technological aspects into leadership (Wu, Yu, & Hu, 2019). Meanwhile, ICT skills enhance the practical function of the principal within the organization (Yucesoy & Dagli, 2019)

Because the effective use of ICT requires specific technical skills and competencies, if principals are unprepared to utilize ICT-based technology, implementing digital learning plans may prove challenging. Principals must understand their roles within the school organization to maximize the use of ICT (Moreira et al., 2019). Many Malaysian principals are not yet competent in ICT usage, often because their training courses do not emphasize these skills (Omar et al., 2020). Therefore, this study investigates the level of approval of the DELIMa 2.0 Learning Platform among principals in the state of Perak as a tool that can support digital learning management.

In recent years, there has been a growing emphasis on integrating technology into educational settings to improve instruction and learning processes. To comprehend the relationship between DELIMa platform management and technology

adoption among secondary school principals in Perak, there is a significant gap in the literature. The DELIMa platform is a popular technology aid in Malaysian schools, designed to facilitate teaching, learning, and administrative processes. Little is known about how principals perceive and navigate the use of the DELIMa platform, the challenges they face, the strategies they employ, and the overall impact of DELIMa platform administration on technology adoption in their schools, despite its implementation. After more than five years of its utilisation, this study attempts to identify the level of acceptance among principals towards the DELIMa platform.

This study investigates the relationship between DELIMa platform management and technology acceptance among secondary schools' principals in Perak to close this critical research gap. By examining the perceptions and experiences of principals, this study aims to gain insight into the factors that influence their technology adoption decision-making processes. This includes examining their attitudes towards the DELIMa platform, their comprehension of its potential benefits, the obstacles they face in effectively implementing it, and the leadership strategies they employ to promote technology adoption among instructors and students.

This study's findings have significant implications for educational leaders, policymakers, and other stakeholders involved in promoting school technology integration. By gaining a deeper understanding of the relationship between DELIMa platform management and technology adoption, leadership practises, professional development initiatives, and targeted strategies that support the effective integration of technology in secondary schools can be enhanced. The ultimate aim of this research is to contribute to the existing body of knowledge on educational leadership

and technology adoption to foster an environment that is conducive to technological advancement in educational settings in Perak and beyond.

1.3 Research Objectives

The objectives of this research is to:

1. To identify the level of technology acceptance among secondary schools's principal in the state of Perak.
2. To identify the level of management of the DELIMa learning platform among secondary school principals in the state of Perak.
3. To determine the difference in the level of principal's technology acceptance based on gender factors.
4. To determine the difference in the level of management of the DELIMa learning platform based on gender factors.
5. To determine the difference in the level of principals' technology acceptance based on their years of experience as principals.
6. To determine the difference in the level of management of the DELIMa learning platform based on their years of experience as principals.
7. To determine the relationship between the principals' technology acceptance and the level of management of the DELIMa learning platform among the principals of secondary schools in Perak.

1.4 Research Questions

This study will answer the questions below :

Q_1: What is the level of technology acceptance among the principals of daily secondary schools in Perak?

Q_2: What is the level of management of the DELIMa learning platform among the principals of daily secondary schools in Perak?

Q_3: Is there a difference in the level of technology acceptance among principals based on gender factors?

Q_4: Is there a difference in the level of management of the DELIMa learning platform among principals based on gender factors?

Q_5: Is there a difference in the level of technology acceptance among principals based on their years of experience as principals?

Q_6: Is there a difference in the level of management of the DELIMa learning platform among principals based on based on their years of experience as principals?

Q_7: Is there a relationship between the principal's technology acceptance and the level of management of the DELIMa learning platform among the principals of secondary schools in Perak.

1.5 Research Hypothesis

In this study, hypotheses null 1, 2, 3, 4, and 5 are used to address research questions 3, 4, 5, 6, and 7.

$H_{1:}$ There is no significant difference in the level of technology acceptance among principals based on gender factors.

H_2: There is no significant difference in the level of management of the DELIMa learning platform among principals based on gender factors.

$H_{3:}$ There is no significant difference in the level of technology acceptance among principals based on based on their years of experience as principals.

H_4: There is no significant difference in the level of management of the DELIMa learning platform among principals based on their years of experience as principals?

$H_{5:}$ There is no significant correlation between the principal's technology acceptance and the level of management of the DELIMa learning platform among the principals of secondary schools in Perak.

1.6 Theoretical Framework

The theoretical framework for this study involves two main constructs: principals' technology acceptance and the management of the DELIMa Learning Platform. A key theoretical model used in this study is the Technology Acceptance Model (TAM) by Davis, Bagozzi, and Warshaw (1989). TAM is highly influential in the study of

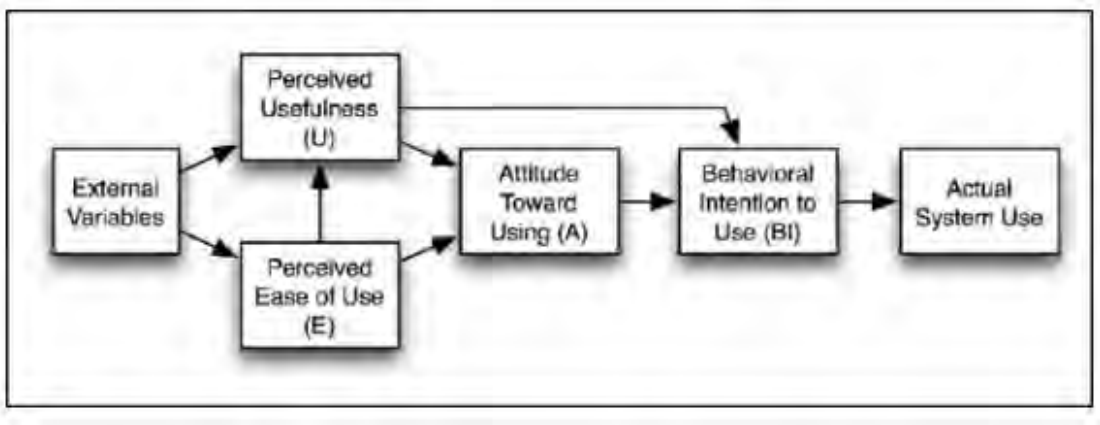
information technology acceptance (Lee, 2005; Jogiyanto, 2008). The TAM model is adapted from the Theory of Reasoned Action (TRA) by Fishbein and Ajzen, comprising two primary constructs: perceived usefulness (PU) and perceived ease of use (PEU) (Davis, 1989). TAM is regarded as the most accurate model for determining technology acceptance in numerous studies (Alomary & Woollard, 2015).

Specifically, the effectiveness of use refers to the level of efficacy in implementing the DELIMa Learning Platform, and the ease of use pertains to how user-friendly the platform is for principals. The acceptance level of the DELIMa Learning Platform is measured by assessing the effectiveness of the platform, and the principals' competency levels in using it. When technology is straightforward to use, principals are more likely to develop a positive attitude toward its adoption, enabling them to utilize it effectively.

Leaders who are adaptive to their environment, especially in terms of digital technology, demonstrate excellent responsiveness to change, including the decision to adopt digitalization (Ageyo & Muchunku, 2020; AlNuaimi et al., 2022). This adaptability is crucial for the successful implementation and management of digital platforms like DELIMa.

Figure 1.1

Technology Acceptance Model (TAM)



To evaluate the degree of technology management involved in the adoption of the DELIMa platform, the study incorporates components from the Technology Management Model, specifically the Six Facets Model developed by Kearns et al. (2005). This model was selected because its components can be effectively applied to assess management levels involving the utilization of new technologies. The Six Facets Model includes six essential management components: technology evaluation, product and process integration, planning, implementation, training, and change management.

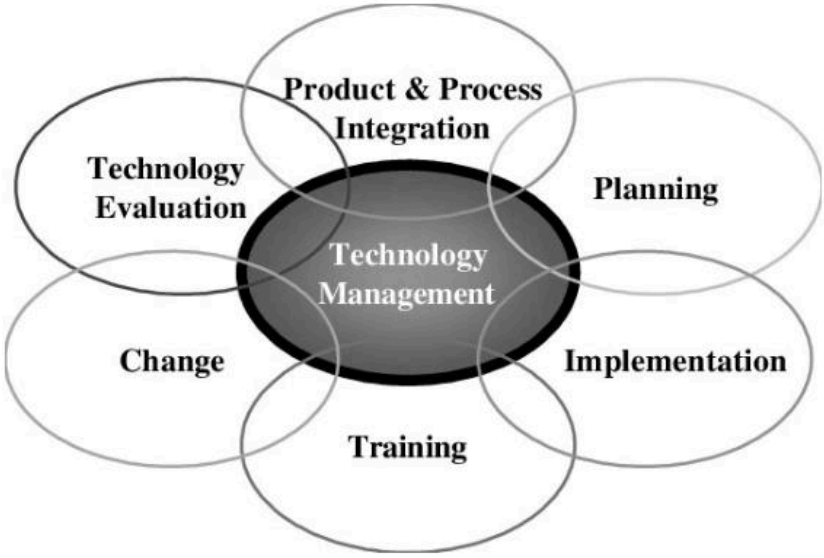
Technology evaluation involves assessing the capabilities and potential benefits of the technology. Product and process integration includes creating quality management systems and ensuring seamless integration of technology into existing processes. Planning encompasses strategic planning, developing work plans, and conducting environmental assessments. Implementation involves establishing documentation systems, organizational processes, software utilization, project execution, project planning, and control. Training focuses on conducting proper

training and ensuring its impact on users. Change management is about managing and controlling changes effectively.

By applying the Six Facets Model, this study aims to comprehensively assess how well the DELIMa platform is managed and integrated within schools, thereby providing insights into the effectiveness of technology management practices in the educational context. The Six Facets Model is depicted in Figure 2.

Figure 1.2

The Six Facets of Technology Management. Adapted from, Kearns et al. (2005)



Technology assessment, planning, implementation, product and process integration, training, and change are the six essential elements in technology management aimed at achieving effective implementation change (Kearns et al., 2005). In this study, the interconnected Six Facets model elements are used to evaluate the extent of DELIMa Learning Platform management. These elements serve

as the research's central concepts, enabling principals to effectively manage the DELIMa Learning Platform.

There are two variables measured in this study: principals' technology acceptance as the independent variable and DELIMa Learning Platform management as the dependent variable. Based on these two variables, the researcher has constructed a conceptual framework to discuss the relationship between principals' technology acceptance and DELIMa Learning Platform management. This framework provides a structured approach to examining how the acceptance of technology by principals influences the effective management and utilization of the DELIMa Learning Platform in schools.

By leveraging the Six Facets Model, this study aims to offer a comprehensive assessment of the management practices related to the DELIMa platform. This includes understanding how well technology is evaluated, planned, implemented, integrated into products and processes, supported through training, and managed through changes. The insights gained from this assessment will contribute to a deeper understanding of the factors that influence successful technology adoption and management in educational settings.

1.7 Conceptual Framework

A conceptual framework is used to explain the relationships between variables in a study (Mat Rabi N., 2020). Figure 3 illustrates the research framework developed to

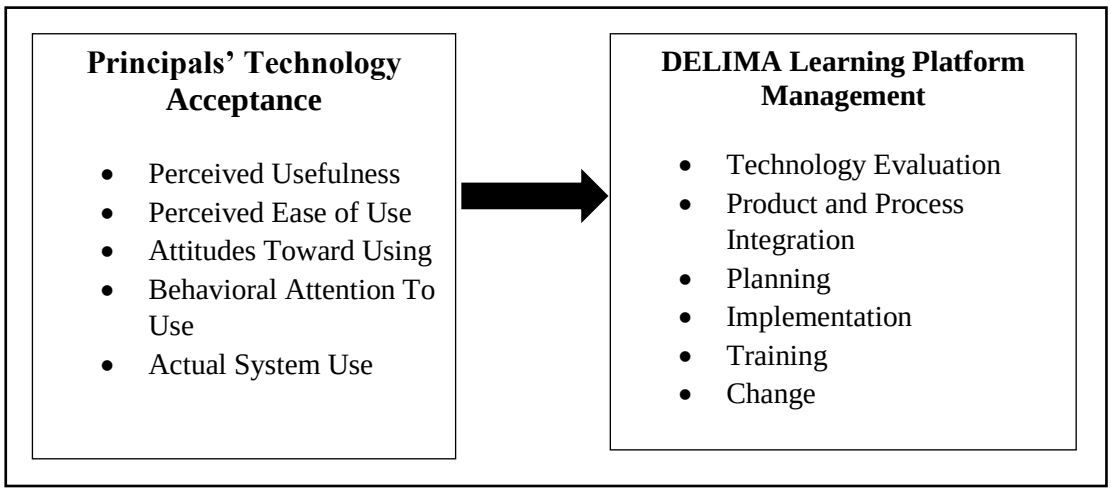
facilitate the understanding of research processes before, during, and after the study is conducted. This research conceptual framework depicts the relationships between independent and dependent variables.

In this study, there are two variables measured: the principal's technology acceptance, which serves as the independent variable, and the management of the DELIMa Learning Platform, which serves as the dependent variable. Based on these two variables, the researcher has constructed a conceptual framework to explore the relationship between the principal's technology acceptance and the management of the DELIMa Learning Platform. Figure 1.3 illustrates the conceptual framework of the study, serving as a guide throughout the research process.

By understanding the interaction between these variables, this framework helps to elucidate how the acceptance of technology by principals influences the effective management and utilization of the DELIMa platform in schools. This approach not only clarifies the direction of the study but also provides a structured pathway for examining the impact of technological acceptance on educational management practices.

Figure 1.3

Conceptual Framework



1.8 Definition of Operation

Operational definition refers to providing meaning and explanation regarding the terms used in the study (Merry & Rahmat, 2016). According to Rosli (2018), operational definition elucidates important terms in the study.

1.8.1 Technology Acceptance

Technology acceptance refers to the willingness and readiness of individuals or organizations to adopt and use a new technology (Allen, 2020).

1.8.2 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) used in this study refers to the level of users' readiness to accept and apply technological advancements in their lives (Davis, 1989). In this study, TAM will examine the relationship of elements with the actual usage of the DELIMa learning platform.

1.8.3 Perceived Usefulness (PU)

Perceived Usefulness is “the degree to which a person believes that using a particular system would enhance his or her job performance” (Davis, 1989).

1.8.4 Perceived Ease of Use (PEOU)

Perceived Ease of Use is “the degree to which a person believes that using a particular system would be free of effort” (Davis, 1989).

1.8.5 Attitude Toward Using (ATU)

Refers to an individual's positive or negative feelings about performing a specific behavior related to technology use. It is an effective response formed based on the perceived ease of use and perceived usefulness of the technology. This attitude

directly influences the user's intention to use the technology, which subsequently impacts actual usage behaviour (Davis, 1989)

1.8.6 Behavioural Intention to Use (BI)

Behavioral Intent is “a measure of the strength of one’s intention to perform a specified behavior” (Davis, Bagozzi, & Warshaw, 1989).

1.8.7 Actual Use (AU)

In this study, AU refers to refers to how much people actually use a particular technology in their daily tasks. It shows the real extent to which the technology is being utilized and is influenced by how useful and easy to use people find the technology to be.

1.8.8 Technology Management

Technology management refers to the systematic and strategic approach of overseeing the use and implementation of technology within an organization (Phaal et al., 2002). It involves planning, organizing, and coordinating resources to effectively leverage technology in order to achieve organizational goals and objectives.

1.8.9 Technology Evaluation

This involves evaluating the potential and current technologies to understand their benefits, risks, and implications for the organization. It helps in identifying the most suitable technologies that align with the strategic goals of the organization (Kearns et al., 2005).

1.8.10 Product and Process Integration

This facet ensures that the new technology seamlessly integrates with existing products and processes. It involves modifying workflows, adjusting procedures, and ensuring that the technology enhances overall operational efficiency (Kearns et al., 2005).

1.8.11 Planning

This facet focuses on developing a comprehensive plan to integrate and utilize technology effectively within the organization. It includes setting objectives, determining resource requirements, and establishing timelines for technology implementation and upgrades (Kearns et al., 2005).

1.8.12 Implementation

This involves the actual deployment and installation of technology solutions. It includes configuring systems, testing their functionality, and ensuring they are properly integrated with existing processes and systems (Kearns et al., 2005).

1.8.13 Training

This involves educating and training employees on how to use the new technology effectively. It ensures that staff members are proficient in utilizing the technology to its full potential, which in turn maximizes the return on investment (Kearns et al., 2005).

1.8.14 Change

This focuses on managing the organizational changes that come with technology implementation. It involves addressing resistance to change, ensuring stakeholder buy-in, and facilitating a smooth transition to new technological systems (Kearns et al., 2005).

1.8.15 Digital Educational Learning Initiative Malaysia (DELIMa)

In the context of this study, the management of the DELIMa Learning Platform refers to how the hardware, software, tools, or Digital Educational Learning Initiative Malaysia (DELIMa) platform are handled to enhance teachers' knowledge and skills, improve communication among teachers, and successfully implement technological changes that align with the school's vision and mission.

To assess and manage these technological changes effectively, the study relies on the Six Facets Model proposed by Kearns et al. (2005), which includes elements such as technology assessment, product and process integration, planning, implementation, training, and change. Technology assessment focuses on carefully selecting and implementing appropriate technologies, while product and process integration deals with seamlessly incorporating the DELIMa Learning Platform into the overall school management structure.

Planning examines how technology assessment and product and process integration contribute to effective planning strategies that support efficient school management. Implementation explores the role of school principals in ensuring the successful execution of plans and the smooth integration of the DELIMa platform. Training investigates the professional development opportunities provided to principals to equip them with the necessary skills for effectively managing the DELIMa Learning Platform. Lastly, change explores significant technological advancements, such as the adoption of the DELIMa platform, to achieve high levels of implementation success and fulfill the school's mission and vision.

By utilizing the Six Facets Model, this study aims to provide a comprehensive assessment of how the DELIMa platform is managed within schools. The focus is on enhancing the knowledge and skills of teachers, improving communication, and ensuring that technological changes align with the educational institution's overall goals. This structured approach allows for a thorough evaluation of the effectiveness of DELIMa management in achieving educational objectives.

1.8.16 Principals

The principals involved in this study are individuals who directly contribute to the administration and management of schools. They hold appointed positions and have the responsibility of guiding the school's leadership, managing the organization, overseeing educational programs, and nurturing student development (Jemaah Nazir Sekolah, 2004). As principals, they actively work towards implementing changes in teaching and learning systems, fostering a student-centered approach, and enhancing overall school performance.

Additionally, principals play a crucial role in school administration, which encompasses vital processes such as strategic planning, budgeting, personnel management, organizational control, problem-solving, and decision-making. They must effectively balance these responsibilities to ensure smooth operations and positive outcomes within the school setting.

Principals are not only leaders but also managers who need to possess strong interpersonal skills. They interact and communicate with staff members, collaborate with stakeholders, and address the various challenges faced by students. Their role extends beyond administration as they evaluate situations, drive positive changes, motivate and influence students, parents, and the community. Principals are accountable for creating a professional and ethical learning environment, where their decisions are guided by expertise and moral values rather than relying solely on their authority (Murphy, 1995).

1.8.17 Secondary Schools

Secondary schools consist of Government Secondary Schools and Private Secondary Schools. In this study, secondary schools refer to 'Sekolah Menengah Kebangsaan (SMK),' which means 'government schools.' This study also include Sekolah Berasrama Penuh (SBP), Sekolah Menengah Kebangsaan Agama (SMKA) and Sekolah Agama Bantuan Kerajaan (SABK) These schools are established and fully maintained by the Minister under Part IV (Education Act 1996, Act 550). Government Secondary Schools are entirely under the responsibility of the Government of Malaysia, specifically the Ministry of Education Malaysia (KPM).

1.9 Limitation of Study

This study was conducted to measure two primary variables: the technology acceptance of principals and the management of the DELIMa Learning Platform in secondary schools in the state of Perak. This is a quantitative study, utilizing a questionnaire as the research instrument. The study sample consists of principals from secondary schools, representing the study population.

The data obtained in this study relies on the honesty of the respondents in answering the questionnaire. Therefore, their opinions and perceptions reflect their leadership in managing the DELIMa Learning Platform and do not represent larger organizations such as the Ministry of Education Malaysia (KPM), the State Education Department of Perak (JPNP), and the District Education Office (PPD) of their respective states.

Other limitations might stem from the instrument used. It is believed that the use of additional data collection strategies, such as interviews, could provide deeper insights and thus expand and complement the results. Interviews could help uncover underlying meanings and contextual factors that are not easily captured through questionnaires alone, providing a more comprehensive understanding of the principals' technology acceptance and their management of the DELIMa Learning Platform.

1.10 Research Importance

The significance of this study is divided into academic and practical aspects.

Academic Perspective: From an academic perspective, this research is expected to contribute to the scholarly literature, providing a valuable resource for future researchers. It is hoped that this study will fill knowledge gaps and further enrich the pool of knowledge beneficial to both scientific research and general education. Sharing knowledge related to technology acceptance and management can continue to add to the existing body of knowledge, as exemplified by this study. Additionally, this research is expected to raise awareness among principals regarding learning platform management to achieve organizational goals.

The involvement of principals in technology management further enhances the relevance of this study's objectives. Most existing research has focused on teachers' use of technology in teaching and learning processes, with limited attention to principals' technology management. Therefore, this study aims to apply suitable theories and models to the current education system in Malaysia, emphasizing the use of technology to achieve organizational goals. Consequently, the theories and models used in this study can be further developed to address research gaps. Finally, this study aims to provide academic references and research practices to other stakeholders in education, such as students, researchers, and academics, thus opening up dynamic and current references for future follow-up studies.

Practical Perspective: From a practical standpoint, it is hoped that the Ministry of Education Malaysia (MOE) will pay attention to the findings of this study

and make improvements in terms of planning and developing leadership skills to cultivate competent leaders in the future. These improvements are also expected to align with the government's aspirations in the Malaysia Education Development Plan (2013-2025) through the fifth shift, "Ensuring High-Performing Leadership is Placed in Schools," as well as Digital Education Core Policy 3, which emphasizes the culture of visionary digital leadership through strategies to empower digital competency among educational leaders and institutionalize digital educational leadership changes. Furthermore, the findings of this study are expected to serve as a general reference for school leadership.

This study is expected to assist the Ministry of Education Malaysia (MOE) in collaboration with administrators in developing leadership among teachers in schools to become catalysts for student success, as envisioned by the MOE. Additionally, this study can serve as a reference in efforts to ensure the efficiency of management related to the Digital Educational Learning Initiative Malaysia (DELIMa) learning platform. It can also serve as a guide for administrators in designing various leadership and management programs in schools tailored to the current teaching and learning environment while assessing teachers' leadership in technology management. If there is a relationship between principal acceptance and management of the DELIMa learning platform in the results of this study, then the findings are expected to help administrators redouble their efforts to strengthen the use and management of the DELIMa learning platform.

1.11 Conclusion

This chapter has provided a detailed explanation of the research background, problem statement, research objectives, research questions, theoretical framework, conceptual framework, research limitations, an explanation of some key terms for each aspect to be studied, and the significance of the study. The next chapter is related to the theories involved in this study and a review of previous studies related to the principal's technology acceptance and technology management.