INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS & SOCIAL SCIENCES

Vol 15, Issue 01, (2025) E-ISSN: 2222-6990

Learning Agility Level among Diploma Students

Atiqah Wahida Zainudin[1] & Faridah Mydin Kutty[2]

[1,2]Fakulti Pendidikan, Universiti Kebangsaan Malaysia 43600 UKM, Bangi, Selangor, Malaysia

Email: [1]atiqahwahida@gmail.com, [2]faridah_mydin@ukm.edu.my

To Link this Article: http://dx.doi.org/10.6007/IJARBSS/v15-i1/24423 DOI:10.6007/IJARBSS/v15-i1/24423

Published Date: 24 January 2025

Abstract

This study aims to examine the level of learning agility among diploma students. A total of 100 diploma students were selected as respondents for the study. The research, conducted in the Petaling Jaya district of Selangor, adopted a survey method with a quantitative approach. The research instrument was adapted from the Learning Agility Self-assessment (LAS), which outlines four aspects of learning agility: mental agility, individual agility, change agility, and result agility. A questionnaire was distributed to collect relevant information, and the data obtained were analysed using SPSS Version 29.0 (Special Package for Social Statistics). The findings of the study are presented in descriptive and inferential forms. Descriptive analysis was used to assess the level of learning agility among diploma students, while t-tests were employed to identify differences in learning agility based on gender. The findings show that the level of learning agility among the students is at a moderately low level. Across the four aspects of learning agility, all of them—mental agility, individual agility, change agility, and result agility—demonstrated an overall mean level that was moderately low. Mental agility scored a mean of 2.78, individual agility scored a mean of 2.47, change agility scored a mean of 2.98, and result agility scored a mean of 3.77. The findings also indicate that there is no significant difference in the level of learning agility between students based on gender. This suggests that diploma students in Selangor have learning agility skills that need further development.

Keywords: Learning Agility, Mental Agility, Individual Agility, Result Agility, Change Agility.

Introduction

The VUCA situation—Volatility, Uncertainty, Complexity, and Ambiguity—is a term used to describe the instability, uncertainty, complexity, and unclear circumstances faced by industries, organizations, companies, and institutions that drive the progress of a country. Technology, which is constantly advancing and changing with time, is inherently ambiguous. As technological progress accelerates, students must now learn quickly, think critically and creatively to adapt to any emerging changes. The shift from the learning environment to the change environment is complex and unclear. The acceptance of new changes typically requires voluntary and proactive choices, where emotional importance offers motivational energy, acting as the internal drive needed by each student (Mimoun et al., 2021).

The concept of learning agility has been used to describe individuals with skills such as openness, a willingness to learn, and ability. Furthermore, agile learners (AL) are curious about the world, have a high tolerance for ambiguity, social skills, vision, and innovation (Eichinger & Lombardo, 2004). Learning agility is the development of adaptable behavior (Wong, 2004). The ability to learn quickly from experience, retain that knowledge, and then access and apply it easily to new environments and tasks is a key component of learning agility (DeRue et al., 2012; Hoff & Burke, 2017). In general, learning agility is related to adaptability and readiness to face unknown situations. Moreover, with the development of the internet and emerging technologies such as artificial intelligence (AI), cloud computing, and virtual reality, disruptions in the education sector are inevitable. In this context, disruption refers to the emergence of new modern methods that eventually replace older, traditional approaches considered increasingly irrelevant.

The purpose of this study is to examine the need for learning agility among diploma students so that it can serve as a reference for universities and other researchers. This study has two objectives: (1) to assess the level of learning agility among diploma students at the Food Institute of Malaysia, and (2) to identify gender-based differences in emotional agility. Learning agility is still not fully explored in current educational practices and remains a controversial issue. It is vital for shaping 21st-century learners in line with the Malaysia Education Development Plan (PPPM) 2013-2025, which focuses on 21st-century learning.

In facing the era of the Fourth Industrial Revolution (IR 4.0), many jobs will be replaced, with labor-intensive jobs decreasing in favor of technology (Suhendar & Hulu, 2023). Technological advancements make jobs in the technology sector highly in demand. Therefore, learning agility is an essential skill that 21st-century students need to possess.

Based on interview findings in a study by Prayoga et al. (2023), some students feel insecure about their ability to compete in learning sessions, particularly with the shift from traditional learning to online learning. This can lead to a decline in students' learning levels in the VUCA era, including excessive anxiety due to low self-confidence. In the context of education, one of the critical aspects affected by the changes occurring in this VUCA situation is the level of student learning in the university environment. With the rapid advancement of technology, students must now learn quickly, think critically and creatively to adapt to emerging changes. The shift in the education system during the pandemic, where teaching and learning sessions were conducted online, demonstrated that the education community could adapt to changes and be flexible. However, many were mentally affected, including teachers, students, and parents (Faizah et. Al., 2022). The greatest challenge students must overcome is the rapid changes they face due to technological advancements. One aspect impacted by the VUCA situation is the level of student learning in the university environment (Prayoga et al., 2023). This decline in learning levels is a phenomenon that needs to be thoroughly understood as it has the potential to affect academic performance and the quality of education as a whole.

Students who lose direction in changing situations must analyze and continuously reassess the situation to find more clues and ideas about their direction and goals (Eilers K et. al., 2022). Such situations can slow students' progress and ultimately lead them to become stuck and unable to find a way out. Students need to master learning agility to adapt, lead,

and manage learning during rapid changes. Therefore, students require learning agility skills in preparation for changes driven by rapid and unpredictable technological advancements. Thus, there is a need for students to possess high learning agility.

Given the lack of discussion on learning agility, especially among diploma students, this study addresses that gap. Most past research focused on organizational agility in higher education institutions in Malaysia, with little exposure to the learning agility of diploma students. This study is expected to contribute to filling this knowledge gap, evaluating the learning agility levels of diploma students, and examining its relationship with gender, offering valuable insights for universities and researchers.

Additionally, the relationship between gender and learning agility needs to be explored to understand the study's issues further. Gender is a social role associated with males and females, which can change over time. According to Taufiq Pasiak (2008), there are three aspects that differentiate males and females: physical structure, reproductive organs, and ways of thinking. Therefore, it is crucial to study the relationship between gender and learning agility to explore these research problems further. Five decades ago, men were the primary breadwinners, and women rarely worked. Since World War II, women began entering the workforce to support their families. In the present era, working women are common across the globe.

To develop an agile learner (AL), it is essential first to assess the individual's learning agility level (Van Ruler, B., 2019) and the differences in learning agility levels between male and female students. Despite this, there is still limited understanding of learning agility, especially within the context of higher education in Malaysia. Therefore, it is necessary to examine the learning agility levels of students to evaluate their learning agility skills.

This quantitative study uses a questionnaire based on the four highest domains outlined in the learning agility framework by Lombardo & Eichinger (2000): (1) People Agility (PA), (2) Mental Agility (MA), (3) Change Agility (CA), and (4) Result Agility (RA). The study's aim is to assess the learning agility levels of diploma students and examine gender differences in learning agility. The findings of this study are expected to contribute to future research.

Literature Review

Learning Agility

Learning Agility can be understood as the willingness and ability to learn from experiences and apply that learning to new and different situations, often in creative or unique ways (Lombardo & Eichinger, 2000). De Meuse (2017) suggests that learning agility focuses on high-level cognitive processing and human behaviors such as experimentation, self-awareness, continuous improvement, and self-reflection. Lombardo and Eichinger (2003) conducted a validation study and concluded that learning agility can be categorized into four sub-categories: (1) People Agility, (2) Mental Agility, (3) Change Agility, and (4) Result Agility.

The first study on the concept of learning agility was conducted by Lombardo and Eichinger (2000), where they defined learning agility as the willingness and ability of an individual to practice new skills and acquire new knowledge, resulting in flexibility in completing tasks. This definition emphasizes that learning agility allows individuals to learn

from experience, apply it in unfamiliar situations, and has the potential for future success. While potential is not always quantifiable, it can be assessed by evaluating an individual's ability and motivation to apply new skills and knowledge in novel environments (DeMeuse et al., 2010; Lombardo & Eichinger, 2000).

A study by Burke et al. (2017) defines learning agility as the readiness and ability to quickly reorganize activities to meet the changing demands of the task environment. They argue that learning agility is a combination of motivation and the skills to learn from experience, with agile learners adjusting their behavior as situations change. In general, learning agility is related to the ability to adapt and the willingness to face the unknown. Specifically, learning agility attempts to predict an individual's potential performance in new tasks, assessing whether a candidate has the potential to transfer what they have done or learned previously to new and/or different situations (Gravett & Caldwell, 2016). While learning agility is a behavioral construct, it is also related to various personality traits (Lombardo & Eichinger, 2000; De Meuse et al., 2010).

Importance of Learning Agility

The education sector worldwide is facing challenges due to global issues such as the rise of the digital economy, connectivity, liberal trade policies, increased global competition, and innovation (Brodnick & Gryskiewicz, 2018) in line with the rapid advancement of technology. These changes have also impacted the education sector, particularly with the integration of digital technology in the teaching and learning system.

Yosef & Selvi (2022) state that technological advancements have brought about significant changes in various aspects of life, including education. In this context, curriculum changes have become a necessity to ensure education remains relevant to modern times. Research by Maritsa et. al., (2021) found that technology has both positive and negative impacts on education. According to Ryzal et. al., (2020), optimal learning occurs when instructors provide a variety of learning processes and resources. A flexible curriculum helps educators adjust learning to local needs, making education more inclusive and providing equal opportunities for all students (Yosef & Selvi, 2022).

According to Hussin et al. (2022), online learning is an essential requirement in education, especially in the era of Industry Revolution 4.0. The COVID-19 pandemic has transformed the interaction between educators and students into an online format. Video applications such as Zoom, Skype, MS Teams, Google Hangouts, WhatsApp, Google Meet, and others are frequently used for this purpose. The use of these applications has allowed learning to continue effectively in the new normal. This need is critical to meet the demands of the digital age, where students are now more inclined to be creative and innovative.

This is further supported by Prayesti T. (2022), who noted that most companies or organizations now require a workforce capable of quickly adapting and remaining flexible with technological advancements. As the era advances, technology also becomes more sophisticated and requires more media to support individuals and students in completing their tasks. As organizational environments become more complex and uncertain, students' ability to learn and adapt has become increasingly important (De Meuse et al., 2010). Hence, learning agility is emerging as a crucial factor for future work, with individuals possessing high

learning agility more likely to exhibit behaviors and traits that allow them to deal with the unexpected, embrace new challenges, and achieve results in difficult situations (Swisher, 2013). Therefore, it is essential for students to possess learning agility.

Components of Learning Agility

Lombardo and Eichinger (2000) define learning agility as the willingness and ability to acquire new abilities to perform tasks under new, difficult, or different conditions. Learning agility comprises four dimensions: people agility, result agility, mental agility, and change agility. The original four-factor model has evolved with the development of learning agility as a leadership assessment tool. Over the last two decades, new definitions and models of the concept have been proposed by researchers. Below are the components of learning agility:

Mental Agility

De Meuse et al. (2011) state that mental agility is the extent to which an individual is comfortable with complexity, carefully examines problems, demonstrates curiosity, and can make new connections between different concepts. According to Handayani & Ambara (2021), mental agility is the ability to think of solutions from a new perspective, be comfortable with uncertainty and complexity, and explain their thought patterns to others. Lombardo & Eichinger (2000) define mental agility as the ability to be comfortable with complex events, scrutinize problems thoroughly, and build relationships between different elements (Gravett and Cadwell, 2016). In a study by Özgenel (2021), mental agility is described as the ability of trusted individuals to achieve excellent results in difficult situations and provide support for others to perform at a high level. According to Gravett (2016), mental agility refers to individuals who are comfortable with complexity, carefully examine problems, and establish connections between different aspects.

Result Agility

De Meuse et al. (2011) state that result agility is the ability of an individual to deliver outcomes in first-time and/or challenging situations through strong personal drive and by inspiring their team. According to Handayani & Ambara (2021), result agility is the ability to produce good results even in difficult or new situations, inspire others to perform at a higher level, and build confidence in others. Özgenel (2021) describes result agility as the ability of trusted individuals to achieve excellent results in challenging circumstances and to provide support for others to perform at a high level. According to Lombardo & Eichinger (2000), result agility refers to individuals who achieve results in difficult situations, inspire others to exceed expectations, and demonstrate a presence that builds confidence in others. Gravett (2016) defines result agility as the ability of individuals who are resourceful enough to deliver outcomes in first-time situations by inspiring their team and making a significant impact. While many individuals may consistently deliver strong results in situations similar to those they have faced before, the key difference is their ability to repeatedly deliver the best outcomes in new and challenging situations (Ferry, 2015).

Change Agility

De Meuse et al. (2011) state that change agility refers to how comfortable an individual is with change, their interest in continuous improvement, and their ability to lead change efforts. According to Handayani & Ambara (2021), change agility is the behavior that displays a strong curiosity, enthusiasm for new ideas, a willingness to experiment, and active

involvement in skill development activities.Özgenel (2021) describes change agility as the trait of individuals who are curious, have a broad perspective, and voluntarily engage in activities that provide experience and develop skills. Lombardo & Eichinger (2000) also describe change agility as the trait of individuals who are curious, enthusiastic about ideas, enjoy experimenting, and are involved in skill-building activities. According to Gravet (2016), change agility refers to individuals who enjoy experimenting and can effectively overcome discomfort resulting from rapid change.

People Agility

De Meuse et al. (2011) stated that people agility refers to how open a person is to others, skilled in interpersonal relationships, and able to easily handle diverse people and challenging situations. According to Lombardo & Eichinger (2000), individual agility describes individuals who have clear self-understanding, learn from experiences, interact constructively with others, and remain calm and resilient under pressure from change. Handayani & Ambara (2021) defined people agility as individuals who understand themselves well, learn from experience, remain calm and flexible under pressure, and build constructive relationships with others. Özgenel (2021) adds that people agility refers to how well individuals understand themselves, learn from their experiences, engage in two-way interactions with others, and are at peace with themselves while being resilient under pressure from change. Gravet (2016) explains that people agility refers to individuals who have a strong sense of self-awareness and can easily navigate diverse people and challenging situations. Those with high people agility understand the value of different perspectives and surround themselves with diverse teams, rather than individuals who are just like them.

Learning Agility and Performance

Learning agility can be understood as the willingness and ability to learn from experiences and apply that learning to new and unique situations, often in creative or distinctive ways (Lombardo & Eichinger, 2000). Research by De Meuse et al. (2010) identifies learning agility as a critical success factor for effective performance in student environments. Other studies have suggested that learning agility is a construct for determining key performance indicators and potential (Eichinger & Lombardo, 2000; McCauley, 2001).

Moreover, Howard's (2017) study indicates a significant relationship between learning agility and individual performance. Learning agility has become a key factor as a predictor of high potential. Direct learning experiences have positively impacted employee skill levels and their contributions to company success, thereby enhancing performance.

De Meuse et al. (2010) also identified learning agility as one of the most critical factors for successful performance. Therefore, learning agility will be increasingly significant in the future workforce. Individuals with high learning agility are better equipped to deal with the unexpected, embrace new challenges, and achieve results in difficult, first-time situations (Swisher, 2013). This trend has led to the development of learning agility as a performance and potential measure, particularly in identifying talent and assessing potential leaders. Hence, learning agility should be used as a measure to predict leadership performance and potential (De Meuse et al., 2010).

Learning Agility and Gender

According to Yazici (2023), previous studies on learning agility and gender have shown inconsistent results. In research by Lombardo and Eichinger (2000), gender differences were not significant in measuring learning agility. Similarly, studies by Catenacci-Francois (2018) and Yazici (2020) found no relationship between gender and learning agility, and gender roles did not influence the overall performance relationship.

However, studies by Allen (2016) and Haring et al. (2020) suggest that there are differences in learning agility between males and females. Some studies indicate that differences between men and women at the group level exist in learning agility and its domains, with relatively small but significant differences, but no significant difference in overall learning agility (Korn Ferry, 2016; De Meuse et al., 2011).

Nonetheless, Korn Ferry (2016) stated that women generally score higher than men in individual agility and self-awareness. The differences are minimal in terms of effect size. More importantly, the overall learning agility difference is very small. Eichinger and Lombardo (1997) conducted an ANOVA analysis and found that women scored higher than men in individual agility. A study by Akkaya & Üstgörül (2020) also reported that women develop more agile leadership skills compared to men. This finding is supported by Abdullah & Othman (2021), who noted that, in general, women tend to have higher leadership self-efficacy compared to men. Women are more agile in communication, which is their preferred method of learning, and they succeed in environments where they can work closely with others, learn from them, and seek outside perspectives by gathering information from others' viewpoints and ideas (De Meuse, Dai, & Hallenbeck, 2010; Velsor & Hughes, 1990).

Methodology

This study is a survey research designed to examine the level of learning agility among diploma students. The research was conducted at a private college in Selangor, namely the Food Institute of Malaysia. An online questionnaire was randomly distributed to 100 diploma students from the Food Institute of Malaysia through Google Forms. The researcher selected the Food Institute of Malaysia as the location for this study. This study focuses on male and female diploma students enrolled in higher education institutions (IPT). The study utilized both random stratified and systematic sampling, where from a population of 1,200 students, 100 students were selected as respondents. The Food Institute of Malaysia was chosen as the study site as it met the required criteria, offering diploma programs to male and female students from across Malaysia. Respondents consisted of diploma students from semester 2 to semester 6 who were attending classes and had CGPA results from the previous semester.

The researcher employed a questionnaire to collect data from the sample. The instrument, a survey questionnaire, was developed based on previous literature and was used to test the conclusions drawn from the study. The instrument used in this study was the questionnaire, which consists of three sections that the respondents needed to answer: Section A - demographic information, and Section B - learning agility.

Section A gathers demographic information related to the respondent's personal details, such as gender, age, semester of study, and program of study. Section B focuses on learning agility, where the researcher adapted items from the Learning Agility Self-assessment (LAS) by Gravett & Caldwell (2016). All adapted items were translated into Malay. The LAS is

a tool to measure learning agility that uses four main components proposed by Lombardo and Eichinger (2003), which are: (1) People Agility (PA), (2) Mental Agility (MA), (3) Change Agility (CA), and (4) Result Agility (RA). A five-point Likert scale was used, ranging from (5) = Almost always, (4) = Often, (3) = Sometimes, (2) = Occasionally, (1) = Rarely.

Table 1
Items in Learning Agility Scale

No.	Aspect	Item
1.	**Mental Agility**	If I hear a word I don't know in a conversation, I will look up its meaning.
		I find it easy to retain new information.
		I am optimistic that I can learn new information.
		I do not make an effort to learn from my mistakes.*
		I understand the best approach for me to learn something new.
		I do not enjoy tasks that force me to learn something new.*
2.	**People Agility**	I enjoy working with others when trying to solve problems.
		I seek feedback on my skills and abilities.
		I look for people to learn about subjects outside of my work field.
		I seek people to show me how to become more efficient and effective.
		I enjoy learning from others.
		People seem to come to me when they need help solving problems
3.	**Change Agility**	I feel comfortable when there are changes in the conditions affecting my work.
		New experiences are not a learning opportunity for me.*
		I can achieve good results even in fluctuating situations.
		I enjoy using different approaches to get things done.
		I enjoy studying new information.
		I can set aside a project and switch to another one when necessary.
4.	**Result Agility**	If I don’t know the answer to something, I am comfortable asking.
		I think logically when solving problems.
		I will not accept information from others without examining it first.
		I feel satisfied when I study in-depth ways to solve problems.
		If one problem-solving approach doesn’t work, I will switch to another approach.
		I can find ways to solve something even if I don’t have a clear direction.
		I strive to find ways to apply new knowledge

The questions marked with * are reverse-score questions. The reverse-score template is as follows: (5) = 1; (4) = 2; (3) = 3; (2) = 4; (1) = 5.

Reliability and Validity

The reliability level of the study can be determined using the interpretation of the Cronbach's alpha value, which ranges from 0.00 to 1.0. Table 2 shows the interpretation table for Cronbach's alpha scores to determine the reliability level of the items.

Table 2
Cronbach's Alpha Score Interpretation Table (Bond & Fox, 2015)

Cronbach's Alpha Score	Reliability Level
0.8 to 1.0	Very good and effective with a high level of consistency
0.7 to 0.8	Good and acceptable
0.6 to 0.7	Acceptable
< 0.6	Items need to be removed
< 0.5	Items need to be revised

The validity of the Learning Agility Self-assessment (LAS) tool developed by Gravett & Caldwell (2016) was implemented by Handayani & Ambara (2021) and achieved a Cronbach's alpha value of 0.861. According to Ursachi et. Al., (2015), a Cronbach's alpha value between 0.6 and 0.7 indicates an acceptable level of reliability, while a value of 0.8 and above indicates very good reliability. According to Table 3.2, LAS has shown high internal consistency with a Cronbach's alpha value between 0.8-1.0 (Walach et. al., 2006). This study used 30 students from FIM, consisting of both male and female students.

Table 3
Cronbach's Alpha Score for Pilot Study (n=30)

N=30	Cronbach's Alpha Score	Reliability Level
LAS	0.861	Very good and effective with a high level of consistency

Table 3 presents a summary of the reliability and item reliability values, where the item reliability score for FMI is 0.86. Based on Table 3, the item reliability score for LAS is considered very good and effective with a high level of consistency (Bond & Fox, 2015). Inferential analysis is also used in this study to obtain values or measurements that describe population parameters. Inferential statistics are employed to make generalizations about the study's findings from the sample to the larger population. Using the data collected from the sample, the researcher used inferential statistics to draw conclusions about the population's characteristics based on the sample's features. Inferential statistics in this study applied the t-test to assess the differences between the learning agility levels of male and female students.

Result

This study involved a total of 100 respondents from a private college in Selangor. The demographic profile, detailed below, provides an overview of the respondents' background.

Table 4

Respondents' Demographic Profile

Profile	Demography	Frequency	Percantage %
Gender	Male	44	44
	Female	56	56
Umur	18-20 years	89	89
	21-23 years	9	9
	24-26 years	1	1
	27 years and above	1	1
Current Semester	Semester 2	84	84
	Semester 4	7	7
	Semester 5	1	1
	Semester 6	8	8
CGPA	1.00-2.00	7	7
	2.01-3.00	45	45
	3.01-4.00	48	48

Based on Table 4 above, this study involved 44 male respondents and 56 female respondents. The study also included respondents aged 18-20 years (89%), 21-23 years (9%), 24-26 years (1%), and 27 years and above (1%). In terms of current semester, 84 respondents were in Semester 2 (84%), 7 respondents in Semester 4 (7%), 1 respondent in Semester 5 (1%), and 8 respondents in Semester 6 (8%). Regarding the students' CGPA, 7 students had a CGPA of 1.00-2.00 (7%), 45 students had a CGPA of 2.01-3.00 (45%), and 48 students had a CGPA of 3.01-4.00 (48%).

Learning Agility Level of Students

Descriptive analysis was conducted to answer the research question related to the level of learning agility, involving the mean and standard deviation. The mean score was measured based on the mean score measurement and interpretation by Nunnally & Bernstein (1994). The measurement of mean score levels by Nunnally & Bernstein (1994) is based on four stages: 1.00 – 2.00 = low; 2.01 – 3.00 = moderately low; 3.01 – 4.00 = moderately high; and 4.01 – 5.00 = high. The interpretation of the mean scores was used to determine the level of agreement or evaluation of respondents.

Table 5
Learning Agility Levels of FIM Students Overall (n=100)

Bil.	Aspect	Mean	Standard Deviation	Interpretation
1.	Mental Agility	2.78	0.56	Moderately Low
2.	People Agility	2.47	0.43	Moderately Low
3.	Change Agility	2.98	0.70	Moderately Low
4.	Result Agility	3.77	0.88	Moderately High
	Overall	3.00	0.40	Moderately Low

Referring to Table 5, based on the four aspects of learning agility, all four aspects—mental agility, people agility, change agility, and result agility—showed an overall mean score of moderately low based on Nunnally & Bernstein's (1994) mean score interpretation scale. The mental agility aspect showed a mean score of 2.78, while people agility had a mean score of

2.47, change agility showed a mean score of 2.98, and the result agility aspect had the highest mean score of 3.77.

Overall, the level of learning agility of the students is at a moderately low level, with a mean value of 3.00 and a standard deviation of 0.40. The aspect with the highest mean is result agility, with a mean score of 3.77 and a standard deviation of 0.88, which is categorized as moderately high. The aspect with the lowest mean is people agility, with a mean score of 2.47 and a standard deviation of 0.43, categorized as moderately low.

The findings of this study are in line with the research by Zulkifli Manzor et al. (2021), which states that some students, especially those who prefer traditional learning methods over e-learning, face challenges during e-learning that affect their focus during teaching and learning processes, which in turn affects their academic performance. Learning agility is the ability to adapt to changes, and the findings of this study show that students are willing to embrace change, although their readiness could still be improved.

Normality Analysis

Table 6

Normality Test of Learning Agility

Item	Skewness			Kurtosis		
	Value	SE	Z	Value	SE	Z
Learning agility level of students	0.44	0.24	1.84	0.83	0.48	1.74

Table 6 shows the results of the normality test for the variables in this study. The skewness and kurtosis tests were conducted to confirm that the data follows a normal distribution. Overall, the results of the normality test indicate that the data is normally distributed, as the Z values fall within the range of ± 1.96. This suggests that the data is approximately normally distributed, which is an essential assumption for conducting further statistical analyses.

Hypothesis Testing

The researcher proposed two types of hypotheses: the null hypothesis (Ho) and the alternative hypothesis. The researcher suggested Ho to determine whether there is a difference in learning agility between male and female students. The hypothesis testing process involves statistical analyses that help the researcher make decisions on whether to reject the structured hypothesis statement (Ho) or not.

Ho: There is no difference in the learning agility level of diploma students at the Food Institute of Malaysia between male and female students.

H1: There is a difference in the learning agility level of diploma students at the Food Institute of Malaysia between male and female students.

Inferential statistical analysis for comparison is used to test the hypothesis, examining the differences in the learning agility levels between male and female diploma students at the Food Institute of Malaysia. A t-test was used to answer the research question and test the study hypothesis.

Difference in Learning Agility Based on Gender

Ho: There is no difference in the learning agility level of diploma students at the Food Institute of Malaysia between male and female students.

Table 7

t-test of Learning Agility Levels of Diploma Students at the Food Institute Based on Gender

Gender	N	Mean	Standard Deviation	t-Value	Sig.
Male	44	3.03	0.44	0.68	0.39
Female	56	2.90	0.36		

The results show that the sample sizes and mean scores based on gender are 44 (3.03) for males and 56 (2.90) for females, with standard deviations of 0.44 and 0.36, respectively. The t-test results show that the t-value is 0.68, with a significance level of 0.39 ($p > 0.05$). These findings indicate that there is no significant difference between genders (male and female) in terms of learning agility among diploma students at the Food Institute of Malaysia. Therefore, Ho is accepted. This finding is consistent with studies by Catenacci-Francois (2018) and Yazici (2020), which also found no relationship between gender and learning agility, and the role of gender does not support the relationship between overall performances.

The overall results of the study show that diploma students possess a moderate level of learning agility. The study, which used four main aspects of learning agility by Lombardo and Eichinger (2003)—individual agility, mental agility, change agility, and results agility—proves to be highly relevant for studying learning agility skills in depth. The Ministry of Education Malaysia (KPM) needs to take the initiative to ensure efforts are made to produce students who possess high learning agility. Learning agility skills are crucial for students to adapt to changes and maintain high performance. Overall, the results indicate that students' learning agility is at a moderate-low level, with a mean score of 3.00 and a standard deviation of 0.40. The four aspects of learning agility—mental agility, individual agility, change agility, and results agility—are the four key aspects examined in this study.

The results show that the aspect with the highest mean score is results agility, which falls under a moderately high level, while individual agility has the lowest mean score, indicating a moderate-low level. This suggests that the learning agility of diploma students at the Food Institute of Malaysia is at a moderate-low level. The findings indicate that students are not yet fully prepared to face complex and ever-changing situations in the future. The integration of technology in learning is a change that diploma students are currently facing. This study's findings align with the findings of Muzafar Mat Yusof & Hasmadi Hj Hassan (2021), where the readiness of diploma students for the transition to e-learning is at a moderate level. This is further supported by the study by Haring et al. (2020), which found that higher education students in Asia have moderate learning agility. Therefore, it is crucial for students to strengthen their learning agility skills to be better prepared for the changes occurring in the educational landscape.

Discussion

The lack of preparedness to face complex situations leads students to feel confused and lose direction. Learning agility emphasizes experiential learning, enabling students to prepare for complex situations. These findings are consistent with the study by Ishak & Talaat (2020), which found that students' mental preparedness for the integration of technology is

at a moderate level. The integration of technology is often seen as complex by students due to the shift from traditional to modern learning methods. This situation causes the previously one-way “Chalk and Talk” learning method to be replaced by e-learning based on ICT platforms such as MOOC, KAHOOT, QUIZZIZ, Google Classroom, and others. Students also need to possess the appropriate devices to access these platforms. As a result, students who have not adapted to this technological change will fall behind in their studies.

The findings of this study are also supported by research conducted by Antino et. al., (2022) on the changes in the education system during the COVID-19 pandemic. COVID-19 is an example of an unforeseen complex situation that students had to face, requiring them to adapt to online classes. This change had an impact on individuals' mental health, leading to stress, anxiety, depression, restlessness, and insomnia, which also caused conflicts at home. The biggest challenge students had to overcome was the rapid changes they had to endure due to the fast-paced technological advancements. The changes in the education system during the pandemic, where teaching and learning sessions (PdP) were conducted online, have shown that many people, including teachers, students, and parents, were affected mentally (Faizah et al., 2022). Therefore, students need to have high mental agility to successfully lead and manage learning in times of rapid change and remain high-performing, even in unpredictable and complex future situations.

This study also shows that students’ learning agility is essential in producing flexible students who can perform well, even in complex situations, in the 21st century. Universities and the Ministry of Education (MoE) can create a robust approach to produce excellent students in the context of national education through high learning agility. Numerous positive implications and effects can be seen on schools, curricula, learning processes, and the development of students' soft skills, especially in technology-based education. The importance of students' learning agility can have a positive impact on their development. The researcher hopes that this study will provide initial insights to MoE and serve as a guide towards continuous development of student agility.

Implications of the Study

Identifying the issues and challenges faced by lecturers in navigating the VUCA world, as well as the methods for preparing them to face this world, is crucial. A student must possess high learning agility skills to adapt to the changes and developments in education at the global level. The development of learning agility in students allows them to excel and possess the necessary soft skills in the 21st century, as well as the ability to adapt to changes in the face of rapid modernization. Educators must be more aware and proactive in efforts to further enhance students' learning agility.

Lecturers and Higher Education Institutions (HEIs) play a significant role in solving problems and addressing the changes that occur in the educational landscape. The findings of the study have identified various issues faced by lecturers at the Food Institute of Malaysia. As such, the results of this study can contribute to the implications for various stakeholders and the education system. In line with the focus of this study to assess the level of students' learning agility, several steps and suggestions must be taken to ensure its optimal implementation, as follows:

The study findings indicate that lecturers face several issues related to student management and technological changes in the teaching and learning process. Educators can use this study as a guide and reference in preparing themselves for the VUCA world. A range of new skills need to be learned, and lecturers must constantly keep up with technological changes and apply them in education. Lecturers can use the EXCEL framework provided by the government as a reference to design suitable learning sessions that equip students to face complex situations. Lecturers should also actively interact with students and involve them in activities that require them to discuss and communicate with peers and lecturers in class. One-way communication from lecturers is no longer relevant. Lecturers must use appropriate approaches to train students to have good communication skills. By dividing students into groups, they will feel more comfortable and find it easier to communicate in smaller groups.

Activities involving various learning agility skills should be incorporated into the classroom to help students adapt to unforeseen changes. Therefore, learning agility-related courses should be organized by MoE to enable lecturers to implement teaching that includes various learning agility skills in preparation for the future. HEIs can use this study to organize programs, training, workshops, and courses aimed at enhancing lecturers' skills and preparing them for the VUCA world. New technological tools can also be provided to lecturers to ensure they stay updated with the latest technological advancements. HEIs can also develop a unified system or portal to help both lecturers and students continue with teaching and learning activities, ensuring no student is left behind in terms of information and education.

Students can use this study as a reference to shape themselves into individuals capable of navigating the VUCA world. Both soft skills and technical skills are essential in preparing students for the VUCA environment. Students should also focus on developing a personality that includes leadership skills, problem-solving abilities, and adaptability by attending educational events, participating in activities, and joining competitions organized by their institutions, among other things. The optimal integration of technology in the classroom should be implemented. Platforms such as MOOC, KAHOOT, QUIZZIZ, and others should be incorporated during the teaching and learning process. In this era of rapid modernization, students should learn to adjust to the use of technology in their daily lives. Universities and colleges must take the initiative to provide suitable facilities and learning tools to develop IT-literate students.

Recommendations

Several improvements to this study need to be considered from various aspects for future research by other scholars. Therefore, the following suggestions are made for further research in the same field:

1. *General Focus of the Study*
   This study only focuses on students' learning agility levels. For improvement, future researchers may enhance the study by examining the relationship between learning agility and students' performance, as well as other aspects such as age, ethnicity, background, and the impact on students' readiness to face the VUCA (volatile, uncertain, complex, and ambiguous) world.
2. *Increasing the Number of Respondents*
   The study should involve a larger number of respondents to achieve higher consistency and accuracy in the findings. This study involved only 100 respondents.

3. *Expanding the Scope of the Study*
   The study was conducted only in selected private colleges in Selangor. The scope of the research should be expanded to include public higher education institutions across Malaysia. The findings could provide a more comprehensive understanding of students' learning agility in other areas of Selangor.
4. *Effectiveness of Learning Agility Across Different Levels of Study*
   Future researchers can carry out a study to assess the effectiveness of learning agility involving students from various levels of study.
5. *Diversifying Data Collection Methods*
   Researchers can diversify methods of data collection, such as interviewing students about the types of learning methods they use.

This study also shows that the level of student learning agility is crucial in producing 21st-century students who are flexible and capable of performing well even in complex situations. Universities and the MoE can create a robust approach to achieve the goal of producing outstanding students in the context of national education, resulting from a high level of learning agility. Various implications and positive effects can be observed in schools, curriculum, the learning process, as well as in the development of students' soft skills, particularly in technology-based education. The importance of the level of student learning agility can have a positive impact on student development. The researchers hope that this study can provide an initial overview for MoE and serve as a guide toward the continuous development of student agility. MoE is expected to educate and nurture students' agility skills starting from the school level.

Conclusion

Educators must play a crucial role in developing learning agility skills in students. Students should also take the opportunity to remain adaptive as they pursue modernization, while maintaining excellence in every task they undertake. As the future leaders of the nation, students must continuously update themselves with the latest knowledge and remain sensitive to the changes around them. Therefore, educators need to assist students in improving their learning agility to face the VUCA (Volatile, Uncertain, Complex, and Ambiguous) world. In conclusion, understanding the importance of students' learning agility skills is vital to ensure the development of 21st-century learners. The Ministry of Education's (KPM) efforts to produce excellent human capital capable of thinking critically and creatively require lecturers who are knowledgeable in the best teaching approaches for students. This study is also expected to enhance understanding of the importance of learning agility, and it is hoped that the Malaysia Education Development Plan (PPPM) 2013-2025 will be successfully realized.

References

Abdullah, N., & Othman, N. (2021). Analisis Efikasi Kendiri Kepimpinan Dalam Kalangan Penjawat Awam Wanita di Putrajaya, Malaysia. *Asian People Journal (APJ)*, 4(1), 195-204.

Akkaya, B., & Üstgörül, S. (2020). Sustainability of SMEs and health sector in a dynamic capabilities perspective. In *Challenges and Opportunities for SMEs in Industry 4.0* (pp 43-64). IGI Global.

Allen, J. (2016). Conceptualizing Learning Agility and Investigating Its Nomological Network.

Antino, M., Ruiz-Zorrilla, P., Sanz-Vergel, A. I., Leon-Perez, J. M., & Rodriguez-Muñoz, A. (2022). The Role of Job Insecurity and Work-Family Conflict on Mental Health Evolution During COVID-19 Lockdown. *European Journal of Work and Organizational Psychology*, 31(5), 667-684.

Bond, T. G., & Fox, C. M. (2015). *Applying The Rasch Model: Fundamental Measurement in the Human Sciences (3rd ed.)*. Mahwah, New Jersey: Lawrence Erlbaum Associates.

Brodnick, R., & Gryskiewicz, S. (2018). Using Positive Turbulence for Planning and Change. *Planning for Higher Education*, 46(4), 27-40.

Burke, W. W., & Smith, D. E. (2019). Technical report v3.5: *A Guide for Learning About Learning Agility.* https://easi.egnyte.com/dl/qzSLVOm9Ap/

Catenacci-francois, L. (2018) *Learning Agilityi in Context: Engineers' Perceptions Of Psychologically Safe Climate on Performance*. Columbia University

DeRue, D. S., Nahrgang, J. D., Hollenbeck, J. R., & Workman, K. (2012). A Quasi-Experimental Study of After-Event Reviews and Leadership Development. *Journal of Applied Psychology*, 97(5), 997.

De Meuse, K. P., Dai, G., & Hallenbeck, G. S. (2010). Learning agility: A construct whose time has come. Consulting Psychology Journal: Practice and Research, 62, 119–130.

De Meuse, K. P., Dai, G., Eichinger, R. W., Page, R. C., Clark, L. P., & Zewdie, S. (2011). The Development and Validation of A Self Assessment of Learning Agility. In *Society for Industrial and Organizational Psychology Conference, Chicago, Illinois*.

Haring, S., Shankar, J., & Hofkes, K. (2020). The Potential Of Learning Agility.

Eichinger, R. W., & Lombardo, M. M. (2004). Learning Agility as A Prime Indicator Of Potential. *Human Resource Planning, 27*. Retrieved from http://www. successfactors.com/static/docs/LearningAgilityResearchWhitepaper.pdf.

Eichinger, R. W., Lombardo, M. M., & Capretta, C. C. (2010). *FYI For Learning Agility*. Minneapolis, MN: Korn Ferry

Eilers, K., Peters, C., & Leimeister, J. M. (2022). Why the Agile Mindset Matters. *Technological Forecasting and Social Change*, 179.

Gravett, L. S., Caldwell, S. A., Gravett, L. S., & Caldwell, S. A. (2016). *What Is Learning Agility?* (1-8). Palgrave Macmillan US.

Gravett, L. S., & Caldwell, S. A. (2016). Learning agility: The Impact on Recruitment and Retention. *In Learning Agility: The Impact on Recruitment and Retention*.

Handayani, D. A. P., & Ambara, D. P. (2021). Does Learning Agility Depend on Age and Work Experience?. In *4th International Conference on Innovative Research Across Disciplines (ICIRAD 2021)* (pp321-326). Atlantis Press.

Haring, S., Shankar, J., & Hofkes, K. (2020). *The potential of learning agility*.

Hoff, D. F., & Burke, W. W. (2017). *Learning Agility: The Key to Leader Potential*. Hogan Assessments.

Howard, D. (2017). *Learning Agılity in Education: An analysis of Pre-Servıce Teacher's Learning Agility and Teaching Performance*. Unpublished doctoral dissertation, Tarleton State University, Texas.

Hussin, H., Ghani, A.R.A., Ahmad, A.R., Saleh, M.H., Haridi, N.H. (2022): Dimensi Pelajar Terhadap Penggunaan Medium Teknologi Dalam Kursus Hafazan Al-Quran Semasa Covid-19: Kajian Terhadap Pelajar Universiti Sains Islam Malaysia. –QIRAAT: Jurnal Al-Quran dan Isu-Isu Kontemporari 5(1), 27-36.

Ishak, A. A., & Talaat, A. Z. M. A. (2020). Online Learning: A Survey Of Readiness And Motivation Among Logistics And Supply Chain Management Diploma Students. *World Journal of Education*, *2*(4), 68-82.

Ferry, K. (2016). Viaedge Technical Manual. Retrieved from https://dsqapj1lakrkc.cloudfront.net/media/sidebar_downloads/82205-viaEdge-TechnicalManual.pdf

Lombardo, M. M., & Eichinger, R. W. (2000). High Potentials As High Learners. *Human Resource Management*, 39(4), 321-329.

Maritsa, A., Hanifah Salsabila, U., Wafiq, M., Rahma Anindya, P., & Azhar Ma'shum, M. (2021). Pengaruh Teknologi Dalam Dunia Pendidikan. *Al-Mutharahah: Jurnal Penelitian Dan Kajian Sosial Keagamaan*, 18(2), 91–100. https://doi.org/10.46781/al-mutharahah.v18i2.303

McCauley, C. D., & Van Velsor, E. (Eds.). (2004). *The Center For Creative Leadership Handbook Of Leadership Development* (Vol. 29). John Wiley & Sons.

McCauley, C. D. (2001). Leader Training And Development. The Nature of Organizational Leadership: Understanding the Performance Imperatives Confronting Today's Leaders, (pp347-383).

Mimoun, L., Trujillo-Torres, L., & Sobande, F. (2022). Social Emotions and The Legitimation of The Fertility Technology Market. *Journal of Consumer Research*, 48(6), 1073-1095.

Nunnally J. C., Bernstein I. H. (1994). *Psychometric theory* (3rd ed.). New York, NY: McGraw-Hill.

Özgenel, M. (2021). Learning Agility of School Administrators: An Empirical Investigation. *International Journal of Progressive Education (IJPE)*.

Prayesti, T. (2022). Kesiapan Menghadapi Dunia Kerja Di Era Vuca Pada Mahasiswa Akhir Pendidikan Agama Islam Universitas Islam Indonesia. 10, 1–44

Prayoga, M., Dista, S., Winarti, A., Aprianti, N., Arvianti, S., Junianti, E. D., & Amelia, R. (2023). Menurunnya Tingkat Belajar Mahasiswa Di Era VUCA. In *Proceeding Conference On Psychology and Behavioral Sciences* 2(1), 115-120.

Perdana, R. P., Ratu Betta Rudibyani, R. B. R., Budiyono, B., & Sajidan, S. (2020). The Effectiveness of Inquiry Social Complexity to Improving Critical and Creative Thinking Skills of Senior High School Students. *International Journal of Instruction (IJI)*, *13*(4), 1-14.

Suhendar, A., & Hulu, M. R. (2023). Pemanfaatan Teknologi Cloud Computing dalam Mendukung Otomatisasi pada Dunia Kerja. *Dasabhakti: Jurnal Pengabdian Masyarakat*, *2*(1), 22-26.

Swisher, V. (2013). Learning Agility: The "X" Factor In Identifying and Developing Future Leaders. *Industrial and Commercial Training,* 45(3), 139-142.

Ursachi, G., Horodnic, I. A., & Zait, A. (2015). How Reliable Are Measurement Scales? External Factors with Indirect Influence on Reliability Estimators. *Procedia Economics And Finance*, *20*, 679-686.

Van Ruler, B. (2019). Agile Communication Evaluation and Measurement. *Journal of Communication Management*. 23(3), 265-280.

Walach, H., Buchheld, N., Buttenmüller, V., Kleinknecht, N., & Schmidt, S. (2006). Measuring Mindfulness—The Freiburg Mindfulness Inventory (FMI). *Personality and individual differences*, *40*(8), 1543-1555.

Wong, L. (2004). *Developing Adaptive Leaders: The Crucible Experience of Operation Iraqi Freedom*. Carlisle, PA: U.S. Army War College, Special Studies Institute.

Sobnem, Y. (2023) Is There a Relationship Between School Principals' Learning Agility and Decision-Making Styles? The Effect of Gender as a Moderating Factor. *International Journal of Psychology and Educational Studies*, 11(1), 36-49.

Manzor, Z. (2021). Belajar Secara Bersemuka Lebih Fokus. Retrieved from https://www.kosmo.com.my/2021/07/14/belajar-secara-bersemuka-lebih-fokus/.