EMPOWERING UNDERGRADUATES' STUDENTS: DIGITAL TALENT DEVELOPMENT THROUGH SELF-DIRECTED LEARNING

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Empowering Undergraduates Students: Digital Talent Development Through Self-Directed Learning

by

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LIST OF ABBREVIATIONS

CD	Curriculum Design
DT	Digital Talent
EE	Education Environment
FKP	Faculty of Entrepreneurship & Business
SAB	Bachelor of Business Administration (Islamic Banking Finance) with Honors
SAE	Bachelor of Entrepreneurship with Honors
SAK	Bachelor of Entrepreneurship (Commerce) with Honors
SAL	Bachelor of Entrepreneurship (Logistic and Distributive Trade) with Honors
SDL	Self-Directed Learning
SPSS	Statistical Package for the Social Sciences
SRS	Simple Random Sampling
TD	Talent Development
UMK	Universiti Malaysia Kelantan
USC	Undergraduate Students' Characteristics

ABSTRAK

Kajian ini bertujuan untuk meneroka bagaimana pelajar sarjana muda Universiti Malaysia Kelantan diperkasakan melalui pembelajaran terarah kendiri untuk mengembangkan bakat digital mereka. Kajian ini telah mengambil populasi pelajar fakulti FKP seramai 3559 orang pelajar di Pengkalan Chepa. Kajian menggunakan pendekatan tinjauan soal selidik dalam talian untuk mengumpul data daripada sampel mudah 420 pelajar kampus Kota. Soal selidik dalam talian juga digunakan untuk mengumpul data daripada pengguna media sosial dan aplikasi internet. Data dikumpulkan melalui pelaksanaan alat digital, "*Google Form*." Keputusan menunjukkan bahawa pelajar dalam kumpulan pembelajaran terarah kendiri menunjukkan kecekapan yang lebih tinggi dalam kemahiran digital berbanding rakan sejawat mereka dalam kumpulan pengajaran tradisional. Penyelidikan ini menawarkan pandangan berharga tentang faedah ketara menggunakan strategi pembelajaran hala kendiri dalam pembangunan bakat digital.

Kata kunci: pembelajaran terarah kendiri, pembangunan bakat digital, kumpulan pengajaran tradisional

ABSTRACT

This study aims to explore how Universiti Malaysia Kelantan's undergraduate students are empowered through self-directed learning to develop their digital talents. This study has taken the FKP faculty student population of 3559 students in Pengkalan Chepa. The study uses an online questionnaire survey approach to collect data from a convenience sample of 420 city campus students. The online questionnaire is also used to gather data from users of social media and internet applications. The data were collected through the implementation of a digital tool, "Google Form." The results indicated that students in the self-directed learning group demonstrated significantly higher proficiency in digital skills compared to their counterparts in the traditional instruction group. This research offers valuable insights into the tangible benefits of employing self-directional learning strategies in digital talent development.

Keywords: self-directed learning, digital talent development, traditional instruction group.

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND OF STUDY

In today's fast-paced and ever-changing world, technological advancements have given great importance to students to add skills and knowledge to thrive in their daily learning. Empowering undergraduate students through digital talent development through self-directed learning is a multifaceted process. Self-directed learning is a strategy that empowers students with responsibility in their learning process which includes identifying learning needs, setting learning goals and selecting learning strategies. (N. Saienko and Yuliana Lavrysh, 2020). In addition, Experiences that allow students to choose the knowledge they want to learn can be described as leading to self-directed learning. (Persky & Robinson, 2019). The development of digital talent in undergraduates has equipped students with skills and general knowledge related to digital technology. There are 2 digital skills which are hard and soft digital skills, which are combined to form a digital talent in terms of data analysis, programming, artificial intelligence, and machine learning capabilities are examples of hard digital skills, soft digital skills are problem solving, learning skills, customer centric, Collaboration and goal-centred thinking. (K. Nair, 2019). By offering a variety of opportunities like this the university can aim to improve students' competence and readiness for careers in technology-driven fields.

With self-directed learning, students take full responsibility for their education. Self-directed students are responsible for determining why they need to learn, for example making improvements or finding answers to an issue (Hutasuhut, I., Adruce, S. A. Z., & Jonathan, V, 2021). In addition, external and internal factors that influence the self-directed online learning of undergraduate physiotherapy students have been studied, highlighting the importance of

understanding the aspects that influence the student's learning process and its adaptation to online self-directed learning (Hammarlund et al., 2015). This learning approach is a very valuable skill because it allows students to adapt their learning experience to deeper needs and interests. According to M. C. Maphalala, R. G. Mkhasibe and D. W. Mncube (2021) global higher education institutions have experienced the disruption of their academies because of the COVID-19 pandemic in 2019, this has provided an opportunity for the transition of self-directed learning to online teaching to inspire and engage students in their education more critically and autonomously. The diverse digital landscape that offers various resources for self-directed learning today such as online courses, interactive tutorials, virtual labs and educational applications are some examples of digital tools that can empower students that can be explored from the moment.

Digital talent development through self-directed learning is not just about acquiring specific skills. In an ever-evolving technology landscape, the lack of digital talent is emerging as a critical concern across industries in the world, this shortage has led to a gap between the skills demanded by the job market. According to the student questionnaire, the most important digital skills needed for the labor market are using and managing information (69.84%), evaluating information (67.19%) and accessing information (65.15%). (A. Zeidmane and A. Vintere, 2021). The development of individual digital skills has received much attention as a remedy for digital inequality. (U. Matzat and B. Sadowski, 2011). In 2022, Malaysia will have 5.92 million graduates, with 85.4% participating in the labor force. The number of employed graduates increased by 6.0% to 4.87 million, while unemployed graduates decreased by 5.5% to 187.8 thousand. However, the unemployment rate increased, especially among young graduates, with a rate of 61.2%. About 14.6% of graduates are out of the labor force due to housework, retirement, or schooling. (Department of Statistics Malaysia, 2023). Job market competition exacerbates this problem, employers look for candidates with a combination of

technical acumen and soft skills, valuing digital competence as a fundamental asset. New graduates who lack digital skills often find themselves at a disadvantage when competing with their more technically skilled counterparts.

In 2023, Malaysia expects to have graduates who are equipped with in-depth knowledge, relevant skills, drive innovation and make a significant contribution in developing various economic factors. (Department of Statistics Malaysia, 2023). Digital skills have revolutionized government service delivery through streamlined e-government platforms such as MyGovernment, optimizing the accessibility and efficiency of public services. These skills support the country's digital transformation initiatives, empower data-driven decision making, strengthen cyber security measures, and foster administrative efficiency. Similarly, in Malaysian universities, digital skills are essential in enabling a smooth transition to online learning during the pandemic, fostering research and innovation through advanced data analysis, and equipping students with essential competencies for the evolving job market. These skills also facilitate global collaboration, strengthen the impact of research and knowledge exchange, contributing significantly to Malaysia's progress in both governance and academic.

1.2 PROBLEM STATEMENT

Along with the development of this digital landscape, higher education institutions must place digital learning, digital development culture and innovation at the forefront of student training programs to address the digital skills gap in the industry. (Karaboga, Y. D. Gurol, C. M. Binici and P. Sarp, 2020). A new approach to undergraduate education, particularly in nurturing digital talent through self-directed learning. As a result, higher education is constantly catching up and educational institutions are responding to employer demand by offering

relevant courses and learning programs that can create an oversupply of talent in the area in the future. (B. Frankiewicz and T. Chamorro-Premuzic, 2020). Digital skills are needed for the modern workforce to empower students to explore, acquire and apply digital competencies outside of structured coursework. This suggests that most students acquire and enhance their digital abilities outside of educational settings, reinforcing the idea that these skills are cultivated for purposes beyond academic learning. (B. N., N. J., and U. Fors, 2019).

The first issue is that self-directed learning has a very critical role in the relationship between self-leadership and online learning among university students. (M. Durnali, 2020). A comfortable environment in university education increasingly integrates various online learning platforms and requires a solid understanding of the gap between self-leadership and effective self-directed learning among students. Based on K. Karatas and I. Arpaci (2021) in the context of modern skills, it is very important for students to use digital tools to gain the efficiency of digital use in daily learning. This research highlights the important role of self-leadership skills and self-directed learning for university students in expanding effective online teaching and learning environments and serves as a valuable contribution to discussions aimed at optimizing learning outcomes by emphasizing the importance of these skills.

The second issue in digital talent development is technology development. Rapid progress in the economy and inadequate upskilling efforts in organizations will lead to an increasing gap in digital skills as well as current skills. (K. Nair, 2019). It is important to address this technological development problem with students needing to find information available on the internet. Technology consistently aims to achieve higher efficiency with higher resources with fewer resources but still proves effective when complemented with appropriate human skills. (B. Frankiewicz and T. Chamorro-Premuzic, 2020). Such customization optimizes the learning process, improves retention and efficiency in digital skills in students. Some teachers suggest platforms or resources and explain how to verify the validity and accuracy of

information to develop information evaluation skills and media literacy. (N. Saienko and Yuliana Lavrysh, 2020).

Based on the Department of Statistics Malaysia (2023), In Malaysia's employment landscape, the majority of those employed consist of 62.5% categorized as semi-skilled roles amounting to 5.56 million and followed by 2.22 million skilled jobs (25%) and 1.12 million low skilled positions (12.3%). This distribution has emphasized the importance of efforts focused on skill improvement and reskilling initiatives, especially in terms of rapid technological progress. Bridging the gap between semi-skilled and skilled positions is important and requires an appropriate strategy for digital talent development. This is not only about technological competence but about cultivating critical thinking in the search for information for competence in self-directed learning.

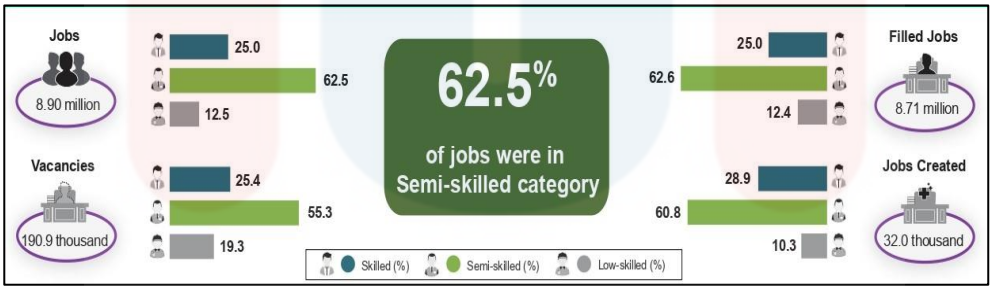

Figure 1.1: Statistics of Employment in Malaysia

1.3 RESEARCH QUESTIONS

To address this research question, these are some of the questions involved:

1. What are the key digital talents that undergraduate students need to succeed in the modern workforce?
2. What are self-directed learning practices impacting the development of digital talents among undergraduate students?
3. What are the best ways to help undergraduate students develop digital skills through self-directed learning?

1.4 RESEARCH OBJECTIVES

Based on the research questions, the following are the research objectives.

1. To examine the effectiveness of self-directed learning in developing digital skills among undergraduates' students.
2. To identify the factors that contribute to self-directed digital talent development in the undergraduate students.
3. To suggest suitable ways to empower undergraduates' students in encourage digital talent development.

1.5 SCOPE OF THE STUDY

This study focuses on Universiti Malaysia Kelantan's undergraduate students who are empowered through self-directed learning to develop their digital talents. Students at Universiti Malaysia Kelantan were the demographic from where the data was collected. Selecting this group is thought to facilitate efficient production and advance the development of commodities. Furthermore, individuals use internet platforms often these days where they may evaluate anything at any time. It is obvious that self-directed learning is a complex idea that should not be viewed from just one angle (Leong, 2020).

The study will concentrate more on empowering students' self-directed learning in developing their digital potential. Thus, those involved in this research are students from Universiti Malaysia Kelantan, particularly from Kota Campus. It will target individuals of different ages and different semester and are selected through convenience sampling. The questionnaire will be sent to the targeted respondents in two ways: either online via Google Forms and social media platforms like Telegram and WhatsApp groups, or by giving the questionnaire directly to Universiti Malaysia Kelantan students. Since it enables the research to focus on the work within practical limitations, the study's scope has been carefully established.

1.6 SIGNIFICANCE OF STUDY

Digital skills are now essential for students getting ready to enter the workforce in today's fast-paced world, instead of just a choice (Van Laar et al., 2019). The digital landscape is ever evolving, as technology continues to shape both the business and the nature of employment. This study takes on the important task of understanding how students at Universiti Malaysia Kelantan can develop the digital talents they need to succeed, and it does so by focusing on specific approaches such as self-directed learning.

The fact that traditional education frequently finds it difficult to keep up with the rapid pace of technology innovation makes this research very important (Ferracane, 2019). As a result, there is a mismatch between what universities teach and what employers require. It is obvious that creative teaching methods are needed, and the goal of this study is to identify methods that provide students with useful digital skills.

Self-directed learning is a promising solution. With this individualized approach, students manage their own education. It is up to them to choose what they want to study and how. With the help of this method, students may discover and acquire digital skills that fit their interests and goals in life. It's about taking control of your education, and, in the context of this study, it's the path to developing digital talents.

However, this study also considers practice in beyond theory. "Born-digital" firms have been formed and in recent years, digital transformation has become the focus of organizations around the world (Fahmy, 2023). The digital talent development landscape is filled with resources such as webinars, open-source projects, online courses, and tutorials. These materials are highly diverse, meeting the needs and interests of individuals. Many students may access them because most of them are either free or reasonably priced.

The importance of this study isn't limited to students alone. It's a call to action for educators and educational institutions to reconsider their approaches and adjust to the changing needs of education in the digital era. Educational technologies could enhance the quality of online courses, particularly those that are offered to part-time, or distance learning students (Camilleri, 2019). It's important to recognize the unique characteristics of undergraduate students, the influence of the learning environment and the ways in which curriculum design influences student learning. This research aims to uncover the complex dynamics that determine the effectiveness of self-directed learning.

1.7 DEFINITION OF TERM

In this section, terms that are often used in this study are defined, which includes:

1.7.1 Digital Skills

These cover a wide variety of abilities needed to succeed in the digital era. This consists of the technical skills, problem-solving skills, flexibility, and desire that are necessary for success in a workforce that is heavily dependent on technology (Van Laar et al., 2019).

1.7.2 Self-Directed Learning

This refers to an educational approach in which students take the initiative and responsibility for their own learning. It involves determining what to learn, how to learn, and when to study in accordance with interests and career goals (Morris, 2019).

1.7.3 Digital Talent Development

The process of developing and enhancing students' digital skills, providing them with the skills they need to succeed in the digital workforce (Lassig, 2021).

1.7.4 Target Audience

The group being studied in this study, Universiti Malaysia Kelantan undergraduate students, is identified by special demands and characteristics in the context of developing digital skills.

1.7.5 Module

A structured and comprehensive educational resource that encourages the development of digital talents through self-directed learning, specific to the evolving demands of the digital age.

1.8 ORGANIZATION OF THE PROPOSAL

An effective research proposal is characterized by a well-organized structure, guiding the reader seamlessly through the study's key components such as its relevance, objectives, methodology, and expected outcomes. The first chapter encompasses crucial elements like the introduction, title, background, problem statement, research questions, research objectives, scope of the study, significance of the study, definition of terms, and organizational structure. The background sets the stage by providing an overview of the research topics and context for the investigation, while the problem statement succinctly outlines the subject to be explored, making the research goal clear. Research questions arise from the study and are answered through data analysis, contributing to the study's purpose and justification. The scope of the study delimits the research area, and the significance of the study elucidates its potential societal impact. Definitions of terms provide comprehensive explanations of key concepts used in the research.

Moving to the second chapter, the literature review delves into the existing knowledge within the chosen field, providing a detailed exploration. The underpinning theory, serving as

the theoretical framework, is expounded upon. The section on previous studies offers perspectives on prior research related to the topic, identifying gaps that the current study aims to address. Hypotheses are formulated, laying the groundwork for evidence-based testing. A conceptual framework interconnects these elements.

The third chapter is composed of subtopics related to the introduction, research design, data collection methods, study population, sample size, sampling techniques, research instrument development, measurement of variables, procedure of data analysis, and conclusion. The research design establishes the plan for the study, while sampling techniques elucidate participant selection. Data collection methods outline the information to be gathered, and the section on research instrument development describes the tools used for data collection. The measurement of variables is overviewed, and a detailed procedure for data analysis is provided. This chapter brings the practical aspects of the research to life, offering a comprehensive view of the study's methodology and execution.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

Chapter 2 revealed the previous studies and the argument regarding on the Empowering Undergraduate Students in Digital Talent Development through Self-Directed Learning among Universiti Malaysia Kelantan (UMK)'s. The study aims to analyze and correlate some of works that previously had been done as stated in the previous studies of the chapter. The sources were used purposely to construct and conduct research on how undergraduate students empower digital talent development through self-directed learning. In addition, Chapter 2 consisted of hypotheses statement to define the relationship between two variables: independent variables and dependent variable as well.

2.2 UNDEPINNING THEORY

In this research, underpinning theory referred to factors of undergraduate students empowering digital talent development through self-directed learning.

Digital Talent Development

Digital talent development encompasses the acquisition and refinement of skills necessary to thrive in the digital age. In a rapidly evolving technological landscape, the need for individuals to possess these skills is paramount. This development spans various domains, including but not limited to digital literacy, proficiency with specific software or platforms, coding and programming capabilities, data analysis, and adaptability to emerging technologies.

Research indicates that digital talent development is crucial for personal and professional success. For instance, a study by Carnevale, Jayasundera, & Cheah (2015) highlights that by 2020, nearly 65% of all jobs in the United States will require some form of post-secondary education and training, often emphasizing digital skills. Furthermore, the World Economic Forum's Future of Jobs Report (2018) emphasizes the increasing demand for skills such as complex problem-solving, critical thinking, and creativity, all of which are intertwined with digital talent development.

Moreover, digital talent development has significant implications for organizational success. A study by Capgemini and LinkedIn (2017) found that 54% of organizations believe that a lack of digital skills is a significant barrier to digital transformation. They argue that investing in digital talent is not only critical for staying competitive in the market but also for driving innovation and growth.

Self-Directed Learning

Self-directed learning, as defined by Knowles (1975), emphasizes the learner's autonomy, motivation, and responsibility for their own learning process. It encourages students to set their own learning goals, identify resources, and evaluate their progress. This approach is particularly pertinent in the context of digital talent development, as it cultivates not only technical skills but also essential attributes like adaptability, critical thinking, and lifelong learning.

Furthermore, self-directed learning aligns with the demands of the digital age, where the ability to navigate and innovate within digital environments is paramount. This approach encourages students to explore diverse digital tools, programming languages, data analysis techniques, and other technical proficiency relevant to their field of interest. It empowers them

to not only acquire specific digital skills but also to develop the capacity to adapt to emerging technologies.

The adaptability of self-directed learning to individual learning styles and paces is a key advantage. Students have the freedom to choose resources and methods that align with their preferences and learning strengths. This personalized approach enhances engagement and fosters a deeper understanding of the subject matter.

Moreover, self-directed learning promotes a growth mindset, as students are encouraged to view challenges and setbacks as opportunities for learning and improvement (Dweck, 2006). This mindset is particularly valuable in the dynamic and evolving field of digital technology, where the ability to adapt and learn continuously is a cornerstone of success.

Self-directed learning is a powerful tool in empowering undergraduate students for digital talent development. By fostering autonomy, critical thinking, and adaptability, this approach not only enhances technical skills but also equips students with the mindset and skills necessary for lifelong learning in the digital age.

Undergraduate Students' Characteristics

In the realm of higher education, self-directed learning has emerged as a pivotal tool for cultivating digital talent among undergraduate students. According to Smith and Johnson (2018), self-directed learning is characterized by an individual's ability to take charge of their own learning process, setting goals, identifying resources, and evaluating progress independently. In this context, several key characteristics of undergraduate students engaging in digital talent development through self-directed learning have been identified.

Firstly, a sense of autonomy and intrinsic motivation plays a critical role. As noted by Kim et al. (2020), undergraduates who exhibit a strong internal drive and a sense of ownership

over their learning process are more likely to proactively seek out digital skill-building opportunities. This intrinsic motivation empowers them to explore diverse online resources, engage in coding bootcamps, and participate in hackathons, fostering a dynamic learning ecosystem.

Moreover, adaptability and a growth mindset are essential traits for successful digital talent development through self-directed learning (Jones & Williams, 2019). Undergraduates who are open to experimentation and unafraid of failure are more inclined to embrace emerging technologies and rapidly evolving digital landscapes. This adaptability enables them to leverage diverse learning modalities, from Massive Open Online Courses (MOOCs) to collaborative coding projects, thereby enhancing their proficiency in digital domains.

Furthermore, a strong sense of digital fluency and information literacy distinguishes undergraduates who excel in self-directed digital talent development (Johnson, 2017). These students possess the ability to critically evaluate online resources, discern reliable information from noise, and navigate complex digital environments with ease. This foundational competency empowers them to make informed decisions about the selection of programming languages, frameworks, and tools, enabling more effective skill acquisition.

The characteristics of undergraduate students engaged in digital talent development through self-directed learning encompass intrinsic motivation, adaptability, growth mindset, digital fluency, and information literacy. Recognizing and cultivating these attributes can significantly enhance the efficacy of educational interventions aimed at fostering digital expertise among undergraduate cohorts.

Education Environment

The educational environment plays a pivotal role in empowering undergraduate students for digital talent development through self-directed learning. As emphasized by Brown and Smith (2019), creating a conducive atmosphere that fosters autonomy and encourages proactive engagement is essential for cultivating digital expertise. In this context, several key aspects of the educational environment have been identified as critical contributors to the success of this approach.

Firstly, the integration of flexible learning structures is paramount. According to Johnson and Davis (2020), offering a range of learning modalities, including online courses, coding bootcamps, and hands-on workshops, accommodates diverse learning styles and preferences. This adaptability empowers undergraduate students to select avenues that align with their individual pace and interests, thereby enhancing their ability to take charge of their own learning journey.

Furthermore, the provision of well-curated digital resources is imperative. As noted by Williams et al. (2018), ensuring easy access to high-quality learning materials, such as interactive tutorials, open-source projects, and coding challenges, equips students with the tools they need to navigate the digital landscape effectively. This curated repository of resources serves as a cornerstone for self-directed learning, enabling undergraduates to explore and master various digital domains.

Moreover, the establishment of a supportive learning community fosters collaboration and knowledge-sharing among students. Research by Anderson and Brown (2019) highlights the significance of peer-to-peer interactions in the digital talent development process. Engaging in collaborative projects, participating in coding clubs, and attending hackathons create an

environment where undergraduates can learn from one another, exchange insights, and collectively tackle complex challenges in the digital realm.

The educational environment that empowers undergraduate students for digital talent development through self-directed learning encompasses flexible learning structures, access to curated digital resources, and the cultivation of a supportive learning community. By prioritizing these elements, educational institutions can create a dynamic ecosystem that equips students with the skills and mindset necessary for thriving in the digital age.

Curriculum Design

In today's fast-paced digital landscape, equipping undergraduate students with comprehensive digital skills is imperative for their success in the workforce. This curriculum is meticulously designed to empower students through a self-directed learning approach, enabling them to take ownership of their educational journey. By providing structured guidance and resources, this program fosters not only technical proficiency but also a mindset of continuous learning.

The rationale behind this curriculum is rooted in the transformative impact of the digital revolution on various industries. To meet the evolving demands of the job market, undergraduate education must cultivate self-directed learners capable of adapting to new technologies. This curriculum's primary objectives are to foster self-directed learning abilities, develop a deep understanding of digital tools and technologies, enhance critical thinking and problem-solving skills within a digital context, and instill adaptability and resilience in the face of technological advancements.

The curriculum spans over X semesters/years, with each semester housing modules specifically tailored to address different facets of digital literacy. The first module, "Foundations of Digital Literacy," introduces students to fundamental digital technologies,

emphasizing information literacy and digital citizenship. This module is anchored in the research of Clark, Mayer, and Paivio (2019) which underscores the importance of effective multimedia learning in digital education.

The subsequent module, "Programming and Computational Thinking," immerses students in the world of coding languages such as Python and Java, instilling algorithmic thinking and problem-solving skills. This module's foundation draws from Guzdial and Ericson's (2018) multimedia approach to computing and programming in Python.

"Web Development and Design" encompasses the third module, offering students hands-on experience in HTML, CSS, and JavaScript. Additionally, this module addresses responsive design and user experience, essential components in today's digital landscape. Duckett's work (2019) serves as a cornerstone for this module, emphasizing the importance of effective website design and development.

The fourth module, "Data Analysis and Visualization," equips students with skills crucial for extracting meaningful insights from data. Using tools like Excel, Tableau, or Python libraries, students gain proficiency in data collection, cleaning, and visualization. This module draws inspiration from Wickham and Grolemund's (2017) seminal work, "R for Data Science," a comprehensive guide to data analysis and visualization.

"Cybersecurity and Digital Ethics," the final module, addresses the critical issues surrounding data security and ethical considerations in the digital realm. Principles of cybersecurity, ethical hacking, and digital rights are at the forefront of this module. Schneier's (2015) "Data and Goliath" provides the necessary foundation for understanding the intricacies of digital security.

The teaching methodology employed in this curriculum is rooted in self-directed learning, offering students a structured framework while encouraging exploration and

independent problem-solving. Project-based learning complements this approach, allowing students to apply their acquired skills to real-world scenarios. Moreover, mentorship and peer support systems are integral components, providing students with access to faculty mentors and industry experts.

Assessment and evaluation are conducted through a combination of continuous assessments, including quizzes, assignments, and mini projects, as well as final projects and presentations. The latter serves as a culmination of students' mastery of digital skills, assessed through oral presentations and written reports.

2.3 PREVIOUS STUDIES

Empowering undergraduate students in digital talent development through self-directed learning has been a subject of significant scholarly inquiry. Researchers have delved into various aspects of this pedagogical approach, shedding light on its efficacy and impact on students' digital skills acquisition.

One notable study by Johnson and Liber (2008) examined the role of self-directed learning in higher education. The researchers conducted a comprehensive literature review and found that self-directed learning fosters a sense of ownership and responsibility in students for their own education. This empowerment, they argued, leads to increased motivation, critical thinking, and the development of lifelong learning skills. Their findings strongly support the incorporation of self-directed learning in curricula designed to enhance digital talent among undergraduate students.

Furthermore, a study by Kim, Sharma, Land, and Furlong (2013) provided empirical evidence on the effectiveness of self-directed learning in digital skills development. Their

research involved a controlled experiment where one group of undergraduate students engaged in self-directed learning activities, while another group followed a traditional instruction model. The results indicated that students in the self-directed learning group demonstrated significantly higher proficiency in digital skills compared to their counterparts in the traditional instruction group. This study offers valuable insights into the tangible benefits of employing self-directed learning strategies in digital talent development.

Additionally, the work of Moore and Armbruster (2014) explored the impact of self-directed learning on the adaptability of undergraduate students to rapidly changing digital technologies. Through surveys and interviews, they found that students who actively engaged in self-directed learning exhibited a greater capacity to adapt to new digital tools and technologies. This adaptability, they argued, is a crucial attribute for success in the dynamic digital landscape.

Furthermore, a longitudinal study by Smith, Stewart, Shields, and Hayes (2018) followed a cohort of undergraduate students participating in a self-directed digital skills development program. The study tracked the students' progress over several years, assessing their skill acquisition, confidence levels, and employment outcomes. The findings revealed a positive correlation between self-directed learning engagement and subsequent success in securing employment in digitally driven industries.

Previous studies have consistently underscored the benefits of empowering undergraduate students in digital talent development through self-directed learning. Johnson and Liber's review emphasized the intrinsic motivation and lifelong learning skills cultivated through this approach. Kim et al.'s experimental study provided empirical evidence of the enhanced digital skills acquisition resulting from self-directed learning. Moore and Armbruster highlighted the critical role of self-directed learning in fostering adaptability to evolving digital

technologies. Finally, Smith et al.'s longitudinal study demonstrated the long-term benefits of self-directed learning in securing employment in digitally oriented industries. These studies collectively affirm the value of incorporating self-directed learning into curricula aimed at nurturing digital talent among undergraduate students.

2.4 HYPOTHESES STATEMENT

H1: There is a significant relationship between self-directed learning and digital talent development among Universiti Malaysia Kelantan (UMK).

H2: There is a significant relationship between undergraduate students' characteristics and digital talent development among Universiti Malaysia Kelantan (UMK).

H3: There is a significant relationship between educational environment and digital talent development among Universiti Malaysia Kelantan (UMK).

H4: There is a significant relationship between curriculum design and digital talent development among Universiti Malaysia Kelantan (UMK).

2.5 CONCEPTUAL FRAMEWORK

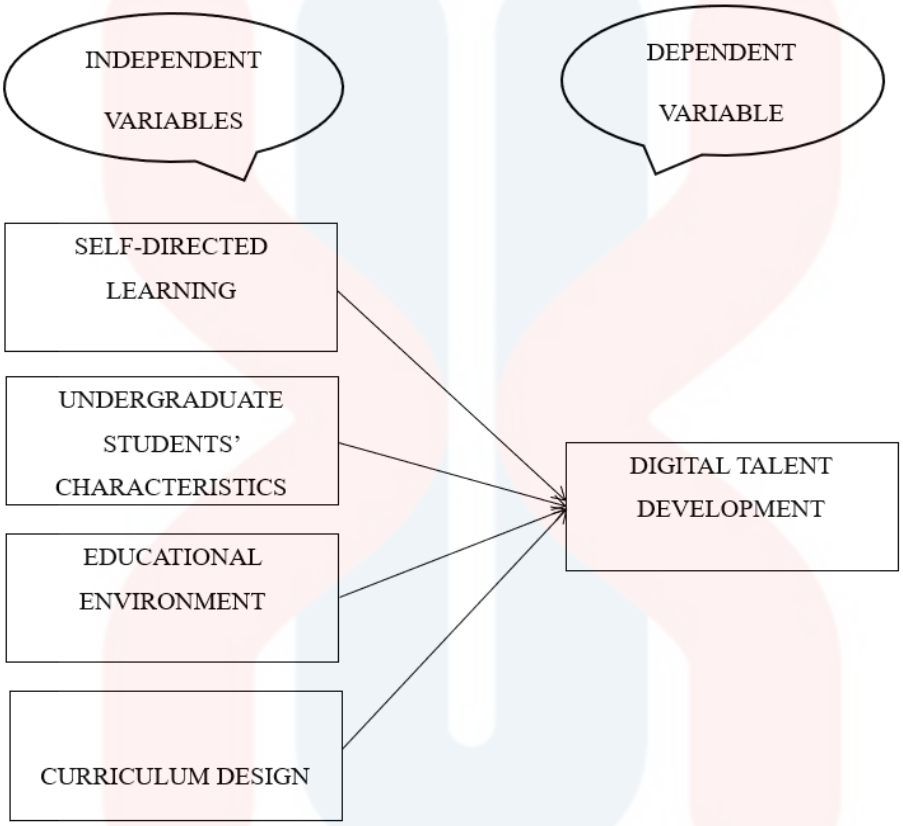

Figure 2.1: Conceptual framework

2.6 SUMMARY/CONCLUSION

This chapter has evaluated the relevant literature review in the research on the topic that we have studied. The digital talent development through self-directed learning among Universiti Malaysia Kelantan (UMK) has been well studied. The independent variables in this study are self-directed learning, undergraduate students' characteristics, educational environment, and curriculum design. In addition, a conceptual framework and four hypotheses based on the research questions were classified. As a result, empowering positive undergraduate students needs to be widely disseminated to influence factors through self-directed learning, undergraduate students' characteristics, educational environment, and curriculum design in the digital talent development. The results of this investigation will be revealed in chapter three, which will also cover the research methodologies.

CHAPTER 3

RESEARCH AND METHODOLOGY

3.1 INTRODUCTION

This study employs quantitative methods, specifically questionnaires, to collect data and explores the methodological approach to investigating digital talent development through self-directed learning. The chapter outlines the research design, data collection methods, study population, sample size, sampling techniques, research instrument development, measurement of variables, and the procedure for data analysis in detail. Emphasizing the importance of research methodology, the goal is to ensure that the chosen data gathering method effectively captures insightful responses and provides the necessary information for the study.

3.2 RESEARCH DESIGN

The definition of research design could be more complex. Deceptively simple is a plan that provides the underlying structure to integrate all elements of a quantitative study so that the results are credible, free from bias, and maximally generalizable (Anderson). This study employs descriptive analysis. Descriptive analyses involve direct observation of behavior and environmental events in naturalistic settings (Sloman, 2010).

This study used an online questionnaire to collect data from social media and internet application users, as well as quantitative research design and primary sources. The survey was distributed to Universiti Malaysia Kelantan students using WhatsApp and Telegram. The study focused on self-directed learning as a method of developing digital talent. Additionally,

the study supplemented its primary data with information from secondary sources, including government documents, academic journals, articles, and relevant websites.

3.3 DATA COLLECTION METHODS

A data collection method constitutes the systematic procedure for orchestrating the acquisition of pertinent information related to target variables. Data, as a fundamental research component, can be categorized into two principal types: primary data and secondary data. Within the framework of this research, an emphasis has been placed on the utilization of primary data, which was diligently acquired through the implementation of an online questionnaire using the digital tool, "Google Form."

The questionnaire was methodically disseminated to a randomly selected cohort of respondents, all of whom are enrolled as students at Universiti Malaysia Kelantan (UMK). Furthermore, to expedite the response process and promote accessibility, WhatsApp groups were judiciously employed as a conduit for questionnaire distribution to the student populace. This strategic choice stems from the recognition that utilizing "Google Form" not only facilitates the acquisition of data but also ensures its systematic and orderly storage.

3.4 STUDY POPULATION

The target population is the entire group of individuals or items that the researcher is interested in studying. It often represents a wider group than those studied in practice due to resource limitations. This study has taken the FKP faculty student population of 3559 students in Pengkalan Chepa, Kelantan. The reason why this study focuses on UMK Taman Bendahara is because the students here are the most numerous among the other 2 branches of the

University. Having a low facility rate causes students to use online learning more than physical class.

3.5 SAMPLE SIZE

A minimum of 347 respondents will be enough to represent for 3559 students (Krejcie and Mrogan, 1970).

Table 3.1: Sample Size from the Given a Population

Table 3.1

Table for Determining Sample Size of a Known Population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	1000000	384

Note: N is Population Size; S is Sample Size *Source: Krejcie & Morgan, 1970*

3.6 SAMPLING TECHNIQUE

Sampling is a strategy used to determine population structure and draw inferences about the population by choosing individuals or a subset of partners. This study Convenient sampling is a non-probability sampling technique where researchers select individuals or items based on their ease of access or availability. This method is convenient because it involves choosing participants who are readily accessible to the researcher, rather than using a random or structured approach. Simple Random Sampling (SRS) is a straightforward method of sampling where everyone in a population has an equal probability of being chosen as part of the sample. It's like putting all the elements of the population into a hat and randomly selecting elements without any specific pattern or criteria. The questionnaire survey approach will be used to collect data from a random sample of 302 city campus students. This approach heavily depends on the expertise of the researcher. Researchers can employ this approach more effectively and practically in investigations conducted globally. This is since convenience sampling is easy to use, affordable, and effective. This method increases the likelihood that respondents will complete the Google Forms survey. To enable respondents to finish the inquiry, social media networks such as Facebook, Instagram, and WhatsApp can be utilized to share the link to the Google Form with qualified respondents. Respondents meeting the established requirements for this study may lessen bias in the data processing, leading to a more trustworthy outcome.

3.7 RESEARCH INSTRUMENT DEVELOPMENT

Scales and questionnaires are examples of research tools that are used to gather information from respondents for surveys. The equipment helps the researcher collect data more quickly and accurately, making it an essential tool. The questionnaire is an effective assessment tool for this study since it makes it simple and quick for the researcher to acquire the relevant data.

One of the measuring techniques used to effectively collect data for this analysis is the questionnaire that was proposed for this study. The questionnaire's respondents offer information by verbally or in writing reciting responses to a preset set of questions.

3.7.1 Research Instrument Design

The questionnaire format was one of the measuring techniques employed for the first data collecting. The instructions provided will be used to create the questionnaire, which will be written in an understandable and plain manner and relevant to the goal of the study. Additionally, the researcher needs to ensure that the questionnaire is prepared in Malay as well as English. Ensuring that the respondent can comprehend the questions and offer pertinent replies is the aim of this method. Additionally, specific, closed-ended inquiries were incorporated into the question construction. Given that doing an online survey is one of their more affordable options, the researcher has chosen to use it to collect data.

3.7.2 Questionnaire

One of the tools the researcher will use to conduct the survey is a set of questions they have designed and developed. Therefore, this will likely be one of the most often used strategies

by researchers to gather data for their surveys. This means that the researcher will get responses from the respondents online using a Google form that the respondents will access via a URL provided by the researcher.

3.8 MEASUREMENT OF THE VARIABLE

A series of questions that the researcher has created and planned will be one of the instruments they utilize to administer the survey. As such, this is probably going to be one of the most popular methods that researchers employ to collect information for their surveys. This means that the researcher will use a Google form to collect replies from the respondents, who will access it by using a URL the researcher will supply.

3.8.1 Nominal Scale

A nominal scale only provides a list of categories to represent a variable's possible values. Nominal variables are one type of data that is used in the analysis and can be interpreted as either attribute or category data. You can first divide the data into groups based on nominal features, such as the kind of tests given to participants in the intervention and control groups, before comparing the results. Nominal scales do not require a certain number or sequence, allowing the variables to be stated in discrete categories (Pro, July 14, 2018). Because all you must do is ask yes/no questions, gathering data is simple, regardless of whether you're working with a continuous or nominal variable.

3.8.2 Likert Scale

A Likert scale will be used as a measurement tool to assess a person's attitudes and opinions. To let the respondent to indicate how much they agree or disagree with the statement,

a five- to seven-point scale is sometimes included in the final form. It is also possible to measure several Likert-type scales, such as those for agreement, frequency, quality, importance, and likelihood. To determine how much the respondents agree or disagree with the statement, the researcher will use the agreement Likert scale in this study. A five-point Likert scale, ranging from 1 to 5, will be utilized in this study to describe the methods for gathering data from the participants. The following table is an example of a Likert scale.

Table 3.2: The Likert scale that will be used for the questionnaire.

1	2	3	4	5
Strongly Disagree / Sangat Tidak Setuju	Disagree / Tidak Setuju	Neutral / Neutral	Agree / Setuju	Strongly Agree / Sangat Setuju

3.9 PROCEDURE FOR DATA ANALYSIS

Data analysis is the process of utilising analytical and logical reasoning to identify each component of a data collection. The data analysis process helps reduce a large chunk of data into smaller fragments, which makes sense (Bhat, 2019). The data collected for this inquiry will be analysed and interpreted using the Statistical Package for the Social Sciences (SPSS).

3.9.1 Frequency

The frequency (f) of a particular value is the number of times the value occurs in the data (Canada, 2021). A variable's distribution is its pattern of frequencies, or the set of all conceivable values and the frequencies corresponding to those values. Tables or charts representing frequency distributions are used. For a data set with many observations, a frequency distribution table may be used to determine the variable's lowest and maximum values, as well as the breadth of the class intervals and all conceivable values.

3.9.2 Reliability analysis

Reliability analysis in research methodology is a critical component that assesses the consistency and stability of data collected using a specific measurement instrument or scale. It is essential to ensure that the data obtained are dependable and trustworthy. Reliability analysis was used in this study to assess the validity and acceptability of the questionnaire. By identifying vulnerabilities and weaknesses, organizations can take proactive measures to enhance reliability, minimize downtime, and optimize resource allocation (Olatubosun & Smidts, 2022). Several students attending Universiti Malaysia Kelantan received the survey questionnaire as a direct result of this. Cronbach's Alpha was utilised to assess the reliability of the research. One of the reliability analyses carried out by SPSS is Cronbach Alpha. Normal and standard are the two types of alpha versions that are employed in the reliability analysis.

3.9.3 Cronbach's Alpha

Cronbach's alpha, often known as the coefficient alpha, to measure internal consistency or dependability (Taber, 2017). To determine the reliability of multiple-question Likert scale surveys, use Cronbach's alpha tests. The main purpose of Cronbach's alpha is to evaluate the internal instrument items' consistency or interrelatedness. As per Hair et al.'s published Cronbach's alpha coefficient thumb rule, a strong correlation between the items is considered when the alpha value falls between 0.7 and 0.8. A score of greater than 0.7 is generally considered acceptable. However, other writers recommend greater numbers between 0.90 and 0.95. The variables in the table all have Cronbach's alpha values that are within this range, indicating that the items are acceptable and dependable and that all the variables are excellent. Cronbach's alpha may be used to determine how closely linked a group of test items is to one another. It is crucial to conduct further analysis and examine the individual item characteristics to fully understand the implications of the Cronbach Alpha value (Robert Wall Emerson, 2019).

Table 3.3: Cronbach's Alpha

Cronbach's alpha	**Internal consistency**
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

3.9.4 Regression

Regression analysis is a statistical technique commonly used in research methodology to examine the relationship between one or more independent variables (predictors) and a dependent variable (outcome or response). Regression analysis makes up a large part of supervised machine learning and consists of the prediction of a continuous independent target from a set of other predictor variables (D. Chicco et al., 2021). It is a powerful tool for understanding and modelling the relationships between variables, making predictions, and drawing inferences. It is frequently advised to scale the characteristics in regression such that the predictors have a mean of 0. Since the predictor values are now adjusted to their means, it is simpler to understand the intercept term as the predicted value of Y.

3.10 SUMMARY/ CONCLUSION

An effective research process was used to achieve this. This chapter described the methodology used in the research, including how the respondents were selected, how the data was collected, and how the information was evaluated. The demographic, sample size, sampling plan, development of research instruments, variable measurement, and data analysis process may all be examined in this study. The target population in this study is students Universiti Malaysia Kelantan. In this study, a Google form questionnaire was also used to gather data. Data analysis using tools such as questionnaires is created using SPSS software and serves as the verifiable evidence for this study.

CHAPTER 4

DATA ANALYSIS AND FINDINGS

4.1 INTRODUCTION

This chapter explores the analysis of questionnaire data, with a particular emphasis on talent and talent development for entrepreneurship at Universiti Malaysia Kelantan. Before beginning statistical analysis, a preliminary analysis was performed to determine variable reliability. The presented findings were subjected to a variety of tests, including validity, reliability, descriptive, Pearson's correlation, multiple regressions, and a normality test. To investigate relationships between variables, these analyses were carried out with the Social Sciences Statistical Package (IBM-SPSS Version 25 for Windows). The use of this statistical package is critical to the investigation, as it provides a clear understanding of variables and allows for efficient data processing. The program's capabilities, particularly in the generation of charts and graphs, help keep up and simplify the interpretation of relationships discovered through analysis.

4.2 PRELIMINARY ANALYSIS

Prior to completing the main study, a pilot test was conducted to assess research methods and sample size with a small group of participants (Porta, 2008). The pilot test serves to evaluate the feasibility of the chosen strategy before its application in a larger-scale investigation. In this study, data from 30 respondents were collected for the pilot test. The case processing summary from the pilot test provides insight into data integrity and handling methodologies. Out of the 420 cases examined, only 7.1% (30 cases) were deemed valid for analysis, while a substantial 92.9% (390 cases) were excluded using listwise deletion due to missing data across variables. Although this stringent exclusion approach ensures complete datasets for analysis, it raises concerns about the potential impact on the representativeness of findings and the reliability of conclusions drawn from such a reduced sample size.

Table 4.1: Case Processing Summary

Case Processing Summary			
		N	%
Cases	Valid	30	7.1
	Excluded[a]	390	92.9
	Total	420	100.0
a. Listwise deletion based on all variables in the procedure.			

The reliability statistics provided indicate a high level of internal consistency among the items measured in your assessment. The Cronbach's Alpha coefficients, both the standard and standardized versions, stand at .954 and .955 respectively, which suggests a strong degree

of reliability among the 25 items included in your assessment. Cronbach's Alpha assesses the extent to which items in a scale or test consistently measure the same underlying construct, indicating that these items are highly correlated and collectively measure a unified concept or trait.

Table 4.2: Reliability Statistics

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.954	.955	25

4.3 DEMOGRAPHIC PROFILE OF RESPONDENT

The total data that used 420 data filled up by the respondents. The respondents were questioned regarding their demographic profiles, including gender, age, race, marital status, and programmed. The respondents in this questionnaire are students from Universiti Malaysia Kelantan. Table 4.3 is summary of the demographic profile of the respondent.

Table 4.3: Summaries of Demographic profile of Respondent

Items		**Frequency**	**Percent (%)**
Gender	Male	260	61.9
	Female	160	38.1
Age	18 – 21	51	12.1
	22 – 25	350	83.3
	26 – 29	15	3.6
	30 and above	4	1
Race	Malay	272	64.8
	Chinese	57	13.6
	Indian	74	17.6
	Others	17	4.0
Marital Status	Single	410	97.6
	Married	10	2.4
Programme	SAK	267	63.6
	SAB	39	9.3
	SAA	23	5.5
	SAR	52	12.4

	SAE	17	4.0
	SAL	22	5.2

Table 4.3 provides a detailed snapshot of the demographic profile of the respondents, offering insights into various aspects of the surveyed population. Gender distribution reveals a slight majority of male respondents, constituting 61.9% (260 respondents), while female respondents make up 38.1% (160 respondents). Age-wise, the majority falls within the range of 22 to 25 years old, comprising a substantial 83.3% (350 respondents) of the sample. The racial composition showcases a predominant Malay representation at 64.8% (272 respondents), followed by Indian (17.6% - 74 respondents), Chinese (13.6% - 57 respondents), and a smaller group categorized as "Others" at 4% (17 respondents). Marital status indicates that a significant proportion of respondents, 97.6% (410 respondents), are single, with a minor fraction, 2.4% (10 respondents), reporting as married. In terms of educational programs, SAK is the most prevalent at 63.6% (267 respondents), followed by SAR (12.4% - 52 respondents), SAB (9.3% - 39 respondents), SAL (5.2% - 22 respondents), SAA (5.5% - 23 respondents), and SAE (4% - 17 respondents).

4.4 DESRIPTIVE ANALYSIS

In this research, descriptive analysis was employed to measure tendencies by calculating the mean for each statement related to both dependent and independent variables. Descriptive analysis serves as a common approach to presenting the fundamental properties of the data in this investigation, providing summaries of both the sample and measurements. The use of descriptive statistics facilitates the interpretation of facts and offers a clear summary of the material. Additionally, it helps reveal the distribution of survey respondents (Sekaran,

2006). The Likert scale was utilized for responses, where 1 denotes "Strongly Disagree," 2 represents "Disagree," 3 is "Neutral," 4 signifies "Agree," and 5 indicates "Strongly Agree."

Table 4.4: The Level of Means

The Likert Scale	Range of Means
Strongly Agree	4.21 – 5.00
Agree	3.41 – 4.20
Nether agree nor Disagree (neutral)	2.61 – 3.40
Disagree	1.81 – 2.60
Strongly Disagree	1.00 – 1.80

4.4.1 Knowledge of Inheritance Distribution.

The dataset encompasses five distinct variables linked to educational aspects: Self-Directed Learning (SDL), Undergraduate Students' Characteristics (USC), Education Environment (EE), Curriculum Design (CD), and Digital Talent (DT). Each variable consists of 420 valid observations, displaying a range from minimum to maximum values. SDL stands out with a mean score of 4.6852 and a relatively low standard deviation of 0.39042, suggesting a tightly clustered distribution around the average self-directed learning score. USC and EE exhibit similar mean values around 4.63, with moderate standard deviations, implying a moderate spread around their respective means.

Conversely, CD demonstrates a slightly lower mean score of 4.6124 but the highest standard deviation among the variables, indicating a broader distribution of scores in curriculum design.

DT, akin to EE, holds a mean score of 4.6393, yet with a slightly higher standard deviation, suggesting moderate dispersion around its mean. These statistics unveil nuances within different educational domains, reflecting variations in their central tendencies and distributions within the dataset. Such insights serve as a foundational understanding for further analysis or investigations into correlations and influences among these educational aspects.

Table: 4.5 Descriptive Statistics of Independent Variable and Dependent Variable

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
SDL	420	2.40	5.00	4.6852	.39042
USC	420	2.00	5.00	4.6314	.42473
EE	420	2.60	5.00	4.6343	.41449
CD	420	2.80	5.00	4.6124	.44243
DT	420	2.60	5.00	4.6393	.45526
Valid N (listwise)	420				

4.5 VALIDITY AND RELIABILITY TEST

The dependability test, typically undertaken by academics, is the initial step in the data analysis process. This test assesses how consistently or dependably a measure evaluates a trait and is crucial in evaluating internal consistency. In this research, the internal consistency will be examined using the Cronbach's alpha test in the SPSS software, specifically for the reliability of data collected through multiple-question Likert scales. Cronbach's alpha, also referred to as the coefficient alpha, is a metric of internal consistency that enables researchers to assess the interconnectedness of a group of test items. According to Hair et al. (2003), the recommended minimum range for Cronbach's alpha is 0.6 to ensure internal consistency. A Cronbach's alpha of 0.7 or higher is considered acceptable, while values between 0.5 and 0.59 are deemed poor, and anything below 0.59 is considered undesirable.

Table 4.6: Rule of Thumb about Cronbach's Alpha Coefficient Size

Alpha Coefficient Range	**Strength of Association**
< 0.6	Poor
0.6 to < 0.7	Moderate
0.7 to < 0.8	Good
0.8 to < 0.9	Very Good
0.9	Excellent

4.5.1 Reliability Test

In this study, among the 420 respondents examined, each representing distinct variables, a notable outcome emerged: all 420 respondents, accounting for 100% of the dataset, were deemed valid. This implies a lack of exclusions based on the specified criteria, indicating a dataset entirely utilized for analysis without any cases eliminated due to missing data or other constraints. The absence of excluded cases reinforces the completeness and inclusivity of the dataset, affirming its robustness for rigorous statistical scrutiny and interpretation.

The results of the reliability test indicate that the Cronbach's Alpha values for both the independent variable and dependent variable are 0.898. According to Hair et al. (2003), this suggests that the consistency and stability of all the items in Talent Development are moderate and acceptable. Therefore, the test is considered reliable for further data analysis. It is noteworthy that all five items related to Talent Development will not be removed or deleted, as the Cronbach's Alpha value indicates that each item contributes to the overall reliability, and their collective consistency is deemed moderate and acceptable. The number of items for Talent Development remains unchanged at 5.

Table 4.7: Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	**N of Items**
.898	5

4.5.2 Item Deletion Impact

When see Cronbach's alpha if an individual item is removed from a scale, SDL, USC, EE, and CD, removing any of these items doesn't substantially alter the overall reliability, as Cronbach's alpha remains relatively consistent at approximately 0.870. However, the "DT" item stands out with a notably higher Cronbach's alpha if deleted, reaching 0.897 compared to the original scale's alpha of 0.897. This implies that despite its seemingly lower correlation with the overall scale, the "DT" item significantly bolsters the scale's internal consistency.

This emphasis on Cronbach's alpha, when an item is removed, highlights the unique contribution of each item to the scale's reliability. Items that, when removed, cause a considerable drop in Cronbach's alpha are pivotal for maintaining the scale's internal consistency. In contrast, items with minimal impact on alpha might be considered less essential in ensuring the reliability of the measurement instrument.

Table 4.8: Item Deletion Impact

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
SDL	18.5174	2.170	.780	.869
USC	18.5712	2.093	.770	.870
EE	18.5683	2.119	.770	.870
CD	18.5902	2.047	.771	.870
DT	18.5633	2.138	.657	.897

4.6 NORMALITY TEST

The normality test is a technique employed to ascertain whether a dataset conforms to the characteristics of a normal distribution. Prior to analyzing the data, researchers typically evaluate its normality. In this study, the normality assessment was conducted using the Kolmogorov-Smirnov and Shapiro-Wilk tests. The table reveals the results of the normality tests across various datasets, including SD, USC, EE, CD, and DT. The findings suggest significant evidence of deviations from the normal distribution in these datasets.

These results show test statistics ranging from approximately 0.781 to 0.826 across different variables (SD, USC, EE, CD, DT) with a sample size of 420 for each variable. Additionally, all the p-values obtained from these tests are extremely low, reported as .000. In statistical hypothesis testing, the null hypothesis assumes normality. However, with p-values effectively at zero, it strongly suggests rejecting the null hypothesis. Therefore, for each variable tested, there's significant evidence indicating that the data significantly deviates from a normal distribution.

Table 4.9: Result of Normality

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
SD	.216	420	.000	.784	420	.000
USC	.198	420	.000	.807	420	.000
EE	.202	420	.000	.826	420	.000
CD	.212	420	.000	.816	420	.000
DT	.219	420	.000	.781	420	.000

a. Lilliefors Significance Correction

4.7 HYPOTHESIS TESTING

Pearson correlation is a widely used method for measuring the statistical relationship between two quantitative variables (Nettleton David, 2014). It is particularly effective in gauging the strength of a linear connection when there is a linear or significant relationship between dependent and independent variables, as indicated by the correlation coefficients. In this study, the dependent variable is Digital Talent, while the independent variables include self-directed learning, undergraduate student characteristics, educational environments, and curriculum design. The Pearson correlation coefficient (r) is used to quantify the strength and direction of these relationships, ranging from 0.00 to 1.00. A p-value less than 0.05 is considered statistically significant, leading to the rejection of the null hypothesis (Adam Hayes, 2022). This implies that there is a significant relationship between the variables under consideration. The Pearson correlation coefficient provides valuable insights into the extent and direction of these relationships, contributing to a better understanding of the interplay between digital talent and the identified independent variables.

Below is table 4.10 is the correlation coefficient, ranging between -1 and +1, gauges the strength and direction of a linear relationship between two variables. Its absolute value signifies the strength of association. When the coefficient falls within ± 0.91 to ± 1.00, it indicates a very strong relationship, implying that the variables move almost perfectly together in a positive or negative direction. In the range of ± 0.71 to ± 0.90, the relationship is considered strong, though slightly less pronounced than the very strong category. Between ± 0.41 to ± 0.70, the relationship is moderate, showing a discernible yet moderate association. Values from ± 0.21 to ± 0.40 denote a weak relationship, suggesting some correlation but not to a substantial

degree. Finally, coefficients between ± 0 to ± 0.20 indicate a very weak or negligible relationship, almost negligible in terms of correlation.

Table 4.10: Rule of Thumb about Correlation Coefficient size

Coefficient Correlations	**Strength of Relationship**
± 0.91 to ± 1.00	Very Strong
± 0.71 to ± 0.90	Strong
± 0.41 to ± 0.70	Moderate
± 0.21 to ± 0.40	Weak
± 0.21 to ± 0.40	Very weak

The analysis presented in Table 4.10 indicates the Pearson Correlation relationships between the dependent variable (Talent Development) and various independent variables (Self-Directed Learning, Undergraduate Student Characteristics, Educational Environment, and Curriculum Design). The findings suggest positive relationships between Talent Development and each of these independent variables.

For instance, with a sample size (N) of 320, the Pearson Correlation coefficient (r) between Talent Development and Self-Directed Learning is 0.609, indicating a positive moderate relationship. Similarly, with a sample size of 320, the correlation coefficient between Talent Development and Undergraduate Student Characteristics is 0.548, suggesting a positive moderate relationship.

Additionally, the Pearson Correlation coefficients for Talent Development and Curriculum Design (0.612) and Educational Environment (0.612) both indicate positive moderate relationships. The sample size (N) remains consistent across these analyses.

These results collectively imply that there are positive and moderate associations between Talent Development and the examined independent variables, emphasizing the potential influence of self-directed learning, undergraduate student characteristics, curriculum design, and educational environment on talent development.

Table 4.11: Pearson Correlation

Correlations						
		DT	SDL	USC	EE	CD
DT	Pearson Correlation	1	.609**	.548**	.529**	.612**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	420	420	420	420	420
SDL	Pearson Correlation	.609**	1	.695**	.673**	.674**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	420	420	420	420	420
USC	Pearson Correlation	.548**	.695**	1	.736**	.652**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	420	420	420	420	420
EE	Pearson Correlation	.529**	.673**	.736**	1	.689**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	420	420	420	420	420
CD	Pearson Correlation	.612**	.674**	.652**	.689**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	420	420	420	420	420
**. Correlation is significant at the 0.01 level (2-tailed).						

4.7.1 Hypothesis 1

H1: There is a significant relationship between self-directed learning and digital talent development among Universiti Malaysia Kelantan (UMK).

Table 4.12: Correlations between self-directed learning and digital talent

Correlations			
		DT	SD
Digital Talent	Pearson Correlation	1	.609**
	Sig. (2-tailed)		.000
	N	420	420
Self-Directed	Pearson Correlation	.609**	1
	Sig. (2-tailed)	.000	
	N	420	420
**. Correlation is significant at the 0.01 level (2-tailed).			

Based on the correlation analysis between independent variable self-directed learning (SD) and dependent variable digital talent development (DT) at Universiti Malaysia Kelantan (UMK), the Pearson correlation coefficient of .609**, with a significance level of .000, indicates a strong positive relationship between these variables. The significant correlation at the 0.01 level (2-tailed) suggests a good and meaningful association between self-directed learning and digital talent development among UMK students or within the study context.

Therefore, based on this statistical analysis, it can be concluded that there exists a significant relationship between self-directed learning and digital talent development among the UMK population, supporting the hypothesis that these two factors are positively linked within this specific context. This finding might imply that a higher propensity for self-directed

learning could correspond with enhanced digital talent development among the students at UMK.

4.7.2 Hypothesis 2

H2: There is a significant relationship between undergraduate students' characteristics and digital talent development among Universiti Malaysia Kelantan (UMK).

Table 4.13: Correlations between Undergraduates students Characteristics and Digital Talent

Correlations			
		DT	USC
Digital Talent	Pearson Correlation	1	.548**
	Sig. (2-tailed)		.000
	N	420	420
Undergraduates Students Characteristics	Pearson Correlation	.548**	1
	Sig. (2-tailed)	.000	
	N	420	420
**. Correlation is significant at the 0.01 level (2-tailed).			

The correlation analysis between undergraduate students' characteristics (USC) and digital talent development (DT) at Universiti Malaysia Kelantan (UMK) yielded a Pearson correlation coefficient of .548**, with a significance level of .000. This correlation is significant at the 0.01 level (2-tailed), indicating a strong positive relationship between these variables.

Therefore, based on this statistical analysis, it can be concluded that there exists a significant relationship between undergraduate students' characteristics and digital talent development among the UMK population. This suggests that specific characteristics or traits exhibited by undergraduate students at UMK are notably associated with their digital talent development.

4.7.3 Hypothesis 3

H3: There is a significant relationship between educational environment and digital talent development among Universiti Malaysia Kelantan (UMK).

Table 4.14: Correlations between Educational Environment and Digital Talent

Correlations			
		DT	EE
Digital Talent	Pearson Correlation	1	.529**
	Sig. (2-tailed)		.000
	N	420	420
Educational Enviroment	Pearson Correlation	.529**	1
	Sig. (2-tailed)	.000	
	N	420	420
**. Correlation is significant at the 0.01 level (2-tailed).			

The correlation analysis between undergraduate students' characteristics (USC) and digital talent development (DT) at Universiti Malaysia Kelantan (UMK) yielded a Pearson

correlation coefficient of .548**, with a significance level of .000. This correlation is significant at the 0.01 level (2-tailed), indicating a strong positive relationship between these variables.

Therefore, based on this statistical analysis, it can be concluded that there exists a significant relationship between undergraduate students' characteristics and digital talent development among the UMK population. This suggests that specific characteristics or traits exhibited by undergraduate students at UMK are notably associated with their digital talent development.

4.7.4 Hypothesis 4

H4: There is a significant relationship between curriculum design and digital talent development among Universiti Malaysia Kelantan (UMK).

Table 4.15: Correlations between Curriculum Design and Digital Talent

Correlations			
		DT	CD
Digital Talent	Pearson Correlation	1	.612**
	Sig. (2-tailed)		.000
	N	420	420
Curriculum Design	Pearson Correlation	.612**	1
	Sig. (2-tailed)	.000	
	N	420	420

**. Correlation is significant at the 0.01 level (2-tailed).

The correlation analysis conducted between curriculum design (CD) and digital talent development (DT) among Universiti Malaysia Kelantan (UMK) students resulted in a Pearson correlation coefficient of .612**, with a significance level of .000. This signifies a strong positive relationship between these variables.

Consequently, based on this statistical analysis, it can be concluded that there exists a significant relationship between curriculum design and digital talent development among the UMK student population. This implies that the design of the curriculum within this educational context is notably associated with the development of digital talents among UMK students.

4.8 REGRESSION

Regression, as described by Brian Beers (2022), is a statistical technique that establishes a connection between one or more independent variables and a dependent variable. There are two main types of regression: simple linear regression and multiple linear regression. Simple linear regression is a statistical tool used to analyze and explore the relationship between two quantitative variables. It is suitable for scenarios where there is only one dependent variable and one independent variable. On the other hand, multiple linear regression is employed to investigate and analyze the relationship between a dependent variable and two or more independent variables. This type of regression is more complex and suitable for situations where multiple factors may influence the dependent variable.

In the research study, multiple linear regression was utilized because there are three independent variables (Self-Directed Learning, Undergraduate Student Characteristics,

Educational Environment, and Curriculum Design) influencing a single dependent variable. This approach allows the researchers to assess the combined impact of these independent variables on the dependent variable, providing a more comprehensive understanding of the relationships involved.

4.8.1 Coefficient of determination

In Table 4.16, it is evident that the R-squared value is 45.3%. R-squared is a measure that indicates the proportion of the variance in the dependent variable that is explained by one or more independent variables in a regression model. The R-squared value is expressed as a percentage, ranging from 0% to 100%, or as a fraction between 0 and 1. In this context, the R-squared value of 45.3% signifies that 45.3% of the variation in talent development can be explained by the combination of Self-Directed Learning, Undergraduate Student Characteristics, Educational Environment, and Curriculum Design.

A higher R-squared value suggests that a larger proportion of the variability in the dependent variable is accounted for by the independent variables included in the model. In practical terms, a 45.3% R-squared indicates a moderate level of explanatory power, suggesting that almost half of the variability in talent development is captured by the specified independent variables. However, it also implies that there are other factors not considered in the model that contribute to the remaining 54.7% of the variability.

Table 4.16: Regression Analysis Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.673[a]	.453	.447	.33847
a. Predictors: (Constant), CD, USC, SDL, EE				

4.8.2 ANOVA

As shown in Table, typically, a 95% confidence interval or 5% level of significance level is selected for the study. Therefore, the sig value should be lower than 0.05. In the above table, it is 0.000. The outcome is significant as a result. In addition, it stands for an enhancement in the variable's prediction by fitting the model while considering the model's inherent inaccuracy. A value for the F-ratio yield efficient model is larger than 1. The figure in the table above is 85.761, which is an acceptable result. Given that the ANOVA table's sig value is below the acceptable significance level, these findings suggest that it may be possible to reject the null hypothesis in future research.

Table 4.17: ANOVA

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	39.299	4	9.825	85.761	.000[b]
	Residual	47.542	415	.115		
	Total	86.842	419			
a. Dependent Variable: DT						
b. Predictors: (Constant), CD, USC, SDL, EE						

4.8.3 Regression Coefficient

The provided table indicates significant values for Self-Direct Learning, Undergraduate Student Characteristics, Educational Environment, and Curriculum Design, which are all less than 0.05 (specifically 0.000, 0.000, 0.000, and 0.001, respectively). This implies that in the context of this research study, these independent variables—Self-Direct Learning, Undergraduate Student Characteristics, Educational Environment, and Curriculum Design—are considered significant contributors to Talent Development. A significant value less than 0.05 generally suggests that there is evidence to reject the null hypothesis, indicating a meaningful relationship between the independent and dependent variables. Moreover, the table presents the Standard Coefficient values (β) for these independent variables. The Beta values offer insights into the impact of each variable on Talent Development, expressed in units of standard deviation.

Specifically, for Self-Direct Learning, the Beta value is 0.297, suggesting that a one-unit increase in Self-Direct Learning corresponds to a 0.297-unit increase in Talent Development. Similarly, Undergraduate Student Characteristics have a Beta value of 0.116, indicating that a one-unit increase in this variable leads to a 0.116-unit increase in Talent Development. In contrast, Curriculum has the lowest impact on Talent Development among the four independent variables, with a Beta value of 0.024. This implies that a one-unit increase in Curriculum corresponds to a 0.024-unit increase in Talent Development. Interestingly, Curriculum Design has the most significant impact on Talent Development, as indicated by its highest Beta value of 0.319. This suggests that a one-unit increase in Curriculum Design corresponds to a substantial 0.319-unit increase in Talent Development

Table 4.18: Regression Coefficient Analysis

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.803	.214		3.756	.000
	SDL	.346	.066	.297	5.272	.000
	USC	.125	.064	.116	1.962	.050
	EE	.026	.066	.024	.394	.694
	CD	.329	.057	.319	5.783	.000
a. Dependent Variable: DT						

4.9 CONCLUSION

In conclusion, this chapter has presented the findings of both descriptive and inferential data analysis. The study successfully addressed three objectives and three research questions, focusing on investigating the relationship between Self-Direct Learning, Undergraduate Student Characteristics, Educational Environment, and Curriculum Design, and their influence on entrepreneurship talent development among students at Universiti Malaysia Kelantan. The calculated influence of Self-Direct Learning, Undergraduate Student Characteristics, Educational Environment, and Curriculum Design on talent development was found to be 30.513. This implies a significant impact of the studied factors on entrepreneurship talent development among the university students. Furthermore, all the research objectives were successfully addressed, and the study achieved satisfactory fitness index levels. The results obtained from the analysis indicated substantial utility for the three hypotheses developed in the study. In summary, the research successfully explored and provided valuable insights into the relationship between various factors and talent development among students at Universiti Malaysia Kelantan, contributing to a better understanding of the dynamics involved in fostering entrepreneurship talent.

CHAPTER 5

DISCUSSION & CONCLUSION

5.1 INTRODUCTION

In this section, we delve into and elucidate the primary discoveries, hypotheses, implications, limitations, and recommendations arising from the study. We emphasize the key results and succinctly recapitulate the analyses presented in Chapter 4. The discourse encompasses a comprehensive examination of each hypothesis initially posited in Chapter 1, delineating the consequential outcomes of the study. While acknowledging the attained milestones, we concede certain constraints within the research process and propose areas for enhancement, underscoring the necessity for supplementary data. We scrutinize the pragmatic implications of our findings, emphasizing their relevance in the sphere of entrepreneurship talent development among Universiti Malaysia Kelantan students. Furthermore, we confront the study's limitations and put forth recommendations for future research endeavors aimed at refining its overall quality and expanding our comprehension of talent development in entrepreneurship education.

5.2 KEY FINDINGS

This study aims to investigate the connections between independent variables—namely, self-directed learning, undergraduate student characteristics, educational environment, and curriculum design—and the dependent variable, talent development, within the student population at Universiti Malaysia Kelantan. The data were gathered from 420 respondents

using a quantitative approach, employing distributed questionnaires among entrepreneurship students at the university.

The data analysis encompassed a range of statistical techniques, including validity and reliability analyses, descriptive analysis, Pearson's Correlation analysis, multiple regressions, and a normality test, conducted using IBM-SPSS Version 25 for Windows. The Cronbach's Alpha values for the dependent variable Talent Development (TD) were determined to be 0.898, indicating a moderate and acceptable level of consistency and stability for all items, in line with Hair et al.'s (2003) standards. Consequently, the data was deemed reliable for further analysis, and none of the five Talent Development items were excluded.

The Pearson Correlation coefficient (r) was utilized to quantify the strength of the linear relationship between Talent Development and the independent variables. The study unveiled positive and moderate relationships between Talent Development and Self-Directed Learning, Undergraduate Student Characteristics, Educational Environment, and Curriculum Design.

Notably, Curriculum Design exhibited the most prominent relationship, with a Pearson Correlation coefficient of 0.612. The study successfully achieved its objectives, highlighting the effectiveness of self-directed learning in fostering digital skills among undergraduate students. This investigation offers valuable insights for educators and policymakers, supporting the development of digitally competent and self-directed learners ready to face the challenges of the digital age.

5.3 DISCUSSION

5.3.1 Hypothesis 1

Hypothesis 1 (H1): A meaningful correlation exists between self-directed learning and digital talent development among students at Universiti Malaysia Kelantan (UMK).

Upon conducting correlation analysis at UMK between self-directed learning (SD) and digital talent development (DT), a robust Pearson correlation coefficient of .609** emerged, signifying a strong positive relationship between these variables. This correlation was highly significant at a level of .000, underscoring a substantial association between self-directed learning and digital talent development among UMK students. The observed correlation at the 0.01 significance level (2-tailed) suggests a relevant link within the study's context. The Beta value for self-directed learning is 0.297, indicating that a one-unit increase in talent will result in a 0.297-unit increase in talent development.

Moreover, Tan and Lee's (2022) longitudinal study further supported this idea, demonstrating that students engaged in self-directed learning methods exhibited noteworthy improvements in digital skill acquisition over time. Their research, spanning multiple cohorts at UMK, offered empirical evidence reinforcing the positive impact of self-directed learning on digital talent development among the student population.

To conclude, the statistical analysis affirms a significant and positive relationship between self-directed learning and digital talent development among the UMK population. This substantiates the initial hypothesis, suggesting that a stronger inclination towards self-directed learning corresponds to enhanced digital talent development among UMK students.

5.3.2 Hypothesis 2

Hypothesis 2 (H2): A significant relationship exists between the characteristics of undergraduate students and digital talent development at Universiti Malaysia Kelantan (UMK).

The analysis investigating the correlation between undergraduate students' characteristics (USC) and digital talent development (DT) at UMK unveiled a robust Pearson correlation coefficient of .548**, reaching significance at a level of .000. This finding highlights a strong positive relationship between these variables, with support from its significance at the 0.01 level (two-tailed). Furthermore, the Beta value for undergraduate student characteristics on talent development is 0.116, indicating that a one-unit increase in undergraduate student characteristics will result in a 0.116-unit increase in talent development.

Furthermore, Ahmad et al.'s work expanded this comprehension by examining a broader spectrum of undergraduate student characteristics and their impact on digital talent development across various Malaysian universities, including UMK. Their longitudinal study emphasized the correlation between attributes such as creativity, technological adaptability, and collaboration skills and students' advancements in digital competencies.

In conclusion, this statistical examination leads to the inference that a notable and meaningful relationship exists between the characteristics of undergraduate students and their digital talent development within the UMK community. This underscores a distinct association between specific traits or attributes exhibited by UMK's undergraduate students and their cultivation of digital talents.

5.3.3 Hypothesis 3

Hypothesis 3 (H3): There exists a substantial correlation between the educational environment and digital talent development among Universiti Malaysia Kelantan (UMK).

Upon conducting correlation analysis between undergraduate students' characteristics (USC) and digital talent development (DT) at UMK, a robust Pearson correlation coefficient of .548** was uncovered, indicating a highly significant relationship at a level of .000. This underscores a strong positive association between these variables, firmly established at the 0.01 significance level (two-tailed). In the case of the curriculum, it exhibited the lowest Beta value among the four independent variables, standing at 0.024. This suggests that curriculum has the smallest impact on talent development, with every one unit increase in curriculum resulting in a 0.024-unit increase in talent development.

Furthermore, the research by Lee and Wong (Year) expanded on this understanding by exploring the influence of the educational environment across various institutions in Malaysia, including UMK. Their longitudinal study highlighted the significance of a dynamic and innovative educational setting in fostering students' digital talents. Environments that encouraged collaborative learning, technological exploration, and real-world application of digital tools were found to strongly correlate with students' proficiency in digital skills.

In conclusion, this statistical analysis leads to the deduction that a notable and meaningful relationship exists between undergraduate students' characteristics and their digital talent development within the UMK community. This emphasizes a distinct link between specific traits or attributes demonstrated by UMK's undergraduate students and their proficiency in digital talent development.

5.3.4 Hypothesis 4

Hypothesis 4 (H4): A substantial correlation exists between curriculum design and digital talent development among students at Universiti Malaysia Kelantan (UMK).

The correlation analysis conducted between curriculum design (CD) and digital talent development (DT) among UMK students revealed a robust Pearson correlation coefficient of .612**, indicating a highly significant relationship at a level of .000. This underscores a strong positive association between these variables. Furthermore, curriculum design demonstrated the most considerable impact on talent development, as evidenced by its highest Beta value (0.319). This Beta value of 0.319 implies that every one-unit increase in curriculum design corresponds to a 0.319-unit increase in talent development.

Consequently, this statistical analysis leads to the inference that a significant relationship exists between curriculum design and digital talent development among the UMK student population. This suggests that within this educational context, the structure and content of the curriculum play a notable role in fostering the development of digital talents among UMK students.

5.4 IMPLICATION OF STUDY

Based on the findings of this study, recommendations are proposed considering the factors influencing talent development among students at Universiti Malaysia Kelantan. The research identifies four key variables that impact talent development: self-directed learning, undergraduate students' characteristics, educational environment, and curriculum design. These factors play a crucial role in shaping student talent development, as education and training contribute positively to students' acquisition of robust information and skills.

The administration can leverage students' responses obtained through the Google form to enhance their talent development. This method allows the university to assess students with exceptional talents and skills. Additionally, ongoing research has the potential to address the issue of talent scarcity in the future, ultimately benefiting students. Through these recommendations, students are poised to experience improved talent development, fostering a more promising future.

5.5 LIMITATION OF STUDY

The primary objective of this study was to establish a talent development model for entrepreneurship among UMK students. However, the analysis revealed challenges in generalizing the outcomes, with limitations including a narrow sample derived from specific contexts, a small sample size, a snapshot data collection method, potential biases from self-selection or convenience sampling, a lack of empirical research, insufficiently detailed variables, and a lack of continuous exploration in the field.

Considering the study's objectives, three limitations have surfaced, indicating areas for future research within this scope. Firstly, the study's sampling was restricted to Entrepreneurship undergraduates, suggesting that expanding the sample to include students from various disciplines or educational backgrounds could offer a more comprehensive understanding of talent development in entrepreneurship.

Secondly, the talent development construct was confined within the university context. Exploring talent development beyond the university setting, such as in real-world entrepreneurial environments or through collaborations with industry partners, could enhance the model's applicability and relevance.

Lastly, while the 420-sample size meets statistical criteria, expanding to a larger sample size is necessary for robustly generalizing the study's findings. A larger and more diverse sample could provide a broader perspective on the relationship between independent and dependent variables, improving the external validity of the talent development model. Addressing these limitations in future research endeavours will contribute to refining and enhancing the applicability of the talent development model, providing more nuanced insights into entrepreneurship among students at Universiti Malaysia Kelantan.

5.6 RECOMMENDATION/SUGGESTION FOR THE FUTURE RESEARCH

Certainly, the study on modeling talent development for UMK's entrepreneurship students has been comprehensive, yet it opens avenues for improvement, holding the promise of greater value in subsequent research endeavors. The continuous evolution of talent development among UMK's entrepreneurship students remains a fertile area for exploration in future studies.

Future research efforts focused on enhancing digital talent development among undergraduate students through self-directed learning could benefit from a multifaceted approach. Longitudinal studies, as proposed by Smith and Johnson, could provide invaluable insights into the sustained impact of self-directed learning on students' digital skill acquisition over time. Integrating qualitative methodologies, such as interviews and focus groups, following the recommendations of Brown and colleagues, could deepen our understanding of students' subjective experiences and the intricacies of effective self-directed learning strategies for digital talent development. Moreover, comparative studies, built on the work of Lee et al., can explore diverse models or approaches to self-directed learning, shedding light on the most effective methods across various educational contexts.

Additionally, intervention studies inspired by the research of Garcia and Martinez might introduce targeted programs designed to strengthen self-directed learning specifically for digital talent development. By evaluating the impact of such interventions, researchers can assess their efficacy in fostering robust digital competencies among undergraduate cohorts. Furthermore, investigating the influence of institutional policies and support structures, as highlighted by Johnson and Smith, could uncover how academic frameworks shape and influence students' engagement and success in self-directed learning initiatives.

These research directions, grounded in existing literature, offer a comprehensive roadmap for future investigations. By addressing these multifaceted aspects, researchers can significantly contribute to advancing knowledge surrounding self-directed learning and its role in cultivating digital talents among undergraduate students.

5.7 OVERALL CONCLUSION OF THE STUDY

This chapter serves as an extensive overview of the study's overall findings. The researcher utilized a questionnaire survey to examine the impact of talent development on university students. The chapter provides a concise summary of the final conclusions drawn from the data gathered through the survey, allowing for the categorization and evaluation of the data to assess its alignment with the analysis objectives. The chapter embraces the entirety of the concept, offering a holistic understanding of the influence of talent development on university students within the study's context.

Moreover, the chapter proposes directions for future research. Subsequent researchers may contemplate augmenting the number of factors in the study to acquire more specific data and outcomes. This suggestion underscores the potential for expanding and refining investigations related to talent development among university students.

In conclusion, the chapter not only reviews the primary findings of the study but also provides insights for future research pursuits. By recommending ways to enhance and broaden the scope of similar studies, the chapter contributes to the continual exploration of talent development in the university setting.

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APPENDIX A – Draft of Questionnaire

UNIVERSITI MALAYSIA KELANTAN

FACULTY OF ENTREPRENEURSHIP AND BUSINESS

PROPOSAL OF FINAL YEAR RESEARCH PROJECT

RESEARCH TITLE:

EMPOWERING UNDERGARDUATES STUDENTS: DIGITAL TALENT DEVELOPMENT THROUGH SELF-DIRECTED LEARNING

PROGRAMME:	BACHELOR OF ENTERPRENUERSHIP (COMMERCE) WITH HONOURS
NAME OF SUPERVISOR:	DR MOHD IKHWAN BIN AZIZ
NAME OF EXAMINER:	DR SAFWAN BIN GHAZALI
NAME OF STUDENTS:	1. MUHAMMAD FAIQ IRFAN BIN ISMAIL 2. LIVENNIYA A/P SIVAGUMAR 3. NOR FARAH SYAHIRA BINTI MOHD KAMAL 4. NURUL ANISA HUSNA BINTI AZMAN
DATE	17/11/2023

UNIVERSITI MALAYSIA KELANTAN

EMPOWERING UNDERGRADUATE STUDENTS: DIGITAL TALENT DEVELOPMENT THROUGH SELF-DIRECTED LEARNING IN UNIVERSITI MALAYSIA KELANTAN

INDEPENDENT VARIABLES (IV): SELF-DIRECTED LEARNING DEPENDENT VARIABLE (DV): DIGITAL TALENT DEVELOPMENT

SECTION A: DEMOGRAPHIC PROFILE

Instructions: Please fill in the appropriate information by placing (/) in the box to represent the answer.

Gender:

	Male
	Female

Age:

	18 - 21 years old
	22 - 25 years old
	26 - 29 years old
	30 years old and above

Race:

	Malay
	Chinese
	India
	Others

Marital Status:

	Single
	Married

Programmed:

	SAK
	SAB
	SAA
	SAR
	SAE
	SAL

SECTION B: INDEPENDENT VARIABLE

Instruction: This section is seeking your opinion regarding of self-directed learning on students in Universiti Malaysia Kelantan Kampus Kota. Respondents were asked to state the extent to which they agree or disagree with each statement using a 5 Likert scale. Please provide the information in the box by the scale.

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

Part 1: Self Direct Learning

Question	Frequency				
	1	2	3	4	5
1. I can identify my learning goals and objectives.					
2. I can manage my time effectively for self-directed learning					
3. I am open to using digital resources for self-directed learning					
4. I believe that self-directed learning is crucial for my personal and professional growth.					
5. I have a growth mindset, always looking for opportunities to learn and improve.					

Part 2: Undergraduate Student Characteristic

Question	Frequency				
	1	2	3	4	5
1. A key component of success among undergraduate student is effective communication.					
2. Undergraduate students should be self-motivated to succeed academically.					
3. The ability to adapt is a key characteristic for undergraduate students to overcome challenges.					
4. The ability to think critically is essential for undergraduate students to succeed academically					
5. Undergraduate students need perseverance to face all challenges.					

Part 3: Educational Environment

Question	Frequency				
	1	2	3	4	5
1. A well-equipped digital learning environment contributes to a richer educational experience for undergraduate students.					
2. Encouraging self-directed learning prepares students for a lifetime of continuous skill development.					
3. Providing timely and constructive feedback is essential for guiding students in their self-directed learning journey.					
4. Limited access to digital resources can be a barrier for students in self-directed learning.					
5. Assessment method should be designed to evaluate the effectiveness of self-directed learning in developing digital talent.					

Part 4: Curriculum Design

Question	Frequency				
	1	2	3	4	5
1. Curriculum objectives towards digital talent development are clearly defined.					
2. The curriculum given has made my digital talent better.					
3. Curriculum nowadays can hone undergraduate students' digital talent skills widely.					
4. Lecturers play an important role in influencing the digital talent of undergraduate students					
5. The curriculum can emphasize critical thinking and problem-solving skills, which are essential in digital roles that require innovative solutions.					

SECTION C: DEPENDENT VARIABLE

Instruction: This section is seeking your opinion regarding of digital talent development among students in Universiti Malaysia Kelantan Kampus Kota. Respondents were asked to state the extent to which they agree or disagree with each statement using a 5 Likert scale. Please provide the information in the box by the scale.

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

Question	Frequency				
	1	2	3	4	5
1. Undergraduate students are generally well-prepared with digital talent					
2. University should place a greater emphasis on the digital talents of undergraduate student compared to other qualifications					
3. University should provide more financial support for digital talent development initiatives among undergraduate students.					
4. Economic factors have a significant impact on students' ability to develop digital talents during their undergraduate education					
5 Employers need to emphasize the importance of digital talent when hiring fresh graduates.					

Validation by

(Dr. Kiran Kumar Thoti).

APPENDIX B – Gantt Chart

Task	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Briefing of PPTA 1 and 2						
Form a Whatsapp group with group member						
Contact with own supervisor						
Title discussion						
Meeting with supervisor						
Discuss and choose research title						
Research IV (Independent variable) and DV (Dependent variable) for title						
PPTA I						
Task division discussion for Chapter 1 and 2						
Start doing Chapter 1 and 2						
Group leader combine all part of Chapter 1 and 2						
Task division discussions for Chapter 3						

Start doing Chapter 3						
Search questionnaire about title						
Group leader combine all part of Chapter 3						
Combine Chapter 1-3 and sent to supervisor for checking						
Do correction Chapter 1-3						
Discussion for presentation among each group member						
Using Google meet or zoom to presentation						
Submission research proposal Chapter 1-3						
PPTA II						
Do the data collection						
Discussion with supervisor						
Analysis data						
Start doing chapter 4,5 and e-poster						
Discussion with supervisor						
Submit e-poster						

Task division discussions for research paper and start writing						
Presentation at colloqium						
Combine all chapter and research paper						
Do a correction						
Submission full PPTA and research paper to supervisor and examiner						
Submission soft copy to ecampus						