

**THE INFLUENCE OF INTERACTION ON  
STUDENT SATISFACTION VIA FLOW  
EXPERIENCE AMONG DISTANCE LEARNERS**

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**UNIVERSITI SAINS MALAYSIA**

**2023**

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by

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**Thesis submitted in fulfillment of the requirements  
for the degree of  
Master of Arts**

**September 2023**

## **ACKNOWLEDGEMENT**

In the name of Allah, the Most Gracious and Most Merciful. All praise is due to Allah, the Lord of the Worlds. May His blessings and peace be upon the most noble and purest of creation, our Prophet Muhammad S.A.W, a role model and leader of the righteous, seal of the prophets and messengers and a mercy for all the worlds.

Special appreciation goes to my supervisors, Dr. Norizan Baba Rahim and Dr. Mohd Faiz bin Hilmi, for their guidance, comments, and advice throughout the research. Their knowledge and skills have significantly raised the calibre of this dissertation. They have wonderful personalities, are very compassionate, and are always willing to lend a hand. Being their student and having them as my supervisor makes me feel fortunate and privileged. Their expertise and guidance made the entire process more efficient and manageable.

Ultimately, I would like to thank my family, especially my mother and husband, for their support and advice. Without them, I would have missed lots of valuable information and not made this a reality. I could not have done this without them.

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## LIST OF ABBREVIATIONS

DELES	Distance Education Learning Environments Survey
HLIs	Higher Learning Institutions
ITCP	Information Technologies Certificate Program
KMO	Kaiser-Meyer-Olkin
LC	Learner-Content
LCI	Learner-Content Interaction
LI	Learner-Instructor
LII	Learner-Instructor Interaction
LL	Learner-Learner
LLI	Learner-Learner Interaction
LLL	Lifelong Learning
WBI	Web-Based Instruction

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# **PENGARUH INTERAKSI TERHADAP KEPUASAN PELAJAR MELALUI PENGALAMAN ALIRAN DALAM KALANGAN PELAJAR JARAK JAUH**

## **ABSTRAK**

Pembelajaran sepanjang hayat telah diiktiraf sebagai keutamaan global untuk menangani pelbagai cabaran kemampanan dalam Pelan Pembangunan Pendidikan Malaysia 2015 - 2025. Seajar dengan itu, pelajar mempunyai kurang kemungkinan untuk berinteraksi dengan institusi pengajian tinggi dalam persekitaran atas talian. Walaupun terdapat beberapa kajian mengenai interaksi, aliran, dan kepuasan pelajar namun, ia adalah relevan kepada negara Barat dan pelajar tradisional. Kajian ini bertujuan untuk menyiasat kesan interaksi (kandungan-pelajar, pengajar-pelajar, dan pelajar-pelajar) terhadap kepuasan pelajar di kalangan pelajar jarak jauh di Malaysia. Kerangka kajian dalam kajian ini adalah berdasarkan teori jarak transaksi yang dicadangkan oleh Moore (1989). Data dikumpul melalui alat soal selidik yang ditadbir sendiri, Survey Monkey untuk menguji hipotesis yang dicadangkan. Sampel kajian terdiri daripada 270 responden yang menepati kriteria inklusi, dan SPSS digunakan untuk menganalisis hipotesis. Kajian ini mendapati perkaitan yang menggalakkan dan substansial antara pengalaman aliran dan kepuasan pelajar. Sementara itu, keputusan hipotesis menunjukkan bahawa pelajar-kandungan, pelajar-pengajar, dan interaksi pelajar-pelajar mempunyai kesan positif terhadap kepuasan pelajar. Akhir sekali, tiga hipotesis selanjutnya yang diuji tidak menunjukkan bahawa interaksi pelajar-kandungan, interaksi pelajar-pengajar, dan interaksi pelajar-pelajar mempunyai kesan yang signifikan terhadap pengalaman aliran. Beberapa implikasi teori dan praktikal kajian diterokai berdasarkan penemuan, metodologi dan keputusan kajian. Cadangan untuk penyelidikan masa depan juga ditawarkan.

# **THE INFLUENCE OF INTERACTION ON STUDENT SATISFACTION VIA FLOW EXPERIENCE AMONG DISTANCE LEARNERS**

## **ABSTRACT**

Lifelong learning has been recognized as a global priority for addressing the many challenges of sustainability in the Malaysia Education Blueprint 2015 - 2025. Correspondingly, in an online setting, learners have fewer possibilities to interact with higher education institutions. Despite several studies on interactions, flow, and student satisfaction, it is relevant to Western countries and traditional students. The study aims to investigate the impact of interactions (learner-content, learner-instructor, and learner-learner) on student satisfaction among distance learners in Malaysia. The research framework in this study is based on the transactional distance theory proposed by Moore (1989). To test the proposed hypotheses, data was collected through the self-administered questionnaire tool, Survey Monkey. The study sample consisted of 270 respondents that conform to the inclusion criteria, and SPSS was used to analyze the hypotheses. This study found a favorable and substantial association between flow experience and student satisfaction. Meanwhile, the hypotheses' results show that learner-content, learner-instructor, and learner-learner interaction each have a positive impact on student satisfaction. Finally, the further three hypotheses tested did not indicate that learner-content interaction, learner-instructor interaction, and learner-learner interaction have a significant impact on flow experience. Several theoretical and practical implications of the study are explored based on the study's findings, methodologies, and results. Suggestions for future research are also offered.

# **CHAPTER 1**

## **INTRODUCTION**

### **1.1 Introduction**

The chapter offers an overall summary of the research background, statement of the problem, research questions, objectives of the research, as well as significance and scope. The chapter ends with important terms being defined.

### **1.2 An Overview of Online Education**

Online learning encompasses all types of electronic-assisted teaching and learning (Nagarajan & Jiji, 2010). The commonly used terms include distance learning, online learning, computer-based learning, computer-assisted learning, web-based learning, network learning, e-learning, among several others. These terms are applicable to learning environments where learners are not physically co-located within the vicinity of their academic institutions nor other learners. Among higher education learners, online learning is considered the most popular. Higher education learners access online learning management systems such as Blackboard to participate in online sessions, participate in conversations, read instructor-led articles, and access digital materials and resources.

There has been a lot of interest in adopting web-based teaching in higher education in the past decade, and it has had a substantial influence on education. It has also been implemented successfully in university teaching to supplement conventional teaching and learning techniques (Laurillard, 2004).

### **1.3 Background of the Study**

E-learning has developed rapidly in recent years since technology is always growing and providing us with new educational choices in a variety of ways (Johansson & Smith, 2020). In recent years, numerous e-learning systems and infrastructures have been presented (Yusri et al., 2020; Hanna et al., 2020; Sethi et al., 2019). The contemporary world requires a lifetime of study because every educated individual needs a plethora of expertise. Learning from a distance can assist in addressing this challenge (Kovbasnyuk & Styfanyshyn, 2020). Distance learners may use learning technologies such as mobile gadgets and well-established forms (Cross et al., 2019). The transformation of higher education in preparing Malaysia to become a developed nation is critical in ensuring every Malaysian has access to knowledge wherever and whenever they want it, as well as opportunities to embark on life-long learning journeys (Jegathesan et al., 2018). Social and economic growth, on the other hand, can be boosted by providing educational facilities for conventional working individuals to continue pursuing higher education. They serve as blueprint accelerators by enhancing life-long learning efforts, globalizing online learning, and revolutionizing higher education delivery (Ministry of Higher Education, 2017).

According to a McKinsey analysis published in 2018, just 7% of institutions were completely equipped to handle the talent gaps. To avoid this issue, the workforce's cognitive skill sets must be enhanced (Hunt et al., 2018). Every Malaysian will adopt a culture of lifelong learning [Malaysia Education Blueprint 2015 - 2025 (Higher Education)]. Aside from learner independence, another key criteria of lifelong learning includes self-determination (Qalehsari et al., 2017). Lifelong Learning (LL) has emerged as a global priority to address the many problems of sustainable development (MOE, 2011). Lifelong learning is described in

Malaysia as the process of democratising education via the mastery of information, skills, and competencies through formal or informal means based on experience in the workplace or during training. A demanding sector and a substantial dropout rate describe the educational atmosphere, which is heavily reliant on learners' perceptions and feelings (Ribeiro, 2021).

The strategy seeks to provide educational prospects to Malaysians regardless of age, educational background, or learning location, and is primarily available through remote learning, e-learning, workplace learning, and part-time learning (Buja, 2021). The proportion of freely accessible behaviour and determinations in many real-world sequential decision-making problems can evolve over the years (Chandak et al., 2020). Several institutes in Malaysia provide LL with a variety of specialisations. Even though distinguished advancements in lifelong learning have been made, interacting with the environment is required to learn from the experience and must be capable of gradually accumulating and applying information over prolonged periods (Parisi et al., 2019).

As a result, lifelong learning attributes are critical for educational technologies and interaction in real life, as well as processing continuous streams of information (Parisi et al., 2019). Furthermore, with these various challenges caused the distance learning to become the most important and sought-after learning modality in the system of higher education in the previous decade (Leontyeva, 2018). A lack of distance learning system use hinders the realization of its benefits because the success of the system depends on students' readiness and acceptance (Almaiah & Alismaiel, 2019). Adoption of remote learning research would help colleges better comprehend their learners' necessities, leading to a more efficient distance learning



program (El-Masri & Tarhini, 2017). Successful information systems are frequently mentioned as a prerequisite for satisfaction among learners specifically (Almaiah, 2018). Accordingly, in the environment of a virtual education system, one of the primary requirements for long-term performance is acceptance by learners (Karim et al., 2021).

People generally envisage online graduates utilising web pages, emails, and video casts, techniques that are currently available using a computer or mobile phone. Learners who take part in distance education are considered self-educating using digital and telecommunication networks. As a result of the COVID-19 pandemic, this type of education has spread across the country for a long time. Any facilitated instruction which occurs at a distance is identified as distance learning. In the meantime, the learner-learner interaction and supervision guidance affects the interpreted development of education outcomes and the learner's happiness (Eom & Ashill, 2016). Distance education is an exquisitely managed form of self-education using digital and telecommunication networks. Several major theoretical approaches to self-regulated learning rely on learners' ability to proactively manage many parts of the learning process (Kim, 2020). Distance learning is therefore increasing every day, expanding the educational and learning areas greatly and allowing learners to study in-depth university-based programmes throughout the faculty (Aktaruzzaman & Plunkett, 2016). In addition, it gives learners the option to study at their own speed and space. This method has many benefits over the conventional mode. In practice, however, much of what distant learning entails is presently conducted via electronic methods. Conversely, in an online setting, learners have fewer possibilities to interact with higher education institutions (Martin & Bolliger, 2018). The layout of the curriculum is quite important and must be intended to encourage learner participation.

Learner-learner plus learner-instructor interaction takes place in a higher constructive learning method that necessitates more cooperative discussions (Ashill & Eom, 2018).

Offering the opportunity for lifelong learning, more and more educational institutions use distance education as a training mode. Course-based distance education is one type of distance education model where learners are formally enrolled in courses offered by a school or university. Participation can increase learner satisfaction because learner involvement is important for their acquisition and satisfaction in the educational process (Martin & Bolliger, 2018). Although the versatility of online learning contributes to its appeal, analysis has revealed questions about learner participation (Prior et al., 2016) and fears of missing out on conventional classroom interactions (Ragusa, 2017; Martinez et al., 2020). Numerous individuals have criticised the efficiency of online learning, citing concerns regarding time and technological issues (Hung, 2016). Nevertheless, the requirement for relevant financial assistance, restricted labour, and frequent assessments of the quality of online teaching should be to improve links with the industry and provide learners with a broader grasp of the respective academic fields (Huq & Gilbert, 2017; Clarke et al., 2020). Without satisfying these demands, the teacher's sense of transition to distance learning is still insufficient. In the aftermath of recent advances in technology, e-learning has become increasingly essential in pedagogical applications.

The use of e-learning for communicating, providing, and promoting more effective information exchange also applies to teacher-training institutions. Using media like chats, instant messaging, online discussion, email, text messages, MMS,

and others helps learners communicate through the Internet (Taat & Francis, 2020). Mobile gadgets and young people are now getting more and more intertwined as the prices of gadgets decrease due to the increase in mobile technology and mobile appliance demand. The technical advancement of communication devices and instruments has led to the interconnection with mobile apps of various businesses and industries in the sense that these mobile applications both make an impact and are influential. The concentration of e-learning and self-efficacy learning has a beneficial influence and is mostly connected to recognised effectiveness and learner happiness. Even though e-learning has been recognised by colleges worldwide, there is still a greatly undeveloped examination of the goal of using e-learning (Al-Rahmi, 2018).

This e-learning method differs from conventional methods of education such as courses and seminars. This style of learning is more important to people than to groups, since it encourages pupils to study independently, not in organisations and classes at home. Hence, learners take home-based programmes using this form of learning and organise their schedules according to their requirements and desires. Learners who have a dependable Internet connection can conduct their education easily. This enables learners in their respective nations to fulfil their courses (Siew et al., 2021). Learners who step down from their educational program due to poor competence may influence the long-term viability of ODL institutions. As a result, there is an imperative to investigate learner satisfaction and its impact on learning outcomes (Jegathesan et al., 2018). Since most students in post secondary education programs quit their academic pursuits due to dissatisfaction with their educational programs, student satisfaction is seen as a measure of the caliber of an educational program and is considered to be crucial to finishing the course (Khan & Iqbal, 2016).

The utilization of remote learning research will help educational institutions comprehend their students' needs, leading to an efficient distance learning program (El-Masri & Tarhini, 2017).

However, e-learning generally builds on consciousness, and the capacity of pupils to self-regulate is the most important criterion. The performance of instruction has a significant impact on student satisfaction, as this is a very essential issue for academic administrators, who need to structure distance learning in a method that enables them to give continuing assistance and continuous enhancement to educating professionals. Engagement with learners enrolled in distance learning programmes needs special consideration, owing to the increasing use of asynchronous or more non-conventional approaches, including video communication, as well as a lack of physical touch, which is necessary for the establishment of trust (Sadeghi, 2019).

#### **1.4 Problem Statement**

The Malaysia Education Blueprint 2015-2025 (Higher Education) reported that Malaysia's penetration rate of the Internet is presently 67%, which is the seventh highest in Asia (MOE, 2015). Hence, Malaysia is in a positive state to embrace the online learning prospective, allowing the nation to heighten access to information of great quality, enhance the quality of teaching and learning, lessen costs of delivery, and spread Malaysian knowledge around the globe (MOE, 2015). E-learning is also a convenient and premium method of education (Diab & Elgahsh, 2020). The National E-Learning Policy provides several possibilities for attaining intended results. The corresponding method is carried out in accordance with the choices of the learners (Sedek & Hassan, 2019). To do this, each learner is reflected by a vector of

credentials derived from behavioural skills and academic knowledge (Yusri et al., 2021).

Subsequently, learners' ideas of the usefulness of technology advancement for educational efficiency and learning influence their use of e-learning for their studies, as a link between educational ability and time utilisation on the Internet was discovered (Gonzales et al., 2020). Furthermore, as suggested in the Blueprint on Enculturation of Lifelong Learning for Malaysia 2011-2021, ODL institutions are to capitalise on ICT and other appreciative technologies to effectively and efficiently deliver their programmes to the satisfaction of lifelong learners as well as meet the quality standards imposed by the Malaysian Qualifications Agency (MQA) (MOE, 2015). "Online learning" is defined as the implementation of cutting-edge technologies to teaching and learning (Enbeyle, 2022). An essential aspect of online learning is providing learners with the potential for interaction for them to generate roots in cultural information and achieve greater tiers of academic satisfaction (Van Den BERG, 2020). Interactions and engagements between learners are essential to support learners' practice of teamwork (Kocdar, 2018).

Learners with less recurring communications with their peers had four times tendency of their learning activities to be affected, six times tendency of their evaluation activities to be limited, and three times tendency of their social activities to be reduced (Bao, 2020; Aristeidou & Cross, 2021). A learner who interacted less consistently with his instructor had three times tendency of his learning activities to be affected (Sahu, 2020; Aristeidou & Cross, 2021).

Unlike traditional learning environments, online learning requires the confidence of learners to perform Internet-related tasks, as well as the willingness

and ability to manage the learning process on their own (Sun & Rueda, 2012; Tsai, Chuang, Liang, & Tsai, 2011). The education sector was forced to change teaching methods as well as operating procedures instantly (Corlotean, 2020; Singh & Thurman, 2019). Interactions can be encouraged by incorporating talks into learning systems (Gurajena et al., 2021). Obtaining a well-organised operating environment will keep learners and instructors from becoming worried and dissatisfied (Mashwama, 2020). Moreover, distance education promotes learner-centred learning and self-learning (Gurajena et al., 2021), as well as other innovative advancements like digital practice, educational information retrieval, and artificial intelligence mechanisms (Bimha, 2021). By creating more learning activities that are asynchronous, learners can take part whenever they feel convenient to do so. Besides that, more available and manageable technologies can be developed for learner communication, including testing options to encourage learner review and reflection. For instance, asynchronous-timed exams or open- book assessments (Aristeidou & Cross, 2021).

Hence, the challenge for online learning is to develop an atmosphere that involves learners in ways that retain high levels of participation, curiosity, and dedication throughout the learner's learning experience (Pearce, 2005; Shernoff, 2003). Accessibility parameters have evolved to embrace the ability to sustain gadgets, as information and networking platforms have improved (Bell et al., 2022). Undergoing such a flow state helps learners overcome perceptions of being isolated or disconnected in online learning environments (Rovai, 2007; Skadberg & Kimmel, 2004), and encourage them to keep learning online and attain fulfilment. Parallel to Guo et al. (2006), the ideal flow experience of an individual has been demonstrated to contribute to the continuous intentions of Internet users, since experiencing flow

motivates an individual to persevere in and return to an activity due to the experiential benefits it provides. Therefore, having good flow experiences in online learning is likely to enhance fulfilment.

Learner satisfaction is an essential indicator of programme- and learner-related outcomes, since it indicates how favourably learners evaluate their learning experiences (Biner et al., 1997; Liao & Hsieh, 2011). Learner satisfaction is an important factor to examine in evaluating programme efficacy, since it leads to increased degrees of involvement, engagement, acquisition, and achievement (Basuony et al., 2020). High student satisfaction may be related to low dropout rates, increased perseverance, and heightened dedication to the programme (Ali & Ahmad, 2011; Allen & Seaman, 2003; Debourgh, 1999; Koseke & Koseke, 1991; Noel-Levitz, 2011; Reinhart & Schneider, 2001; Yukselturk & Yildirim, 2008).

Learner dropout rate is an important predictor in determining learner satisfaction toward remote learning courses (Gregori et al., 2018). Thus, student satisfaction with online courses in distance education requires a solid understanding of the factors influencing student satisfaction. Thence, understanding these factors and the rationale behind them would enable curriculum developers, teachers, and instructional designers to develop recommended policies for creating a more conducive learning environment and identifying learners' future achievements in the online context.

Several studies have been conducted concerning interaction, flow experience, and student satisfaction. However, it has generally only been within the scope of western countries and among traditional learners. For example, Cheng (2013) investigated the roles of interaction and flow among nursing college learners in

Taiwan. Chen and Chen (2007) conducted research to study the extent to which other predictors like learner-content interaction, independent learning design, and Internet self-efficacy, influence adult learner satisfaction in online learning for graduates of the US private higher education system. Furthermore, Jung et al. (2002) studied how three communication styles (academic, collaborative, and social) impacted learning, satisfaction, participation, and attitude toward online learning in a web-based classroom environment among university learners of three courses at a Korean tertiary institution.

There has also been some research with non-traditional learners on the relationship between interaction, flow experience and learner satisfaction, but this was also done within the framework of the Wester. For example, Buil, Catalán, and Martínez (2018) investigated the relationship between e-learning participation, flow experience, and learning management system determination involving Spanish learners.

Then, Alqurashi (2017) studied the predictor variables (online learning self-efficacy, learner-content interaction, learner-instructor interaction, learner-learner interaction), including learner satisfaction and perceived learning, concentrating on tertiary learners who registered in virtual classes at a private, medium-sized, non-profit American university. Guo et al. (2016) examined the variables that influence learner achievement of flow experience in online learning and the impacts of flow on their motivation to pursue online learning among Australian tertiary learners who registered for online courses. Shin (2006) investigated the empirical associations between flow antecedents, flow experiences, and flow outcome-course satisfaction among Korean undergraduates enrolled in online learning.



Within the Malaysian context, the focus for studies about distance education looked into the abundant personalities of distance learners (Mat Zin, 2012), the effects of platforms for online writing on the scores of distance learners' narrative writing (Annamalai, Eng, & Abdullah, 2013), distance learners' learning difficulties in improving English language proficiency (Sai & Belaja, 2013), distance learners' online reading strategies (Jusoh & Abdullah, 2015), and distance learners' coping strategies for work-family conflict (Rahim, 2019a; 2019b). More recently, a study pertaining to distance learners was conducted on engagement with behavioural outcomes via persistence by Rahim (2022). Nonetheless, the association between distance learner interaction, flow experience, and learner satisfaction has not been well investigated.

As claimed by Dzakiria and Christopher (2010), one factor that affects distance learners' success in ODL is the number of learning interactions and interactivity made available to them. In accordance with the Blueprint on the Enculturation of Lifelong Learning in Malaysia 2011-2021, ODL institutions are to leverage ICT and other beneficial technologies to efficiently and effectively provide their programmes to the contentment of lifelong learners. Learners who demonstrate stronger cognitive self-regulation may succeed effectively in academics whilst controlling their satisfaction and behavioural stimuli. They are also highly motivated to learn and possess the ability to organise ahead of time (Sahranavard et al., 2018).

Moreover, a past study done by Diaz (2002) suggested that the decline in adult learners, particularly in the workforce, does not indicate learners' academic failure, but rather the reality of conflicting personal or work-related priorities. It is said to be a decision based on a reasonable evaluation. This author's view is that

online learners are more mature and educated, and that those who are presently employed may find it easier to decide whether to continue or drop out of a course, depending on their significant academic and life experiences.

According to the statistics from a public university in Malaysia, the enrolment rate has decreased in five years from 2016/1017 to 2021/2022 (see Figure 1). In the five years between 2016 and 2022, the number of students enrolled has reduced substantially, correlating to this downward trend. There are significant limitations in the overall progression of education due to a lack of physical and digital infrastructure as well as comprehensive online learning facilities impedes the overall progression of education.

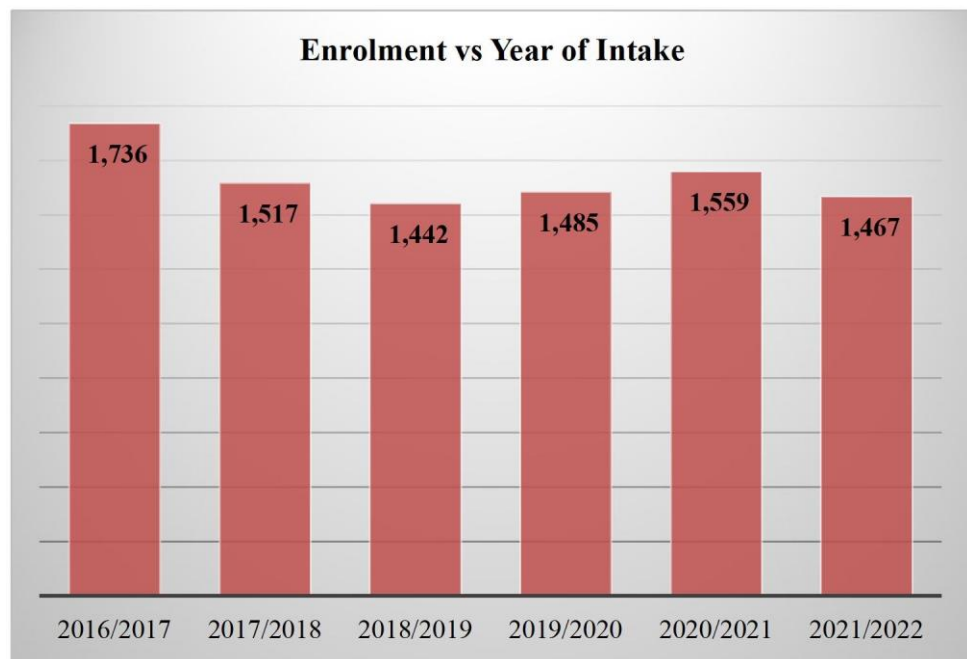


Figure 1.1 Enrolment vs Year of Intake

Therefore, it is worthwhile to investigate the interaction between distance learners, flow experience, and learner satisfaction in the Malaysian setting.

Additionally, learner satisfaction can help institutions recognise growth areas and drive strategic planning customised to online learners (Noel-Levitz, 2011).

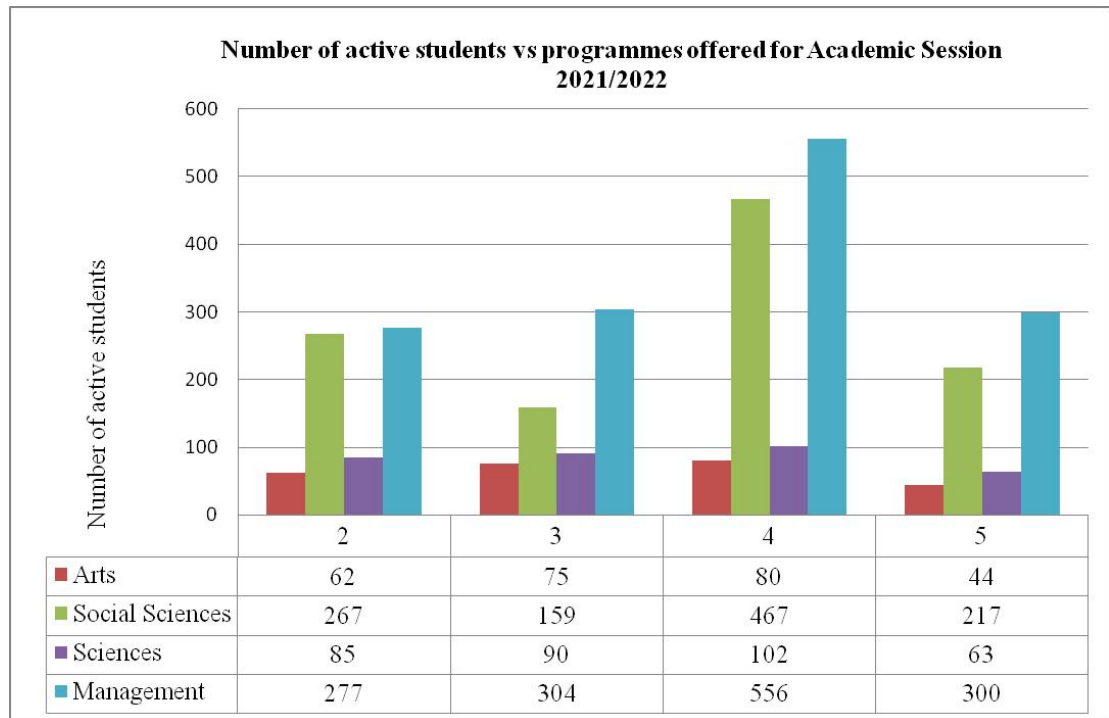


Figure 1.2 Number of active student’s vs programmes offered for Academic Session 2021/2022 by year of study (2-5)

As of June 2022, the total of active distance learners was 4,225. The breakdown of the number of active student’s vs programs offered by year of study is shown in Figure 1.2. The number of active students decreases as they progress from their fourth to their fifth year of study. Furthermore, there is a significant drop from 1,205 students in the fourth year to 624 students in the fifth year since there is a significant change from a total of 1,205 students in the fourth year to 624 students in the fifth year. Attempting to measure learners' behavioral efforts can provide insight into learners' engagement and how they struggle to master the content during the interactive process between the learner and the content. (Moissa, Bonnin, Castagnos, & Boyer, 2019).

## **1.5 Research Questions (RQs)**

The present study intends to investigate the impact of interactions (learner-content, learner-instructor, and learner-learner) on learner satisfaction through distance learners' flow experiences. Consequently, this study will address the research questions that follow:

RQ1: Does learner-content interaction influence flow experience among distance learners?

RQ2: Does learner-instructor interaction influence flow experience among distance learners?

RQ3: Does learner-learner interaction influence flow experience among distance learners?

RQ4: Does learner-content interaction influence student satisfaction among distance learners?

RQ5: Does learner-instructor interaction influence student satisfaction among distance learners?

RQ6: Does learner-learner interaction influence student satisfaction among distance learners?

RQ7: Does flow experience influence student satisfaction among distance learners?

RQ8: Does flow experience mediate the relationship between learner-content interaction and student satisfaction among distance learners?

RQ9: Does flow experience mediate the relationship between learner-instructor interaction and student satisfaction among distance learners?

RQ10: Does flow experience mediate the relationship between learner-learner interaction and student satisfaction among distance learners?

## **1.6 Research Objectives (ROs)**

The main intention of this study is to examine the influence of interactions (learner-content, learner-instructor, and learner-learner) on learner satisfaction via distance learners' flow experience. For this purpose, the study will concentrate on the following research aims:

RO1: Does learner-content interaction influence flow experience among distance learners?

RO2: Does learner-instructor interaction influence flow experience among distance learners?

RO3: Does learner-learner interaction influence flow experience among distance learners?

RO4: Does learner-content interaction influence student satisfaction among distance learners?

RO5: Does learner-instructor interaction influence student satisfaction among distance learners?

RO6: Does learner-learner interaction influence student satisfaction among distance learners?

RO7: Does flow experience influence student satisfaction among distance learners?

RO8: Does flow experience mediate the relationship between learner-content interaction and student satisfaction among distance learners?

RO9: Does flow experience mediate the relationship between learner-instructor interaction and student satisfaction among distance learners?

RO10: Does flow experience mediate the relationship between learner-learner interaction and student satisfaction among distance learners?

## **1.7 Significance of the Study**

This section will analyse the study's contribution to the theory and knowledge in this area of discipline, to distance learners, to educators, to ODL institutions management and to the government as policy maker.

### **1.7.1 To the theory and knowledge in this area of discipline**

Accordingly, utilizing qualitative methodologies for this research addresses a gap in the literature and has the opportunity to reveal heretofore unknown characteristics particular to adult learners. As a result, it will aid in demonstrating the personality development mechanisms of adult learners as they go through their academic path to become self-regulated learners and, as a result, more competent individuals (Lee, Choi, & Cho, 2019).

Afterward, a broader set of theoretical conceptions is now allowing greater comprehension of the distant learner. Transactional distance, interaction, learner control, and student satisfaction are four such notions. Learning provides a spectrum of transactions ranging from less distant, with increased interaction at slighter construction, to vaguer and with fewer interactions and more arrangement. Because of the range of transactions that occur between instructors and learners in both contexts, this continuum reduces the boundaries between traditional and distant programs. Therefore, distance is established by the interaction across interaction and organization rather than location.

Later, it indicates an entirely novel approach that involves knowing how the interaction is used in every connection. Learners who lack the fundamental abilities expected to use a communication medium waste time learning how to engage with technology and have less time to study the lesson. As a result, curriculum developers must integrate learner-interface interactions that allow the learner to interact successfully with the mediating system.

### **1.7.2 To distance learners**

Essentially, the contribution of this study is to help both learners and educators comprehend these smart learning systems since both expect responsibility for their self-learning systems. Meanwhile, the curriculum itself will be self-organized; consequently, their desires will be individualized and even more intense (Gros, 2016).

Then, to assist distance learning learners in developing an action plan that may be implemented while arranging their studies. Because of new technologies and the information explosion, the school system will be preparing learners for jobs that

do not exist today (Kolenick, 2018). Correspondingly, the literature has highlighted a major field for research, the findings of which might help to decrease dropout rates, benefiting both learners and higher education institutions.

Also, to provide learners with meaningful instructional opportunities and preparation, universities, and faculties need to understand how they can build a supportive learning atmosphere to enable learners to complete the goals of the course and degree. Choices accompanying the organization and execution of distance education courses are critical in fulfilling responsibilities to learners who may not be on campus (Centner, 2014).

### **1.7.3 To educators**

Effectively, the contribution of this study is to help educators decide what the inherent moves are that they need to perceive to be relevant and represent society in the future by extending their gaze to future challenges. The distance learning approach can be executed by utilizing a variety of methods, including video conferencing, synchronous and asynchronous, large-scale online courses, hybrid distance learning, and time-based courses arranged online, as well as others (Habidin et al., 2020).

Accordingly, to help online teachers in structuring their classes to provide learners with meaningful instructional opportunities and preparation, universities and faculties need to understand how they can build a supportive learning atmosphere to enable learners to complete the goals of the course and degree. This situation is possible thanks to new technologies, quantum computing, and information on the Internet (Ally, 2019).



Consequently, to assist online teachers in structuring their classes, which is required to provide learners with meaningful instructional opportunities and preparation because universities and faculties must understand how to create a supportive learning environment to enable learners to complete the course and degree goals.

#### **1.7.4 To ODL institutions management**

Practically, the contribution of this study is to help ODL institutions management to create strategies for more colleges and universities to offer online courses, which are essential for educators to recognize the evolving dimensions of virtual learning environments such as curriculum layout, learner engagement, and educator presence (Allen & Seaman, 2015).

The findings of this study will also be useful to stakeholders administering the overall culmination of distinguished dropout rates in online education. As an illustration, attrition is a big issue for institutions, both in terms of economic expenses and the perceived quality and efficacy of their online programs (Boton, 2015).

#### **1.7.5 To the government as policy maker**

Malaysia's education sector can benefit from the findings of this research to help educational institution authorities better grasp the optimal method for enforcing the education sector (Karim et al., 2021). Consequently, the Twelfth Plan will maintain initiatives to boost efficiency, which will result in stronger labor efficiency improvements. Additionally, Malaysia would achieve the ideal level of employment during the Twelfth Plan because of improved labor market

circumstances. In addition to the emphasis on inclusive economic growth, increased earnings and wages are anticipated, which will raise earnings for households. The state of the individual's welfare is anticipated to continue to enhance, assisted through financial and socioeconomic advancement and also by diverse territorial growth.

Thereafter, the goal of the nationwide learning structure is to create a top-notch, high-quality educational environment that will help each student reach their maximum capacity and realize the aspirations of the Malaysian individuals. The nation's mature individual workforce is now much more interested in advanced learning for self-improvement and competence upgradation. In recognition of the need, several colleges and universities attempted to accept and execute distant learning via the creation of a specialized section or organization inside the universities, or by "crafting" it within their traditional divisions.

## **1.8 Scope of the Study**

The study took place at one of the Malaysian public universities located in the northern region. The undergraduates who are registered in a distance learning programme is the study's unit of analysis. The distance learners that fulfil the inclusion requirements are determined as follows:

- (1) an active learner from the academic session of 2020/2021 onwards;  
and
- (2) they are at least in the 2nd year of the programme

These distance learners come from various programmes such as sciences, social sciences, arts, and management. Nevertheless, all distance learners are targeted

regardless of their major. The research focused on all learners who meet the above criteria.

## **1.9 Definition of Key Terms**

The definitions of the independent variables are given as follows:

(a) Interaction

Following Michael G. Moore (1989), interaction refers to the main element of effective instruction. There are three dimensions to this: learner-content interaction, learner-instructor interaction, and learner-learner interaction. Here are the definitions for each dimension:

(i) Learner-Content Interaction (LCI)

An assessment of the interaction which takes place between the learner and the subject matter is known as learner-content interaction. It is a much-personalised process supported by a trainer.

(ii) Learner-Learner Interaction (LLI)

The evaluation of an interaction that takes place two ways between or among learners for information and idea exchanges in relation to the content of a course is referred to as learner-learner interaction. This can be done with or without the supervision of an instructor.

(iii) Learner-Instructor Interaction (LII)

A two-way interaction that occurs between the learner and the instructor is referred to as learner-instructor interaction.

(b) Flow Experience

According to Trevino and Webster (1992), flow refers to the degree of which (a) the person possesses some control over the communication via the technology; (b) the person's attention is drawn on the communication; (c) the person's inquisitiveness is stimulated while interacting (d) the person regards the communication finds the interaction naturally exciting.

(c) Student Satisfaction

According to Kuo et al. (2014), learner satisfaction denotes the positivity learners feel regarding their learning experiences. It is also a key predictor of programme and learner outcomes.

## **1.10 Organisation of Chapters**

This thesis contains five chapters. Chapter 1 presents the research overview, problem description, research goals, research questions, research relevance, research scope, and research contributions.

The second chapter presents a thorough overview of the literature on the research variables, namely interaction, flow experience, self-regulated online learning, student satisfaction, and learning outcomes. It also highlights the gaps in the available literature. In addition, related theories are utilised to provide the theoretical framework for empirical and hypothesis testing with regards to every correlational association being given in this chapter.

Chapter 3 provides the approach adopted by the present study. The research design is also provided, which covers the sample and population of the study, the questionnaire design, as well as variables and measures. The chapter ends with an explanation on the statistical methodology employed for data gathering in this study.