

# THE EFFECTIVENESS AND ACCEPTANCE OF MOBILE APPLICATION FOR ARABIC LANGUAGE PROFICIENCY ELEMENTARY AT UNIVERSITY LEVEL

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SULTAN IDRIS EDUCATION UNIVERSITY

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THE EFFECTIVENESS AND ACCEPTANCE OF MOBILE APPLICATION FOR  
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AT UNIVERSITY LEVEL

WAN AB AZIZ BIN WAN DAUD

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From the bottom of my heart, JASAMU DIKENANG.  
May Allah bless us all.





## ABSTRACT

This study aimed to develop a mobile application (i-Almunawwar) for Arabic language learning based on the KEMGERLY Model and evaluate its effectiveness and acceptance. It aimed at identifying the effect of interaction between achievement and ARCS motivation constructs toward User Acceptance (UA). A total of 470 beginner's Arabic learners from four universities in peninsular Malaysia were selected through stratified random sampling technique. This study employed a quasi-experimental design where the participants from each university were separated into two groups of 25-30. For the treatment group, i-Almunawwar was used to conduct the lessons, while for the control group, a conventional pedagogical approach was adopted. The data were collected through tests, questionnaires, and semi-structured interviews. The data were then analysed using t-test and one-way ANCOVA. Structured Equation Modelling (SEM) statistical analysis was used to estimate the parameters and conduct model testing. The semi-structured interviews' data that was conducted on eight (8) participants were also descriptively and thematically analysed. The results of the t-test indicated a significant effect on the achievement test score ( $p=0.000$ ), with the mean score of the treatment group (47.86) surpassing the control group (38.35). The finding of ANCOVA showed a significant effect on the achievement test score, where the mean scores of the male treatment group (51.16) and female treatment group (46.39) surpassed the control group (38.35). The finding of the model testing revealed that the proposed model met the fit index specification. Overall, the SEM analysis proved that the variables contributed largely to 38.2% variance for UA. The findings from the semi-structured interview supported the SEM results. To conclude, i-Almunawwar is proven to increase learners' achievement and motivation besides contributing to development theories and contextual educational technology acceptance. This study implicates in providing a constructive guidance to MOHE and related parties in improving learners' mastery in Arabic learning.





## KEBERKESANAN DAN PENERIMAAN APLIKASI MOBIL DALAM MEMPELAJARI BAHASA ARAB TAHAP PERMULAAN DI UNIVERSITI AWAM

### ABSTRAK

Kajian ini bertujuan untuk membangunkan aplikasi mobil (i-almunawwar) berpandukan model KEMGERLY dan menilai keberkesanan dan penerimaannya (UA) dalam pembelajaran bahasa Arab. Ia juga bertujuan mengenal pasti hubungan antara pencapaian dan konstruk motivasi (ARCS) terhadap penerimaan pelajar (UA). Seramai 470 pelajar bahasa Arab tahap permulaan dari empat universiti di semenanjung Malaysia dipilih melalui persampelan rawak berstrata untuk dijadikan peserta dalam kajian ini. Kajian ini menggunakan reka bentuk kuasi eksperimen; pelajar dibahagikan kepada dua kumpulan antara 25–30 pelajar bagi setiap kumpulan. Bagi kumpulan rawatan, (i-almunawwar) digunakan di dalam kelas, manakala kumpulan kawalan pula menggunakan pendekatan konvensional. Data kajian dikumpul melalui ujian, soal selidik dan temu bual separa berstruktur. Dapatan kajian ini dianalisis menggunakan analisis ujian t, ANCOVA satu hala. Analisis statistik Structured Equation Modelling (SEM) digunakan sebagai prosedur analisis statistik bagi melaksanakan anggaran parameter dan pengujian model. Temu bual separa berstruktur dalam kalangan lapan (8) pelajar dianalisis secara diskriptif dan tematik. Hasil ujian t telah menunjukkan bahawa terdapat pengaruh kumpulan terhadap skor ujian pencapaian secara signifikan ( $p=0.000$ ), dengan skor min kumpulan rawatan (47.86) melebihi kumpulan kawalan (38.35). Hasil ujian ANCOVA satu hala pula mendapati terdapat pengaruh signifikan terhadap pencapaian kumpulan pelajar ( $p=0.000$ ), iaitu min kumpulan rawatan lelaki (51.16), min kumpulan rawatan wanita (46.39) melebihi kumpulan kawalan (38.35). Dapatan analisis statistik pengujian model menunjukkan model cadangan memenuhi indeks fit yang ditetapkan. Secara keseluruhannya, analisis SEM membuktikan bahawa pemboleh ubah kajian telah menyumbang secara majoriti 38.2% varian bagi UA. Dapatan temu bual separa berstruktur menyokong dapatan kesemua statistik SEM. Kesimpulannya, penggunaan (i-almunawwar) ini telah terbukti dapat meningkatkan pencapaian dan motivasi pelajar. Di samping itu, kajian ini juga dapat menyumbang kepada teori-teori pembangunan dan penerimaan teknologi pendidikan secara kontekstual. Implikasinya, kajian ini berjaya memberi panduan konstruktif kepada KPT dan pihak yang berkaitan untuk meningkatkan kemahiran penguasaan pelajar dalam mempelajari bahasa Arab.



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## LIST OF ABBREVIATIONS

A	Attention
ACH	Achievement
AGFI	Adjusted Goodness of Fit
AMOS	Analysis of Moment Structures
ANCOVA	Analysis of covariance
Apps	Application
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CMIN/DF	Chi Square/Degrees of Freedom
( $\chi^2/df$ )	
EFA	Exploratory Factor Analysis
GFI	Goodness of Fit Index
GOF	Goodness of Fit
HIE	Higher Institution Educational
R	Relevance
C	Confidence
S	Satisfaction
TAM	Technology Acceptance Model (TAM)
UA	Public University
UA	User Acceptance

## LIST OF APPENDICES

- A            Need Analysis Questionnaire
- B            Students Questionnaire
- C            Prototype Expert Validation Questionnaire
- D            Pre and Post Tests
- E            Permissions Letter from UUM
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- G            Permissions Letter from UITM
- H            Permissions Letter from UMK

## CHAPTER 1

### INTRODUCTION

#### 1.1 Preface

For second language learners, proficiency is the most challenging skill to master. Lenneberg (1967) takes the view that this is the outcome of a hypothesis based on neurology. According to Taylor (1974), there is no theoretical reason to justify why learning a language is better for children than adults. Upshur (1968) and Spolsky (1969) offer additional necessary data to support the belief that adults' second-language skills can reach native-speaker levels.

The Arabic language teaching and learning, especially for students from non-native speakers, has garnered substantial attention in recent years. There are many experiments and work done to increase Arabic language education quality based on students' history and the improving learning situation. This has contributed to several

developments that have pushed the Arabic language's teaching and learning in a progressive direction. In Arabic, Malaysian education had experienced positive developments before the country's independence when it was introduced in the 'hut schools' and madrasah institutions in the 18th century AD (Abdullah, 1989). Arabic language teaching in Malaysia has been proliferating ever since, Shahrizal et al. (2015). This excellent development continues, and Arabic is presently being taught in primary schools by introducing J-QAF initiatives (Jawi, Quran, Arabic and Fardu Ain). In tertiary education, Arabic language courses are offered by many public institutions of higher learning (IPTAs), including the University of Malaya (UM), International Islamic University of Malaysia (IIUM), Universiti Sains Islam Malaysia (USIM), Universiti Sultan Zainal Abidin (UniSZA), Universiti Teknologi MARA (UiTM) and Universiti Pendidikan Sultan Idris (UPSI) at different levels of study.

Meanwhile, even though Arabic teaching and learning have been practised across several stages of education, the Arabic language learning process also needs to highlight the facets of language skills that become a crucial point of language teaching and learning, including the use of resources books, modules and notes. In this regard, Abd Rauf Hassan Azhari (2005) conducted research conducted by Nik Mohd Rahimi Nik Yusoff (2005) Zawawi Ismail, Ab. Halim Tamuri, Nik Mohd Rahimi Nik Yusoff and Mohd Ala-Uddin Othman (2011), Ibtisam Abdullah and Zamri Ahmad (2012), Ismail Muhamad, Wan Maizatul Akmar Wan Ahmad and Azman Che Mat (2013) conversed linguistic skills as the vital aspect in improving Arabic language teaching and learning.

Smartphones have become a necessity in our modern lives. However, they can also be disruptive. The constant notifications easily drag us out of present surroundings into the welcoming pixelated glow of smartphones. Despite social media addiction, those applications like Facebook and Instagram help learn Arabic. Dong and Liu (2013) discussed that learning aids are valuable tools for language courses because they help build students' linguistic skills. Apps are software that can be operated on computers, phones, tablets, or other electronic devices via a web browser or offline. Apps are accessible with or without an internet connection. They comprise any knowledge which is essential in language study. Apps can be used in many fields and designed for use in an educational or training course. In this light, some apps offer modern takes on the word software, and at the same time, apps allow the use of electronic media, which has more to offer other than photo and music. As a result, people are now considering studying using tablet-type devices (Shimizu R., Ogawa K., 2014).

Meanwhile, Ng et al. (2015) posited that It is daunting for beginners to study foreign languages by self-learning because no tutor can provide them with instruction and suggestions to develop their skills. However, most beginners may not have the basic knowledge of Arabic, such as Arabic alphabets or phonology and may not pronounce a word. They also may not have any idea of what they should learn at the beginning. This problem causes the process of teaching and learning to become slower and less effective. Moreover, students taking this subject often face difficulties because there are limited tools that can help them revise at home, especially in terms of revising pronunciation. Therefore, this study established a multimedia, interactive mobile application that will become a learning aid to understand Arabic further using a combination of multimedia elements. HTML 5 will be put to use to build this app.

Students can do their revision by using this app, and the teaching and learning process is made more accessible and more practical.

## 1.2 Background

The evolution of mobile phone applications has become very significant in education, and educators are actively involved in incorporating mobile learning and designing or effectively deploying mobile phone software portfolios. Hinchcliffe (2013) forecast that mobile technology growth would continue to be a major challenge and that branded mobile apps (branded apps) would be widely adopted in the coming years. Some studies have shown greater use of mobile devices in education as modern digital devices require immersive learning. It is easier to work with mobile devices like a smartphone rather than work with a PC. Thus, it is imperative to try on learning through devices since it can enhance learning progress at all levels. On the other hand, while the iOS AppStore contains a huge amount of pre-school and elementary school educational software, some educational apps may not comply with the local educational ethics. Many test applications in this light are poorly defined distracters.

In this light, the use of technologies is one of the latest educational methods that should not be ignored, and educators should take advantage of all the modern teaching technology. This is particularly true for Arabic language education, which needs to be changed from conventional to modern techniques, together with modern technology, such as internet-based learning (Ali, 2008). Internet-based learning enhances the learning model framework using interactive internet technology to provide learning

materials and promote communication experiences. The use of the Internet may create excitement among the users as they escaped from the traditional learning method and have attractive and fascinating learning experiences. Furthermore, Jennifer Lin clarified that studying through the Web enables knowledge courses to be accessed mainly using Internet-based technology and facilitates the contact between the parties involved in the educational process (Ali, 2008).

Based on the above discussion, the researcher believes that modern technology should be incorporated into teaching currently. Hence, this study has entitled the mobile application's effectiveness and acceptance for learning Arabic language proficiency elementary at the university level. This highlights the importance of implementing this technology in learning the Arabic language to offset the lack of interest in studying Arabic to make the language classroom more exciting and attractive.

### 1.3 Problem Statement

Even in the 21st century, Arabic teaching has continued to prosper in Malaysia. Many public and private institutions of tertiary educations offer either an Arabic language program or Arabic language subjects. This situation causes a plentiful of similar courses available in the country. In addition to carrying out Arabic language classes, some of these institutions organize seminars and workshops to develop and improve Arabic language proficiency.

Recent statistics have proved that the Arabic language learners in Malaysia have reached thousands, especially with the implementation of J-QAF (Quran- Jawi- Arabic-Fardhu Ain Programme) in government schools under the Malaysian Ministry of Education jurisdiction. Intrinsically, the significance of the Arabic language in Malaysia is paramount due to the increasing number of Arabic language learners at different levels, which had increased from time to time, as Hanapi Dollah et al. (2017) mentioned. Moreover, students still cannot learn Arabic language skills despite completing the classes, according to Abdul Hayyi et al. (2012). It arises as students study Arabic to pass their exam, and the learning methods applied to the students are less successful. So, language skills are one of the most important criteria that contribute to the measurement of language proficiency for students, added by Zunita et al. (2016).

05-4506832 Janudin (2017) asserted that the current teaching system does not allow

students to grasp the required language skills. Furthermore, poor command of Arabic language skills can also be correlated with the teacher's strategy and techniques. Most lecturers or educators only use the translation and memorization methods and do not use other methods (Rosni S. , 2009). This harms the students' performance as such approaches will not help students learn language skills and deter students from being involved and engaged in the classroom. Rosni (2012) discovered that most students are we-versed in Arabic grammar and vocabulary, but they do not have the courage and confidence to speak. Among the factors contributing to this problem is the weakness of pedagogy in teaching Arabic, the heavy influence of the first language and the surrounding culture. This entire problem has been supported by the study done by Salih Mahgoub el-Tingari (2016). He said that the main reason for avoiding the Arabic language in communication by the Malaysian learner is that teaching is the traditional

method used by the lecturer in the learning process. Besides, the problem in teaching the Arabic language is very critical. Arabic teachers in Malaysia face various problems in delivering their teaching. Among the teachers' issues are lack of skills, pedagogy, motivation, teaching aids and the environment. (Zaini et al., 2017).

According to Rosni (2017), students should be taught to learn independently and actively using electronic materials around them. Irma Martiny has supported this statement Maimun. Zaid and Mohd Yusri (2016) said that teaching tools in educating the Arabic language are moderate. Mohd Feham and Isarji (2000), Mohd Feham (2006), Ashinida, Afendi and Mohd Shabri (2004) and Zawawi (2008) lamented that the use of computer-assisted technology in Arabic language teaching and learning is still minimal. However, (Azhar et al., 2008) teachers of the Arabic language still underuse the technology-based tutoring method. Over-dependence on textbooks is also vital in Arabic teaching and learning (Shahrizal, 2012). This condition can be attributed to the limited number of digital software available for Arabic instruction and those focused on the Arabic language curriculum and textbooks. This encourages teachers to choose textbooks and reference books as instructional materials. Moreover, Mohd Feham (2016) asserted that there are limited numbers of invention and technology in studying Arabic. Several studies have indicated that most Arabic language teachers, especially senior teachers, have low computer literacy and are inept in using the computer, the teaching courseware (Zawawi, 2008) and lack computer training (Ashinida et al., 2004).

It is argued that the Arabic language's teaching can no longer rely solely on learning methods, which Arabic language teachers prefer. Nurkhamimi,et.al., (2016). To improve teaching and learning, Rosni (2017) stated that Arabic teachers should be



exposed to the 21st-century approach to learning objectives and improve their pedagogical proficiency of subject content. One way to do this is by providing current teaching materials to facilitate further the learning process (Rosni S. , 2017).

The lecturers' traditional teaching practice caused the student's main demotivating factors in learning and mastering the Arabic language (Ashinida, 2013). Besides, motivation plays an essential role in the learning process. Motivated students will always be passionate about their learning process. For foreign language learning such as Arabic at the public university, motivation plays an essential role in all aspects and should be nurtured for every student (Abdul Hakim et al., 2015; Gardner R. C., 2016; Robert, 1980). In addition to influencing students' achievement levels, motivation will also affect students' acceptance of the Arabic language (Anuar Sopian 2015).

Students' motivation in learning Arabic is still low, which can lead to weakness in the Arabic language and the perception that Arabic is difficult to learn (Abim Halim & Wan Mohammad 2006; Abdul Hakim, 2015) low student motivation in learning Arabic, previous studies (Asep Muhammad 2015; Nanin Sumiarni 2012; Samsul Afandi 2010; Wan Azura, Lubna & Ahmad Fazullah, 2013) recommend the use of media and technology to increase students' motivation for learning Arabic.

As a digital generation living in a modern age, modern technology is an integral part of our lives. Many students rely heavily on technology to facilitate their daily work and affairs (MyMetro, 2015). The use of modern technology as educational materials could increase students' motivation to learn Arabic and instil their learning environment. Mohd Shahrizal et al. (2016). This situation undoubtedly highlights the



urgent need for the current educational and learning landscape to follow, track, and keep updated with modern technology's rapid developments.

Malaysian Communications and Multimedia Commission (MCMC) (2017) has surveyed smartphones user has rapidly become the preferred device for most Malaysian to remain connected. According to the survey, smartphone users' percentage continues to rise from 68.7% in 2016 to 75.9% in 2017. The ownership is exceptionally high among younger people and those with tertiary education level.

In the meantime, mobile application effectiveness in learning language has been proven effective and efficient (Grimus & Ebner, 2015). The use of a mobile application has the prospect of creating a transformation in the education process. It is anticipated to remodel the education era that demands fresh and exciting concepts. As a result, mobile applications are widely used as a learning medium. The e-Learning concept is often linked to the provision of systematic and quality systems and increasing content or course materials. However, the adoption of these concepts in Arabic language education is still limited and has yet to reach many students. In this regard, while providing the Learning Management System as a platform for delivering learning and teaching materials is not a significant issue, researchers have identified the deficiency in Arabic language teaching materials that meet the systematic and quality system provision or other commonly used e-Learning concepts as the key hindrance in employing e-Learning concepts in Arabic language education. The usability of the app and its contribution to the course's growth is crucial for developing the Arabic language in the era of information and communication technology. Md Feham Ghalib (2016), in his study of technology and Arabic language, has formulated that the use of technology

should be made as ambitious as possible to meet the current needs so that the Arabic language will advance concurrently with speed in information and communication technology. It is also essential to systematize technology adoption with pertinent knowledge and readiness as teachers should be skilled to utilize technology-based teaching materials. In this light, there are still no pilot studies that have ascertained mobile applications' role in the development of Arabic language teaching, particularly in Malaysia (Janudin & Arsyad, 2004). The next discussion will be focusing on the issue of selecting the learning delivery medium and the instructional design model.

Lastly, the inability to master Arabic language proficiency among Arabic learners in Malaysia and at the university level is still significant and out of the learning outcomes. Abdul Hakim, et al. (2015). This has been proven by Ku Fatahiyyah et al. (2017) in the study that stated that more than 60% of Arabic language learners in IPTA's are weak in the proficiency of Arabic language after attending the classes. It has been supported by the analysis of student's achievement in Arabic language classes from 2016-2018 done by the department of the third language, and University Malaysia Kelantan stated that more than 85% of students are not able to get excellent result in the Arabic language course as described in the table below:

Table 1.1  
*Student's achievement 2016-2018*

Year	Number of registered students	Number of students achieve (A)	Percent
2016	450	110	24%
2017	520	135	26%
2018	470	100	21%

*Source, Universiti Malaysia Kelantan, (2019).*

Many opinions expressed by the researchers have related to the weakness of Arabic language proficiency among students with their level of motivation. Siti Saudah Hassan (1994) states that the problem that affects the deficiency of Arabic language proficiency is a language environment do not support student's motivation in learning. The phenomenon of weakness in Arabic language proficiency amongst students should not be underestimated. It will have a hazardous impact in the future.

The above discussion has prompted the researcher to study and identify the appropriate solutions to progress the growth of Arabic language education in the current information technology era as the integration of technology improves the quality of learning and teaching tools and gradually increase the quality of learning over time. This could be demonstrated using mobile phones by educators and students, which has increased exponentially and will continue to grow over the coming years. Mobile accessibility, in this respect, is incumbent to ensure that technology could be beneficial, especially in the fields of academic and education which were always left behind despite the technology progress.

The acceptance of technology in Arabic language learning is less popular among students and teachers. This is due to the tendency of teachers to adopt conventional methods over technology (Al-Muslim & Zamri, 2012; Ghazali et al., 2012; Ayyad et al., 2011; Muhammad Sabri, 2011; Nik Mohd Rahimi & Kamarulzaman, 2008; Zawawi, 2008; Lubna et al., 2007). Besides, teachers have no exposure and training using technological equipment and limited infrastructure facilities (Lubna et al., 2008; Rahimi et al., 2005; Ashinida et al. 2004) and lack the skills to using technology devices (Lubna et al., 2008; Rahimi et al., 2005; Mohd Feham & Isarji, 2000).

Moreover, the researcher has considered the gender factor, which also contributes to the differences in the proficiency and motivation level in the learning Arabic language. The preceding study has identified students' performances differs according to their gender (Nadhilah, 2018). Besides that, there are reports on how male and female students have different perceptions of ICT and multimedia-based learning processes (Aminul et al., 2011; Bebetos & Antoniou, 2009; Tengku Faekah, 2005; Ofsted 2003; Gunn, 2003; Liaw, 2002; Mumtaz, 2001).

Relevant previous studies are more likely to develop technology-based materials without focusing on implementing the technology in the classroom. Therefore, this study will form the Arabic Proficiency language learning application for Arabic language learners' classes at a public university. This study aims to address several issues related to the deficiency of Arabic language materials, particularly technology-based, inappropriate, unattractive and non-compliant pedagogical content, and to clarify the concept of implementing the mobile application for the learning process in the classroom. The application is systematically built and through a model-based procedure selected and looks at student achievement, motivation and acceptance in mobile application learning Arabic.

#### **1.4 Aim of Research**

In general, this research aims to analyse the use of the mobile application to deliver Arabic language teaching in the case of students studying Arabic language undergraduates' students. The key objectives of this study are to:

1. Investigate the extent to which the Mobile apps can improve the delivery of Arabic Language lessons to students, focusing on developing a special mobile application to uphold Arabic proficiency among the Malaysia society.
2. Analyze students' motivation to use the mobile application to learn Arabic and
3. Design a unique Mobile application program to help students to learn Arabic.

### 1.5 Research Objectives

The specific research objectives are as follow:

1. To design and develop a mobile application for learning Arabic language proficiency.
2. To identify the effectiveness of mobile applications in improving students' Arabic Proficiency compared to traditional pedagogical practices and gender.
3. To identify the effect of Attention, Relevance, Confidence and Satisfaction and achievement towards User Acceptance in using the mobile application for learning Arabic language proficiency.
4. To identify the effect of Attention, Relevance, Confidence and Satisfaction toward Achievement in using the mobile application in learning Arabic language proficiency.
5. To develop a model of student's user acceptance on learning Arabic language proficiency using the mobile application.
6. To investigate the barriers to using the application in learning the Arabic language.

## 1.6 Research Question

Based on the discussion above, this study pursues to answer these research questions:

1. What needs of the students need to be considered in the design and development of the mobile apps in learning Arabic language proficiency?
2. What is the significant difference between students' proficiency in the treatment group and the control group in learning Arabic language proficiency?
3. What is the significant difference in student's achievement across gender in the treatment group?
4. What is the effect of Attention, Relevance, Confidence and Satisfaction and achievement towards user acceptance in using the mobile application in learning Arabic language proficiency?
5. What is the effect of Attention, Relevance, Confidence and Satisfaction toward Achievement in using the mobile application in learning Arabic language proficiency?
6. What is the best model to measure students' acceptance of using mobile applications in learning Arabic language proficiency?
7. What types of barriers to using the mobile application in learning the Arabic language?

## 1.7 Research Hypotheses

These hypotheses are on the differences in student achievement between group and gender.

H<sub>01</sub>: There is no significant difference in students' achievement between the control group's pre-test score and the treatment group.

H<sub>02</sub>: There is no significant difference in students' achievement between the pre-test and post-test scores of the treatment group.

H<sub>03</sub>: There is no significant difference in students' achievement between the control group's post-test score and the treatment group.

H<sub>04</sub>: There are no significant differences between genders in terms of academic achievement in the Arabic language after experimental treatments.

These hypotheses are on the effects of student's Attention, Relevance, Confidence, Satisfaction and achievement toward user acceptance in learning the Arabic language using the mobile application

H<sub>05</sub>: There is no significant effect on student's Attention toward user acceptance in learning the Arabic language using the mobile application.

H<sub>06</sub>: There is no significant effect on student's Relevance toward user acceptance in learning the Arabic language using the mobile application.

H<sub>07</sub>: There is no significant effect on student's Relevance toward user acceptance in learning the Arabic language using the mobile application.

H<sub>08</sub>: There is no significant effect on student's Satisfaction toward user acceptance in learning the Arabic language using the mobile application.

H<sub>09</sub>: There is no significant effect on student's Achievement toward user acceptance in learning the Arabic language using the mobile application.

H<sub>010</sub>: There is no significant effect on student's Attention toward Achievement in learning the Arabic language using the mobile application.

H<sub>011</sub>: There is no significant effect on student's Relevance toward Achievement in learning the Arabic language using the mobile application.

H<sub>012</sub>: There is no significant effect on student's Confidence toward Achievement in learning the Arabic language using the mobile application.

H<sub>013</sub>: There is no significant effect on student's Satisfaction toward Achievement in learning the Arabic language using the mobile application.

These hypotheses are on the effects of student's achievement as a mediator between Attention, Relevance, Confidence, Satisfaction toward user acceptance in learning the Arabic language using the mobile application

H<sub>014</sub>: There is no significant effect on achievement as a mediator between Attention and User Acceptance in learning the Arabic language using the mobile application.

H<sub>015</sub>: There is no significant effect on achievement as a mediator between Relevance and User Acceptance in learning the Arabic language using the mobile application.

H<sub>016</sub>: There is no significant effect on achievement as a mediator between Confidence and User Acceptance in learning the Arabic language using the mobile application.

H<sub>017</sub>: There is no significant effect on achievement as a mediator between Satisfaction and User Acceptance in learning the Arabic language using the mobile application.

## 1.8 Limitation of the research

The design, development, and implementation of the mobile application in this research cater to a limited group of Arabic language learners as a foreign language among undergraduate students in Malaysia. They are the ones responsible for evaluating program effectiveness. This research's selection is limited to students in Higher Educational Institutions (HIE) enrolled in Arabic proficiency courses.

## 1.9 Significant of this study

The use of a mobile application module as a learning tool for Arabic courses will provide inputs that comprehensively shape the dynamics of Arabic language education. This research's findings can be used to guide universities and schools on how the design tools according to their learners' needs. The mobile application modules designed and used in this study allow teaching and learning anytime, anyplace, and make it possible for learning to occur beyond the classroom's physical walls. Consequently, students can learn in their preferred learning environment, and learning becomes interactive, personal, collaborative, and lifelong. Moreover, the online learning concept can also be expanded to other subjects, not only Arabic.

This research comprises analysis, development, and evaluation of mobile applications in mobile learning and focuses on incorporating technology into Arabic teaching. The program is designed as an Arabic-specific learning resource and built as a KEMGERLY Model-based multimedia course. It is hoped that its design will guide the development of another course software. It would benefit students, instructors, and multimedia application developers (either individual, small groups or special projects) and those involved with the development of linguistic education in the context of e-learning.

Moreover, the application designed in this study is beneficial for Arabic language learners as it allows students to explore the application content more flexibly in a new learning environment without time and place restrictions. It also offers a more interactive and exciting learning experience through multimedia technology and can

strengthen acquisition and mastery of the Arabic language more quickly and effectively. Meanwhile, for teachers, this study helps present a case for using the mobile application and the mobile learning concept in teaching Arabic. This study also acts as a blueprint and a comparison for the development of other Arabic language teaching & learning materials involving Arabic characters.

This study is also beneficial to organizations or relevant parties such as schools/ educational departments/universities/ministries involved in the development of teaching & learning Arabic materials. This is because it serves as a guide and reference to developing more comprehensive Arabic teaching & learning materials for various educational stages, either for teaching & learning tool or as support resources for the subject. It also documents the preparation of teaching & learning materials tailored to the syllabus's content specified and makes the distribution of knowledge related syllabus more systematic, efficient and effective. Additionally, the study can add value and increase expertise in Arabic teaching so that it can compete globally in this era of information and communication technology.

### **1.10 Research design**

This work used the case study methodology to explore the mobile application's role in the Arabic language's learning environment. It was heavily based on the Cognitive Theory of Multimedia Learning. This research used a case study of learning Arabic through a mobile app by sample undergraduate students participating in proficiency courses in Arabic.

Quantitative analysis of students' needs and perception will be used to assess the impact of mobile application on their motivation to learn Arabic and their level of proficiency in the Arabic language. Data will be collected from questionnaires distributed among the students. Several questionnaires will be used. The first focuses on the needs and perceptions of the students to probe their demographic information. A pre-test set of questionnaires was constructed to assess the students' basic knowledge of Arabic.

In contrast, a post-test questionnaire was deployed to evaluate student' motivation to learn Arabic and their performance in the language. Lastly, a motivation questionnaire will be used to assess the interaction between motivation and proficiency in both the control and treatment groups. Meanwhile, A Structural equation Modelling has been developed to explore the effects of the interaction between achievement, motivation, and user acceptance of using the mobile application. The qualitative analysis will be used to analyse the student's barriers in using mobile apps for learning Arabic language proficiency.

The students are split into two groups: group 1 and group 2. Group 1, or the controller group, is performed conventionally in teaching and learning, while Group 2 or the treatment group will intervene in the mobile application as a learning tool. Thus, the instruments used in this research are: 1) need analysis questionnaire 2) Pre- and post-tests to assess students' performance before and after treatment (use of the mobile application), 3) motivation and Students' Acceptance questionnaire to identify the level of motivation and their acceptance toward learning Arabic via Mobile Application (4) Semi-structured interview questions on the students' barriers of mobile applications.

### 1.11 Theoretical Framework

Kemp's model was adapted to guide the development. In comparison, Gerlach & Ely's model will guide the way of the classroom's delivery method. Kemp adopts a comprehensive view, the oval shape of his model, which is elaborated in chapter 2, conveys that the design and development process is a continuous cycle that requires constant planning, design, development, and assessment to ensure effective instruction. The model is systematic and seems to encourage designers to work in all areas as appropriate. Kemp's instructional model defines nine different components of an instructional design and at the same time adopts a continuous implementation/evaluation model (Morrison and Kemp, 2004:4), namely instructional problems, learners' characteristics, task analysis, instructional objectives, content sequencing, instructional strategies, designing the message, instructional delivery, and evaluation instrument. This model thrives on the idea of flexibility.

The essential concept of using this model is that any of the elements can be addressed at any time in the process, giving the designer freedom to modify their instruction as necessary. It may start from the instructional problem, which happens in the researcher's classroom. One of the major draws to this model is that revision is highly encouraged throughout the process. The goal is to have the flexibility to correct problems as they arise, making the result or product more efficient and freer of error.

Within this model, the designer has the choice to decide what elements will be needed. The lack of lines and arrows make it easier for the designer to skip around to the components she needs to address and disregard those that she does not.

Besides the contents, the way to deliver is one of the considerations in developing the mobile application. The growth of technology is a crucial thing to consider in this research. The materials developed in this research are in mobile application format to consider technology's blending in education. As we move further into the Digital Age, the way the students learn is changing. The students now are growing up in this technology-saturated world. The materials, mainly in the form of the book, one of the main focal points and foundation of modern education, should adapt to the situation. As educators integrate new technologies into teaching, the book is transforming to include what is known as the electronic book or e-book (Cavanaugh, 2006). As we look at the growth of technology integration into education and the need to make students resources more available, the mobile application provides an ideal solution. The mobile application may have the power to remove large parts of that heavy book bag that students are carrying (Cavanaugh, 2006). The mobile application resources are easily updated and do not fill up shelf space (Cavanaugh, 2006:4). The materials in the e-book can be linked to the internet, allowing the students to learn from up-to-date sources and get self-learning opportunities. Hopefully, the supplementary mobile application development adapted from Kemp's and Gerlach & Ely models, designed with the content-based instructions and delivered in the portable format, can provide the students with a better platform for the learning process. What differentiates Kemp model and Gerlach & Ely model is the combination of instructional model and classroom-oriented model from most other models is that it considers instruction from the perspective of the learners, it provides an exemplary application of the systems approach where the ID process is presented as a continuous cycle, and finally it puts a greater emphasis on how to manage an instructional design process.

Gustafson and Branch (2001) in Akbulut (2007) classifies the Kemp model as a classroom orientation instructional model. The classroom focus involves teachers in deciding appropriate content, strategies, media usage and evaluation. It is of interest primarily to teachers who look for instructional solutions to learning problems. However, the Kemp model suggests both instructional and non-instructional solutions and assigns flexible roles to a larger team. Akbulut (2007) states if one is to be too rigid in assigning models to the different orientation.

Categories might claim that the Kemp model might be suitable for a system focus rather than the classroom. The Kemp model could be considered as a classroom orientation model since it leads to an output of one or a few hours of instruction. In contrast, systems-oriented models lead to an outcome of a whole course or curriculum.

Although the model is also primarily used to develop an instructional program, it can also be adapted to create learning materials for additional program mobile application for learning the Arabic language as this research was conducted. Figure 1.3 describes the theoretical framework for research designing and developing a prototype for mobile applications. It is a blend of the two instructional models, the Kemp model and the Gerlach and Ely model, known as the KemGerly model. Kemp Model is made up of nine essential elements that become the basis of a continuous design cycle. There is no starting and ending point for this non-linear cycle and can start at any related aspect. The researcher has not missed a step in following the requirement to set up the prototype.

The process design rules generally start with a set of analyses, needs analysis, task analysis and instruction analysis. Therefore, the Kemp Model will be addressed

first from the research process to identify instructive problems and set the goal of developing an instructive system. First, the student's personality and history will be examined before the activities are further defined, learning goals are set, learning material prepared, and learning strategy developed. Those components are repeated using the values of Gerlach and Ely Process (1980).

After the groundwork, the following steps entail defining the instructional message and communication mechanism, developing the assessment method to determine the targets, and 3) determining the foundation for teaching and learning programs. Both aspects of development must test developing a digital learning tool based on the Learning Theory of Constructivism.

The next step in designing the device involves evaluating the concept of instructive design, rationalising the smartphone framework/module, applying functionality ideas and developing a user interface. It had been stressed that the principal objective of the mobile application is to tempt students towards a better learning experience. Accordingly, the researcher has developed this module based on principles discoursed in Cognitive Load Theory (CLT) and Cognitive Theory of Multimedia Learning (CTML). Few essential CLT and CTML effects and directions have been used in creating the application, as the audio and visual form with the result and direction of modality. A particular type of presentation of information may reduce concentration dissection, as it lets students concentrate their attention on a picture when listening to the audio text's interpretation. This is also in line with the contiguity concept of CTML that specifies that the distribution of diagrams and texts form are most suitable

when presented simultaneously (temporal-contiguity effect) and adjacently (spatial-contiguity effect).

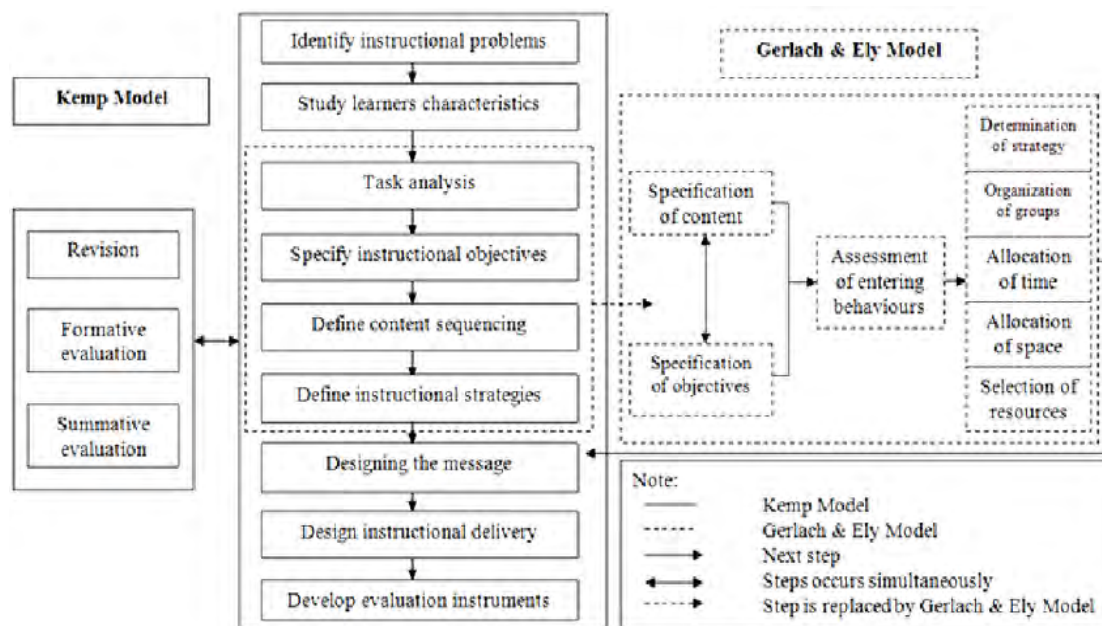


Figure 1.1. KEMGERLY MODEL, adapted from Tien & Kamisah (2010)

## 1.12 Conceptual Framework

The study's conceptual framework illustrated in Figure 1.4. Researchers do careful planning before building mobile applications. Among the plans to consider are the instructional design models that need to be used, the learning theory applied in the content delivery and screen design. The learning theory applied in this module is divided into two parts: the theory applied during the presentation of content and the theory applied in the module screen's design and display. Second language learning and acquisition theory and Vygotsky's Cognitive Development Theory. The way content is



presented and the steps in delivering information are based on Behaviour Theory, Cognitive Theory and Constructive Learning Theory.

To ensure that students can learn quickly and easily without being overwhelmed by the complex elements of the mobile application environment, the researchers designed this module based on the principles discussed in the learner-centred approach, second language learning and acquisition theory and Cognitive Theory. The researcher also considered the development of several theories in the design and development of the mobile application, such as the Cognitive Theory of Multimedia Learning and Some important implications and principles of CLT and CTML being applied in this application. Examples provide visual and audio information, as described in the effects and principles of modality. Graphical diagrams and audio text descriptions can also avoid the effects and principles of focus sharing, so students only must refer to charts when listening to audio stories. This helps students focus more on the information because both visual and audio input can be acquired simultaneously. This is also in line with the closeness principle in CTML, where text and diagrams are better presented simultaneously (temporal-contiguity effect) and near (spatial-contiguity effect) than distant or separate.

The model of instruction design is the basis of the mobile application's construction based on the combination of two models of instructional design, namely the Kemp Model (Morrison et al. 2007) and Gerlach and Ely Model (1980). Researchers have named this combined design model as KemGerly Model. Kemp's model consists of nine key elements that form the cycle's backbone during the application module



construction process. This cycle has no starting point and no ending point and is non-linear. So, this cycle can start in any related element.

This study has three main phases: analysis, design and development, implementation and evaluation based on the KEMGERLY model. The first phase begins with the conduct of research of the students. This aims to identify student readiness in implementing mobile application assisted learning and mobile application elements that meet their needs. Besides, appropriate learning theories include theories relating to the use of technology or multimedia.

Subsequently, the Arabic language-based mobile application was developed and referred to as a prototype of materials as it is still in evaluation and improvement. The prototype was built and modified, and refined several times based on expert evaluation.

This assessment takes place in several rounds so that the prototype built has a valid and influential element in learning. This process will guarantee the quality of the material developed.

In the final phase of the implementation and evaluation phase, the prototype tested in the actual study. This material tested during the real class of 1 semester, 2018/2019, for Seven (7) weeks to evaluate the prototype's effectiveness through quasi-experimental experiments in 4 public universities selected by cluster sampling according to regional peninsular Malaysia. These results included pre- and post-intervention tests between the control group and the treatment group. Levels of student motivation and student acceptance also measure student achievement on student motivation and student acceptance by the Acceptance Model.

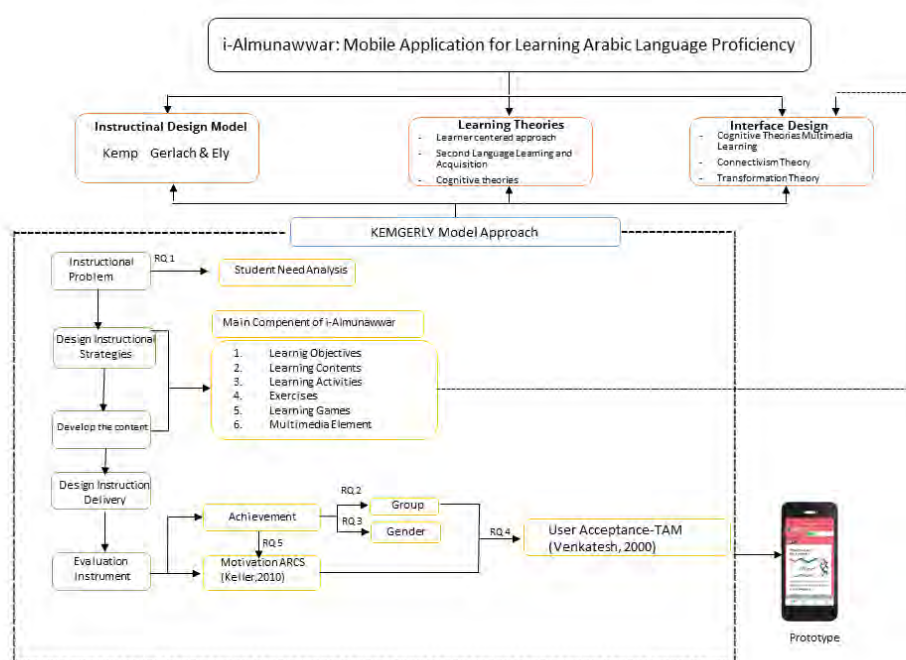


Figure 1.2. Conceptual Framework

## 1.13 Definition of terms

### i. Arabic language

Arabic is one of the major global languages and is the official languages of 24 Arab countries. It is spoken by nearly 300 million native speakers, accounting for 4 per cent of the world's population (Abdul Rahman, 2009). Arabic in this study refers to the Arabic Language subject offered as an elective course to undergraduate students in Malaysia's public university. It emphasises studying Arabic to communicate so that institutions can develop students who can interact in Arabic.

## **ii. Instructional technology**

In this analysis, the phrase 'instructional technology' refers to any use of digital, computer technology, or networked communications to facilitate teaching or evaluation. It can also extend to the management of academic information. This definition includes whether an exercise is done in-person, in a face-to-face classroom environment, or between persons in two or more remote regions. Instructional Technology can also be extended to the classroom delivery of broadcast television documentaries or to conduct virtual reality instruction by automated interactive computer simulations that integrate the instruction process with the assessment. (Molenda, 2004) described that, "in popular usage, instructional technology refers to the use of communications media—hardware and software—to help people learn". In this study, the integration of instructional technology in Arabic language proficiency in the teaching and learning process at the elementary level via mobile application.

## **iii. Multimedia Learning**

Multimedia refers to the form of media that carries information such as paper, tapes, and audio and video CDs. (Abdel Salam A.F., Abdel Azim, 1997). Multimedia materials include communication tools comprising sounds, illustrations, video clips, prints, slides, audio recordings, computer, and motion pictures. These materials widely used to strengthen the teaching and learning process' effectiveness (Buford, 1994). In this study, multimedia elements included in developing Arabic language content and

delivering to the student using mobile application such as videos, audios, animations, and interactive contents.

#### iv. Mobile Apps Learning

Apps learning refers to the modern teaching method and knowledge that uses the latest technology in the learning process. It is an e-learning type and be a form of distance learning. Georgiev, Geogieva & Smrikarov,(2004). Here, learning through apps is explained as “the use of the application in mobile devices that can link to the Internet for educational perspectives. Kinash, Brand & Matthiew, (2012). Apps learning encompasses the teaching and learning approach known as learning through mobile devices, for instance, laptops, Palms, PDAs, and mobile devices (Saedah, 2005).

Researchers also believe that learning through the application is a new concept whereby it focused on the transfer of information without being there physically Kukukska-Hulme & Traxler, (2005). Learning through mobile apps in this analysis comprises learning through mobile technology or wireless technology, which focuses on delivering learning content through selected mobile electronics devices. This study has developed a special mobile application for the teaching and learning process of Arabic language proficiency for elementary-level tertiary learners in the public university.

## v. Courseware

According to (Zhang & Chen, 2010), teaching and learning linked by multimedia courseware. Another popular definition of course software is an educational program or computer software used either for computer-assisted teaching or learning. For this study, the courseware refers to the mobile application developed for e-learning as part of Arabic language instruction. In this study, multimedia courseware has been developed for teaching and learning Arabic language proficiency at the elementary level.

## vi. Motivation

Motivation refers to the internal conditions that stimulate, steer, and maintain Awan et al.,(2011). Motivation directs one's behaviour Wigfield et al., (2002) and someone enthusiastic and actively doing something is said to be motivated (Ryan & Deci, 2000). Thus, motivation refers to a person's interest in the learning experience, self-efficacy (self-efficacy) to succeed in the experience and goal orientation (goal orientation) to participate in an experience (Parker, 2007). It can also describe as a student's effort to learn a second language because of the need and wish to study it (Ellis, 1994). Furthermore, Gardner (1985) described the motivation for language learning as the stage where one works and strives to learn the language because of his desire to do so and feel satisfied when doing the activity. According to him, there are three main mechanisms in its description: business focus, willingness to learn, as well as satisfaction with tasks which are essential elements in assessing the level of

motivational strength of language learning. In this study, students' motivation based on the ARCS motivation constructs measured after quasi-experiments among the students in the treatment group.

## **vii. Language Proficiency**

A way of measuring language skills had been developed and refined in the United States for government, business, and academic purposes. Still, the definitions of language skills vary greatly depending on the people who use the term, their perspectives, and objectives. The use of the dictionary was extensive in those days without the presence of technology. The dictionary used is looking for words they do not understand and studying the grammar aspect, learning part of speech, words, and phrases, discern, and producing the sound system to encode and decode messages. The scale below comprises six skill levels of language learning:

Level 0: No Proficiency in The Language – A person has not been introduced to the language assessed at this level of proficiency and knows no words or very few words in it.

Level 1: Elementary Proficiency – A person at this level of skill knows dozens or even hundreds of words and can order meals, be courteous, ask and reply to very basic questions about familiar subjects, tell the time and other menial tasks. Yet he/she is likely to have many pronunciation errors.

Level 2: Limited Working Proficiency – An individual at this level of skill has a versatile vocabulary of hundreds of words and can utilise the language in most fundamental social conditions and handle basic work needs. He or she can talk about



current events, himself/herself, and his / her family. And he/she is likely to have a strong foreign accent.

Level 3: Professional Working Proficiency – A speaker at this level of competence has a functional vocabulary of a few thousand words and can use the language in most formal or informal social and work circumstances. Such a person would understand most of the speech at a standard rate of speed and draw from an extensive receptive vocabulary. Although he/she may still have an accent, listeners are not distracted.

Level 4: Full Professional Proficiency – A person at this level of expertise has a constructive vocabulary of several thousand words, including terms unique to his / her professional lexicon. He or she can use the language in almost every language environment, appropriately and precisely. He or she can informally interpret to and from the language with rarely having grammar or pronunciation errors.

Level 5: Native-Like Proficiency – A person by this stage will have a productive and receptive vocabulary equivalent to a well-educated native speaker, including the communicative skills needed to make appropriate cultural references and properly chosen idioms.

### **viii. Traditional Pedagogy**

Traditional pedagogical activities typically involve face-to-face instruction, classroom-based teaching, contact and collaboration in conventional education between student/teacher, student/student, student/content, and teacher/content (Hael, 2012).

Communication between teachers may also take place outside the classroom. Browsing





through the past, all education made use of traditional pedagogy practices in learning since it benefited from providing the instructor with maximum control and oversight of the learning process. During the lesson, the teachers can see, observe, and assess their students all the time.

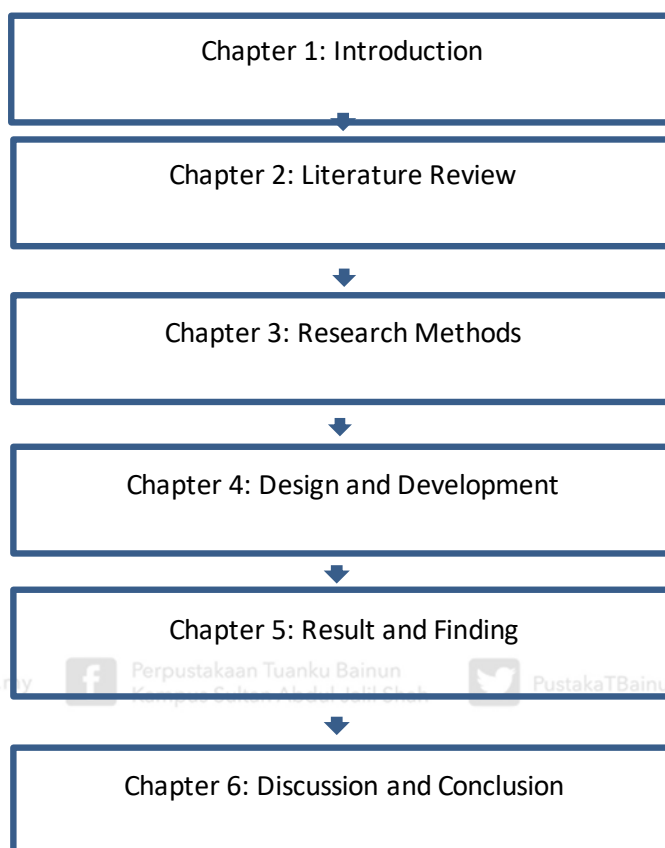
### **ix Students Performances**

A student's academic performance may be viewed as a student's visible and measured actions in each situation (Yusuf). For example, a student's success in social studies academically consists of both visual and metric activities at the start of a course, including scores received from a teacher's examination. The evaluation from the teacher includes first term and mid-semester tests. So, in making a specific research point, we may generalise academic performance from the observable behaviour.



### 1.14 Organisation of the thesis

This analysis is prearranged into six subdivisions, as shown below.



## Chapter 1: Introduction

This chapter provided a general description of this research, including the project's context, the related analysis, and the research questions that this paper would answer. The chapter also addressed the importance of the thesis and the commitment this work has brought to improve Arabic for specific purposes, focusing on the context of teaching Arabic in Malaysia.

## Chapter 2: Literature Review

This chapter provided a general overview of this review, including the study context, the related research, and the research issues in this report. The chapter also addressed the importance of the thesis and the commitment this work has brought to developing Arabic for specific purposes, with a particular focus on the context of teaching Arabic in Malaysia.

## Chapter 3: Research Methods

The third chapter described the methodology used in this research to gather the information. It justified the case study choice – Learning Arabic Language for Specific Purposes via mobile applications in Malaysia. The discussion in this chapter has dramatically helped the researcher complete the designated development phases.

## Chapter 4: Product Design and Development

The fourth chapter presented the five-phase development process of the KEMGERLY Model, which comprises the analysis and design of course software, the development phase, and the implementation phase. The researcher also discussed the final step of the KEMGERLY Model, the course evaluation phase of the course. This phase is related



to preparing the questionnaires, questionnaire data collection, data analysis, and the discussion.

#### Chapter 5: Result and Finding

In this section, the analysis and reports in which the outputs related to the participants' information presented. This discussed the findings and gave the key conclusions from this study. The chapter also gave several recommendations and suggestions to improve mobile applications' role in improving students' learning.

#### Chapter 6: Discussion and Conclusion

Chapter 6 will discuss the consequences of the discoveries in relation to the research questions and discuss the contributions of this research within the literature context.



The section has also identified the analysis's boundaries and provides several proposals and recommendations for upcoming research prospects.



### 1.15 Conclusion

The rapid development of sophisticated technology such as smartphones, tablets, PCs, laptops, and other electronic devices, has made us dependent on mobile apps in our daily lives. Consequently, mobile apps have extensively used for education, business, employment, and people in creative industries. The emergence of mobile apps and the rapid growth of technology have spurred the development of innovative and interactive packages for educational and conducive learning. This research will create a complete and detailed understanding of how mobile learning implemented and how mobile applications enhance learning. In this regard, mobile apps are particularly useful in education. They allow students to visualise various kinds of knowledge during their learning process and development to make teaching more effective for them.

In this chapter, the researcher has explained the research's introduction, the background of the study, statement of the problem, research questions, the objectives of the study, research significance, scope, and the limitation of this study. It has also described the operational definition of the terms used in this study. Subsequently, the next chapter will discuss the areas and frameworks of the research and theoretical and real-world consequences of this study which are very important in Arabic teaching.