

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

In order to start a research, it is very important for every researcher to find similar study based on the current issues and problems occurred regarding to the research topic. Literature review is an important part to be done before proceed for a real research. Researcher need to find information about the prior topics to get an early picture of the research that will be conduct.

For this research, the researcher had sought numerous of articles regarding to the research topic. Various articles from different journals and proceedings had been reviewed which focuses on the research and also from books, theses, reports and any other resources that related to the study. The articles were obtained from google scholar; the freely accessible web search engine that indexes the full text or metadata of scholarly literature and also from various databases such as SAGE journals, ACM Digital Library, EBSCOhost, Emerald Management Plus, ProQuest Central, and Tylor and Francis Online.

All the journal articles had been sorted on Mendeley into folders with the specific name to simplify and expedite the process of reading the literature. Mendeley act as reference manager which it can store .pdf file and generate bibliography easily. In accomplishing the literature review, researcher will use Mendeley together with ATLAS.ti 8 as systematic literature review.

In this chapter, the researcher had organized the themes that are related to the topic of the study. In order to get an idea of what *Tarannum* is, the researcher started with the origin of *Tarannum* al-Qur'ān, followed by its definitions of *Tarannum* al-Qur'ān by the scholars, types of *Tarannum* and their characteristic and the meaning-based *Tarannum* were also discussed. The researcher then discussed on constructivist learning theory for mobile learning that explained on how learning is constructed based on this constructivist learning theory. In light of the core context of the study, this research also analysed the issues and problems in teaching and learning *Tarannum*. In addition, this research discussed on the mobile application in teaching and learning and figure out the existing of mobile apps for *Tarannum* learning and finally, researcher explained in detail the design and development research approach that are pioneered by Richey and Klein (2007).

2.2 The Origin of *Tarannum* Al-Qur'ān

Tarannum al-Qur'ān had emerged for centuries in the Arabs country. It is believed that the art of *Tarannum* al-Qur'ān has been practices since the time of the Holy Prophet Muhammad ﷺ (Nik Jaafar, 2012). According to historians, *Tarannum*'s origin were inspired from few elements of environmental sound that are from wood friction, wind blowing, bird chirping, and water flowing. All the inspired sounds are then been composed and include melodies by the poet to make variation of *Tarannum* rhythms according to the respective cultures. The modernization of *Tarannum* (Arabic music) is believed to be originally influenced by Yunani civilisation. It was started by a music professor who was from Greek people and then extended to music experts in the Arab lands. It is believed from few hadith sohih that

the history of *Tarannum* commencement is from the history of Nuzul Qur'ān in Hira' cave in 610M where the Prophet Muhammad ﷺ himself recited the Qur'ān well, nice and in a beautiful way. He also urged the community to recite the Qur'ān with *Tarannum*, *Tazyīn*, and *Taḥsīn* (Nik Jaafar, 2012; Mohd Ali, 2015).

The history of *Tarannum* and Qur'ān learning in Malay Archipelago expands in line with the development of Islam itself through Arabic traders and missionaries especially in the tenth century until fifteenth century of Masihi; that is before the arrival of the western colonist (Nik Ja'far, 2012).

2.3 *Tarannum* Al-Qur'ān Definitions

Tarannum refers to a rhythmic recitation of the Qur'ān. In Malaysia, the term of *Tarannum* has become synonym which refers to the *Tarannum* Qur'ān, rhythmic song of Qur'ānic recitation or the art song in reciting the Qur'ān. For the Middle East countries, the term *Tarannum* is unpopular among them, they normally use the term *al-Nagham* (النغم) and *al-maqāmāt* (المقامات) that indicate of Qur'ānic *Tarannum* and it was also being used by Indonesian (Khalid et al., 2016).

The meaning of *al-Tarannum* (الترنم) linguistically derives from the word (رَنَّمَ) which means beautifying the voice against something and chanting with a good tone (Zamakhsyari. Mahmud bin Umar bin Ahmad, 1998). Based on “Mu'jam al-ṭullab,” (2005), *Tarannum* came from the root word of (رَنَّمَ- يَرَنَّمُ- رَنِيمًا) which denotes; to chant. While the meaning of *Tarannum* terminologically means knowledge or method discussed on variation of sound according to certain tone, rhythm and melody and it is intended to augment artistic beauty in the recitation especially for Qur'ān recitation

(Nik Ja'far, 2012; Muhammad Lukman et al., 2012; Mohd Zaini, Adnan & Norakyairee, 2018; Kementerian Pendidikan Malaysia, n.d.). Nik Jaa'far (2012) in his book entitled *Methods of Tarannum* defines *Tarannum* as knowledge or methods for diversified voice through these three processes of tone, rhythm and melody. According to Mohd Ali (2015), *Tarannum* means 'taḥsin al-ṣhaut'. Qur'ānic song i.e taḥsin al-ṣhaut has three main components which are al-Tajwīd, al-Tartīl and al-Ghinā. If one of those components is not included, it is not classified as taḥsin al-ṣhaut or *Tarannum*.

Above all, the most used definition that defines *Tarannum* is the knowledge on the art of diversifying the sound of voice by the process of combining the tone, rhythm and melody that are intended to augment the artistic beauty in recitation especially for Qur'ān recitation.

2.4 Types of *Tarannum* and Its Characteristics

According to Mohd Ali (2015) and Nik Jaa'far (2012), the famous *Tarannum* melodies in all Islamic countries since ages only have two streams that are *Tarannum Hijazi* and *Tarannum Misri*. *Tarannum Hijazi* is formed from *lahjah Hijazi* (*Hijazi* dialect) which originated and evolved in Mecca and around the Eastern part of the Arabian Peninsula, known as the *Hijaz* in which the rhythm is influenced by desert environment, hilly with very high temperature heat. The rhythm and melody are quite active besides the voice is quite high-pitched. Compared to *Tarannum Misri* that is formed from *lahjah Misri* (Egyptian dialect), the rhythm is influenced by the lush green valley atmosphere with its simple and comfortable temperatures. The rhythm

and melody are gentle and soft with mild and simple voice. *Tarannum* Hijazi was popular just before 1940s while *Tarannum* Misri was popular after 1940s.

This hijaz rhythmic melody is also known as the Makkawi where it was originated and evolved in Makkah and around the Arabian Peninsula in the Eastern part known as Hijaz. The Arabs Hijaz usually recite the Qur'ān based on the basics of melodies (ترنم أصول), as defined by the acronym *Bihumrin Jasad* (بِحُمْرٍ جَسَدٌ), which states the letter Ba' (ب) indicate the melody of Banjakah, the letter Ha' (ح) indicate the melody of Husaini, the letter (م) indicate the melody of Mayyah, the letter (ر) indicate the melody of Rakbi, the letter (ج) indicates the melody of Jaharkah, the letter (س) indicates the melody of Sikah and the letter (د) indicates the melody of Dakkah. Apart from the melodies mentioned, there are a few more branches or additional melodies which is (ترنم فروع) that recited by the Hijaz Arab community (Mohd Ali, 2015; Nik Jaa'far, 2012).

In Malaysia, the type of *Tarannum* Misri is popular and being used in *Tarannum* teaching and learning. There are seven types of *Tarannum* and were formulated in the Arabic abbreviation words as "*Bihushrin Jasad*" "بِحُصْرٍ جَسَدٌ", which means the letter Ba' (ب) indicates *Tarannum* Bayyati (بَيَّاتِي), the letter Ha' (ح) indicates *Tarannum* Hijaz (حِجَاز), the letter Shad (ص) indicates *Tarannum* Soba (صَبَا), the letter Ra' (ر) indicates *Tarannum* Rasd (رَسَد), the letter Jim (ج) indicates *Tarannum* Jiharkah (جِهْرَكَة), the letter Sin (س) indicates *Tarannum* Sika (سِيكَا), the letter Dal (د) indicates *Tarannum* Nahawand (نَهَوَانْد). These seven melodies are considered as basic melodies or main songs in the archipelago. Apart from those melodies, there are many more famous melodies that are considered as branches of the basic melodies above (Mohd Ali, 2015; Nik Ja'far, 2012).

2.4.1 Characteristic of *Tarannum Bayyati*

The word Bayyati is from Arabic language means house or home, and according to the terms of *Tarannum* knowledge; Bayyati refer to one of the types of *Tarannum* that are popularised by the Arabic Qurra' especially from Egypt. *Tarannum Bayyati* has its own characteristics which are (Mohd Ali, 2015; Mohd Zaini, Adnan, & Norakyairee, 2018; Nik Jaa'far, 2012)

- 1) Soft but firm
- 2) Has the suitability with moderate level (*tobaqat*)
- 3) Has the elements of harmony and calmness
- 4) Has the suitability with opening and closing *Tarannum*

2.4.2 Characteristic of *Tarannum Hijaz*

Hijaz is the name for an area that is located in Saudi Arabia that includes the city of Mecca and the city of Madinah. According to the terms of *Tarannum* science; Hijaz is the name of one type of *Tarannum* that was popularised by the Hijazi *Qurra'* and it is based on the nature of the culture who lives in the barren desert area of hilly hills with rocks around. *Tarannum Hijaz* has its own characteristics which are (Mohd Ali, 2015; Mohd Zaini, Adnan, et al., 2018; Nik Jaa'far, 2012):

- 1) Have a slow movement but effects
- 2) Firmness of passion
- 3) Agility arouse the performance
- 4) Suitability with any level (*tobaqat*)

- 5) Suitability with the verses that indicate command, prohibits, and anger.

2.4.3 Characteristic of *Tarannum Soba*

The word Soba in Arabic language means yearn or miss. According to the terms of *Tarannum* science; Soba is the name for *Tarannum* type that was popularised by the Arabian *Tarannum* experts which were influenced by their cultures. *Tarannum Soba* has its own characteristics which are (Mohd Ali, 2015; Mohd Zaini, Adnan, et al., 2018; Nik Jaa'far, 2012):

- 1) Light movement that permeates the soul
- 2) Have a gentle in voice with engrossment
- 3) Suitability with moderate level (*tobaqat*)
- 4) Suitability with the verses that indicate appealing, begging and moan.

2.4.4 Characteristic of *Tarannum Rast*

Tarannum Rast comes from Persia and it was modified and accepted by the *Tarannum* experts from Hijaz state. *Tarannum Rast* then was popularised to qāri' and qāri'ah all over the Islamic world influenced by Hijazi dialect. Until now, it has been modified and popularised by *Tarannum* experts from Egypt and it was influenced by the Egyptian culture that is well known with their gentleness. *Tarannum Rast* has its own characteristics which are (Mohd Ali, 2015; Mohd Zaini, Adnan, et al., 2018; Nik Jaa'far, 2012):

- 1) Soft but firm
- 2) Gentle voice and fascinating
- 3) Have agility features
- 4) Suitable with any level (*tobaqat*)
- 5) Suitable with any of Qur'ānic verses

2.4.5 Characteristic of *Tarannum Jiharkah*

Tarannum Jiharkah was originated from Persia and it was accepted as *Tarannum al-Qur'ān* by the *Qurra'* in Hijazi state; whereas it has been modified based on the cultural environment. Until now, it has been popularised by the Egyptian *Qurra'* based on their environmental cultural values that are softer and gentler. *Tarannum Jiharkah* has its own characteristics which are (Mohd Ali, 2015; Mohd Zaini, Adnan, et al., 2018; Nik Jaa'far, 2012):

- 1) Gentle movement that effects
- 2) The tenderness of the voice piercing the heart
- 3) Have the elements of calmness and harmony
- 4) Suitable with the moderate level (*tobaqat*)
- 5) Suitable with verses that indicate for appealing, begging and moan.

2.4.6 Characteristic of *Tarannum Sikah*

Tarannum Sikah is originated from Persia and it was modified and accepted by the *Tarannum* experts from Hijaz state. *Tarannum Sikah* then was popularised among *qāri'* and *qāri'ah* all over the Islamic world influenced by Hijazi dialect starts from

seventh century until nineteenth century. Till now, it has been popularised by the Egyptian *Qurra'* based on its environmental culture that is known as *Sikah Misri* in which the chanting is more polite and gentle. *Tarannum Sikah* has its own characteristics which are (Mohd Ali, 2015; Mohd Zaini, Adnan, et al., 2018; Nik Jaa'far, 2012):

- 1) Has a slow convincing movement
- 2) The tenderness piercing the heart
- 3) Has the elements of sadness and moaning
- 4) Suitable with all level (*tobaqat*)
- 5) Suitable with the verses that indicate for begging, appealing, and moaning.

2.4.7 Characteristic of *Tarannum Nahawand*

Nahawand is derived from the name of a place in the area of Hamadan in Persian. According to the terms of *Tarannum* science; Nahawand is the name for *Tarannum* types which were popularised by the *Qurra'* in that area and it was influenced by the local cultures. Even though it was from Persia, but this type of *Tarannum* is widely used today as a result of the reformations made by Egyptian's *qāri'* who have subconsciously brought some influence into it with their culture. *Tarannum Nahawand* has its own characteristics which are (Mohd Ali, 2015; Mohd Zaini, Adnan, et al., 2018; Nik Jaa'far, 2012):

- 1) Has a light movement but effects
- 2) Has a gentle element with full of politeness
- 3) Has the simplicity that attracts the soul

- 4) Suitable with moderate level (*tobaqat*)
- 5) Fine art which is enchanting
- 6) Suitability with the verses that indicate for begging, storytelling etc.

Based on the description of the entire *Tarannum* and its characteristics mentioned in the above sub title, Table 2.1 below classifies all of the *Tarannum* characteristics respectively with its nature, elements and the suitability or relevance for the Qur'ānic verses.

Table 2.1: *Tarannum* Characteristic Classification

<i>Tarannum</i>	Nature	Elements	Suitability / Relevance of the verses
Bayyati	Soft but firm	Harmony and calmness	Opening and closing verses (Nik Jaafar, 2012 ; Mohd Ali, 2015)
Hijaz	Slow movement but effects	Firmness and passionate	Command, prohibits and anger verses (Nik Jaafar, 2012 ; Mohd Ali, 2015)
Soba	Light movement permeates the soul	gentle & melancholic	Appealing, begging, moan verses (Nik Jaafar, 2012) Happiness, sadness and persuasion (Mohd Ali, 2015)
Rast	Soft but firm	gentle and agile	Suitable with any of Qur'ānic verses (Nik Jaafar, 2012 ; Mohd Ali, 2015)
Jiharkah	Gentle movement that effects	Calmness, harmony and tender	Appealing, begging and moan (Nik Jaafar, 2012) Happiness, sadness and persuasion (Mohd Ali, 2015)
Sikah	slow and convincing movement	Tenderness, sadness and moaning	Begging (Nik Jaafar, 2012 ; (Mohd Ali, 2015), appealing , and moan (Nik Jaafar, 2012) persuasion and hope (Mohd Ali, 2015)
Nahawand	A light movement but effects	Gentleness and simplicity	Happiness, begging, storytelling (Nik Jaafar, 2012 ; Mohd Ali, 2015) Sadness (Mohd Ali, 2015)

2.5 Issues and Problems in Teaching and Learning *Tarannum*

In adopting *Tarannum* while reciting the Qur'ān, one has to do it according to the correct principles of *Tajwid* or Arabic elocution and in a melodious voice. While observing the meaning of the Qur'ān with the recitation, the whole process itself can effectively embrace one's body and soul. Thus, it is appropriate for Qur'ānic teachers to develop not only Qur'ān-literate students, but also those who are able to perform *Tarannum* with skill (Maimun Aqsha et al., 2011). In order to develop Qur'ān literate students with *Tarannum* skill, the first thing to be considered is lecturers and teachers (*Tarannum*'s practitioners) should master in *Tarannum* knowledge theoretically and practically. Practitioners should master all rhythms of *Tarannum* Qur'ān perfectly.

There are some issues and problems pertaining to *Tarannum* teaching and learning. A research done by Maimun Aqsha et al. (2011), there are few problems faced by teachers in teaching Qur'ānic *Tarannum* which are the problem with administrative and management, *Tarannum* knowledge, *Tarannum* competency, lack of understanding in *Tarannum* pedagogy, teachers incapability in *Tarannum* chanting, lack of training for teachers and teacher's attitude. In this paper, administration and management, lack of understanding of pedagogy, and teachers' attitude issues had resulted with high level of problems. Problem in regard to administrative and management concluded that school administrators and governmental authorities are not very interested in Qur'ānic *Tarannum* as a subject area. The problem on lack of understanding of pedagogy related to the approach or method adopted in teaching is quite alarming. Among the reasons for this problem are adoption of outdated teaching materials, use of traditional methods, low level of activities that can encourage

students' involvement, weaknesses in the teaching methods, lack of variety in teaching techniques and non-innovation in teaching and management practices. The problems on teachers' attitude in teaching *Tarannum* were identified too which include the unwillingness of the teachers to accept changes in teaching methods, teachers' propensity to use their own vernacular while teaching, and lack of focus in activities.

In other research done by Mohd Aderi (2011), the researcher studied on implementation of *Kelas Khas Kemahiran Membaca dan Menghafaz al-Qur'an (KKQ)* in Malaysia. One of the subjects that were taught in KKQ classes is *Tarannum al-Qur'an*. In this research, the researcher found a few problems faced by students and teachers regarding the *Tarannum* subject. The issues and problems raised are teachers' propensity in using traditional approach in teaching which had caused a boring environment and inactive students. Other than that, learning time in the evening decreased the interest of students to concentrate on teaching and learning in the KKQ class. A research on al-Qur'an teaching method in Sekolah Menengah Kebangsaan Negeri Perak by Misnan et al., (2014) shows in high percentage of result for item, rhythm and voice in reciting al-Qur'an are 67.5% (weak), 27.5% (moderate), and only 5% (good) and for item, ability to read al-Qur'an with rhythm are 63.8% (weak), 20% (moderate) and 6.3% (good). From the result, it can be concluded that over half of the student did not have knowledge on *Tarannum al-Qur'an* and were unable to recite al-Qur'an with *Tarannum*.

This paper highlights the material used in *Tarannum* education. The main inquiry for this research is the *Tarannum* aids used for teaching and learning process.

Are there any interactive methods in learning *Tarannum* that can attract students to

learn *Tarannum*? Based on the literature review, the researcher found that there are insufficient materials in learning *Tarannum*. Thus, the research conducted is to find and figure out the best aids and tools for KKQ *Tarannum* in supporting the learning environment.

2.6 Research Theory

In integrating the *Tarannum* learning with mobile learning technologies, this study has underpinned the theory of meaning-based *Tarannum* by Sheikh Muhammad Rif'at in Wan Hilmi, Ahamad Asmadi, Sabri, and Ezad Azraai (2014) study and the constructivist learning theory which was founded by the scholars such as Von Glasersfeld (1987), Piaget (1980), Vygotsky (1962) and etc. The theory of meaning-based *Tarannum* is believed as the theory that focusing towards the meaning of the recited verses rather than focusing on the *māqāmat* (melodies). While, the constructivist learning theory were adapted in this study whereby it is related to mobile learning. Through the use of mobile technology that is mobile app in teaching and learning of *Tarannum* al-Qur'ān, the constructivism theory is adapted whereby learners would actively constructing knowledge and information by integrating their experiences in the classes into their prior knowledge which they play an active role while building the knowledge. Both research theories are explained in detail below and this research had come out with the theoretical research framework which shows the relationship between the theories and the KKQ *Tarannum* learning that are later being integrated with mobile learning which is through mobile apps.

2.6.1 Meaning-Based *Tarannum* and Theory of Teaching and Learning al-Qur'ān, al-Qabisi

The beauty of every single of Qur'ānic verses is something that cannot be denied and cannot be created by human mind. The holy Qur'ān is the blessing from Allah s.w.t to all mankind as guidance in life to achieve the eternity in the hereafter. Indeed, reciting it is worship and they will gain reward from Allah s.w.t. In addition, beautifying the Qur'ānic recitation with *Tarannum* is an added value as long as it does not violate the law of Tajwīd with the accurate elocutions (*makhraj*) (Maimun Aqsha et al., 2011a; Tariq & Qais, 2012).

In *Tarannum* recitation, there are certain techniques in reciting it. Based on the study of Wan Hilmi et al. (2014) on *Tarannum* qāri' or *Tarannum* figure from Egypt namely Sheikh Muhammad Rif'at, this study examines his technique of *Tarannum* recitation that is based on the meaning of Qur'ānic verses. His technique of *Tarannum* recitation stressed on the importance of understanding the contents of the verses and focusing on al-Ada' component which comprises of five elements that are the observation of law of Tajwīd, waqf (stop or pause) and ibtida' (beginning), tadabbur (meditating) of the verse, engrossment in reading and correlating of verses with māqām *Tarannum*. These five components are the important pillars in explaining the concept or the theory of meaning-based *Tarannum* in Qur'ānic recitation. According to (Nelson, 2001) in her book 'The Art of Reciting the Qur'ān', from her study, she stated that the concept of the ideal recitation as an act or experience of total involvement and awareness on the part of the both listener and reciter. It is the responsibility of the professional melodic reciter to make his skill as an instrument of

understanding in order to bring out the meanings of the text and to evoke a more total response to the listeners. This coincides with the theory of teaching and learning al-Qur'ān by Al-Qabisi (1955) that was adapted in (Azmil, Ab. Halim, & Misnan, 2015; Azmil et al., 2014; Mariam et al., 2015). Al-Qabisi is one of the thinkers on education who is famous educational figures in the IV century AH for his brilliant ideas on various concepts of Islamic education. His concept of thought became a reference in the teaching at the time (Muslim, 2016). The theory by al-Qabisi had introduced certain method in the process of teaching and learning al-Qur'ān whereby it involved on the method of *talqin* (teaching), *takrar* (practices) *al-mail* (love the Qur'ān), and *al-fahm* (understanding). These components from al-Qabisi's theory had completed with the theory of meaning-based *Tarannum* which introduced by Sheikh Muhammad Rif'at whereby the element of understanding of the Qur'ān is important in order to have recite al-Qur'ān with *Tarannum*. The theory of meaning-based *Tarannum* and the theory of teaching and learning al-Qur'ān by Al-Qabisi (1955) was adapted to this study which emphasis and focuses on the best practice in reciting *Tarannum* al-Qur'ān and integrates with the mobile learning technology. The previous studies shows that the constructivist learning theory is most helpful in describing the learning with mobile technology environment (Ozdamli, 2012).

2.6.2 Constructivist learning theory

Learning is a central role in educating the students. Even though, the curriculum has to be prescribed by governments, school boards or educational authorities, the matter of how to teach the students is largely left up to the teachers.

Teachers or practitioners should be creative in order to deliver the knowledge to

students as they will gain something through the instructions. In constructivist learning theory, it concerns with how learners construct knowledge based on their interactions with both the environment and peers (Miller & Doering, 2014).

In general, constructivism maintains that knowledge is constructed by the individual from within rather than being transmitted to the learner from outside source. Therefore, learning is seen as a process of actively constructing knowledge and integrating experiences into the learners' prior knowledge which the learners play an active role in building their own knowledge. Vygotsky, the founder of social constructivism, emphasised the importance of the interaction with others such as peers, teachers and parents to build knowledge. He also emphasised the need for tools such as language and computer to mediate knowledge constructions (Dawood Salim, 2013).

In the study by Ozdamli (2012), the constructivist is most helpful in the terms of describing learning with mobile technologies. Constructivist approach summarized as knowledge that is actively constructed by learners as they are trying to make sense of their experiences and learnings. Constructivism as a paradigm posits that learning is an active and constructive process. The learner is an information constructor. Learners should demonstrate their learning with mobile technologies for example students would make research information on mobile technologies, and reconstruct that information and integrate them into multimedia environment. As mention by Dawood Salim (2013) in his study, the adaption of constructivist approach in rich-technology environment, promotes the full potential of technologies in enhancing learning. The following section sheds light on technologies that are best serve the constructivist approach. The proposed constructivist-mobile learning environment is characterised

by new roles of teacher and learner, specially designed learning activities and use of mobile device as a tool. Mobile devices allow learners' opportunities for collaboration in the creation of products and for sharing them among the peers. The theory of constructivist learning were adapted in the KKQ *Tarannum* learning that integrates the use of mobile devices as an active learning tools in constructing the learning experience towards the students at the same time, help learners in reciting the *Tarannum* creatively with their own way.

2.6.3 Theoretical Framework

The theories that underlie this study are meaning-based *Tarannum* by Wan Hilmi et al. (2014) and constructivist learning theory founded by few scholars such as Von Glasersfeld (1987), Piaget (1980), Vygotsky (1962). Based on the above explanations regarding the theories, researcher had developed the theoretical framework for this study which explains the theories that underpinning the study. Figure 2.1 depicted the theoretical framework that underpinned the study.

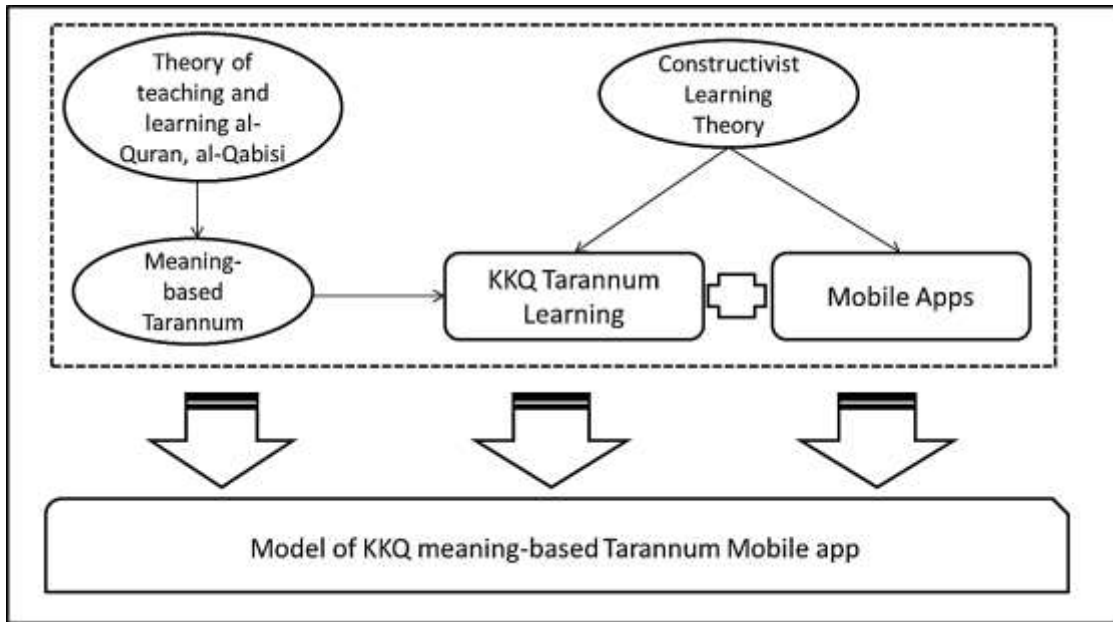


Figure 2.1: The Theoretical Framework

Basically, constructivist approaches in teaching and learning environments have originated from several psychologists and educators such as Von Glasersfeld (1987), Piaget (1980), Vygotsky (1962) and etc. These scholars emphasised two major different strands of the constructivist perspectives; social constructivism, and cognitive constructivism. Even though there is some debate between these two aspects of thought, they share some perspectives in common about the constructivist-learning environment (Liu & Chen, 2010). As pointed out in Karakış, Karamete, and Okçu (2016) study, in constructivist teaching environment, the students are encouraged to form their own concepts and develop their own solutions for their problems. In this approach, the classroom environment is prepared so that students can actively participate in the learning process, which is very important in education. Students are given the opportunity to use their own initiative, evaluate and practice what they learn, and gain hands-on experience. Constructivist learning theories that acknowledge the role of the learner as a constructor of his or her own knowledge are not enough to

accommodate the types of learning that can take place in a digital environment. Constructivist approach which summarised as a knowledge that is actively constructed by the learners and they are trying to make sense of their experiences. Learners form, elaborate and test mental structures until a satisfactory one emerges. Learners demonstrate their learning with mobile technologies for example; students would make research information on mobile technologies, and reconstruct that information and integrate them into a multimedia environment.

According to Ozdamli (2012), constructivist learning constructs knowledge by interpreting new knowledge based on their prior knowledge and learning should be student-centred. Students should be in social interactions with their peers taking part in constructing information actively for the fulfilment of the learning. The role of the instructor is to guide students in the assimilation and construction of the information. So, in this study by integrating the KKQ *Tarannum* learning with mobile technology, the constructivist learning theory was adapted whereby the students can construct their prior knowledge in the classroom when using the mobile apps outside the classroom. The students are also encouraged to use mobile apps in developing their new knowledge in reciting *Tarannum* al-Qur'ān based on their experience in the classroom and they can adapt the recitation in their own creative way that based on the meaning of Qur'ānic verses.

The meaning-based *Tarannum* is the technique of reciting the Qur'ān that correlate the meaning of the verses with the suitable melodies. From a study done by Wan Hilmi et al. (2014), they had exposed the method of reciting the Qur'ān with *Tarannum* recitation by one of the *Tarannum* figures which is by Sheikh Muhammad Rif'at. In this study, Sheikh Muhammad Rif'at emphasised on the importance in

understanding the contents of the verses and he focused on the components of al-Ada' which are observation of the law of *tajwid*, *waqf* (stop or pause) and *ibtida'* (beginning), *tadabbur* (meditating) of the verse, engrossment in reading and correlating of verses with maqam *Tarannum*. These five components are the important pillars in explaining the concept of meaning-based *Tarannum* in Qur'anic recitation. The combination of these five components will results in a solid recitation of high quality of *Tarannum* and as an artistic value. The theory of teaching and learning al-Qur'an by Al-Qabisi (1955) was also adapted in this study whereby the theory of al-Qabisi had introduced certain method in the process of teaching and learning al-Qur'an. The theory involved on the method of *talqin* (teaching), *takrar* (practices) *al-mail* (love the Qur'an), and *al-fahm* (understanding). This teaching and learning process from al-Qabisi's theory was also an important component in reciting al-Qur'an with *Tarannum* which emphasis and focuses on the best practice in reciting *Tarannum* al-Qur'an and integrates the KKQ *Tarannum* learning with the mobile learning technology. So, in this study, researcher had emphasised on the element of meaning to be put in the model of KKQ *Tarannum* mobile app as a step towards introducing *Tarannum* recitation to the beginners of *Tarannum* learners at secondary school level to have the best practice in reciting *Tarannum* al-Qur'an. The emphasis towards the meaning-based *Tarannum* is also to follow the main purpose in reciting al-Qur'an with *Tarannum* which is to give understanding to the reciters and listeners about the beauty of the Qur'anic words (Bahagian Pendidikan Islam, n.d.).

2.7 Mobile Application in Teaching and Learning

Mobile Learning is a method of using wireless and mobile technologies for education by extending access to a desktop-based online environment to handheld devices such as smart phones or personal digital assistants (PDA's) used as part of a mobile communications. Thus, instructional designers, teachers and practitioners need a solid theoretical foundation for mobile learning in context of distance education and how to utilise the emerging mobile technologies and integrate them into teaching and learning in more effective way (Noor Jamaliah et al., 2013). According to Kinash, Brand, and Mathew (2012), 21st century students are apparently demanding for the technology and making mobile learning in part of the pedagogy can enhance students' learning experience. While Snell and Snell-Siddle (2013), realise that the essential method in engaging and interacting with today's learners is by integrating learning with the technologies. By this, it enables students and teachers to easily share information, communicate, co-ordinate projects and ideas in less formal ways than in the conventional learning.

A mobile application, most commonly referred to an app, is a type of application software designed to run on a mobile device, such as a smartphone or tablet computer. Mobile applications frequently serve to provide users with similar services to those accessed on PCs. Apps are generally small, individual software units with limited function. This use of software has been popularised by Apple Inc. with its App Store, which sells thousands of applications for the iPhone, iPad and iPod Touch. A mobile application also may be known as an app, Web app, online app, iPhone app or smartphone app. In developing mobile applications for Qur'ānic field, the

instructional designer must understand well on the subject that will be conveyed to the target audience and what are the objectives of the application. The objectives must be clear, so that it can help the development process to run smoothly. As a survey done by Noor Jamaliah et al., (2013) on mobile application of al-Qur'ān and Arabic language for interactive and self-learning assistant for support in j-QAF learning, the study showed that the current method of learning and teaching for both Arabic and Al-Qur'ān, through conventional method is still insufficient for the teaching and learning process. The survey suggested that ICT implementation in both subjects (Arabic and al- Qur'ān) is quite necessary to be performed to improve the learning process. A research from Tariq and Qais (2012) on teaching the Qur'ānic recitation had constructed a new pedagogical model to help primary school teachers in Malaysia to teach Qur'ānic recitation. The proposed interactive model for this study would help to increase learners' skills, attitude, motivation, grade, and knowledge while learning how to recite the Qur'ān. As most mobile applications are tailored for worldwide consumption, it is a significant challenge to develop applications that satisfy individuals with various cultural backgrounds (Hoehle et al., 2015).

One of the most important things to consider in developing interactive educational materials is the usability of the materials itself. The latest market research suggests that the lack of usability has been identified as the most important factor influencing consumers' decisions to reject mobile applications. The lack of mobile application usability can be due to various reasons. For example, most of the mobile applications do not prioritise the essential aspects of the application and content is ineffectively presented which in turn negatively influences user interactions (Hoehle & Venkatesh, 2015). Addressing that matter, instructional designer should take this

issue systematically in order to make sure the quality of the mobile application works well and can reach the research objectives.

2.8 Generation of learners and their learning styles

In regards with generation of learners, at least there are six labels of generations that can be identified. In relation to the generation theory, as pointed out by Pikhart and Klímová (2020), they are: (1) The first generation, the traditionalists, who were born between 1925 until 1945, their learning styles are focused on the teacher as the centre and the silent students around. (2) The following, the so-called Baby Boomers, were born between 1945 until 1964, unlike the previous generation; they have cooperative spirit and enjoy cooperation and collaboration throughout the class. Moreover, they are very focused and concentrated on hard work and achievement. (3) Generation X, who was born between 1965 until 1980, could be described as more autonomous during the learning process and they appreciate quick and simple instructions and also quick gains. (4) Generation Y, who was born between 1981 to 1999, also called Millennials, are characterized by their focus on activities in groups and a cooperative environment is very motivating for them. They appreciate coaching, being led, and being given regular feedback. In this study, it is important that they are the first generation that uses modern technologies in their learning process in a massive way. This is the first generation that is connected online, and eLearning platforms are very much appreciated by them. (5) The current generation of the students and young adults who start to attend universities are the so-called Fifth Generation, or Generation Z. This generation of learners are born after the year 2000 – 2010 (Ramadlani & Wibisono, 2017) and it is claimed to be very different from the

previous generation regarding their learning styles and the use of technologies in the learning process. This is the Google generation, i.e., the generation of the students who use the Internet as the only authoritative source of information, and the Internet provides them a platform that aggregates both information and entertainment. Education is therefore a synergy of information and entertainment for them. Their immersion in technology is more or less a very natural setting for them and they cannot imagine otherwise. The direct human contact, such as in the traditional learning process, may therefore be considered by them redundant and obsolete. Furthermore, previous research shows that even the changes in their brain are significant and observable from the functional and neurological point of view, such as their attention span, multitasking abilities, and concentration. The half-life of information trend, i.e., the time when half of the information is considered to be untrue or obsolete, is also a crucial reason for this generation to consider the fast learning process to be more efficient. Therefore, obtaining information in real time stands in the opposition to traditional ways of learning from books, teaches, and established educational institutions (Pikhart & Klímová, 2020).

(6) Generation Alpha is far from being a household name to describe the new wave of world inhabitants, but it is one of the terms being used to describe those being born at the cross-over of Generation Z and the new age. What is most important about this generation is the digital environment they are being born into. Technology is a part of their everyday lives, influenced by parents, educators and many other social interactions. The concept of “connection” is central to this generation, even more so than their predecessors Generation Z. Another term used to describe this generation comes from the nickname “digital natives” (Tootell, Freeman, & Freeman, 2014).

According to Wiyani (2019), alpha generation is a digitally native generation that already knows and uses ICT equipment, especially gadgets. They are a generation born in the range of 2011 to 2035.

Table 2.2: The Classification of Generations and its Years.

Generations	Years
First generation; Traditionals	1925 - 1945
Baby Boomers	1945 - 1964
Generation X	1965 - 1980
Generation Y; Millennials	1981 - 1999
Generation Z	2000 - 2010
Generation Alpha	2011 - 2035

Source: Pikhart & Klímová (2020); Ramadlani & Wibisono (2017).

2.9 Elements of Multimedia

According to Sethi (2005) and Mayer (2001) in Mohd Elmagzoub (2015), multimedia refers to the integration of two or more different information media within a computer system. These media can include text, images, audio, video, and animation. As Vaughan (2011) and Costello, Youngblood, and Youngblood (2012) define multimedia as any combination of text, graphic art, sound, animation, and video delivered to the user by computer or other electronic or digitally manipulated means.

Text- Text is the most common multimedia element that is used in multimedia project. Over the past 6,000 years ago, text and symbols were used for communication in human development. The pictographic signs and cuneiforms is one of the text and symbols that are believed to be the earliest messages delivered in written words typically contained information vital to the management of people, politics, and taxes.

Based on Vaughan (2011), text delivers information that can have a potential meaning in a multimedia project. If the multimedia project does not use text at all, the content would be complex and the multimedia designer may need to use many picture and symbols to train the audience on how to navigate through the project. Certainly, voice and sound could guide the audience, but users would quickly get tired of these elements because of greater effort is required to pay attention to spoken words than to browse text with the eye.

For the design perspective, Vaughan (2011) also clarify that the choice of font size and the number of headlines have to be placed on a particular screen and it must be related both to the complexity of the message and to its venue. If the messages are part of an interactive project or web site where the developer knows the user is seeking information, the developers can pack a great deal of text information onto the screen before it becomes overwhelmingly busy. Seekers want dense material, and while they travel along the navigational pathways, they will scroll through relevant text and study the details. Here is where the developer must strike a balance. However, too little text on a screen requires annoying page turns and unnecessary mouse clicks and waits; too much text can make the screen seem overcrowded and unpleasant. On the other hand, if the developers are creating presentation slides for public-speaking support, the text will be keyed to a live presentation where the text accents the main message. In this case, Vaughan had suggested using bulleted points in large fonts and few words with lots of white space. The audience can focus on the speaker at the podium, rather than spend its time reading fine points and subpoints projected on a screen (Vaughan, 2011). This research refers the Qur'ānic verses as a text that used in the *Tarannum* mobile apps.

Graphic – Graphic is an image or visual representation of an object. Graphic elements can usually be scaled to different sizes, colored or patterned or made transparent, placed in front of or behind other objects, or be made visible or invisible on command (Vaughan, 2011). According to Merriam-webster Dictionary (n.d.), a graphic representation such as a picture, map, or graph usually used for an illustration. While “Elements of Multimedia,” (n.d.) had described that the images as those in a photograph or drawing whereby there is no movement in these types of picture.

Graphic is any type of visual presentation that can be displayed on a physical surface like a sheet of paper, a wall poster blackboard, or computer monitor. Based on Costello et al. (2012), graphic is a product of human imagination and is typically created by hand or computer-assisted drawing and design tools. It also include things like stick figures, symbols, numbers drawings, typography, logos, web buttons, illustrations, and line art. In this research, the researcher defines graphic as any static visual presentation presented in the existing *Tarannum* mobile apps such as buttons, texts, pictures or images in a static way without any motion effect or movement or in a still presentation.

Sound or audio – According to Vaughan (2011), sound is perhaps the most sensuous element of multimedia. It is meaningful “speech” in any language, from a whisper to a scream. It can provide the listening pleasure of music, the startling accent of special effects, or the ambience of a mood-setting background. How developer use the power of sound can make the difference between an ordinary multimedia presentation and a professionally spectacular one. Misuse of sound, however, can wreck a project. As stated in the website, (“Elements of Multimedia,” n.d.), the integration of audio sound into a multimedia application can provide the user with

information not possible through any other method of communication. Some types of information cannot be conveyed effectively without using sound. It is nearly impossible, for example, to provide an accurate textual description of the beat of a heart or the sound of the ocean.

Video or digital video is the most engaging of multimedia venues, and it is a powerful tool for bringing computer users closer to the real world. It is also an excellent method for delivering multimedia to an audience raised on television. With video elements in a project, users can effectively present the messages and reinforce a story, and viewers tend to retain more of what they see. But somehow, video that is not thought out or well produced can degrade the presentation (Vaughan, 2011).

Animation - Animation refers to moving graphics images. Animation is an object that moves across, into or out of the screen. It is also the primary source of dynamic action. By definition, animation makes static presentations come alive. It is a visual change over time and can add a great power to a multimedia projects and web pages (Vaughan, 2011).

As defined by Villalobos (2008), animation also means a series of images in rapid succession to create the illusion of movement. A good animation also seeks to deliver some types of messages and it is hoped to make the viewer forget that they are looking at a bunch of drawings or images. Animation relies on the fact that the brain can interpret a series of static images in rapid succession as an object in motion (Villalobos, 2008).









2.10 Existing mobile apps for *Tarannum*

Mobile apps have become trending in student's culture in today's digital era. Not only students but even the kids, teenagers, adults, fathers, mothers, teachers and accurately mobile users are the one who actively experienced the apps for their own purposes. Some will use the mobile apps as the learning materials; in educating themselves or educating others, some will use it to play games, some will use it to have an online shopping such as Lazada, Zalora, Shopee, 11street etc, some will experience it in online banking, some will use it for their business purposes such as selling through mobile app, promoting and marketing the goods and businesses and there are a lot more that mobile apps users can do with the apps. It is up to the users whether they want use it wisely or otherwise. Educational mobile tools have emerged and show great potential to help students construct and share information and knowledge for learning through computers or mobile devices (Barhoumi, 2015).

Tarannum is one of the al-Qur'an education branches that many people do not master it or even are not familiar with. It has always been said that the person with a good voice are talented to recite the Qur'an with *Tarannum*. Regardless, with the passion and the hard work to find teachers or *Tarannum* practitioners to learn and also with the support from other sources like interactive materials, anyone can learn and master the *Tarannum* recitation. In uplifting the *Tarannum* education among Muslims, one of the ways in attracting people's interest towards it is to produce an application that is portable, easy to use and exceptionally interactive. Throughout this research, in identifying the existing mobile apps for *Tarannum*, it has been noticed that there are quite a lot of mobile apps for *Tarannum* in the market place whereas people who had

interest in learning and searching for *Tarannum* learning materials want to learn it by only using the mobile app. However, most of the mobile apps are not suitable for the beginners to learn *Tarannum* like KKQ students who have just been introduced with *Tarannum* learnings. There are a several mobile apps for *Tarannum* learning identified in this study by researching via google play store market. Table 2.3 below shows a preliminary analysis of *Tarannum* mobile apps that are available in the Google Play store market.

Table 2.3: Preliminary Analysis of *Tarannum* Mobile Apps

No.	Apps	Icon in Google Play	Developer	Category
1.	Tilawah Qur'ān		LABKOMIF UIN Bandung	Education
2.	Belajar Ber <i>Tarannum</i> mp3		Khasyaff Store	Education
3.	Teknik Mengaji Lagu AlQur'ān		Asyrobata Inc.	Education
4.	Learning Al-Qur'ān		Edukasi Anak Nusantara	Education
5.	AlQur'ān (Belajar Qiro'at)		Queenza dev	Music & audio
6.	Tn Hj Radzi Kamarul Hailan		Mustel App	Music & audio
7.	Pn Hj Rogayah Sulung		Mustel App	Music & audio
8.	Pn Hj Faridah Mat Saman		Mustel App	Music & audio

9.	Pn Hjh Sapinah Mamat		Mustel App	Music & audio
10.	Syarifah Khasif Fadzilah		Mustel App	Music & audio

Based on Table 2.3, there are ten *Tarannum* mobile apps from various developers with two categories which are education and music & audio category. The *Tarannum* mobile app for education category will be useful for learners who want to learn *Tarannum* and practice it via apps. Learners can also gain knowledge on *Tarannum* by reading the information provided throughout the apps. Meanwhile, the music and audio category is useful for those who want to learn *Tarannum* just by listening to the audio. No information is provided throughout this category. Each of the mobile apps has its weaknesses such as the buttons are not properly function. For example, if users click the button to listen to the *Tarannum* recitation and then users want to listen to another, the audio becomes redundant. There is no ‘stop’ button to stop the audio. Besides, some of the apps have so many distractions with advertisements while using the apps. It might decrease the interest of the users to learn *Tarannum* al-Qur’ān. Moreover, for music and audio category, users can only listen to the *Tarannum* recitation and there is no text of Qur’ānic verses displayed on the screen. Thus, this study will analyse the existing mobile apps in terms of the suitable layout for *Tarannum* mobile app for KKQ and the suitable content to be included.

2.11 Design and Development Research (DDR)

The technology nowadays plays a very important role in our lives such as in communication, medicine, lifestyle, business and even to education. Educational technology can be described as the “application of technological processes and tools which can be used to solve problems of instruction and learning” (Seels & Richey, 1994). A good instructional product will follow the systematic process of designing, developing and delivering the instruction in a consistent and reliable way towards the effective, efficient, and engaging learning.

Design and development research (DDR) is a systematic study that provides systematic processes for developmental research. According to Richey and Klein (2007), a design and development research (DDR) is a pragmatic type of research that offers a way to test theory and to validate practice. It has been perpetuated essentially through unchallenged tradition. In addition, it is a way to establish new procedures, techniques, and tools based upon a methodical analysis of specific cases. Richey and Klein (2007) had offer a concise definition of this type of research as “the systematic study of design, development and evaluation processes with the aim of establishing an empirical basis for the creation of instructional and non-instructional products and tools and new or enhanced models that govern their development”.

Design and development research covers a wide spectrum of activities and interest. It accomplishes the goals through two large categories of research projects; (1) product and tool research and (2) Model research. In product and tool research, it typically involves situations in which the design and development process used in a particular situation is described, analysed, and a final product is evaluated. The

product and tool research includes a careful and extensive documentation of the phases of Instructional System Design (ISD) that are analysis, design, development, and formative evaluation. On the other hand, research on design and development models focus on the models and process themselves, rather than their demonstration (Richey & Klein, 2007). In the model research, there are three systematic phases as a guide which are need analysis, design and development and evaluation based on the study of (Mohd Nazri, 2014; Mohd Paris, 2016; Ramlan, 2017). Table 2.4 shows these two major types of design and development research clusters. According to Richey and Klein (2007) also, design and development research (DDR) is described as a way to establish new procedures, techniques and tools based on specific needs analysis.

Table 2.4: Representative Clusters of Design and Development Research

Design and Development research	
<i>Product & Tool research</i>	<i>Model Research</i>
Comprehensive Design and development projects	Model Development
<ul style="list-style-type: none"> • Instructional Products & Programs • Non-instruction Products & Programs 	<ul style="list-style-type: none"> • Comprehensive Model Development • Development of Model Component Processes
Specific Project Phases	Model Validation
<ul style="list-style-type: none"> • Analysis • Design • Development • Evaluation 	<ul style="list-style-type: none"> • Internal Validation of Model Components • External Validation of Model Impact
Design & Development Tools	Model Use
<ul style="list-style-type: none"> • Tool Development • Tool Use 	<ul style="list-style-type: none"> • Study of Conditions Impacting Model Use • Designer Decision-Making Research • Designer Expertise & Characteristics Research

Source: Richey & Klein (2007)

The researcher employed the DDR model in which the cluster of model research that is stated in the Table 2.4 which perfectly suits in the research conducted which includes a process of comprehensive model development, model validation and

model use. Based on explanation by Richey and Klein (2007) and the studies done on models developments by Mohd Nazri, (2014); Mohd Paris, (2016); Ramlan, (2017), the DDR model seems to be most suitable research design in this study as this study only designs the model of mobile app for KKQ *Tarannum* without the development of the product.

2.12 Fuzzy Delphi Method

A Fuzzy Delphi Method (FDM) was introduced by Murray, Pipino and Gigh in 1985 (Mohd Ridhuan & Nurulrabihah, 2020), and adapted by Kaufmann and Gupta in 1988 as a form of measurement for future research. It is an improvisation of the existing Delphi Traditional and the Fuzzy numbering set. These improvements indirectly make the FDM as more effective measurement approach whereby it is able to solve problems that have uncertainties for the issues being studied (Jamelaa Bibi & Siti Ilyana, 2018; Ramlan & Ghazali, 2018). The FDM technique is began to be used in various fields of study such as in engineering, medicine, business, military system and other various fields of social sciences. It was also has been widely used to obtain a continuous flow of agreement and expert opinion through surveys (Ramlan & Ghazali, 2018). It is generated effectively to obtain consensus among the experts without going through many rounds (Mohd Ridhuan & Nurulrabihah, 2020; Ramlan & Ghazali, 2018).

There are several recent studies that applied this method in order to gain experts consensus in product or model development as studies done by few researchers (Jamelaa Bibi & Siti Ilyana, 2018; Muhammad Fariduddin, Azidah, &

Aziah, 2019; Najahudin, Salmy Edawati, & Siti Noobiah, 2017; Nurulrabihah, Saedah, Siti Hajar, Mohd Ridhuan, & Zaharah, 2019). This study used FDM to analyse the agreement obtained from the experts. This method is done to maintain or drop an item. The item will be maintained if it meets two conditions, namely: (i) the value of d threshold of the item is equal to or less than 0.2 ($d \leq 0.2$) (Cheng & Lin, 2002); and (ii) the percentage of agreement among experts is equal to or exceeds 75 percent ($\geq 75\%$) (Chu & Hwang, 2008; Murry & Hammons, 1995). A detail steps of FDM for phase 3 were explained in research methodology.

2.13 Summary

This literature review chapter discusses on the basis of *Tarannum* field, mobile learning and design and development research approach. In the first phase, the researcher introduced the origin of *Tarannum* al-Qur'ān, how does the *Tarannum* al-Qur'ān has come and from where it started. Then, researcher explained on the definition of *Tarannum* al-Qur'ān from different *Tarannum* scholars and other terms used for *Tarannum* al-Qur'ān with its components. Researcher then explains in detail the types and characteristics of each *Tarannum* melody from *Tarannum* scholars' perspectives. Then, the researcher narrowed down into the issues and problems regarding to the teaching and learning *Tarannum* in Malaysia.

In the research theory, researcher discussed on *Tarannum* recitation based on the meaning, the constructivist learning theory for mobile learning and the theoretical framework for this study. Researcher then discussed on mobile application in teaching and learning and reviewing the existing mobile apps for *Tarannum* in the marketplace. This chapter also covered on the generation of learners and their learning styles. Other than that, researcher examined the elements of multimedia before accomplishing a

preliminary study on the existing *Tarannum* mobile apps available in the online marketplace. Lastly, the study discussed on the design and development approach which was used as a systematic study for this research.

