



INVESTIGATING THE PERCEPTIONS OF  
SECONDARY SCHOOL STUDENTS IN KUCHING,  
SARAWAK IN USING WHATSAPP FOR  
COMMUNICATION AND LEARNING PURPOSES

HSU YEE LING

SCHOOL OF EDUCATION, LANGUAGES & COMMUNICATION  
WAWASAN OPEN UNIVERSITY

2016

NAME: Hsu Yee Ling

DEGREE: Master of Education

SUPERVISOR: Chuah Kee Man

TITLE: Investigating the Perceptions of Secondary School Students in Kuching, Sarawak in using WhatsApp for Communication and Learning Purposes

DATE: May 2016

Project Report submitted in partial fulfillment  
of the requirements for the award of  
Master of Education of Wawasan Open University  
Penang, Malaysia

## **ACKNOWLEDGEMENTS**

I would like to extend my heartfelt gratitude and affection to my husband, Roy Sim and my children, Christabel and Christian for the support and encouragement given to me throughout my educational journey. To my friends who have helped me in one way or another, I give my sincere thanks. There were times when work commitments and personal challenges made it difficult for me to continue my studies and it was during these times that their words of advice and inspiration motivated me to persevere and reach the end of this trying journey.

My deepest appreciation goes to my supervisor, Chuah Kee Man, for his guidance, feedback and support which contributed to the successful completion of this research report. He worked efficiently with an impressive attention to detail and to him, I am indebted.

Hsu Yee Ling

May 2016

# TABLE OF CONTENTS

<b>Contents</b>	<b>Page</b>
Title Page	i
Acknowledgements	ii
Certificate of Originality	iii
Plagiarism Statement	iv
Table of Contents	v-vi
List of Tables	vii
List of Figures	viii
Abstract	ix
<b>Chapter 1: Introduction to the Study</b>	
1.1 Introduction	1
1.2 Background of the Study	2
1.3 Problem Statement	3-4
1.4 Research Objectives	4
1.5 Research Questions	4
1.6 Significance of the Study	4
1.7 Definition of Terms	5
1.8 Limitations of the Study	5-6
1.9 Summary	6
<b>Chapter 2: Literature Review</b>	
2.1 Introduction	7
2.2 Definition	7
2.3 Literature Review	7
2.3.1 Community Building	7-8
2.3.2 WhatsApp Features	8
2.3.3 Use of WhatsApp in Education	8-12
2.4 Conceptual Framework	12-13
2.5 Summary	14
<b>Chapter 3: Methodology</b>	
3.1 Introduction	15
3.2 Research Design	15-16
3.3 Population, Samples and Sampling	17
3.4 Location of Research	18
3.5 Instrumentation	18
3.6 Pilot Study	19
3.7 Data Collection	19
3.8 Validity and Reliability of Data	20-21
3.9 Data Analysis	21-23

3.10	Summary	24
<b>Chapter 4: Findings and Discussion</b>		
4.1	Introduction	25
4.2	Findings	25
4.2.1	Instant Messaging Tool(s) used	25
4.2.2	Frequency of WhatsApp usage	26-27
4.2.3	Intentions	27-28
4.2.4	Reasons for using WhatsApp	29
4.2.5	Learning Purposes	29-35
4.3	Perceptions of WhatsApp as a tool for learning	35
4.3.1	Convenient platform for discussions	35-36
4.3.2	Contributes to the understanding of a subject	36
4.3.3	Positive effect on relationships	37
4.3.4	Positive effect on student participation	38
4.4	Overall opinion of WhatsApp as a tool for learning	39
4.5	Leaving a group	40
4.6	Problems and concerns	41-42
4.7	Summary	43
<b>Chapter 5: Conclusions, Implications and Recommendations</b>		
5.1	Introduction	44
5.2	Conclusions	44-45
5.3	Implications	46
5.4	Recommendations	46-47
5.5	Summary	47
<b>References</b>		48-50
<b>Appendices</b>		
Appendix A Questionnaire		51-55
Appendix B Interview Guide		56
Appendix C Interview Transcript		57-62

## **List of Tables**

<b>Contents</b>	<b>Page</b>
Table 1 Extract of spreadsheet for data entry	21
Table 2 Extract of spreadsheet showing overall results of survey	23
Table 3 Time spent on WhatsApp	27
Table 4 Participants communicating with third-party using WhatsApp	28

# List of Figures

<b>Contents</b>	<b>Page</b>
Figure 1 Diagram Of Connectivism	13
Figure 2 Flowchart of data collection, evaluation and findings	16
Figure 3 Instant Messaging Tool(s) used by Secondary School Students	26
Figure 4 Reasons for using WhatsApp	29
Figure 5 Number of group chats students participated in	30
Figure 6 Students' opinion on the use of WhatsApp as a convenient platform for discussion on school-related matters	36
Figure 7 How students felt about the effectiveness of chats in improving their understanding of a subject	37
Figure 8 Students' opinion on the use of WhatsApp as a tool for learning	39
Figure 9 Reasons for students to leave a WhatsApp group	40

NAME: Hsu Yee Ling  
DEGREE: Master of Education  
SUPERVISOR: Chuah Kee Man  
TITLE: Investigating the Perceptions of Secondary School Students in Kuching, Sarawak in using WhatsApp for Communication and Learning Purposes  
DATE: May 2016

### **ABSTRACT**

The use of mobile technologies among high school students is increasing rapidly with the affordability of smartphones and social media applications such as WhatsApp. Instant messaging (IM) is an innovative tool adopted as a platform for teachers and students to communicate for social and learning intentions. This study is undertaken to examine the use of WhatsApp among secondary school students in Kuching, Sarawak, Malaysia. Specifically, it explores the perceptions of the students on the use of Whatsapp for communication and learning and investigates the problems or concerns encountered from the IM's use. To address these issues, a qualitative method of research was performed. 64 questionnaires were distributed to selected secondary school students in two schools in the city followed by an interview of 5 students from the same sample. The study revealed that WhatsApp is the top IM used by secondary school students; preferred by most compared to calling or short messaging service (SMS). WhatsApp is deemed as a convenient and effective tool for communicating for social and academic purposes. Students participate in group chats to discuss and share ideas, thoughts and opinions on a range of topics and enjoy the features of WhatsApp to send text, images or videos. For proper management and successful attainment of learning objectives of online groups, the teacher's presence is vital. Despite the benefits offered by WhatsApp, the study also showed that students are bothered by the amount of time taken up particularly from random or off-task chats, the distraction to their social and academic obligations, reduction in the use of appropriate vocabulary from over-reliance on emoticons to convey messages and the negative effects on spelling.



# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

With the increasing use of technology such as smartphones, iPads, tablets and personal computers among students in academic and tertiary institutions of learning, coupled with the availability and affordability of the Internet and instant messaging (IM) tools, this sector of the population has extensively utilised the technology not only for communication but learning as well. Educators have introduced ‘online learning’ as an alternative or additional platform for learners to gather together with their instructor to discuss and share ideas, thoughts and resources. This common platform has evolved from the confines of an office or home during the early days of the Internet to being ‘wireless’, giving rise to the term ‘mobile learning’. This chapter introduces the instant messaging tool, WhatsApp, which is currently the top choice for most students in Kuching, Sarawak, Malaysia. That being the case, its wide usage is being investigated as to the reasons for its popularity, and its impact on communication and learning from the perspective of the students. The contributions that this study will bring to certain parties in addition to the limitations imposed are also being discussed.

### 1.2 Background of the Study

The largest online messenger application today is WhatsApp. It is the most used social application globally. As of February 2016, it has recorded 1 billion monthly active users. This is a gigantic leap from its 200 million users previously in April 2013 (Statistica, n.d.).

WhatsApp was founded in 2009 in California, United States by two former Yahoo! employees; Jan Koum and Brian Acton. The name WhatsApp was chosen by Koum as a reference to “what’s up”. Initially WhatsApp 2.0 was introduced as an application (app) with a messaging feature and in November 2009, it was released exclusively for

iPhone's App store. The following month, the feature of sending photos was added and WhatsApp users then grew substantially to make it one of the top 20 apps in Apple's U. S. App Store (WhatsApp, 2016). To bear the cost of sending verification messages to its growing user base, WhatsApp began to charge its users from the initial free service. The WhatsApp messenger was then released into the market in 2010. WhatsApp was first made available for BlackBerry smartphones and then later included platforms using the Symbian Operating System (OS), followed by Android OS.

Thereafter, it incorporated most of the other operating systems including Windows Phone, Nokia Series and Samsung. In February 2014, Facebook acquired WhatsApp for a staggering US\$19 billion; its biggest purchase and also the biggest venture capitalists' company acquisition to date. In the same year, WhatsApp was made available for Android Wear smartwatches and Windows/Linux PCs (WhatsApp, 2016).

WhatsApp is a free, downloadable mobile instant messaging application made available on almost all smartphones in the market. In order to use it, users need to have internet connection, each other's phone numbers, as well as the app installed on their smartphones. It then allows users to send real time text messages and exchange photos, videos, music files, audio messages, GPS locations and contacts via an Internet data connection which can all be performed either on a one-to-one conversation or a group conversation. The latter allows up to 50 people at any one time. WhatsApp has taken its place as the top IM tool on the grounds that it is currently free in Malaysia; as compared to SMS and is easy and more fun to use.

Since its availability, an increasing number of literature has investigated on tertiary students' experiences in using WhatsApp for learning (Rambe & Chipunza, 2013; Bouman, 2013; Bansal & Joshi, 2014; Ahad & Lim, 2014; Barhoumi, 2015; Willemse 2015) while limited research was carried out on high school students (Bouhnik & Dshen, 2014). As the number of school students (both primary and secondary) who own a smartphone is on the rise and simultaneously the usage of WhatsApp, it is practical to explore how this segment of the population perceives WhatsApp as a communication and learning tool.

### **1.3 Problem Statement**

While several studies have explored the use of IM for learning purposes, the understanding of how WhatsApp can be effectively used remains an area worth investigating. This is because the number of school students who own a smartphone is increasing rapidly and inadvertently, this ownership also sees the rapid rise in the utilisation of WhatsApp to fulfill communication needs. WhatsApp has been the technological tool to “cross the dividing lines” between teachers and students to communicate beyond the classroom as they both use it in their daily lives. The App’s “ability to access information, content, support and personal aid” (Bouhnik & Deshen, 2014) is adopted by teachers as an extension of their teaching process to facilitate learning. In the context of Malaysia, although WhatsApp users are growing, its use for learning is not widely examined.

The app’s popularity among teenagers is largely due to its capability to hold group chats, voice messages, emoticons and even location sharing. Research has been conducted on the usage of WhatsApp for teaching language skills in colleges and universities including its impact on students’ behaviour and achievement in the respective fields (Riyanto, 2013; Yeboah & Ewur, 2014; Alsaleem, 2014; Plana, Escofet, Figueras, Gimero, Appel & Hopkins, 2014; Chuah, 2014; Amry 2014; Chu & Toh, 2014). Little research, however, has been performed on students’ views on the use of WhatsApp in secondary schools.

Given the high percentage of secondary school students who own a smartphone today and the free and easy use of WhatsApp as an IM tool, online groups are created within and beyond the classrooms. The usual purpose behind the creation of groups is to provide a platform for students to connect in a group and share information and resources either for social or academic gains. The groups may either be initiated by the students themselves or by the teacher for a specific subject. Whether WhatsApp is considered as a useful and effective tool in learning among fellow students and between students and teachers or serves more towards fulfilling social intentions are questionable. This study attempts to discover the opinions of these students. Hence, the purpose of this study is to investigate the use of WhatsApp among secondary school

students and explore their experiences and perceptions of the app as a communication and learning tool.

#### **1.4 Research Objectives**

The objectives of the study are:

- i. to investigate if secondary school students use WhatsApp for communication and learning
- ii. to explore the perceptions of secondary school students towards the use of WhatsApp for learning purposes
- iii. to discover the problems and concerns faced by secondary school students in using WhatsApp for communication and learning

#### **1.5 Research Questions**

To address the objectives, the following research questions are to be answered:

- i. Do secondary school students use WhatsApp for communication and learning purposes?
- ii. How do secondary school students perceive the use of WhatsApp for learning purposes?
- iii. What are the problems and concerns faced by secondary school students in using WhatsApp for communication and learning?

#### **1.6 Significance of Study**

The findings from this research will be of interest and good use to educators, policy makers, marketers, parents as well as students. The results can be used to enlighten parties concerned on the impact of WhatsApp on the everyday lives of students; whether being connected in groups online brings benefits or concerns both socially and academically. The outcomes of this study determine if the use of instant messaging as a tool for learning among secondary school students has potential gains or ills.

## **1.7 Definition of Terms**

**1.7.1** Instant messaging (IM) – Instant messaging refers to the transfer of messages back and forth between users in near real-time; often in an interactive, conversational mode (Campbell, Rosenberg, Schulzrinne, Huitema & Gurle, 2002) and allows users to share digitally-based information for example text, audio and video with each other over a network of computers such as the Internet (Lipschultz & Musser, 2016).

**1.7.2** Online learning – Online learning is defined as a form of distance education in which the academic programmes are delivered online via the Internet. The instruction and assessment are performed online with the provision of course materials, and facilitation of interaction between instructors and students (Bakia, Shear, Toyama & Lasseter, 2012).

**1.7.3** Mobile learning – Mobile learning is a subset of distance education and refers to the learning and training which is carried out on technological devices that are characterised as being mobile, user-friendly, personal, cheap and used constantly irrespective of age or settings. Such devices may be PDAs/palmtops/handhelds, smartphones and mobile phones (Keegan, n.d.)

**1.7.4** Collaborative learning – Collaborative learning is a term used to cover a variety of educational approaches involving joint intellectual effort by students, or students and teachers. Usually students work together in groups to mutually search for understanding, meanings or solutions via exploration or application of the course material (Smith & MacGregor, 1992).

## **1.8 Limitations of Study**

Questionnaires are effective in giving descriptive answers but they do not offer in-depth understanding of the feedback. Superficial information may be derived from the questionnaires. This limitation is overcome by including the feedback from a focus group interview. The sample for this study consists of only three classes of 16-17 year old secondary school students therefore, the data obtained was not representative of the

whole population. As for the focus group interview, due to time constraint, only five participants were selected from the group of students who participated in the survey. Among the five participants, some were vocal and contributed significantly during the interview while some were more reluctant in expressing their views openly. As with questionnaires, the data obtained was limited.

### **1.9 Summary**

In Malaysia, there has been little research done on the use of WhatsApp for learning intentions although a majority of secondary school students use it thereby warranting this study to be conducted. The opinions of secondary school students about WhatsApp drawn from their experiences and their perceptions of the tool for communication and educational purposes are to be investigated. The objectives of this study were outlined and research questions posed to address the objectives. The results obtained from this study will provide useful information to parties involved in using WhatsApp for the fulfillment of social or academic needs. The limitations of this study served to denote that the survey carried out through the use of a questionnaire received only responses to standard questions although clarification and details to those responses were sought from a face-to-face interview. The study did not cover the entire segment of the targeted population, therefore, the findings cannot be interpreted as representing the whole secondary school population in the city.

## CHAPTER 2

### REVIEW OF LITERATURE

#### 2.1 Introduction

A number of researches have been conducted since 2000 on the use of instant messaging especially among learners in higher education. This particular segment of the population was surveyed due to their popular use of instant messaging for social and academic intentions mainly because being young adults, they tend to keep up with technological trends. With the advent of IM on smartphones and its increasing affordability even for learners, education has evolved from being restricted to the walls of a physical classroom to open or mobile learning irrespective of place or time. This chapter gives a description of the term ‘mobile learning’ in addition to researches performed on the use of IM particularly, by college and university learners and the impact on users.

#### 2.2 Definition

With over 6 billion of people worldwide having access to the Internet either from a computer or a mobile device, learning has extended beyond the traditional classroom (UNESCO, 2015). Today, the term “mobile learning” is defined by learning that takes place utilising mobile technology and without any limitation to time or place. According to UNESCO (2015), mobile learning is achieved in different ways: accessing educational resources online, connecting with others and creating content.

#### 2.3 Literature Review

##### 2.3.1 Community Building

Drawing on the theory of Connectivism, the use of IM such as WhatsApp has built a sense of community (Rovai, 2002). Online communities are built via the creation of groups in WhatsApp. Westheimer and Kahne (as cited in Rovai, 2002) defined community as a product of interaction and consideration by people with similar goals

and interests. The common objective behind the building of groups is to communicate and share information deemed to be of interest and meaningfulness to the members of the group. The information comes in a multiplicity of multimedia forms which adds to the appeal of WhatsApp.

The formation of communities conceptualises social presence. As opposed to face-to-face interaction, social presence online is less felt which may be either beneficial or disadvantageous. The activeness of the online group depends largely on the participants' activeness in communication and the group administrator in initiating interaction. In terms of learning, instructors must "plan on enhancing social presence" (Rovai, 2002). This is equally true of learners who create the group on their own accord to ensure that their group achieves its initial objectives.

### **2.3.2 WhatsApp Features**

A feature of WhatsApp is the evidence of when a user is online. This presence information although first conceived to be useful and harmless could, after investigation by research, lead to revealing details and unwelcome intrusions into people's lives. Buchenscheit, et al. (2015) explored the privacy implications of the presence updates in WhatsApp. Their study disclosed that users' behaviour patterns and activities are exposed from their online presence.

For work, employers can learn about their employees' WhatsApp use during work hours and deduce their work performance and on a personal front, the "last seen" feature can affect relationships when parties see the activity times and conversation partners on WhatsApp. The researchers recommended that providers of mobile messaging applications should come up with more secure "control mechanisms" with regard to the presence sharing feature.

### **2.3.3 Use of WhatsApp in Education**

In recent years, a number of researches have been carried out on the use of instant messaging tools specifically WhatsApp among communities and its impact on social



and academic environments. From the aspect of education, research has been done mostly on youths particularly college and university students with results indicating that the instant messaging tool has both positive and negative impacts on users.

Among the positive viewpoints; WhatsApp tool has been accepted as a means for collaborative learning between teachers and students and among students themselves. Patient, Rambe and Chipunza (2013) conducted a study on the use of Whatsapp at a South-African University and found evidence that WhatsApp increased students' access to learning resources besides promoting "on-task behaviour" and peer support in a significant online setting.

Bouman (2013) in her article stated that Whatsapp is "always with you on your smartphone and offers television, Facebook, navigation, chatting and calling in one". She agreed that being in a group chat is useful for collaborative learning among students but not so if it involves teachers. Bouman however, personally feels that this form of online learning could be "an intrusion on her personal life" as it comes with the "anxiety of never knowing when her teacher will put another assignment on Whatsapp."

A study carried out by Bouhnik and Deshen (2014) revealed that teachers who initiated WhatsApp groups with their high school students achieved four goals: "communicating with students, grooming a positive atmosphere and a sense of belonging in the class, creating a dialogue and using and sharing a learning platform." The important finding from this study is that the teachers themselves did not share their WhatsApp experience with fellow teachers and each thought they were the only ones working with the students.

Bansal and Joshi's (2014) study showed that students find WhatsApp educationally useful as interaction between teachers and peers is enhanced through collaborative learning. Married students, however, prefer classroom learning as WhatsApp interferes with family time.

Another research was performed by Amry (2014) to compare the achievement and attitudes of female university students between using WhatsApp and face-to-face classroom. The research revealed the effectiveness of WhatsApp social networking in

the creation of a cooperative and constructive learning community as compared to face-to-face learning in the classroom.

An interaction model was designed using WhatsApp as a teaching tool by Chu and Toh (2014) to facilitate Chinese character learning, writing and sentence making. The feature of group chat exposed all learners to peer work, collaborative learning and discussions with the instructor.

Willemse (2015) in her study divulged positive experiences in using WhatsApp groups; it was effective in integrating theory and clinical practice, the resources and clarification availability, including anonymity although some learners are excluded due to them lacking the device or the running out of the battery on their devices.

Barhoumi (2015) explored the effectiveness of blended learning process using WhatsApp learning activities to discuss questions posed by the online instructor. The results verified that “online lectures are more effective when combined with attending face-to-face lectures.”

There were also studies, which suggested both benefits and concerns in the use of instant messaging especially among learners in higher institutions of education. Jeong (2007) in his study presented positive and negative findings in the adoption of IM in classes. Among the positive aspects are that “it encourages instant communication, expands the student comfort zone and facilitates flexible office hours” (Jeong, 2007) while the negative aspects consist of the possibility of miscommunication as a result of misinterpretation of messages and tones, matters of privacy and intrusion especially when learners are reluctant to disturb their instructor online, availability of instructor and the informality of the channel of communication.

Yeboah and Ewur (2014) conducted a study on the impact of Whatsapp on the performance of tertiary students in Ghana had mixed results. If used positively, WhatsApp can improve the students’ understanding of information and idea sharing which increase their academic performance, on the other hand, if misused, the impact can be devastating as WhatsApp consumes “too much of the students’ studies time, results in procrastination related problems, destroys students’ grammar and spelling,

leads to lack of concentration during lectures and difficulty in balancing online activities and academic preparation.”

The domestication of Whatsapp among undergraduates at Universiti Brunei Darussalam was investigated by Ahad and Lim (2014) which indicated that Whatsapp was the most popular instant messaging tool used at 96% as it benefits the users in discussing and sharing study-related information although negative issues also arise which included the urgency of attending to the WhatsApp messages, the exposure to false information, mobile connectivity and addictive-like behaviour that disrupts their studies.

WhatsApp has been increasingly used as a medium for specific instruction in English among higher education learners. The results have been optimistic while simultaneously raising problems and concerns associated with its use. Riyanto (2013) noted that by joining a WhatsApp group with students and teachers, non-native English speakers can learn English more effectively as they are compelled to read and answer in English, be it for communication or assignment completion.

Alsalem's (2014) action research showed that WhatsApp electronic journaling made a significant improvement in vocabulary word choice and voice on the writing of undergraduate students in Saudi Arabia. The multi-media features of WhatsApp was utilised by Chuah (2014) to teach English vocabulary and the results proved that WhatsApp is a constructive tool for “consciousness-raising” of new words. Conversely, any potential use of the IM tool must come with measures to counter abuse.

A research by Plana, Escofet, Figueras, Gimeno, Appel, Hopkins (2014) on using WhatsApp to learn English among Spanish university students indicated that 91% out of 95 students affirmed that the application provides an avenue for them to connect and boost their interest in learning English. The downside from the use of WhatsApp is the erratic contact time and posting of questions or assignments, which proved problematic for students to answer at specific times.

A majority of studies were conducted on students pursuing tertiary education with a limited number focusing on high school students. The studies revealed how WhatsApp as a new technological learning tool has the potential to yield positive results among its

users if used appropriately while at the same time, produce adverse outcomes if exploited.

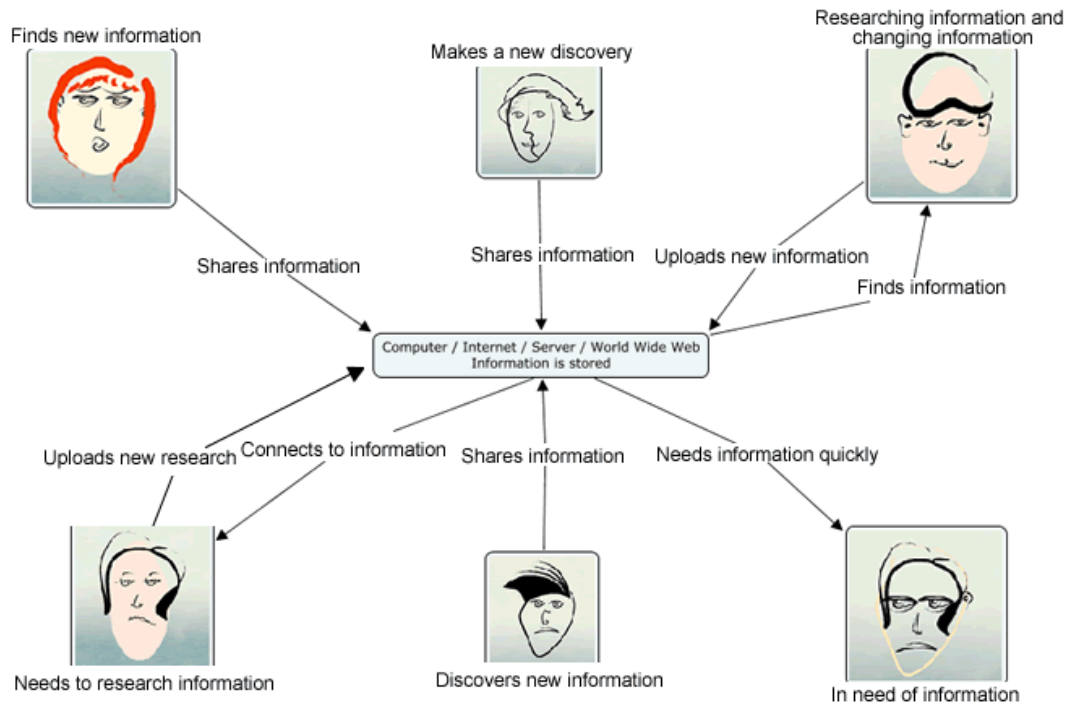
## **2.4 Conceptual Framework**

The advent of technology has “reorganised how we live, how we communicate and how we learn” (Siemens, 2005). Based on this fact, George Siemens in 2005 proposed in his article “Connectivism: A Learning Theory for the Digital Age”, a new learning theory that supports the use of Internet technologies and connections in learning. According to Siemens, the Internet while providing a wealth of resources and information has also opened up opportunities for society to make connections with each other and using these connections, share knowledge and experiences which contribute to personal learning. The learning associated with technology is not catered for under the present learning theories namely behaviourism, cognitivism and constructivism which were devised before the digital age.

Siemens’s key principles of Connectivism are:

- Learning and knowledge rest in a diversity of opinions.
- Learning is a process of connecting specialized nodes or information sources.
- Learning may reside in non-human appliances.
- Capacity to know more is more critical than what is currently known
- Nurturing and maintaining connections are needed to facilitate continual learning.
- Ability to see connections between fields, ideas and concepts is a core skill.
- Currency (accurate, up-to-date knowledge) is the intent of all Connectivist learning activities.
- Decision-making is itself a learning process. Choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality. While there is a right answer now, it may be wrong tomorrow due to alterations in the information climate affecting the decision.

Figure 1. Diagram of Connectivism



Downes (2007) described learning as the ability to construct and navigate networks to access wide-ranging knowledge across those networks. He described a learning community as a “node” and nodes make up larger networks. The nodes vary in size – the individuals in the node and strength – the amount of resources or information passing through the node.

This description is mirrored by Kop (2009) who defined knowledge as a “confluence of information arising out of multiple individuals seeking inquiry related to a common interest and providing feedback to one another”. Connectivism is a “theoretical framework for understanding learning” (Kop, 2009) and the theory explains how the adoption of technological tools such as Web browsers, social networks, online discussion forums, email and video-sharing platforms such as Youtube have given society an avenue to create learning gateways and distribute knowledge across the Internet and among themselves. Kop (2009) asserts that in future “learners will be at the centre of the learning experience rather than the tutor and the institution” as they take

charge of their own learning by sourcing for information related to their personal interests and preferences in addition to creating knowledge outside of the formal educational setting. Connectivism has a significant role in the development of new pedagogies, where independent learners will eventually take the reins from the tutor in the learning environment.

Duke, Harper and Johnston (2013) suggested that Connectivism is an important school of thought directly applicable to the use of technology in and out of the classroom. The Theory of Connectivism provides a framework for this study to investigate the use of WhatsApp, a technological tool among secondary school students for communication and learning purposes.

Users of WhatsApp form a learning network to share information and ideas on an online platform that is visible among all participants in a group and this same connection of individuals will perform discussions that contribute in one way or another to some form of learning. The availability of the Internet means the access to current and precise information is timely and participants online may choose to appreciate what has been imparted or choose to disregard; such is the learning process as advocated by Connectivism.

## **2.5 Summary**

The utilisation of social applications among society has resulted in the development of social communities online, enabling people to foster relations based on similar interests and needs. With the increasing use of technology in education, the Theory of Connectivism was derived which builds on the notion that the Internet offers a rich reservoir of resources and gives learners the opportunity to connect with others from every corner of the world for the attainment of mutual goals. From social to academic purposes, WhatsApp in particular has been used to satisfy the objectives while at the same time, drawing users' attention to problems they encounter with its usage. As with all technological tools, caution is given to users to exercise vigilance when using WhatsApp for any intention in order to reduce or tackle any potential setbacks.

## CHAPTER 3

### METHODOLOGY

#### 3.1 Introduction

A non-experimental research in the form of descriptive research was used to explore and understand the experiences and attitudes of secondary school students towards the use of instant messaging and to describe the situation based on the said individuals' answers to the research questions. The essential information for this study was collected from a survey in the form of a questionnaire performed on a sample population followed by additional details obtained from direct contact with a small number of individuals from the sample group. A pilot study was conducted before the actual survey and the latter was carried out in accordance with a planned timeline and guidelines.

#### 3.2 Research Design

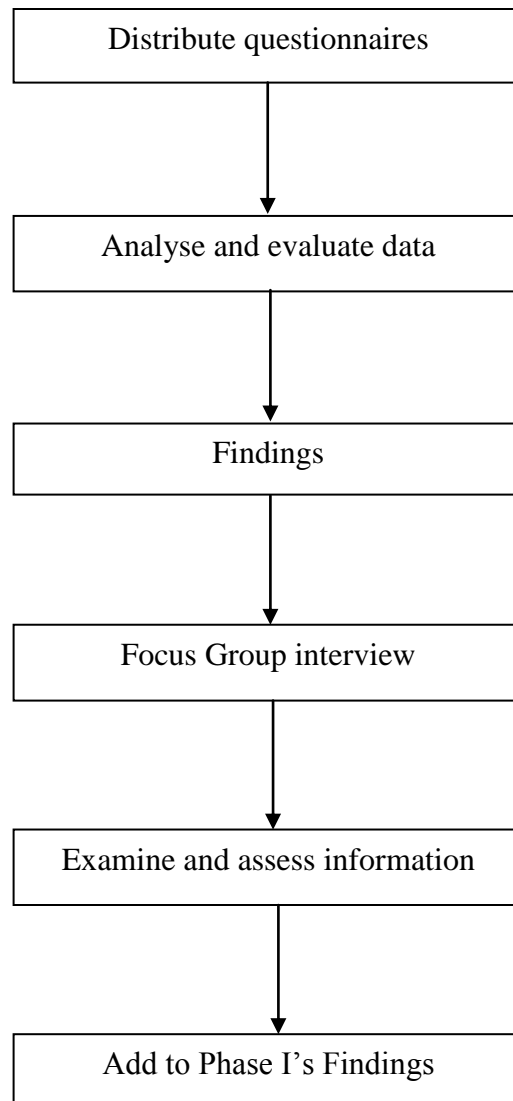
A descriptive research design was conducted for this study to describe the use of IM among secondary school students, to identify problems connected with its use, and suggest improvements from its existing usage. As standardised information for this research was gathered from a small sample group from the population, the design used was a survey, which was carried out by using a questionnaire and an interview with the individuals being investigated. This qualitative method of research aimed to address issues such as the individuals' experiences of using IM, as well as their perspectives and attitudes towards its use for communication and learning.

The research was performed in two phases; the first phase used questioning in the form of a questionnaire, which was distributed to the sample individuals. The data collected from the questionnaire were analysed, entered in an electronic spreadsheet, calculated to derive the total and percentage figures, compared and correlated in the form of quantitative data and the results compiled and interpreted under appropriate categories.

The second phase of the data collection was from a face-to-face focus group interview where the participants were selected from a convenience sampling. The information gathered from the interview provided additional and comprehensive details to the research questions and were added to the findings from the survey. The results were summarized and illustrated in tables and graphs for easy reference in addition to detailed conclusions drawn from those results. Figure 1 demonstrates the data collection procedure for this research.

*Figure2. Flowchart of Data Collection, Evaluation and Findings*

Phase I



Phase II



### **3.3 Population, Samples and Sampling**

This research was carried out in the new school year of 2016 from January to March. The participants were 57 secondary school students; 29 from a private school, Tunku Putra School and 28 from a government school, SMK Batu Lintang, both in the city of Kuching in Sarawak. The 29 students from Tunku Putra School were from two classes of Year 11 consisting of 20 students from Year 11 Gading and 14 from Year 11 Bako. This group of students is studying in the International stream, sitting for the International General Certificate of Secondary Education (IGCSE) at the end of year 11.

The 28 students from SMK Batu Lintang all came from one class in Form Five: Form Five Setia. This group of students is studying in the National stream, sitting for the Sijil Pelajaran Malaysia (SPM) at the end of Form Five.

The students' age in this sample range from 16 to 17 years. Students in the International Stream enter Year 11 at age 16 whereas students in the National Stream enter Form Five at age 17. 32 girls and 26 boys participated in the survey.

These participants were chosen because according to the researcher's knowledge, the students have been using WhatsApp for group chats with their class/subject teacher and fellow classmates for the past year. Convenience sampling was used to collect the data based on the reason that these groups of participants from the identified schools are already using WhatsApp for school-related purposes and they are accessible.

The participants for the focus group interview were selected based on convenience sampling. Three participants were from Tunku Putra School and two participants from SMK Batu Lintang.

### **3.4 Location of Research**

The 29 private school participants were from Tunku Putra School, Jalan Stadium, Petra Jaya while the 28 government school participants were from SMK Batu Lintang, Jalan Batu Lintang, both in the city of Kuching in Sarawak. For Phase I of the research, all the students completed the survey in their respective classrooms under the supervision of their homeroom teacher. For Phase II, the interview was held at Caffebene, Jalan Wan Alwi, Kuching.

### **3.5 Instrumentation**

A qualitative method using questioning was used to collect the data. This method was suitable for this research because questionnaires have:

- standard questions
- possibility of a high return rate
- anonymity (for the respondent)
- efficient use of time (respondents complete the questionnaire in their own time but within the stipulated timeframe so there is no pressure)

The collection of data through questioning was done through the use of tools: questionnaire, Likert scale and interview guide. The questionnaire consisted of 21 questions. Out of the 21 questions, seven were closed questions giving a response of either YES or NO and either Female or Male, seven were highly structured questions and six were Likert Scale items.

An example of a highly structured question:

On a typical weekday, do you use WhatsApp more often for schoolwork, personal reasons or both?

- A More often for schoolwork
- B More often for personal reasons
- C About an equal amount for school and personal reasons

Likert Scale is an instrument made up of statements that produced responses ranging from Strongly agree, Agree, Disagree, Strongly disagree and Undecided/Not sure or responding to a scale such as Less than 1 hour ...1 – 3 hours...3 – 5 hours...More than 5 hours.

### **3.6 Pilot Study**

A pilot testing of the questionnaire was performed prior to the actual survey. Four Form Five students from SMK Batu Lintang were each given a copy of the questionnaire to complete. Their feedback was received and the questionnaire was edited based on the students' comments to make it more user-friendly and comprehensive for more findings; yet easy to understand and complete.

### **3.7 Data Collection**

On the third week of the new term, an email was sent to the International Secondary Coordinator of Tunku Putra School, seeking his permission to conduct the survey on two classes of Year 11 students. The International Secondary Coordinator emailed back with an affirmative reply in the same week. Thereafter, the homeroom teachers of both Year 11 classes were informed (by text messaging and email) of the approved survey. Both class teachers replied giving their support and assistance to have the survey done in their homeroom. The questionnaires were handed to the homeroom teachers on the third week. On the last day of the third week, both Year 11 classes in Tunku Putra School completed the survey during their fifth lesson. In the same afternoon, the completed questionnaires were returned. Out of 34 copies of the questionnaires that were distributed, only 30 were completed and returned.

As for the other chosen school, SMK Batu Lintang, on the third week of the new term, a phone call was made to the Principal, to seek her permission for the survey to be carried out on a Form Five class. This was followed by a formal letter on the subject, which was handed to the Principal at the end of the third week. On the fourth week, a face-to-face meeting was held with the Principal at her office to follow up on the intended survey. The Principal gave her consent for the students of Form Five Setia to do the

survey during class time. On the fifth week, the questionnaires were distributed to the students of Form Five Setia. The students completed the questionnaires and returned them on the same day. Out of 30 copies of the questionnaires that were distributed, 28 were completed and returned.

On the third week of the new term, the questionnaires for Tunku Putra School, were counted and sorted into two categories: those who use WhatsApp and those who don't. Out of the 30 copies of the questionnaires that were received, 29 students owned a smartphone and one did not. The results from the survey were based on 29 students, as one of them did not own a smartphone. The returned copies of the questionnaires were then analysed and the data were subsequently keyed into an electronic spreadsheet on the software programme, Microsoft Excel.

For SMK Batu Lintang, the questionnaires were, on the fifth week, counted and sorted into two categories: those who use WhatsApp and those who don't. Out of the 28 questionnaires that were received, 27 students owned a smartphone and one did not. The one student who did not own a smartphone, however, completed the entire questionnaire. The results from the survey (based on 28 students) were analysed and the data entered into an electronic spreadsheet on Microsoft Excel. The total number of students from both schools is 57 and the overall data was calculated based on this total number.

On the 12<sup>th</sup> week, the focus group interview was carried out with the researcher and five participants. During the interview, the participants were asked questions based on the interview guide and their responses were jotted down in a notebook.

### **3.8 Validity and Reliability of Data**

Validity, one of two essential qualities in research data, refers to whether the data collected are actually what they are purported to be or whether the instrument measures what it is supposed to measure. Reliability, the other essential quality of data means the consistency of the data collected from several tests which are conducted under similar

circumstances (Mertler & Charles, 2005). Based on previous studies conducted on WhatsApp usage, (Jeong, 2007; Ahad & Lim, 2014; Bansal & Joshi, 2014; Yeboah & Ewur, 2014), a questionnaire was designed to investigate the perceptions of secondary school students in using WhatsApp for communication and learning purposes. For further validation, the questionnaire items were scrutinised by the supervisor of this project who is an expert in this field of study. An interview guide was created based on the research carried out by Bouhnik & Deshen, 2014 on mobile instant messaging between teachers and students. For reliability, the data collected from the survey was verified through cross checking with the participants at the face-to-face interview. The instrument was also checked for reliability during the pilot study so as to ensure there was no confusion in the wordings of the items. The supervisor of this project was permitted to check the data collection and analysis procedures to attest to its reliability.

### 3.9 Data Analysis

The data were analysed using descriptive statistics, mainly on frequency count and percentage. Each question from the survey was keyed into an electronic spreadsheet on Microsoft Excel accompanied by a table which contains each possible answer. The number of responses was keyed into a cell beside each answer in the table. The percentage for each response (number of responses/total number of participants \* 100%) was also calculated for each question. Table 1 is an extract of the electronic spreadsheet for data entry.

*Table 1. Extract of Spreadsheet for Data Entry*

<b>Question</b>	<b>Responses</b>	<b>%</b>
1. What is your gender?		
Female	20	
Male	10	
2. Do you own a smartphone?		

Yes	29		
No	1	F	
3. Is your phone connected to the Internet?			
Yes	27		93%
No	2	1 F, 1 M	7%
4. Which instant messaging tool do you use the most?			
WhatsApp	25		86%
WeChat	1	1 M: doesn't like WhatsApp	3%
LINE	1	1 M: doesn't always use WhatsApp	3%
Kakao Talk	2	1 F: she prefers it	7%
		1 F: no reason given	
Viber			
Others			

F = Female M = Male

The responses for both participating schools were entered in two separate spreadsheets within the same file. On the third spreadsheet in the same file, the same questions and tables were entered but the data in each table was a combined result from the previous two separate spreadsheets. The combined results were calculated using a formula that calculates the data entered in the same cell in the two separate spreadsheets. Table 2 is an extract of the spreadsheet that combined the results from the two schools.

Table 2. Extract of Spreadsheet Showing Overall Results of Survey

Question	Responses	%
1. Which instant messaging tool do you use the most?		
Instant Messaging Tool	No. of Students	Percentage
WhatsApp	$=(TPS!C18)+(BL!C18)$ 53	$=(C19/(\$G\$10)*1)$ 93%
WeChat	$=(TPS!C19)+(BL!C19)$ 1	$=(C20/(\$G\$10)*1)$ 2%
LINE	$=(TPS!C20)+(BL!C20)$ 1	$=(C21/(\$G\$10)*1)$ 2%
Kakao Talk	$=(TPS!C21)+(BL!C21)$ 2	$=(C22/(\$G\$10)*1)$ 4%
Viber	$=(TPS!C23)+(BL!C23)$ 0	$=(C23/(\$G\$10)*1)$ 0%
Others	$=(TPS!C24)+(BL!C24)$ 0	$=(C24/(\$G\$10)*1)$ 0%
2. On a typical day, about how many hours do you use WhatsApp?		
Time spent on WhatsApp	Total	Percentage
Less than 1 hour	$=(TPS!E29)+(BL!E29)$ 17	$=(C29/(\$G\$10)*1)$ 30%
1 – 3 hours	$=(TPS!E30)+(BL!E30)$ 21	$=(C30/(\$G\$10)*1)$ 37%
3 – 5 hours	$=(TPS!E31)+(BL!E31)$ 10	$=(C31/(\$G\$10)*1)$ 18%
More than 5 hours	$=(TPS!E32)+(BL!E32)$ 6	$=(C32/(\$G\$10)*1)$ 11%

The researcher also sought permission from subject teachers (who are using WhatsApp to communicate with their students) to participate in their group chats to gain insight on what goes on in the group chats and to validate the questions for this research. The researcher herself had a group chat with her students. The chat history which formed the raw data was collected by using a feature of WhatsApp – ‘email chat’ that sends the chat history to an email address via an attached file.

The responses from the focus group interview were also examined, compiled and added to the results from the respective survey question as additional information.

### **3.10 Summary**

The study was successfully carried out within the planned time period and sufficient data were collected from the survey. Although the sample size was small and not representative of the whole population, the data gathered provided key information in response to the research questions. Questions not fully answered from the survey and explanations that were required were addressed through the interview which provided clarification and a better insight on the topics discussed.



## CHAPTER 4

### FINDINGS AND DISCUSSIONS

#### 4.1 Introduction

The findings gathered from this study were analysed, summarised and categorized under different topics such as the different instant messaging tools used by secondary school students, the frequency of WhatsApp usage, the reasons for using WhatsApp as opposed to other IM tools, the purposes of using WhatsApp for communication and learning, and students' opinions (positive and negative) of WhatsApp as an educational tool. In addition to the detailed findings, tables and graphs are also used to demonstrate the survey results. Evidence of student group chats is also included in this study which gives an insight on the discussions between the teacher and students.

#### 4.2 Findings

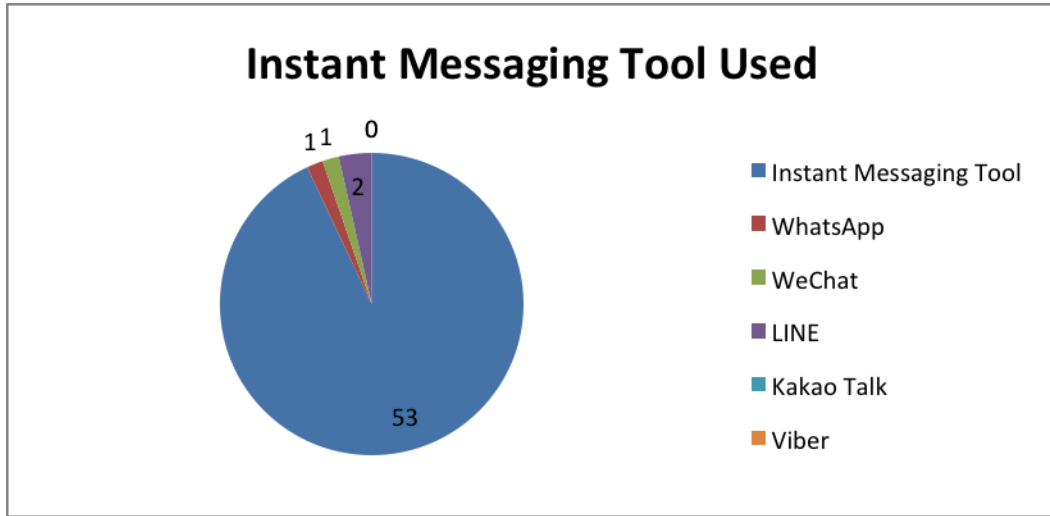
##### 4.2.1 Instant Messaging Tool(s) Used

The data, collected through questioning in the form of a questionnaire indicated that a majority of secondary school students in Kuching, Sarawak owned a smartphone and that WhatsApp was the top instant messaging tool used for communication and learning purposes.

Out of 58 secondary school students who participated in the survey, 57 of them owned a smartphone. The data collected for this research was from these 57 students. 55 of these students had their smartphone connected to the Internet while two did not.

Figure 2 shows the different instant messaging tools used by the secondary school schools who participated in the survey. WhatsApp was the top choice; it was used by 53 out of the 57 students who owned a smartphone. Only two students used Kakao Talk while the number of users for WeChat and Line stood at one each.

Figure3. Instant Messaging Tool(s) Used by Secondary School Students



The reasons for using an instant messaging tool other than WhatsApp can be seen from Table 1 in Chapter 3.

As this survey focused on WhatsApp users, the remaining survey questions dealt with the use of WhatsApp and not any other IM.

#### 4.2.2 Frequency of WhatsApp Usage

Table 3 gives the number of hours spent by the students on WhatsApp on an average day. More than half of the students (38 or 67%) spent from less than an hour to three hours each day on WhatsApp. Considering the school hours for National school students, 7.15-1.00p.m. (six hours) and International school students, 8.00-3.30p.m. (seven and a half hours), quite a huge chunk of the day is taken up if students spent up to three hours on WhatsApp. The figures also show that 10 (18%) of the students spent more than three hours while six (11%) spent more than five hours on WhatsApp each day.

The second part of Table 3 shows the number of times each student checked on his/her WhatsApp messages each day. More than half of the students (32 or 56%) checked their

WhatsApp messages over 10 times each day. An average of eight students (14%) checked their WhatsApp messages five to 10 times daily while a small number of three students or 5% checked from one to four times only each day. This finding revealed that most students with Internet access on their smartphone have easy access to WhatsApp which allowed them to check on their messages as many times as they wish.

Three of the participants from the focus group interview, were in more than 10 WhatsApp groups. About half of these groups were subject-related while the others were personal or activity-based. The participants indicated that the more groups a student is joining, the more frequent the student will check on his/her WhatsApp messages in a day.

*Table 3. Frequency of WhatsApp Usage*

Hours Spent on Using WhatsApp (Daily)	Number	%	Number of Times Participant Checks on WhatsApp after School Hours (daily)	Number	%
Less than 1 hour	17	30%	Once	3	5%
1 – 3 hours	21	37%	2 - 4 times	3	5%
3 – 5 hours	10	18%	5 - 7 times	6	11%
More than 5 hours	6	11%	8 - 10 times	9	16%
			more than 10 times	32	56%
			*depends		0%

#### **4.2.3 Intentions**

The survey also revealed that out of the 57 participants, 51 of them (89%) used WhatsApp more often for communicating instead of calling or using short messaging service (SMS). Only three students (5%) responded that they do not use WhatsApp more often than calling or text messaging.

On the question of whether the participants used WhatsApp more often for school or personal reasons or both on a typical day, 24 participants (42%) responded that they used about an equal amount of WhatsApp for both academic and personal reasons, 20 (35%) indicated that they used WhatsApp more for personal reasons on an average day while 10 participants (18%) revealed that they utilised WhatsApp more for school purposes. This finding showed that WhatsApp is used today not only for personal communication but for school purposes as well and that almost half of the participants spent almost an equal amount of time for both intentions.

Table 4 shows who the participants communicated with using WhatsApp. The participants had a choice of five options (family, friends, schoolmates, teachers and others) in which they may choose more than one option. More than 80% of the participants indicated that they communicated with their family and friends on WhatsApp. 60% to 74% of the participants communicated with their schoolmates and teachers while only 4% also communicated with others. The results showed that for secondary school students, family and friends constitute a major part of their lives and it is not surprising that they communicate with them more than other people.

*Table 4. Participants Communicating with Third-party Using WhatsApp*

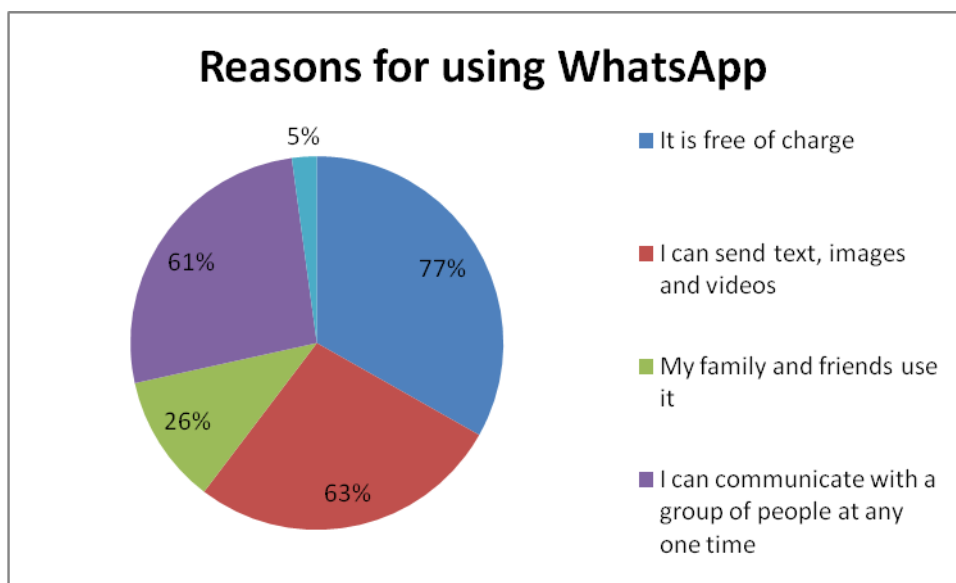
Participants Communicating with Third-party Using WhatsApp	Number	%
Family	46	81%
Friends	48	84%
Schoolmates	42	74%
Teachers	34	60%
Others	2	4%

#### 4.2.4 Reasons for Using WhatsApp

On questioning the reasons they use WhatsApp, the top reason given by the participants (77%) was that WhatsApp is free of charge. Owning a smartphone and having Internet access may be considered a luxury for some secondary school students and it is understandable that if the social application is offered free, it would be popular among users.

About 60% of the participants chose the reasons, “I can send text, images and videos” and “I can communicate with a group of people at any one time” for using WhatsApp. These are features that make the social application convenient and easy for users and which contribute to its popularity. The reason that their family and friends use it is not a popular reason as only 26% of the participants responded so. The number of participants and their reasons for using WhatsApp is illustrated in figure 3 below.

Figure 4. Reasons for Using WhatsApp



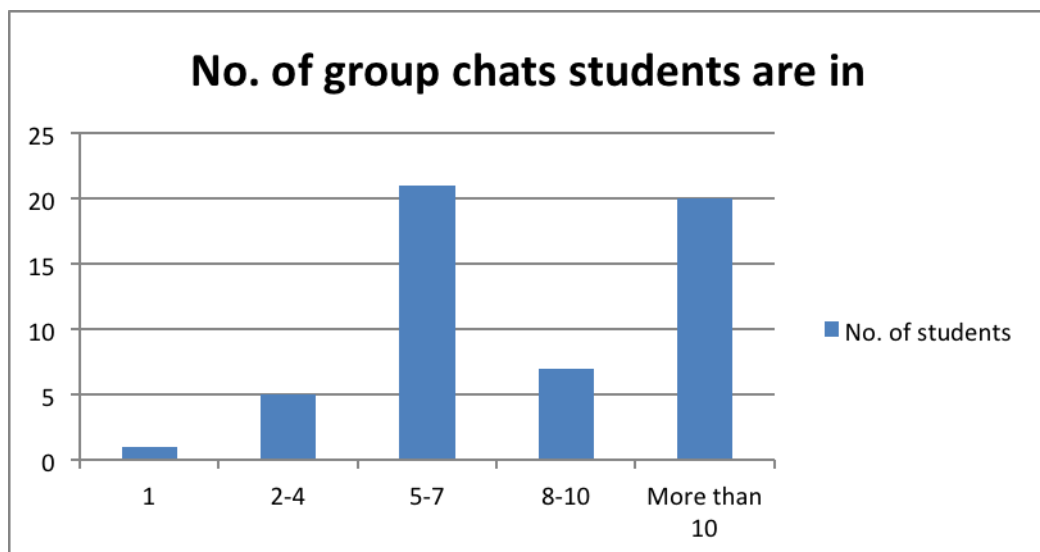
#### 4.2.5 Learning Purposes

The participants were asked if they used WhatsApp for learning purposes to which 45 of them (79%) answered ‘Yes’ while only nine participants (16%) responded with a

'No'. This result confirmed that secondary school students do utilise WhatsApp not just for communicating but for learning intentions as well.

As one of the appealing features of WhatsApp is the capability of holding group chats which offers users an expedient and uncomplicated method of chatting with a group of people at any one time, the participants in this survey were asked if they were in group chats. Figure 4 shows the number of group chats each participant was in. It can be observed that 10 participants (18%) indicated that they were in five to seven groups while eight (14%) were in more than 10 groups. Four participants (7%) were in eight to 10 groups while three participants (five %) were in two to four groups. Only one student was in a single group. The response to this question validated the popularity of the group chat feature in WhatsApp as evident by the participation of most students in more than five groups simultaneously.

*Figure 5. Number of Group Chats Students Participate In*



Participants were also asked on who initiated the group chats in which they can choose four options: teachers, classmates, themselves and others. 36 participants (63%) indicated that their classmates started the group chats, 19 (33%) identified teachers as the initiators, six (11%) stated themselves and one participant chose others. It can be

concluded that students realise the useful features of the WhatsApp group chat and are utilizing the feature to communicate among themselves. The fact that teachers accounted for 33% of the group chat initiators proved that teachers in Kuching, Sarawak are active in using the instant messaging tool as a means of communication with their students.

To gain more insight on the use of group chats, participants were further asked on what they chat about in the WhatsApp groups they joined. 42 participants (74%) stated that they chatted about subject-related matters while 35 (61%) chatted about school-related matters. 29 participants (51%) chatted on general matters and one student (2%) chatted about other matters. These results answered part of the first research question which is whether secondary school students in Malaysia use WhatsApp for learning purposes. The findings indicated that a majority of the participants (74%) discussed subject-related issues on WhatsApp.

Based on the group chats, 37 participants (65%) who formed the majority agreed that the group chats served a useful purpose for learning a subject. Only seven students strongly agreed that the chats are constructive for learning purposes. One student did not agree that the chats were helpful while nine participants (16%) were undecided on whether the group chats provided a positive avenue for achieving learning objectives. Again, this finding emphasized the fact that WhatsApp is deemed as an effective tool that can assist in the learning of a subject as evidenced by the results that more than half of the participants responded in the affirmative.

Below are some sample transcripts taken the participants' group chats with their teachers.

*For advice on English*

*Chat 1*

[4:18 PM, 2/14/2016] [teacher's tel no.]: [teacher]

[4:18 PM, 2/14/2016] [student's tel no.]: My ideal education system

Good morning, ladies, and gentlemen of the school board. Today, as a representative of the students I am here to raise some concerns about our school's education system from a student's point of view. In addition, I would like to speak about my ideal education system.

What is an education? As you all know, it does not only stop at teaching knowledge to children. It has a much larger meaning. An ideal education system exists in order to make students become members of society taking their roles to support and run the future world. However, the modern education system is becoming heavily weighted towards simple inputting of same general knowledge to students. Ridiculously, what the world wants as the outcome from this education system is a very creative person that is capable of thinking differently from others. However, our input is not giving us the required output...

[4:18 PM, 2/14/2016] [student]: (student) wrote this

[4:18 PM, 2/14/2016] [student]: it's a formal speech

[4:18 PM, 2/14/2016] [student]: give some advice pls?

[5:48 PM, 2/15/2016] [teacher: You have all the ideas you want to put forward. Perhaps your topic sentence should address the point rather than use 'it'. Give examples to reflect your point and hold your audience's attention.

[5:56 PM, 2/15/2016] [student]: thanks!

Chat 1 shows a student using WhatsApp to let her teacher read her English essay and ask for feedback on it. The teacher responded by giving some ideas to add to her essay. This chat is indicative of using WhatsApp for learning that is, seeking advice on a piece of written work.

---

### *Chat 2*

[5:20 PM, 1/6/2016] Student 1: miss

[5:20 PM, 1/6/2016] Student 1: can help us with eng homework?

[5:20 PM, 1/6/2016] Student 2: We need to write a letter

[5:21 PM, 1/6/2016] Teacher: Details...

[5:21 PM, 1/6/2016] Student 1: letter to advise our friend whether to take core or extended English

[5:26 PM, 1/6/2016] Teacher: You can use personal experience for this. Think of your friends who are taking core and why they are taking core and not extended.

[5:31 PM, 1/6/2016] Teacher: So imagine writing to one of them to advise them. Or if your imaginary friend is of extended English quality then advise accordingly.

[5:34 PM, 1/6/2016] Teacher: Mention the different skills.

[5:40 PM, 1/6/2016] Student 2: We say advantages and disadvantages?

[5:41 PM, 1/6/2016] Student 2: And then lastly we say our personal experience and we chose esl

[5:41 PM, 1/6/2016] Student 2: And why we chose esl \*



[5:47 PM, 1/6/2016] Teacher: Let's do your essay first. So you can talk about adv n disadv and lastly your recommendation but your friend will make the decision.

[5:48 PM, 1/6/2016] Student 1: that sounds nice

[5:48 PM, 1/6/2016] Student 1: how do we start

[5:50 PM, 1/6/2016] Student 2: Dear.. (name),  
I've heard that you are seeking advice whether to excel in English as a second language core or extended.  
Does it sound okay?

[5:51 PM, 1/6/2016] Student 1: Then add I'll be writing to you to tell you some advice based on blablabla? miss okay or notttt

[5:52 PM, 1/6/2016] Teacher: Change excel to consider or take.

[5:52 PM, 1/6/2016] Teacher : Advice not advices

[5:53 PM, 1/6/2016] Teacher: I am writing not I'll be writing cos you are already writing

[5:54 PM, 1/6/2016] Teacher: Add some greetings before jumping right into the purpose.

[6:19 PM, 1/6/2016] Student 2: What are the reasons why we chose extended and not core.

[6:20 PM, 1/6/2016] Student 1: bc we can do extended

[6:20 PM, 1/6/2016] Student 1: our english quality

[6:24 PM, 1/6/2016] Student 1: the reason why ive chosen the extended field is because I think choosing core is a waste of time and money bc ik i can do better than that. I also want to challenge myself to work harder, and to aim higher.

[6:58 PM, 1/6/2016] Student 2: Is it okay to say...  
In my future career which ive been thinking of a job which requires social skills involves a lot of talking and i'd like to excel my english to meet so people would not look down on me.

[9:18 PM, 1/6/2016] Teacher: Don't say extended field. Just say you choose to take extended tier. Also you want to achieve a high proficiency level in English, not excel in it.

[9:21 PM, 1/6/2016] Teacher: Give examples to support your ideas. In what way can you challenge yourself in ext? Write more? Show better listening skills? See the difference between core n extended and write about what you do in extended that is not covered in core.

[9:25 PM, 1/6/2016] Teacher: An important argument is that in extended you can aim for A and that result is what you believe you can achieve rather than C for core. For entry to good universities and possible scholarship offers, you need excellent results and ESL is one subject you have confidence in getting A. Write that.

[9:30 PM, 1/6/2016] Teacher: Say you have good writing skills and it is not a problem to write 150-200 to produce an effective piece of work rather than restrict yourself to 100-150.

[9:32 PM, 1/6/2016] Teacher: Also since you have been learning English since young, you have attained a competent standard in all the four skills.

[9:45 PM, 1/6/2016] Teacher: So I am imagining your friend is struggling as she is a new learner and you need to advice her to think about core vs extended. Whereas you are an extended learner with all the skills but she hasn't attained them yet. Assuming she just started learning English less than five years ago.

[9:48 PM, 1/6/2016] Teacher: Very good but grammar mistakes. Can you spot them?

[10:00 PM, 1/6/2016] Student 1: thanks miss. you really helped a lot.

[10:01 PM, 1/6/2016] Student 2: Can i add "i have to stop writing now. It's midnight. Do reply me with your decisions and good luck!"

[10:33 PM, 1/6/2016] Student 1: can end with that

Chat 2 shows a group chat consisting of a teacher and her two students. Both students are asking for help with their English homework (writing an informal letter to a friend offering advice as requested). The two students are actively engaging in offering suggestions and ideas on how to complete the letter with tips from their teacher. This is an example of a group chat used for exchanging ideas and thoughts on a topic.

---

### *Chat 3*

[8:56 PM, 1/20/2016] Student 1: miss.  
[8:57 PM, 1/20/2016] Student 1: how to write a profile  
[9:39 AM, 1/21/2016] Teacher: Profile of what?  
[10:07 AM, 1/21/2016] Student 2: Charity  
[[10:24 AM, 1/21/2016] Teacher: Hmm??? Profile of a charitable organization? Free Charity Website Template Download a new premium freebie from Template Monster - the Free Charity Website Template which is brought to you with all of the source files possible! Including the PSD graphic sources for you to b...www.templatemonster.com  
[10:58 AM, 1/21/2016] Teacher: [http://www.templatemonster.com/free-templates/free-charity-website-template.php?aff=KcFHrYhow-to-stand-out-charity-profile\(1\).pdf](http://www.templatemonster.com/free-templates/free-charity-website-template.php?aff=KcFHrYhow-to-stand-out-charity-profile(1).pdf)[www.polarisoffice.com](http://www.polarisoffice.com)  
[11:01 AM, 1/21/2016] Teacher: 'how-to-stand-out-charity-profile(1).pdf'

Chat 3 is another example of a group chat, asking for help on how to do a certain type of written assignment. Here, the teacher responded by sharing a website using the “share page” feature on WhatsApp. This is an easy way to share useful information downloaded from the Internet and send to group members.

---

### *Art class*

#### *Chat 1*

[1:18 PM, 12/30/2015] Teacher: Calling all ARTIES. Please enjoys these few days to the fullest. Coz once sch start, I don't want any distraction for your last year. Be proactive. Don't rely too much on Mr.  
[1:19 PM, 12/30/2015] Teacher: And just to get u excited. Here's something new in my room.  
[1:19 PM, 12/30/2015] Teacher: For u guys (photo of new computers)  
[1:20 PM, 12/30/2015] Teacher: Graphic comp packed with Adobe

#### *Chat 2*

[10:08 AM, 1/5/2016] Teacher: ARTIES, I would like to ask, who have a small size bicycle?  
[10:12 AM, 1/5/2016] Teacher: For art class  
[10:28 AM, 1/5/2016] Student 1: I have an old one

[10:28 AM, 1/5/2016] Student 1: That doesn't work  
[10:28 AM, 1/5/2016] Student 1: And I need to get rid of it  
[12:05 PM, 1/5/2016] Teacher: Yes yes. Please bring it tomorrow. Bring straight to my room  
[12:52 PM, 1/5/2016] Student 1: It's not working  
[12:52 PM, 1/5/2016] Student 1: A bit rusty tho  
[12:53 PM, 1/5/2016] Teacher: Good. Exactly what I'm looking for.  
[3:42 PM, 1/11/2016] Teacher: Anyone else can borrow a bicycle for 2-3 weeks. For drawing in class.  
[3:43 PM, 1/11/2016] Teacher: Lend me a bike for 2-3 weeks. Donate old bike also can  
[4:02 PM, 1/12/2016] Student 2: I try to bring mine. When have to use?  
[8:22 PM, 1/12/2016] Teacher: This Thursday or next week

Chat 1 and 2 (Art Class) are group chats between the Art teacher and his students. The chats are an example of using WhatsApp to communicate important information (Chat 1) and matters related to the subject (Chat 2).

---

To the 1<sup>st</sup> research question, “Do secondary school students use WhatsApp for communication and learning purposes?”, the answer is “yes” as evidenced by the sample transcripts. It can be noted that teachers and students are using WhatsApp to liberally ask for help or advice on subject-related matters and the students are uninhibited but actively participating to fulfill a task. The chats are also indicative of how useful and significant WhatsApp is for the straightforward and convenient completion of tasks (urgent or otherwise).

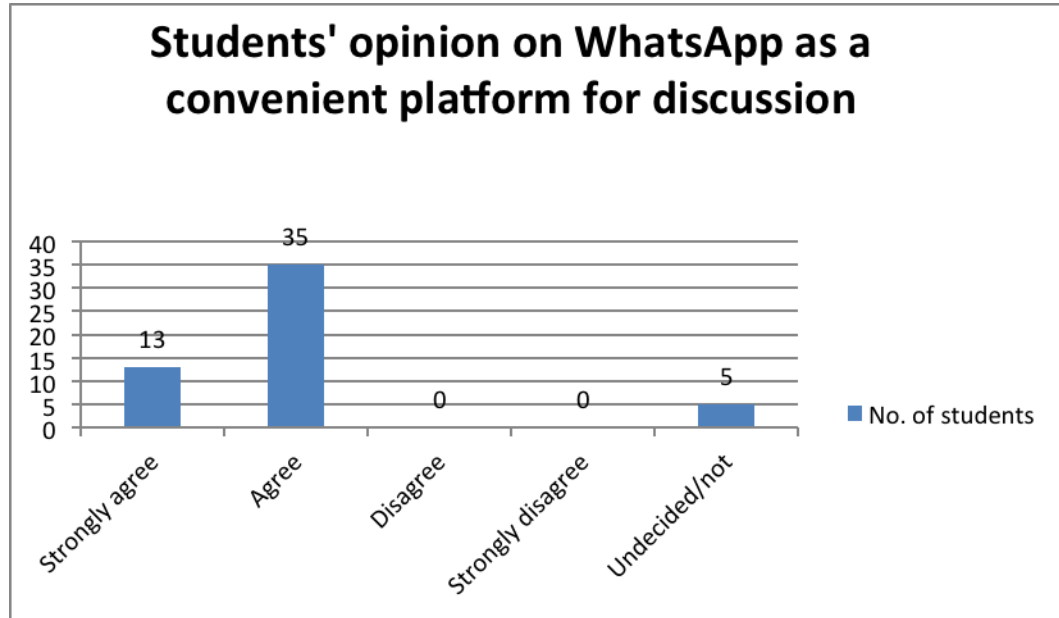
### **4.3 Perceptions of WhatsApp as a Tool for Learning**

#### **4.3.1 Convenient Platform for Discussion**

On the suggestion that being in a WhatsApp group allows students to have a convenient platform for group discussion on school-related matters, majority of the participants agreed that the suggestion was valid as evidenced by 35 participants (61%) who responded positively. 13 participants (23%) strongly agreed to this statement while 5 participants were undecided or unsure. None of the participants disagreed that WhatsApp is a suitable platform for group discussion. This finding reinforced the fact that students recognised the ease and suitability of using WhatsApp for school-related

purposes. Figure 5 presents the students' opinion of WhatsApp as a convenient platform for discussions.

*Figure 6. Students' Opinion on the Use of WhatsApp as a Convenient Platform for Discussion on School-related Matters*



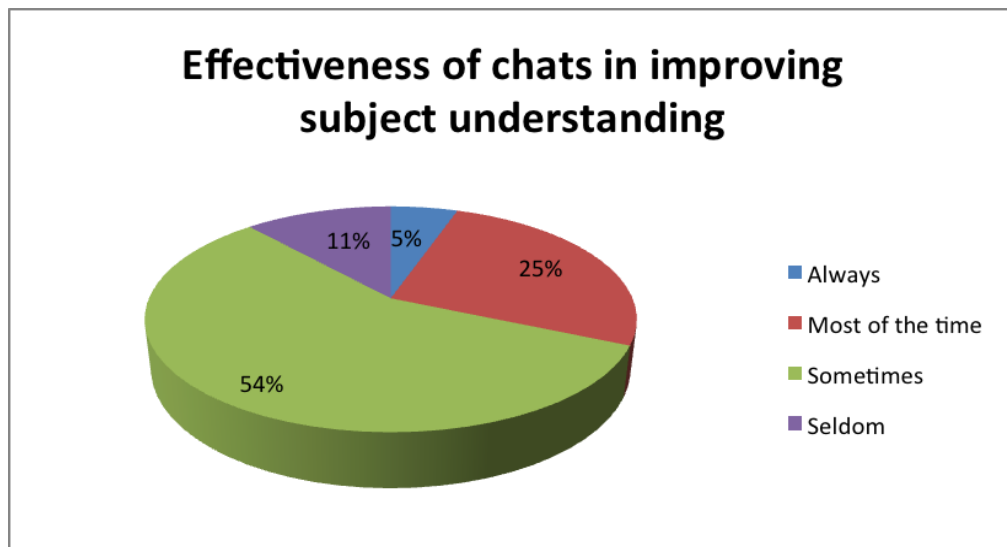
37 participants (65%) who formed the majority agreed that the group chats served a useful purpose for learning the subject while seven participants strongly agreed that the chats were constructive for learning objectives. Only one participant did not agree that the chats were helpful while nine participants (16%) were undecided whether the group chats served a useful purpose for fulfilling learning intentions.

#### **4.3.2 Contributes to the Understanding of a Subject**

The participants' opinion on the effectiveness of the chats in enhancing their understanding of a subject somewhat contradicted the results of the previous question in which the majority of them agreed that group chats were useful for learning a subject. For this particular question, only three students (5%) felt that the chats were always effective in improving their understanding of a subject while 14 participants (25%) found the chats effective most of the time. Majority of the participants, 31 or 54% opined that the chats were only sometimes effective in helping them to understand a

subject better and six participants (11%) held the opinion that the chats were seldom effective in contributing to their subject understanding. The results for this question are shown in Figure 6.

*Figure 7. How Students Feel about the Effectiveness of Chats in Improving Their Understanding of a Subject*



To gain more clarification on the effectiveness of group chats in improving students' understanding of a subject, the participants at the focus group interview were asked for their feedback. All the participants were either in groups initiated by their teacher(s), or classmates/friends, or both and all of them suggested that not all the group chats were useful. Those groups with the presence of a teacher tend to be more helpful as the teacher is present to answer students' questions, share materials related to the subject and offer assistance on any given assignment. All agreed that the group chats initiated by teachers do enhance comprehension of the subject.

#### **4.3.3 Positive Effect on Relationships**

Another result from the survey indicated that a vast majority of the participants, 51 or 89% believed that using WhatsApp can improve their relationship with family, friends, schoolmates and teachers. Only three students (5%) did not share this opinion. With the frequent online communication that takes place, feelings or opinions that may otherwise

be unexpressed face-to-face perhaps due to shyness or awkwardness are often conveyed in the form of texts as the latter does not involve personal or eye contact.

From the interview, all the participants agreed that WhatsApp helps to foster a closer relationship with extended family members. One participant's home country is India and before the availability of WhatsApp, he seldom kept in touch with his cousins but now he regularly communicates with them since WhatsApp is free. Three other participants also use WhatsApp to contact extended family members overseas, send photographs and other materials of interest.

#### **4.3.4 Positive Effect on Student Participation**

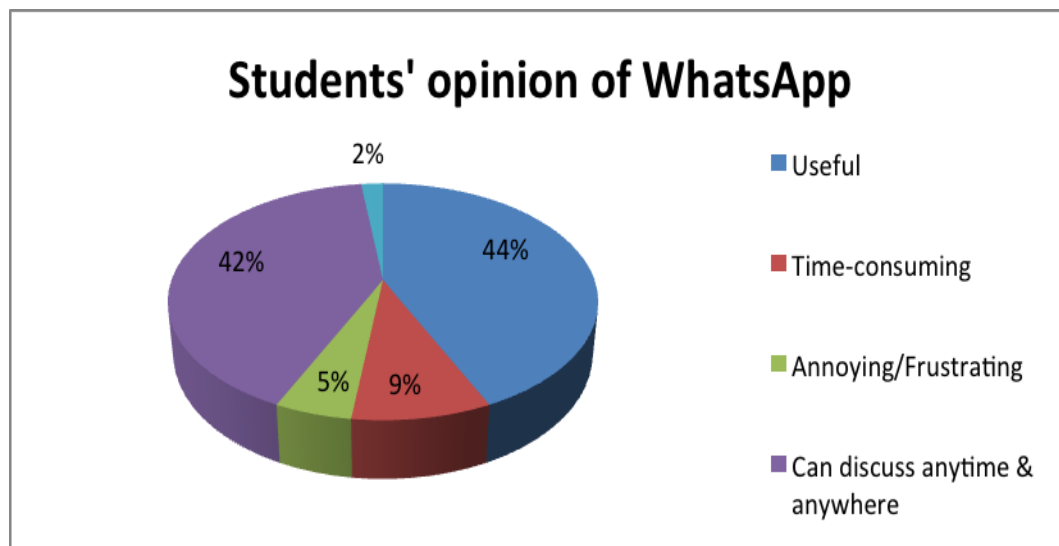
Another discovery from the survey was that most of the participants agreed that being online via WhatsApp encouraged them to join in group discussions more than when being in a traditional classroom. 36 participants (63%) shared this opinion while 18 (2%) felt otherwise, that is, they did not feel that WhatsApp promoted more student discussions compared to traditional classrooms. This finding corresponded with the previous result in that being present in an online environment does contribute to more active participation by students may it be for discussions or merely sharing opinions/feelings about an issue.

Three participants from the interview agreed that being online encouraged more discussions. Their comments: "When you are in a group chat, everyone can talk. Everyone has equal chance to participate." Two other participants, however, prefer being in a classroom as their classmates cannot ignore a fellow student who has something to ask/say. According to one participant, "I prefer in the classroom. In the classroom, we cannot ignore what people are saying." and another said, "Online, people can ignore you." All the participants shared the same opinion that introvert members will only ask necessary questions or stay silent online as in the classroom.

#### 4.4 Overall Opinion of WhatsApp as a Tool for Learning

To explore further on the perceptions of students' use of WhatsApp for learning, another question was posed, "What is your opinion of WhatsApp as a tool for learning?" in which the participants can choose from the possible responses: "useful", "time-consuming", "annoying/frustrating", "can discuss anytime and anywhere" and others. The survey as shown in figure 7 indicated that 25 participants (44%) felt that WhatsApp is a useful tool for contributing to their learning of a subject and 24 participants (42%) liked the fact that WhatsApp can be used conveniently to discuss matters anytime and anywhere. Five participants (9%) however, felt that WhatsApp took up too much of their time while three participants (5%) found WhatsApp to be annoying and frustrating and one student felt that it posed a distraction from what she was doing.

*Figure 8. Students' Opinion on the Use of WhatsApp as a Tool for Learning*



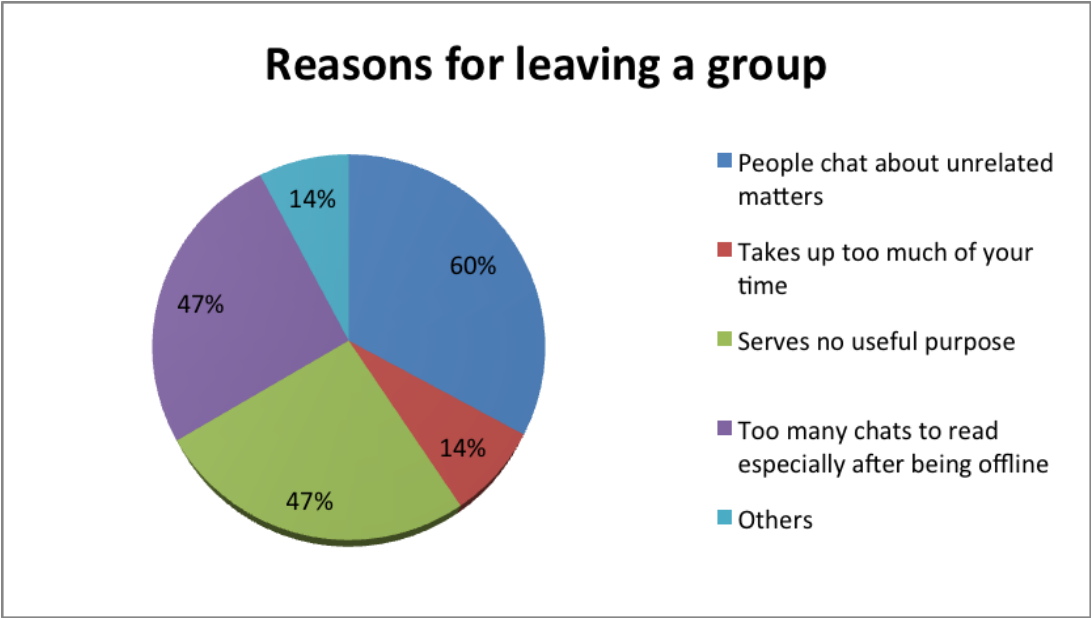
To answer the second research question "how do secondary school students perceive the use of WhatsApp for learning purposes?", it can be concluded from these results that a majority of secondary school students perceived WhatsApp not only as a means of communication but also as a practical, effective and beneficial technological device for achieving learning objectives. As the ownership of smartphones increases among school

students, it is to be expected that these students will utilise the device to its full potential for the attainment of their social or academic needs.

### 4.5 Leaving a Group

The last question in the survey was to discover why students may leave an online group. The results are illustrated in Figure 8. Among the reasons given were “people chat about unrelated matters, WhatsApp takes up too much time, the group serves no useful purpose and having too many chats to read especially after being offline.” 34 participants chose to leave a group based when group members chat about unrelated matters. 27 participants or 47% would leave a group if it doesn’t serve its intended purpose or having to read too many chats after being offline. Eight participants or 14% shared the same reason for leaving a group which is, if it is too time-consuming. Another eight students would leave a group based on the following reasons: the group was inactive, the objectives of the group were achieved, it was too distracting, too much spam happening in the group, group members were annoying or they were kicked out by group members.

Figure 9. Reasons for Student to Leave a WhatsApp Group





#### **4.6 Problems and Concerns**

To answer the third research question, “what are the problems and concerns faced by secondary school students in using WhatsApp for communication and learning?”, the participants at the interview shared some edifying facts.

According to the participants, the main problem with group chats lie in the fact that members tend to go off-topic resulting in random chatting which can be too time-consuming and annoying as they can continue on until late at night. This is especially the case with groups that do not include a teacher. Most of the participants leave the group chat and as one said, ‘I disappear silently’.

When asked about their expectations of a subject-related group, the participants wanted the teacher to be present to control and monitor what goes on in the group, cooperation among members and group discussions on topics connected to the subject. However, this scenario seldom occurs as members tend to chat on unrelated matters while others chose to stay passive. The comments received were “it is awkward, annoying sometimes when they talk about other things. I don’t want to bother the teacher so I don’t ask.” and “I would rather ask my teacher in a private chat instead of in a group chat as I don’t want others to know I have doubts about something.” and “Some people think you are dumb when you ask certain questions, like ‘you don’t know that?’. I don’t want them to think I am stupid. I also feel awkward asking questions when I am in a group with members I don’t get along with.”

Another drawback with random chats is the taking up of storage space on the smartphone. All the participants interviewed said they do not bother to read all the chat logs (especially those from ‘unimportant’ groups) and scrolling through the chats is usual. The participants don’t delete the chat logs unless the storage space is full and that is when they assess which chat log to keep and which to delete. One participant gets annoyed at having to select which chats to maintain and which chats to remove especially if the log contains more than a few hundred chats. Another participant voiced

her concern that chat logs leave evidence of what members chat about and because of that, some members are wary of participating in group chats.

Another major concern experienced by all the participants is the distraction posed by the use of WhatsApp. Regardless of any circumstances in either a formal or informal setting, participants tend to be diverted from what they are doing whenever a message is received. In the words of one participant, “I always have the urge to check on my WhatsApp messages no matter where I am or what I am doing.” Three of them resorted to having different ring tones for different groups (denoting the importance of the groups) in order to know who the message is from and whether it is necessary to check on the message immediately.

One participant highlighted that the common usage of emoticons and abbreviations in chats reduce the use of appropriate vocabulary and affects spelling. Emoticons do, however, help to convey messages clearly instead of having to type in words and this is particularly handy when one is pressed for time, stressed another participant.

For the effective attainment of learning objectives with the use of WhatsApp, the participants emphasised that the teacher’s presence is crucial for taking charge of the group. Rules should be established to monitor and keep in check what members chat about or the type of materials being sent online. A suggestion was given on the teacher setting up a specific time in a day or week for all members to discuss a subject. To this suggestion, a few differences were raised; some teachers are not willing to devote their time after school hours to go online, not all students have WhatsApp and it is difficult to find a suitable time for everyone to get together. A common point of view was, however, gathered from the interview; although WhatsApp is increasingly used among secondary school students now, the tool is still not fully utilised for learning purposes. Not all teachers possess the technologically know-how to use the tool for optimum delivery of subject matters and even so, not every teacher has the keenness to allocate an amount of after-school time to offer extra assistance to students. If left in the hands of students, inappropriate conduct online and random chatting will always be a setback, however,

they will still continue to use WhatsApp as the app is free, can be used anytime and anywhere and saves 3G as compared to other IM tools.

#### **4.7 Summary**

The research findings not only provided answers to the research questions but also revealed additional information regarding the use of WhatsApp among secondary school students. Although WhatsApp is the top IM tool adopted by secondary school students for communication and learning intentions in the locations surveyed, there are still concerns and problems associated with its use. Nevertheless, due to its popularity riding on the main reason that it is offered free of charge, the students interviewed reiterated that they will continue to use it despite glitches encountered.

## CHAPTER 5

### CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

#### 5.1 Introduction

This chapter discusses the conclusions drawn from the findings of the study on WhatsApp usage among secondary school students, the implications of the results which may be of importance to teachers, parents, students and other stakeholders and recommendations for future research on the use of instant messaging among school students.

#### 5.2 Conclusions

This study aimed to examine the use of WhatsApp among secondary school students in Kuching, Sarawak Malaysia, obtain the students' views on the app's use, and uncover any shortcomings from its usage. The data were attained from a qualitative research involving the completion of a questionnaire by the sample population and verbal, acquired from an interview with a selected group of participants from the same population. The results from this study confirm that secondary school students in Kuching, Sarawak, Malaysia utilise the IM tool, WhatsApp for communication more frequently compared to calling or by SMS. WhatsApp is preferred to voice calls for reasons such as convenience and easier usage, effectiveness and reliability and cost saving (Yeboah, Nondzor & Alhaji, 2014). Using SMS involves costs and impedes group communication (Bouhnik & Deshen, 2014). This study revealed that a majority of students spend one to three hours daily on WhatsApp, check their messages more than 10 times a day as well as consume approximately the same amount of time for personal and academic purposes. WhatsApp also helps in building and strengthening the students' relationship with people in their personal and school life due to increased communication. This is in line with what Jisha and Jebakumar (2014) have claimed in which WhatsApp has "created a sense of belonging, nearness and intimacy with friends and relatives."

The main reason for WhatsApp's popularity is that students do not have to pay for its use but Internet connection is required for their smartphones. The tool's ability to send and receive different resources such as text, images and videos in addition to the group chat feature are also significant reasons contributing to its wide usage. The findings also disclosed that all the students surveyed participated in at least one group chat for either social or academic purposes. The convenience of accessing learning materials, personal support and assistance from teachers or friends and availability of learning after school hours are academic benefits that WhatsApp offer (Bouhnik & Dshen, 2014).

Majority of the students agreed that WhatsApp group chats are a useful avenue for both teachers and students to connect and discuss or share information which helps to foster a better understanding of the subject. The integration of WhatsApp learning activities have resulted in positive students' attitudes towards the learning process (Barhoumi, 2015). However, the success of the online group depends largely on its management. A teacher's presence in the group is more beneficial and positive in the achievement of the group's objectives as opposed to a group managed solely by students. The main reason for unsuccessful learning groups is the abuse of time by participants.

Among the negative results of WhatsApp on the performance of students include taking up too much of students' study time, creating problems in balancing online activities and academic preparation as well as procrastination related issues (Yeboah & Ewur, 2014). For effective accomplishment of learning goals, students will need to exercise discipline and restraint to focus on matters associated with the intended discussions. As with any kind of social media, WhatsApp tends to be addictive and disruptive to a student's normal routine. The time spent on meaningless chats could be more wisely spent on other responsibilities. Despite misgivings about WhatsApp, students will still use it due to its affordability and flexibility.

### **5.3 Implications**

The results of this survey provide significant information on students' use of WhatsApp for communication and learning intentions. For teachers, it is to be noted that students prefer their presence in an online group created for subject matters. They need a teacher to control the members from sidetracking in their discussions, ensure that the group chats are effective in clearing their doubts and provide additional and useful information related to learning.

For students, consideration for other members' time is vital when being online in group chats. The minimizing of irrelevant chatting will reduce students' time in reading unnecessary chat logs as well as taking up less storage space on their smartphones. Comments not related to everyone in the group can be restricted to personal chats rather than compel everyone to read them which may lead to the development of negative feelings among members.

For parents, the knowledge on the amount of time spent by their children on WhatsApp is important for monitoring their children's activities after school hours and implementation of measures to control their usage. On the other hand, the increasing use of WhatsApp for communication and learning between teachers and students is a basis for considering the provision of a smartphone to students who have yet to own the device. Parents would have to make a wise decision after careful evaluation of the potential benefits or drawbacks from the use of this technological gadget.

### **5.4 Recommendations**

This study revealed the popularity of IM tools specifically WhatsApp among secondary school students to fulfill their social and academic needs. The findings from the qualitative method of research employed in this study such as survey results, chat transcripts and interview should provide important and useful information for future research. As this research focused only on investigating secondary school students' use of IM for communication and learning, research on the impact from the use of IM on students' achievements in various school subjects could help in gaining a better insight

into whether IM contributes to enhancing students' learning or not. Since this study has confirmed that a majority of secondary school students participate in group chats created for the realisation of academic objectives, examination on the effect of group chats on students' understanding and achievement of results in various school subjects could be useful in order to warrant the continuing use of IM for such purposes.

This study concentrated on a small sample of higher secondary school students. Future studies on the use of IM by students should cover a wider segment of the population, perhaps to include primary and lower secondary students as the use of IM is increasing among this segment of the population.

### **5.5 Summary**

The conclusions derived from this study provide insightful information on the frequency of secondary school students' use of WhatsApp, the reasons for its increasing popularity, the benefits as well as concerns associated with its use. The implications that this study give will be of interest to stakeholders. Suggestions for future research on the adoption of IM among school students will help in obtaining a better understanding of IM's effects on academic learning.

## REFERENCES

- Ahad, A. D., & Lim, S. (2014). Convenience or nuisance? The “WhatsApp” dilemma. The international conference on communication and media. *Procedia – Social and Behavioral Sciences*. Retrieved from <http://www.repo.uum.edu.my>.
- Alsaleem, B. I. A. (2014). *The effect of WhatsApp electronic dialogue journaling on improving writing vocabulary word choice and voice of EFL undergraduate Saudi students*. Retrieved from [www.awej.org/index.php?option=com\\_content&view=article&id=330:basma-issa-ahmad-alsaleem&catid=42&Itemid=133](http://www.awej.org/index.php?option=com_content&view=article&id=330:basma-issa-ahmad-alsaleem&catid=42&Itemid=133).
- Amry, A. B. (2014). The impact of WhatsApp mobile social learning on the achievement and attitudes of female students compared with face-to-face learning in the classroom. *European Scientific Journal*, 1(22). Retrieved from [www.eujournal.org/index.php/esj](http://www.eujournal.org/index.php/esj).
- Bakia, M., Shear, L., Toyama, Y. & Lasseter, A. (2012). Understanding the implications of online learning for educational productivity. *U.S. Department of Education Office of Educational Technology*. Retrieved from <file:///C:/Users/USER/Documents/project/online-learning%20defn.pdf>.
- Bansal, T. & Joshi, D. (2014). A study of students experiences of WhatsApp mobile learning. *Global Journal of Human Social Science Research* 14(4). Retrieved from <http://socialscienceresearch.org/index.php/GJHSS/article/view/126>.
- Barhoumi, C. (2015). The effectiveness of WhatsApp mobile learning activities guided by Activity Theory on students’ knowledge management. *Contemporary Educational Technology*. Retrieved from <http://www.cedtech.net/search.asp>.
- Bouhnik, D., Deshen, M. (2014). WhatsApp goes to school: mobile instant messaging between teachers and students. *Journal of Information Technology Education: Research*, 13, v217-231. Retrieved from <http://www.jite.org/documents/Vol13/JITEv13ResearchP217-231Bouhnik0601.pdf>.
- Bouman, J. M. (2013) *Learning via WhatsApp is what’s up!* Retrieved from <http://masterofmedia.hum.uva.nl/2013/09/10/learning-via-whatsapp-is-whats-up/>.
- Buchenscheit, A., Konings, B., Neubert, A., Schaub, F., Schneider, M., & Kargi, F. (2014). *Privacy implications of presence sharing in mobile messaging applications*. Retrieved from <http://www.uni-ulm.de>.
- Campbell, B., Rosenberg, J., Schulzrinne, H., Huitema C. & Gurle, D. (2002). *Session Initiation Protocol (SIP) extension for Instant Messaging*. Retrieved from <https://tools.ietf.org/html/rfc3428>.



- Chu H. H. & Toh, L.L. (2014). Interactive Character Learning Model (ICLM) – Chinese character learning using WhatsApp for Malay L3 learners. *US-China Education Review A*, 4(11) 777-786. Retrieved from <http://www.davidpublishing.com>.
- Chuah, K. M. (2014). *Word's Up with WhatsApp: The use of instant messaging in consciousness-raising of academic vocabulary*. Retrieved from <http://www.academic.edu>.
- Connectivism: Informing distance education theory, pedagogy and research (critical review). (2014). *Technology for Teaching & Learning reflections on instructional technology*. Retrieved from <https://kelliralph.wordpress.com/2014/05/24/connectivism-informing-distance-education-theory-pedagogy-and-research/>.
- Downes, S. (2008). *Connectivism and its critics: What connectivism is not*. Retrieved from [www.downes.ca/post/53657](http://www.downes.ca/post/53657).
- Duke, B., Harper, G., & Johnston, M. (2013). Connectivism as a digital age learning theory. *The International HETL Review, Special Issue*, 2013. Retrieved from <https://www.hetl.org>.
- Jeong, W (2007). Messaging in on-site and online classes in higher education. *Educause Quarterly*.
- Jisha, K. & Jebakumar. (2014). WhatsApp: A Trend Setter in Mobile Communication among Chennai Youth. *IOSR Journal Of Humanities And Social Science*. 19(9). 01-06. Retrieved from [www.iosrjournals.org](http://www.iosrjournals.org).
- Keegan, D. (n.d.). *The incorporation of mobile learning into mainstream education and training*. Retrieved from <http://www.mlearn.org.za/CD/papers/keegan1.pdf>.
- Kop, R., & Hill, A. (2008). *Connectivism: Learning theory of the future or vestige of the past?* Retrieved from [www.irrod.org/index.pticle/view/523/1103](http://www.irrod.org/index.pticle/view/523/1103).
- Lipschultz, W. & Musser, T. (2016). Instant Messaging: Powerful flexibility and presence. *Clearing house, Academic Advising Resources*. Retrieved from <https://www.nacada.ksu.edu/Resources/Clearinghouse/View-Articles/Instant-Messaging.aspx>.
- Mertler, C. A. & Charles, C. M. (2005). *Introduction to Educational Research*. (5<sup>th</sup> ed.). Boston, MA: Pearson Education, Inc.
- Plana, M. G. C., Escofet, M. I. G, Figueras I. T., Gimeno, A., Appel, C., & Hopkins, J. (2013). *Improving learners' reading skills through instant short messages: a sample study using WhatsApp*. Retrieved from <http://www.researchgate.net/publication/255718202>.

- Rambe, P., & Chipunza, C. (2013). *Using mobile devices to leverage student access to collaboratively-generated resources. A case of Whatsapp instant messaging at a South-African university*. International Conference on Advanced Information and Technology for Education. Retrieved from [https://www.researchgate.net/publication/2666452\\_Using\\_mobile\\_devices\\_to\\_leverage-student\\_access\\_to\\_collaboratively-generated\\_resources\\_a\\_case\\_of\\_Whatsapp\\_instant\\_messaging\\_at\\_a\\_South\\_African\\_University](https://www.researchgate.net/publication/2666452_Using_mobile_devices_to_leverage-student_access_to_collaboratively-generated_resources_a_case_of_Whatsapp_instant_messaging_at_a_South_African_University)".
- Riyanto, A. (2013). English language learning using WhatsApp application. *Wordpress, The Splendio Theme*. Retrieved from <http://akhmadriyantoblog.wordpress.com/2013/02/21/english-language-learning-using-whatsapp-application/>.
- Rovai, AP. (2002). *Building sense of community at a distance*. Retrieved from [www.irrodl.org/index.php/irrodl/article/view/79/153](http://www.irrodl.org/index.php/irrodl/article/view/79/153).
- Siemens, G. (2005). Connectivism: A learning theory for the digital age. *International Journal of Instructional Technology and Distance Learning*, 2(1), 3-10. Retrieved from [http://www.itdl.org/journal/jan\\_05/article01.htm](http://www.itdl.org/journal/jan_05/article01.htm).
- Smith, B.L., & MacGregor, J. (1992). Collaborative Learning: A sourcebook for higher education. *University Park, PA: National Center on postsecondary teaching, learning and assessment (NCTLA)*. 9-22. Retrieved from <http://evergreen.edu/facultydevelopment/docs/WhatisCollaborativeLearning.pdf>.
- Stranack, K. (2012). *Critical review of Connectivism: A learning theory*. Retrieved from <http://stranack.ca/2012/08/16/critical-review-of-connectivism-A-Learning-Theory-for-the-digital-age>.
- United Nations Educational, Scientific and Cultural Organisation (Unesco). (2015). *Mobile Learning*. Retrieved from [www.unesco.org/new/en/unesco/theme/icts/m4ed/](http://www.unesco.org/new/en/unesco/theme/icts/m4ed/).
- Willemsse, J. (2015). Undergraduate nurses reflections on Whatsapp use in improving primary health care education. *Curationis* 8(2). Retrieved from <http://dx.doi.org/10.4102/curationis.v38i2.1512>.
- Yeboah, J. & Ewur, G. D. (2014). The impact of Whatsapp messenger usage on students performance in tertiary institutions in Ghana. *Journal of Education and Practice*. Retrieved from [www.iiste.org/journals/index.php/JEP/article/view/11241](http://www.iiste.org/journals/index.php/JEP/article/view/11241).
- Yeboah, S. T., Nondzzor, H. E. & Alhaji, A. Usage of WhatsApp and Voice Calls (Phone Call): Preference of Polytechnic Students in Ghana. *Science Journal of Business and Management*. 2(4), 103-108. Retrieved from doi: 10.11648/j.sjbm.20140204.11.

## APPENDICES

### APPENDIX A

#### Questionnaire

*Investigating the Perceptions of Secondary School Students in using  
WhatsApp for Learning Purposes.*

**Instructions: For each statement, circle the relevant response.**

1. What is your gender?
  - A Female
  - B Male
  
2. Do you own a smartphone?
  - A Yes
  - B No
  
3. Is your phone connected to the Internet?
  - A Yes
  - B No
  
4. Which instant messaging tool do you use the most? (Choose only ONE answer)
  - A WhatsApp
  - B WeChat
  - C LINE
  - D Kakao Talk
  - E Viber
  - F Others \_\_\_\_\_

If you answered “A” (WhatsApp) for question 4, you may proceed with the survey.  
If you do not use WhatsApp, please indicate why:

---

and you may end this survey.

5. On a typical day, how many hours do you use WhatsApp?
  - A Less than 1 hour
  - B 1 – 3 hours
  - C 3 – 5 hours
  - D More than 5 hours
  
6. Do you use WhatsApp more often than calls or SMS?
  - A Yes
  - B No
  
7. Who do you communicate with using WhatsApp? You may circle more than one option.
  - A Family
  - B Friends
  - C Schoolmates
  - D Teachers
  - E Others \_\_\_\_\_
  
8. How often do you check on WhatsApp messages daily?
  - A Once
  - B 2 - 4 times
  - C 5 - 7 times
  - D 8 - 10 times
  - E more than 10 times

9. On a typical weekday, do you use WhatsApp more often for schoolwork or personal reasons or both?
- A More often for schoolwork
  - B More often for personal reasons
  - C About an equal amount for school and personal reasons
10. Why do you use WhatsApp? You may circle more than one option.
- A It is free of charge
  - B I can send text, images and videos
  - C My family and friends use it
  - D I can communicate with a group of people at any one time
  - E Other reasons
- 
11. Do you use WhatsApp for learning purposes?
- A Yes
  - B No
12. How many chat groups are you currently in on WhatsApp?
- A One
  - B 2 - 4
  - C 5 - 7
  - D 8 - 10
  - E more than 10
13. Who initiated the WhatsApp group(s) for learning?
- A Teachers
  - B Classmates
  - C Yourself
  - D Others \_\_\_\_\_

14. For school-related group(s), what do you chat about? You may choose more than one option.

- A Subject-related matters
- B School-related matters
- C General
- D Others \_\_\_\_\_

15. The WhatsApp group(s) share information useful for learning.

- A Strongly agree
- B Agree
- C Disagree
- D Strongly disagree
- E Undecided/Not sure

16. What is your opinion of WhatsApp as a tool for learning?

- A Useful
  - B Time-consuming
  - C Annoying/Frustrating
  - D Can discuss anytime and anywhere
  - E Others
- 

17. The WhatsApp group is a convenient platform for discussion on school-related matters.

- A Strongly agree
- B Agree
- C Disagree
- D Strongly disagree
- E Undecided/Not sure

If your answer to question 17 is either C or D, please give your reasons why.

18. Do you find the WhatsApp chats effective in improving your understanding of a subject?

- A Always
- B Most of the time
- C Sometimes
- D Seldom

19. Do you think WhatsApp can help improve your relationship with your friends, schoolmates and teachers?

- A Yes
- B No

20. Do you think WhatsApp encourages students to participate more in discussions online as opposed to being in a classroom?

- A Yes
- B No

21. What reason(s) would you have to leave a group? You may choose more than one option

- A People chat about unrelated matters
- B Takes up too much of your time
- C Serves no useful purpose
- D Too many chats to read especially after being offline.
- E Others

---

*Thank you for your participation in this survey.*

### Interview Guide

1. How effective are the chats in helping you to gain better understanding of a subject?
2. On the question of how WhatsApp can improve relationships among families and friends, did you agree or disagree to this statement? Please give reasons for your answer,
3. Do you think that WhatsApp promotes more discussions online among participants than being in a classroom?
4. Do you encounter any problems in using WhatsApp for communication or learning purposes?
5. Do you have any concerns about the increasing use of WhatsApp among school students?
6. How do you think the use of WhatsApp for learning purposes can be improved for successful achievement of objectives?



**Interview Transcript**

- Interviewer: Good morning everyone.
- Students: Good morning, Ms.
- Interviewer: Let me start by asking how many group chats are you all in presently and how many of the group chats are subject-related?
- Student 1: More than 10. Six of the groups are subject-related: Physics, Chemistry, Art, P.E. and two for English
- Student 2: More than 10 too. English, Art, P.E., Chemistry, Photography, Duke of Edinburgh, Prefects and Year 11 class.
- Student 3: Yes, more than 10. English, Chemistry, Physics (one for school and one for tuition), Add. Math (one for school and one for tuition), Math, Photography, Prefects and Year 11 class.
- Student 4: Chemistry (school and tuition), Physics and Class Group chat
- Student 5: Add math, Chemistry, Physics and Class Group chat
- Interviewer: For the subject-related groups, what do you usually chat about?
- Student 1: Due dates for work and subject matters..
- Student 2: We ask questions, have discussions and sometimes general matters.
- Student 3: About the subject and sometimes, not about the subject. Teachers share materials.
- Student 4: Some people want to ask questions and the whole group becomes involved.
- Student 5: Teachers send important messages and information related to the subject. Some members ask questions and others give answers.

- Interviewer: How effective are the chats in helping you to gain better understanding of a subject?
- Student 1: Only for Physics.
- Interviewer: Why is that so?
- Student 1: There is a teacher in the group.
- Interviewer: What about the other groups?
- Student 1: The participants go off-topic because there is no teacher to control. It would be more effective with a teacher. Sometimes they chat until late at night.
- Interviewer: What is your opinion, Student 2?
- Student 2: Not all the time. There should be teamwork, members ask questions and we have discussions on the subject but that usually doesn't happen.
- Student 3: Very seldom. It is awkward, annoying sometimes when they talk about other things. I don't want to bother the teacher so I don't ask.
- Student 2: I would rather ask my teacher in a private chat instead of in a group chat as I don't want others to know I have doubts about something.
- Student 3: Some people think you are dumb when you ask certain questions, like 'you don't know that?'. I don't want them to think I am stupid. I also feel awkward asking questions when I am in a group with members I don't get along with.
- Student 4: No. I don't participate and I don't care what goes on.
- Student 5: Some are okay when the teacher is present but some are just a waste of time.
- Interviewer: On the question of how WhatsApp can improve relationships among families and friends, did you agree or disagree to this statement? Please give reasons for your answer.
- Student 1: I agree. I WhatsApp my cousins in India more than before. Now it is free so I can contact them whenever I want. Before, it was harder to keep in touch because it was expensive by calling.
- Student 2: I agree. I use WhatsApp too to keep in touch with my cousins in Australia. We share pictures of family get-togethers.

- Student 3: Me too. I used to not know this cousin very well but we started Whatsapping. Now we whatsapp all the time.
- Student 4: I don't keep in touch with my cousins.
- Student 5: I agree that WhatsApp can improve relationships but I don't contact them often.
- Interviewer: On to the third question, do you think WhatsApp promotes more discussions online among participants than being in a classroom?
- Student 1: When you are in a group chat, everyone can talk. Everyone has equal chance to participate so yes, I think it does. Not like in the classroom, you are under the control of the teacher. But some students will not talk. They will just ask the necessary questions then they keep quiet.
- Student 2: No. I prefer in the classroom. In the classroom, we cannot ignore what people are saying.
- Student 3: Online, people can ignore you.
- Interviewer: So you don't think that on WhatsApp, participants discuss more than in a classroom?
- Student 2: Ya, some students will not join in the discussion.
- Student 3: They are the same online as they are in the classroom. But in private chats, they can talk a lot.
- Student 4: (Shakes her head). No.
- Student 5: Some people talk more and some will just stay quiet. It is the same as inthe classroom.
- Interviewer: Let's move on to the next question, do you encounter any problems in using WhatsApp for communication or learning purposes?
- Student 1: It takes up too much time when people talk about random things.
- Interviewer: What do you do when that happens?
- Student 1: I disappear silently.
- Interviewer: Any other problems?
- Student 1: It distracts me. I always have the urge to check on my WhatsApp messages no matter where I am or what I am doing.

- Student 2: It is distracting. The number of chats I get. And it is time-consuming as I check more than 10 times a day.
- Student 3: The danger is that people can read about what you say.
- Interviewer: You mean, it leaves evidence of your chats?
- Student 3: Yes, so some people don't want to say anything.
- Interviewer: What about you, Student 4?
- Student 4: When you switch on your phone and you get 500 chats, how do you read all the chats? And it is not easy to choose the chats you want to keep and those you want to delete. It wastes a lot of time.
- Student 5: Some chats that are random are a waste of time. And it is annoying to have to read them when it has nothing to do with you.
- Interviewer: Since you all mention about the number of chats you get, what do you do with them? Do you read all of them? Do you delete them?
- Student 1: I don't delete the chat logs unless the storage is full. But the chats are annoying when they don't concern you and they go on and on. I don't read all of them. I just scroll through.
- Student 2: I don't read all the chats especially from unimportant groups.
- Interviewer: How do you know which groups are important and which are not?
- Student 2: Some groups talk about things I am not interested in like the SSPCA group. I set different ringtones for two groups: important and unimportant. So when I received a message from the important group, I check immediately. Student 3 is in the important group.
- Student 3: I also have different ringtones; one for personal and one for groups.
- Student 4: I don't bother to read all the chats, I just scroll through. I don't delete unless the storage is full.
- Student 5: Same for me. I don't have the time to read everything.
- Interviewer: What about using WhatsApp for learning purposes? Do you have any concerns?
- Student 1: The biggest problem is random chatting. If it can be minimized, the chats would be more effective for learning. Another thing is the emoticons and abbreviations reduce the use of vocabulary and affect the students' spelling.

- Student 2: But the emoticons can to convey the messages clearly instead of having to type in words. A teacher is the group is better. Students will talk about things related to the subject instead of random things.
- Student 3: I agree. We want cooperation and useful discussions.
- Student 4: If people can stick to the topic and not waste everyone's time in random stuff.
- Student 5: Random chatting happens all the time but the teacher can manage the group better if he or she is around.
- Interviewer: The next question, do you have any concerns about the increasing use of WhatsApp among school students?
- Student 1: I think it is good. With WhatsApp, all students can communicate on anything anytime and anywhere, not like before.
- Student 2: WhatsApp is useful for communication but it can be distracting.
- Student : No, I will still use it despite the distraction. It saves 3G compared to other IM.
- Student 4: No.
- Student 5: Not really. It is convenient and free so students will use it.
- Interviewer: How do you think the use of WhatsApp for learning purposes can be improved for successful achievement of objectives?
- Student 1: There must be rules for being in the group chat. The teacher should set a specific time like in a day or week for everybody to discuss on the subject.
- Student 2: That will be hard because you can't get everyone at the same time.
- Student 1: True. Well, the teacher can control the group, like the things that are being sent or to control the random chatting. I think WhatsApp is not as fully utilised for learning purposes now. Not all teachers are willing to devote their time after school hours to help students. Also, not everyone has WhatsApp.
- Student 2: Ya, not all teachers use WhatsApp. The teacher's participation in the group will be more useful. The students will talk about relevant things instead of unrelated stuff.
- Student 3. The teacher can control the group.

Student 4: I don't think WhatsApp is useful. It wasn't meant to be used for learning in the first place.

Student 5: Definitely the teacher can manage the group better. If the students manage the group, they usually don't achieve anything useful. They always end up talking about other things. Also, not all teachers know how to use WhatsApp.

Interviewer: Is there anything anyone would like to add?

Student 1: No.

Student 2: I am happy with WhatsApp.

Student 3: [Shakes her head]

Student 4: No.

Student 5: I don't think so.

Interviewer: Well, thank you all very much. It has been very insightful. I appreciate your time in doing this interview.