THE IMPACT OF KNOWLEDGE SHARING ON INNOVATION IN TEACHING AND JOB PERFORMANCE AMONG TEACHERS IN KOTA KINABALU SECONDARY SCHOOL

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DEDICATION

To My Loving Family,
The Yamado'z

Father and Mother,
Albert Wong Hon Loi
Saliam Yamado
Your blessing has made me who I am today.

Dearly Brothers and Sisters,
Nelly, Alis, George, James, David, Jira, Robin and Julina
All My In Laws, especially Jenny Justinus
Nephews and Nieces
Your love, support, understanding and guidance will always be my philosophy in live. Our ups and downs will be my greatest memoire and this is for all of us.

To my Strongest Companion,
Jiyna,
Thank you for your loving and never ending support.

To My Friends whom had shared the hardships;
Hishammudin, Idayati, Siti Salmah and Faridah
The hardships are worthed as long as it benefits future civilization.

Academician,
Lecturers
All the teachers
Keep on Sharing and Giving Knowledge, for your continuous dedication is the light among the dark.

May the Knowledge Gained from this research Brings Benefits to the Society.

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ABSTRACT

The main purpose of this study is to investigate the impact of knowledge sharing on innovation in teaching and job performance among teachers in National Secondary School. The study was conducted in five secondary schools which are governed by the Ministry of Education of Malaysia in Kota Kinabalu, Sabah. Systematic Stratified Random Sampling were employed in selecting 191 respondents from the identified sampling frame. The study employed survey method through the distribution of questionnaire, and cross sectional. The questionnaire consisted 95 items which divided into four main parts to measure knowledge sharing behaviour based on the Knowledge Sharing Behaviour Scale, teaching innovation through the Technological Pedagogical Content Knowledge, teachers' job performance employed the Teacher's Job Performance Self-Rating Questionnaire and respondent's demographic factors. The data collected from the questionnaires were analysed with Statistical Package for the Social Sciences (SPSS), version 20.00 through descriptive and inferential statistics in which regression model were analysed to determine the impact of regression coefficient of knowledge sharing on teaching innovation and teacher's job performance. The findings indicated that the level of knowledge sharing behaviour among teachers in Kota Kinabalu was moderate, while, teaching innovation and job performance was high. The Standard Regression Analysis signified that knowledge sharing behaviour had low positive relationship level in teacher's teaching innovation and moderate in teacher's job performance. Multiple Regression Analysis confirming that personal interaction is the dominant dimension of knowledge sharing to have significant contribution that influenced both teaching innovation and job performance among teachers of Kota Kinabalu, Sabah. The study lies in the educational context denoting knowledge sharing is significant in teaching professions generally.

ABSTRAK

Tujuan utama kajian ini dijalankan adalah untuk menilai kesan perkongsian pengetahuan terhadap inovasi pengajaran dan prestasi kerja dalam kalangan guru di sekolah menengah kebangsaan. Kajian dijalankan di lima buah sekolah menengah yang dikawal selia oleh Kementerian Pendidikan Malaysia di Kota Kinabalu, Sabah. Persampelan Berstrata secara Sistematik digunakan untuk memilih 191 responden dari rangka persampelan yang telah dikenalpasti. Kajian ini adalah kajian tinjauan melalui pengedaran soal selidik secara keratan rentas. Soal Selidik yang digunakan mengandungi 95 item dan dibahagikan kepada empat bahagian utama dalam mengukur tingkahlaku perkongsian pengetahuan menggunakan *Knowledge Sharing Behaviour Scale*, inovasi pengajaran menggunakan *Technological Pedagogical Content Knowledge*, prestasi kerja guru menggunakan *Teacher's Job Performance Self-Rating Questionnaire* dan faktor demografi responden. Data yang diperolehi daripada soal selidik dianalisis mengunakan *Statistical Package for the Social Sciences (SPSS), version 20.00* melalui statistik diskriptif dan inferensi yang mana model regresi dianalisis untuk menentukan kesan pekali regresi perkongsian pengetahuan ke arah inovasi pengajaran dan prestasi kerja guru. Dapatan kajian menunjukkan bahawa tahap tingkah laku perkongsian pengetahuan dalam kalangan guru-guru di Kota Kinabalu adalah sederhana, manakala inovasi pengajaran dan prestasi kerja adalah tinggi. Analisis Regresi Mudah menunjukkan bahawa tingkah laku perkongsian ilmu mempunyai pengaruh positif pada tahap rendah terhadap inovasi pengajaran dan tahap yang sederhana terhadap prestasi kerja guru. Analisis Regresi Pelbagai Piawai pula menunjukkan bahawa interaksi peribadi adalah dimensi paling dominan dalam perkongsian ilmu yang mempengaruhi kedua-dua pengajaran inovasi dan prestasi kerja dalam kalangan guru-guru di Kota Kinabalu, Sabah. Kajian ini menunjukkan kepentingan perkongsian pengetahuan dalam konteks pendidikan dan profesion perguruan secara umumnya.

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LIST OF ABBREVIATIONS

CCB	:	Compulsory Citizenship Behavior
CCM	:	Capability Maturity Model
CoP	:	Community of Practice
DG41	:	Employee Education Service Grading (Service 1-8 years)
DG44	:	Employee Education Service Grading (Service 1-16 years)
DG48	:	Employee Education Service Grading (Service 1-24 years)
DG52	:	Employee Education Service Grading (Service 1-28 years)
ICT	:	Information Communication Technology
JPA	:	Jabatan Perkhidmatan Awam / Public Service Department
JPN	:	Jabatan Pendidikan Negeri / State Education Department
JPNS	:	Jabatan Pendidikan Negeri Sabah / State Education Department of Sabah
KPM	:	Kementerian Pendidikan Malaysia / Malaysian Education Ministry
NUTP	:	National Union of the Teaching Profession Malaysia
OCB	:	Organization Citizenship Behavior
PPD	:	Pejabat Pendidikan Daerah / District Education Office
PPP	:	Pegawai Perkhidmatan Pendidikan / Employee Education Service
PPPM	:	Pelan Pembangunan Pendidikan Malaysia / Malaysian Education Blueprint
R&D	:	Research and Development
SMK	:	Sekolah Menengah Kebangsaan / National Secondary School
Std. Dev	:	Standard Deviation

LIST OF SYMBOLS

%	:	Percentage
<	:	Less than
>	:	Greater than
≤	:	Less than or equal to
≥	:	Greater than or equal to
+	:	Positive relationship
-	:	Negative relationship
a	:	Alpha Cronbach
df		Degree of Freedom
Ho	:	Null Hypothesis
M	:	Mean
N	:	Number of population
f	:	Frequency
P	:	Population proportion
ß	:	Standard Coefficient (Beta)
R^2	:	Coefficient of multiple determination for multiple regression
t-value	:	A test statistic for *t*-test that measure the difference between an observed sample statistics and its hypothesized population parameter in unit of standard error

LIST OF ATTACHMENTS

CHAPTER 1 :

INTRODUCTION

1.0 Introduction of Study

The importance of knowledge sharing is significant in the improvement of innovation (Paavola, Lipponen, & Hakkarainen, 2004; Vanderlinde & van Braak, 2011), performance, efficacies and development of individual or organization (Paavola & Hakkarainen, 2005). It is vital for teachers collaboratively working as a team to increase quality in learning and teaching to produce high quality end product (Ishak *et al.*, 2013); the student's achievement holistically, as what has been stated in the Malaysian Education philosophy, which is the balance development of students' physical, emotional, spiritual and intellectual (Zakaria, 2012). The focus of this study is to investigate the impact of knowledge sharing on teaching innovation and job performance among teachers. Therefore, a brief preliminary discussion of the study are made to review the study in depth. The discussion of study background and related problem which embarked on this study are reviewed. Then, the research questions, the research objectives and research hypotheses are explained followed by the discussion of the conceptual and operational definition of the study.

1.1 Background of the Study

The Malaysian education system has gone into a phase of development in parallel with vision 2020 which is to be a well developed country in the world (Zakaria, 2012). Education is the building blocks of human civilization as it creates specialists and expertise of human power to survive later in the future; occupational which lead to the country development (Quinn & Rubb, 2005), and it evolves due to globalization (Cubberley, 1920; Hsu, McPherson, Tsuei, & Wang, 2006), technology and information communication technology (ICT) (Dede, 2008). Due to capture the transformations and changes of fast moving technology driven world, individual capabilities are being challenged and to adapt with it, competency of individual in most profession expanded, while, Association for Talent Development (ATD) highlighted that talent is crucial and promising to cope with globalization and economic forces (ATD, 2014). Hence, the importance of sharing knowledge is vital to develop capability in innovation and efficacies among teachers, in which will increase teachers performance (Rowley, 2006).

Malaysian Education Ministry is coming into new edge of learning through the closure of transformation education plan, the Malaysian Education Blueprint 2013-2015 : Preschool to Post-Secondary School (*Pelan Pembangunan Pendidikan Malaysia 2013 - 2025 : PPPM 2013-2025*) (KPM, 2013). There are eleven shifts to achieve it success and two of the shifts are emphasizing innovation through ICT and increasing teaching professionalism, which focus on the development to venture job performance of the teachers (KPM, 2013). In relation with the awareness of innovation in education, teacher's innovation capability due from technology (Alias *et al.*, 2005) is emphasized to trigger teaching innovation among teachers and students (Ahmad *et al.*, 2014; Luis, Pedro, & Francisco, 2012; Nordin, 2013). Therefore, teachers' development lead to innovation and increase job performance (Luis, Pedro, & Francisco, 2012).

In advance, knowledge sharing is proven to be crucial in increasing performance and efficiency, through collaborative and team commitment (Bogler & Somech, 2004; Kotlarsky & Oshri, 2005) among teachers (Jones *et al.*, 2006; Karen, 2006; Kishan, 2007), it triggers high quality service and improves productivity as

well as outcomes in any business nature, be it none-government or government (Gil-Garcia, Chengalur-Smith, & Duchessi, 2007). Knowledge sharing not only improvised knowledge capability among individuals, but it increased organizational knowledge, which will lead to high intense performance through knowledge workers and accomplished organizational goal and service quality (Yang & Chen, 2007).

Additionally, knowledge sharing is positively significant in retaining knowledge and expertise in an organization (Debowski, 2006). This is agreed by Chen *et al.* (2009) in their study on knowledge sharing in an American multinational company in Malaysia. The study indicated that 59.3% respondents agreed that knowledge sharing is positively significant in the success and growth of organization, whereas 16% strongly agreed. Nevertheless, the findings indicated that 27% of the respondents were not willingly to share knowledge and this had triggered a worrying numbers of barrier in knowledge retention. Thus, evaluating the impact of knowledge sharing towards innovation and job performance among teachers are significant for such standpoint and lead to high quality of education.

In the context of education institutional, knowledge sharing brings positive relation towards quality service including innovation and job performance (Tan *et al.*, 2010). Tan *et al.* (2010) conducted a study regarding the relationships of knowledge sharing to service quality in private universities of Perak, Malaysia found out that knowledge sharing lead to quality service through assurance and reliability among the personnel in business faculty in which the researchers indicated that performance is increased with new way of accomplishment. Therefore, it leads a path that motivating knowledge sharing among teachers conceivably increased their expertise and functional development (Keedy, Gordon, Newton, & Winter, 2001; Ramstad, 2008), innovation (Ertmer, 2005) and performance (Selmer, Jonasson, & Lauring, 2012).

In additional, Gray (2004) conducted a study based on Wenger *et al.* (2002) community of practice principles found out that knowledge sharing improved individual skills and performance among academician. Equivalent research had been conducted by Zeng, Guan, and Chen (2013), in which the researchers evaluated knowledge sharing through online communities of practice indicated that knowledge

sharing improved efficacies and performance (Liao *et al.*, 2013; Van den Hooff *et al.*, 2003). Additionally, research conducted amongst teachers in Hong Kong by Eric (2012) to determine knowledge strategies to enhance school learning capacity signified that basically teachers in Hong Kong participated in knowledge sharing as well as knowledge utilization to enhance their performance. The researchers suggested that interpersonal interaction is the best strategy of knowledge sharing among teachers in Hong Kong.

Innovation in the other hands, is important in education within the context of global trends; education is fundamental in individual, be it personal or social development (Kishan, 2007). Kishan (2007) stated that, teachers have to adapt the environmental changes due to globalization as it will assure quality service in delivering education to the students. In additional, Kishan (2007) added that, globalization challenged education in the way of it adaptation of fast paced of technology and ICT (Karen, 2006), which he described that yesterday's skills may not be appropriate in tomorrow's teaching, integrated innovation in technology have to be added into the teaching of globalized era (Cox & Graham, 2009; Hazell, 2005; Karen, 2006; Koehler & Mishra, 2009; Liang *et al.*, 2013; Schmidt *et al.*, 2009). This is supported by Griffin, *et. al* in Griffin, McGaw, & Care (2012) that pedagogical in school have to be integrated with digital networks and technology (Koehler & Mishra, 2009) which they emphasized on collaborative teaching (Oplatka & Stundi, 2011), that will bring out the importance of knowledge sharing among teachers, which triggered innovation and anticipate performance (Wabwezi, 2011).

A study conducted by Houston in Saha & Dwarkin (2009) indicated that information technology is important for performance in teacher's ground of works. According to Mahamod & Noor (2011) in their study of teachers' perception on teaching Malay literature using the aplication of multimedia found that multimedia increased learning ability among students with broder flexibility and effectively. Whereas, innovation in implementing multimedia and technology as teaching aids and pedagody in class among J-Qaf teachers around Sarawak showed that teachers perception are high that they belief multimedia increased teaching and learning ability (Ahmad & Tamuri, 2010; Ertmer, 2005). Nevertheless, creative lead to innovation (Amabile, 1988) in which creativity enhanced innovation wherether with

the intervention of technology or otherwise. Malaysian education enforcing creative and innovative learning to transform education system to content future needs of the competitive market (Nordin, 2013). Hence, fostering innovation among teachers will lead to creative learning, and, in fact teaching (Cachia, *et al*., 2010; Ferrari, *et al*., 2009; Wabwezi, 2011), which is improved by knowledge sharing.

Job performance on the other hand, is important to increase the performance of education (Jones *et al.*, 2006). According to Jones *et al.* (2006), developing teachers performance are crucial to increase their productivity not only in the sense of teaching skills but also managerial, confidence, and interpersonal skills (KPM, 2013). This is supported by Rowley (2006) by stating that interpersonal skills such as communication are important among teachers to develop not only students' achievement (Petegem *et al*., 2008) but also their performance especially among mentors to induce high quality and performance among teachers by collectively participated in knowledge sharing activities. According to Lieberman in Sugrue (2008), leadership and knowledge sharing is vital in developing teachers, and developing teachers as a scholar will lead to a positive performance. Thus, this will increase knowledge sharing among them.

In another approach of job performance, the improvement of teachers' teaching and management skills, discipline and regulatory as well as their interpersonal relationship will increase job performance (Amin, ullah Shah, Ayaz, & Atta, 2013; Amoli & Youran, 2014; Knox, 2011). Amoli & Youran (2014) in their study found that empowering knowledge sharing brings a positive impact on job satisfaction which lead to high performance among teachers who are teaching EFL in Tehran Eviation University, whereby, Knox (2011) indicated that there are different levels of job satisfaction among teachers in a different school, if high level are achieved, it will bring improvement in teachers' task performance.

Based on the statement collected throughout the discussion, it can be seen that knowledge sharing, innovation and teachers' performance are vital in increasing quality of education. Knowledge sharing is the mechanism of new knowledge. Once knowledge is shared, due to the process of assimilating into one's expertise, a new knowledge will be developed. Through this development of new knowledge, a new

way of learning which is more innovative and pratical in the globalized world will be created. This brings out an innovation which leads to the increment of productivity among teachers. Nonetheless, job performance is another area that should be emphasized by school leaders. Through the projection of knowledge sharing, individual will be able to develope efficacy, in which will lead to positive job performance. One may lead a heathier working environment if they managed to utilize knowledge and expertise within them. Through the act of sharing knowledge, the ability in cooping with work process and responsibility will be increased.

1.2 Problem Statement

Since year 2000, Malaysian government invested and spent as much as 10.1 billion in education and training for the development of the country, this can be seen clearly in the Seventh Malaysian Plan (1996 - 2000) (Zakaria, 2012). Strongly based on vision 2020, it has not stop but to move vigorously towards the achievement of future generation with the new education transformation system PPPM 2013-2025, in which focus on quality of education and performance of the students (KPM, 2013). Through the evolution, innovation and teachers' professionalism are being emphasized as two among 11 shifts of the transformation system, to develop the country's education system. Realizing the needs to grasp the fast and current changing of modernization, the implementation of technology, information system and innovations (Dillon & Maguire, 2007; Jones *et al*. 2006; Kishan, 2007; Sugrue, 2008) are focused for teachers to adapt in their learning and hierarchies of work. Competency in teaching profession is expanded (Griffin *et al*., 2012).

Based on the given facts, teachers are required to be more adaptable towards the demanding nature of 21 century teaching and learning as well as to be innovative to promote students' achievement as their major product. By the mean of demanding nature, teachers have to work more than enough, apart of working hours with additional of clerical and management tasks (Carolyn *et al*, 2007; Berry *et al.*, 2011). Therefore, as remedial prescription, this study were carried out to examine the gap of achieving teacher's teaching innovation and job performance through knowledge

sharing behavior. Knowledge sharing can improve innovation (Debowski, 2006; Degraff & Quinn, 2006; Nonaka, 1994) and performance (Blackler, 1995; Gray, 2004; Wenger *et al.*, 2002; Jones, 2006). Nonetheless, there are limits on knowledge sharing evaluation in teaching profession; for teachers who are teaching in school, specifically in Malaysia.

Teacher; individual who performs teaching in school (Jones *et al.*, 2006), and school administrators were seldom engaged in knowledge sharing as they usually only used internet, bulletins and forums to project ideas, or even exchange information with one another (Jamaliah, 2008). This is a barrier as according to Ramayah, *et al.* (2014), the adaptation of internet in sharing knowledge is not enough as organization communication and personal interaction are among two vital dimensions that can enhance the behavior in knowledge sharing, in which will result in positive performance among individual (Awad & Alhashemi, 2012; Bambacas & Patrickson, 2008; Barrett, 2006). Practically, knowledge of technology is crucial to be integrated in the content and pedagogical knowledge among teachers to advance in open innovation in teaching (Ertmer & Ottenbreit-Leftwich, 2010; Liang *et al.*, 2013; Zhao *et al*., 2002) and this triggerred a worrying sign for the senior teachers (Johari *et al*, 2009).

Therefore, knowledge strategies by higher management to support knowledge sharing among teachers to induce performance due to the demanding nature is crucial (Jamaliah, 2008). In additional, Awang *et al.* (2011) stipulated that facilities of knowledge sharing were crucial to enhance teachers' behavior in which it promoted high performance through efficacies (Nonaka, 1994), alas, it has been neglected. According to Johari (2012) the efficacies of teachers in Kota Kinabalu, Sandakan, North West Coast and South West Coast of Sabah, length of service and experience in teaching influenced efficacies between junior and senior teachers and sharing knowledge is beneficial to enhance performance among new teachers. In this context, organization communication and personal interaction are the bottleneck in pursuing knowledge sharing activities.

In paralleled, Griffin, McGaw, & Care (2012) agreed that innovation played a major role in the development of student in the twenty first centuries, along with it,

teachers are the main conductor and the biggest contributor towards it (Aubé *et al.*, 2009; KPM 2013). Consecutively, to maintain achievement of the students are challenging, thus promoting knowledge sharing among teachers are crucial to encourage innovation and this will lead to organization (school) competitiveness and development (Degraff & Quinn, 2006; Nonaka & Takeuchi, 1995; Shaw, 2006). This, somehow, can be achieved through integrated technology in teaching as an open innovation (Chesbrough, 2006; Ertmer & Ottenbreit-Leftwich, 2010). According to Sani (2014), teaching innovation through technology improved literate among students. This can be an improvement sign but had been blocked due to the demanding nature of teaching profession. In addition, the used of technological in teachers' teaching are still depending on teachers' belief, and there are still occured teachers who are only using low level of technology limited in word proscessing and internet browser for the preparation of teaching session (Ertmer, 2005).

Additionally, as stated by Johari (2012) that teachers in Kota Kinabalu and three other districts in Sabah signified different level of efficacies in teaching based on their experience, in which the non experience teacher had lower teaching efficacy rather than those who had longer experience and this is supported by Johari *et al*. (2009) that there were differences between the level of performance based on seniority. This can be the barrier in achieving teachers performance especially in technology literate resulted by generation gap, however, knowledge sharing can be the best prescription to enhance knowledge of technology as well as in upgrading performance (Debowski, 2006). Initially, Chua (2012) indicated that teachers in Kota Kinabalu are oppressed in cooping with innovation in education thus this could bring negative application of teaching innovation. Guzman & Nussbaum (2009) stated that teachers competency should be given a proper attention in making sure they implemented technology in their teaching style, thus promoting innovation.

Hand in hand, innovation will not be readily available if performance of the teachers are low (Chua, 2012). Job performance is important to develop teachers' quality (Berry *et al.*, 2011; Horton & Horton, 1974; Jones *et al.*, 2006; Rowley, 2006). The new challenge of teaching profession in globalized world required well preparation of teachers; physically and mentally (Zakaria, 2012). Nevertheless, the specification in teaching profession changed drastically, without giving a second for

teachers to adjust. Performance among teachers are decreased because of this, thus, teacher have to adapt with all the necessary additional workflow caused by education development (Rahimah Haji, 1998). Carolyn *et al.* (2007) indicated that within 30 years, education system has changed dramatically, demanded the increased tasks of teacher's work responsibility, as such, it increased day to day giving pressure towards teachers, as a result, teachers are willing to retire early from the profession. This can cause confusion among teachers which will lead to disciplinary action (Amin *et al.*, 2013), and indeed will lower the quality of their performance (Viswesvaran and Ones, 2000).

Nevertheless, Chua (2012) suggested knowledge sharing helped teachers to learn new skill in cooping the related problem. Consecutively, Johari (2012) deemed that knowledge sharing among experience teachers increased the knowledge of class management of new teachers. In additional, lack of interpersonal relationship among teachers lead to low teaching performance (Pentegem *et al.*, 2008; Dalal, 2005) in which increasing among teachers because of limited time in pursue to complete their demanding tasks. In relation towards the demanding needs in teaching profession among teachers in Malaysia, it has been documented through various mass media to urge the responsible body to review teachers' task performance as it becomes a great wall in the actual responsibility of teacher which is educating student (Kamaruddin, 2007; Mansor *et al.*, 2010; Mo Lee & Armimmudin, 2012; Mohd Kosnin & Cheman, 2011; Rahimah, 1998; Shaari *et al.*, 2004; Sihes & Shaari, 2010; Yahaya & Ismail). Initially, the increasing tasks performance in teaching profession caused by the changes of globalized teaching demand (Berry *et al.*, 2011). Capturing the problem, National Union of teaching Profession (NUTP), has worked meticulously to balance teachers workloads in administration, clerical and extracurricular activities.

As reported by Khairul in Berita Harian (2010), Utusan Online (2013) and Farah and Siti in Sinar Harian (2015) the ministry is still taking drastic measure to resolve the issues of teacher's work demand to improve their performance, and beginning to see the possibility of knowledge sharing into the account, in which to promote improvement, thus increasing student achievements and assist teachers to be efficient in managing workloads due to the demanding nature of the profession, hence increase performance (Chua, 2012; Johari, 2012; Johari *et al.*, 2009).

Therefore, consolidating knowledge sharing among teachers will help them to increase efficacy (Al-Alawi *et al.*, 2007; Islam *et al.*, 2013; Liao *et al.*, 2013) which will promote job performance (Blackler, 1995; Debowski, 2006; Nonaka, 1994).

In essence, knowledge sharing among teachers conceivably the best prescription to promote teachers' teaching innovation (Garcia-Lorenzo, 2006; Jong & Hartog, 2007) and job performance (Al-Turki & Duffuaa, 2003). Knowledge sharing is hidden among teachers, be it in the order of knowledge donating and knowledge collecting (Liao *et al.,* 2007; Manjit *et al.,* 2011) or in a non-formal way (Liao *et al.,* 2013); the community of practice. Consequently, the importance of knowledge is expanded holistically in which involved in teachers' profession as such in assessing knowledge sharing based on written contribution, organization communication, personal interaction and community of practice (CoP) (Ramayah *et al.,* 2014). Relatedly, Printy (2008) indicated the importance of personal interaction in sharing knowledge as communication is important as medium of transfer, but, lack of teamwork leads to low level of knowledge sharing (Tajasom & Ahmad, 2011). Mutual understanding between leaders and teachers are crucial to induce knowledge sharing, in which Bryk and Schneider (2003) affirmed that there is still existence case of communication deficiency between higher management and teachers that hinder knowledge sharing behavior. Yi (2009), however, pointed that written publication is a way to transfer knowledge, and Wong (2012) indicated that written and published knowledge can donate ideas. Nevertheless, teachers are participating written knowledge only to advance in their career development, in which Yi (2002) indicated that education professional usually involved in publishing written knowledge only to encounter the profession but workloads among teachers hinder these activities (Johari, 2012). Thus, this study will examine the need of knowledge sharing to increase teaching innovation an job performance among teachers.

1.3 Research Questions

Research question is a problem deal with research that may have limited scientific support, which in return leading to research hypothesis (Picardi & Masick,

2014). Whereas, Chua (2011) explained that research question is a speculation made by researcher in parallel with research objective, as a foundation to be answered on the overall research and Salkind (2000) stated that research question is an organized issue to develop the important events of research, thus act as a stimulus for precise research. In consequence, based on the problem statement discussions, research question is developed in which will be used as a foundation of the study. The research questions developed based on the problem statement of the study are:

(i) What is the level of knowledge sharing, teaching innovation and job performance among national secondary school teachers in Kota Kinabalu?
(ii) What is the impact of knowledge sharing on innovation and job performance among national secondary school teachers in Kota Kinabalu?
(iii) What is the most significant impact of knowledge sharing dimensions on teaching innovation among national secondary school teachers in Kota Kinabalu?
(iv) What is the most significant impact of knowledge sharing dimensions on job performance among national secondary school teachers in Kota Kinabalu?

1.4 Purpose of the study

The main purpose of the study is to evaluate the impact of knowledge sharing towards teaching innovation; through technological pedagogical content knowledge and job performance among teachers who are teaching in the National Secondary School in the district of Kota Kinabalu, Sabah, Malaysia.

1.5 Objectives of the Study

According to Chua (2011) objective is a specific and a measurable goals to be achieved. While, Walker (2010) explained that objective should be capable to be clearly clarified and measured. Whereas, Sekaran & Bougie (2010) expained

objective should be made based on fact derived from actual data and not on researcher subjective or emotional values. Therefore, to pursue on the study, a clear and measurable objectives are developed as the foundation of the study. The objectives of the study can be seen as followed:

(i) To identify the level of knowledge sharing, teaching innovation and job performance among national secondary school teachers in Kota Kinabalu, Sabah.
(ii) To identify the impact of knowledge sharing on teaching innovation and job performance among national secondary school teachers in Kota Kinabalu, Sabah.
(iii) To identify the most significant contribution of knowledge sharing dimensions on teaching innovation among national secondary school teachers in Kota Kinabalu, Sabah.
(iv) To identify the most significant contribution of knowledge sharing dimensions on job performance among national secondary school teachers in Kota Kinabalu, Sabah.

1.6 Research Hypothesis

Picardi & Masick (2014) explained hypothesis as a propose or prediction explanation for the result of the study conducted. Whereby, Chua (2011) exerted null hypothesis refers to the hypothesis that has no significant different between specified population, any observed differences are due to sampling or experimenting error. If there shall be any differences result based on the analyzed instruments, it will then being, whether rejected or accepted. Null Hypothesis (No) is employed in this study because of limitation in previous study of knowledge sharing among teachers in Malaysian context. The hypotheses of the research can be seen as followed:

Ho1 : There is no significant impact of knowledge sharing on teaching innovation among teachers.

Ho2 : There is no significant impact of knowledge sharing on job performance among teachers.

Ho3 : There is no significant impact of knowledge sharing dimensions on teaching innovation among teachers.

Ho4 : There is no significant impact of knowledge sharing dimensions on job performance among teachers.

1.7 Significance of the Study

Through the accomplishment of this study, it is predicted that it would bring benefits to individual teachers and institutions on the importance of knowledge sharing. The main purpose of the study is to vigirously examine the impact of knowledge sharing on innovation (Debowski, 2006; Degraff & Quinn, 2006; Nonaka & Takeuchi, 1995; Shaw, 2006), particularly teaching innovation (Berry *et al*., 2011; Dillon & Maguire, 2007; Gray, 2004; Griffin, McGaw, & Care, 2012; Horton & Horton, 1974) among teachers generally in Malaysia and specifically in the district of Kota Kinabalu, Sabah. Scholars agreed that knowledge retention is among others, one of the ways to sustain individual and organization competitiveness (Debowski, 2006; Jafari, Akhavan, Fesharaki, & Fathian, 2007; Swanson & Holton, 2008) rather than hiring new employee. This study generates guidelines in promoting knowledge sharing strategies in projecting teaching innovation among teachers, in which will lead to school productivity and quality. Furthermore, this study can be used as an overview of the actual implication of knowledge sharing in teacher's teaching innovation to encourage innovation towards teacher to promote performance.

On the other hand, knowledge sharing is significant to performance, where it leads to efficacies which result in job performance (Colquitt, Lepine, & Wesson, 2011; Dillon & Maguire, 2007; Jones, Jennkin, & Lord, 2006; Kishan, 2007; Rowley, 2006; Wenger, McDermott, & Snyder, 2002). Thus, this research can be used as a foundation in assisting teachers in enhancing their teaching performance. The result is also useful as an alternative on managing teachers performance. Through this study, data regarding teachers participation in knowledge sharing and

job performance will be discovered, thus it may be practical as a framework in managing knowledge strategies to increase teacher's performance, and eventually, teaching innovation. In additional, this study is beneficial in the validation of knowledge sharing level among teachers, and how it correlates in teaching innovation and job performance. In doing so, the study can be used to evaluate new draft and framework which will benefit teachers.

1.7.1 Significance to the Researchers

The study benefits researchers in their future study by increasing related literature mainly in teaching profession. Through the findings of this study, researchers gained insight on the impact of knowledge sharing towards teaching innovation and teachers' job performance. More to the point of academic writing, it can also be a source of new research based on knowledge sharing and possibly a new developing method in assessing knowledge sharing related issues, particularly in teaching profession for quality, improvement and development purposes.

1.7.2 Significance to the Teaching Professions

The main goal in accomplishing this study is to evaluate teaching innovation and job performance among teachers through the emancipation of knowledge sharing activities, so they can uphold the education quality. Thereof, this research can be used as a basic idea for the teachers in performing their tasks as a knowledge giver; educating. This study intended to inform teachers on the importance of knowledge sharing towards their development in teaching profession.

On top of undergoing courses for their professional development, knowledge sharing activities will develop skills, ultimately, creating new ideas which is more efficient and effective to perform better. Thus, this research can be used as a catalyst in retaining knowledge, while encouraging professional development among

teachers. Additionally, the study can motivate them to be more active in knowledge sharing activities in gaining new ideas and adapting the best practice in performing task as a teacher to achieve high level performance. Thus, leveraging high quality education towards young generations in which are the leaders of tomorrows.

1.7.3 Significance to the Institutional

In a higher level, this study hope to be beneficial for the school administrators, principal, PPD and JPN as a foundation to promote quality in education through knowledge sharing. School administrators and principals, may used this study as a method to enhance the continuity of knowledge among teachers. It is important to value all teachers for their uniqueness and capabilities, thus to encourage them to share knowledge will project high equilibrium of expertise, and therefore, the shortage of expert in any subjects and area will not be occurred. Furthermore, this study may help school administrators and principals in managing knowledge strategy as an input of teachers innovation and performance.

Additionally, PPD and JPN are responsible in evaluating plan in developing teachers in its districts and states. Analyzing module for teachers training courses are promising. This study can be reviewed for alternative in investigating teaching and performance courses. Furthermore, the study is in parallel with the aspiration of the education transformation plan, thus, reviewing the findings of the study may be promising in creating plan and strategy involving sustainable performance in education profession. Therefore, this research can be reviewed as literature for best practice in teaching profession.

1.8 Scope of the Research

This study is attempted to evaluate the impact of knowledge sharing towards teaching innovation and job performance among teachers in Kota Kinabalu, Sabah,

Malaysia. It was conducted to the selected teachers who are teaching in National Secondary School (SMK); school that is administered by Malaysian government. The participants were selected based on stratified random sampling in which the sample of the study were teachers of National Secondary School in the district of Kota Kinabalu. Nonetheless, school counselors were not included in the study as they did not involved in the process of teaching and learning in the classroom. There were 25 National Secondary Schools in the district of Kota Kinabalu, which are managed by Kota Kinabalu District Education Office (PPD) and only five schools were selected randomly through fish bowl method. As a result, the generalization of the findings were parochialism, in which the findings may vary to different demographic and geographical around Malaysia. Nevertheless, the findings can still be used as the foundation in future literature because the respondents were homogenous teachers (Babbie, 2007; Chua, 2011).

The study employed quantitative research design. The measurement of knowledge sharing was based on *Knowledge Sharing Behavior Scale (KSBS)* which was developed by Ramayah *et al*. (2014) in which it measured four dimensions of knowledge sharing activities which were *written contribution*, *organizational communications*, *personal interaction* and *communities of practice*. Whereas, teacher's teaching innovation were measured using *technological pedagogical content knowledge (TPACK)* (Liang *et al.*, 2013) in which measured seven dimensions of teachers implementation of technology in teaching; *technological knowledge (TK), content knowledge (CK), pedagogical knowledge (PK), pedagogical content knowledge (PCK), technological content knowledge (TCK), technological pedagogical knowledge (TPK)* and *technological pedagogical content knowledge (TPACK).* In parallel to the research, teacher's job performance were measured using *Teacher's Job Performance Self-rating Questionnaire (TJPSQ)* (Amin *et al.*, 2013). There were four aspects of teacher's job performance included in the instrument which were *teaching skills*, *management skills*, *discipline and regularity* and *interpersonal relations*.

Consequently, the study employed survey method through the distribution of questionnaire. The instruments were focused on respondents self-assessment towards knowledge sharing, teaching innovation and job performance. Therefore,

honesty and emotion play a key role in regard of the results. Limitation may occurred in handling research (Babbie, 2007), nevertheless, reflective measures were taken to boast significant findings of this study. The respondents state of emotion are important, there will be a probability in dishonesty and response based on values and emotion being. Nonetheless, to narrow such gap, the response of respondents were treated as private and confidential. Privacy were given to the respondents in motivating honest responses and sufficient time was given to them in respect of responding on the distributed questionnaire. The time of questionnaires distribution were conducted in none peak hour.

In essence, the limitations of the study were intensely identified and effective measures were taken to narrow down the gap so that the study achieved high validity and reliability findings. Survey were only given to teachers who are teaching in National Secondary School, whereby teachers in National Primary school were not included in the study due to the limited resources and time frame. The instruments were analyzed using Statistic Package for Social Science (SPSS) version 20. Analysis ran to test the objectives and hypotheses of the study through descriptive and inferential analysis in which were tabulated. The findings then reviewed and explored for discussions to verify the significant of the evaluated variables.

1.9 Conceptual and Operational Definition

Conceptualization is a process of establishing concept into more specifics and precise mean (Sekaran & Bougie, 2010), thus the research acquired its definite conceptual definition through various empirical researches, whereby operationalization is the process of developing operational definition or specifying the exact operation involved in measuring research variables (Babbie, 2007). The study had reviewed numerous literature as a concept of the research variables, and evaluated to determine the most reliable operational definition in the meaning of measuring. Specific and definite conceptual were sufficiently examined as a result, the selection of a solid operation of the study in achieving credence results. The conceptual and operational definitions of the variables are explored in this headlines.

1.9.1 Knowledge Sharing

In the study of knowledge sharing among academics in UK Universities, Fullwood, Rowley, and Delbridge (2013) indicated that knowledge sharing is the prospective on giving away a source of power and expertise to other. Whereas, Merriam *et al.* (2012) exerted knowledge sharing as crucial mechanism in developing adults learners through transferring knowledge in which can be done in formal or non-formal setting. In advance, Swanson and Holton (2008) stated knowledge can be retained in organization for development through adult learning and sharing knowledge. While, Wenger *et al.* (2002), identified knowledge sharing as an act of sharing interest in which can be set in non-formal setting as in community of practice.

In additional, Wenger *et al.* (2002) had formulated principles in communities of practice to enable non formal knowledge sharing that has been widely used by scholars to promote knowledge sharing. In another dimension, knowledge sharing can be seen and evaluated through the level of knowledge donating and knowledge receiving (Liao *et al.*, 2007; Lin, 2007) in which it stimulates new knowledge and ideas. Consequently, knowledge sharing can improve performance and trigger innovation (Al-Alawi, Al-Marzooqi, & Mohammed, 2007; Amayah, 2013; Bildstein, Gueldenberg, & Tjitra, 2013; Huang, Chiu, & Lu, 2013; Yusof, Ismail, Ahmad, & Yusof, 2012), in which knowledge sharing can best be accommodated with the availability of knowledge management system (Donate & Guadamillas, 2010; Jafari *et al.*, 2007; Zhou & Nunes, 2012).

Based on the conceptual, this study employed knowledge sharing definition by Ramayah *et al.* (2014) as a set of individual behavior involving one's work-related knowledge and expertise with others within the organization in which can contribute to the ultimate effectiveness of the organization. Thus, the study is measuring knowledge sharing based on the assessment developed by Ramayah *et al.* (2014) as it is more practical and integrated. Ramayah *et al.* (2014) are using four dimensions to measure knowledge sharing among individuals particularly among teaching professions, which are written contribution, organization communication, personal interaction and community of practice. The dimensions which are emphasized by the

researchers are integrated with previous literature measurements, and it comprised entire elements needed to retain knowledge in an organizations (Blackler, 1995; Nonaka & Takeuchi, 1995; Swanson & Holton, 2008). In additional, the instrument is developed specifically to measure knowledge sharing among education profession. Thus, it is valid on assessing the nature of teachers' profession as it focused on the nature of teaching profession in which the items in every dimensions are related to teachers' task performance. Therefore, it is used as an operational in this study.

1.9.2 Innovation and Teaching Innovation (Technology Integrated Teaching)

According to Hobday (2005), innovation refers to as the new products or services that are offered by individual or organization and it is integrated accordingly with all available input (Nieto & Santamaria, 2007). Whereas, Nonaka (1995), stated that innovation can be created through sharing knowledge, experiences, and values. Whereby, Essman (2009) explained that innovation can be achieved with the implementation of technologies. CMM and five level of maturity model, indicated that technology changed technique of products and services into a new and advance projection of products and services.

Consecutively, Degraff and Quinn (2006) stated that innovation is a process of evolution which it consists of experience and time to be created. Degraff and Quinn (2006), later explained innovation based on their longitudinal research into Innovation Gnome which they divided innovation into four quadrants of collaborative, create, compete and control quadrants in which the researchers later explained that innovation is a change process based on the strengths, weaknesses and resources of the organizational. It is significantly important for the higher management to acknowledge the capability of the company to better perform innovation. Liao *et al.* (2007), conducted numerous study on innovation by evaluating innovation level based on innovation capabilitiy. Whereby, Alias, *et al.* (2005), measured innovation in teaching based on the implementation of technology by observing stages using *Hall and Hoard's stages of concerned questionnaires*.

Teaching innovation on the other hand represents a construct, comprise cluster of qualities including effectives interaction with learners, openness to change, persistence, reflective practice, specificity approach, and disciplined embedded pedagogy (Lunde & Wilhite, 1996). Whereby, according to KPM (2015) innovation among teachers are important and in the year 2014, the ministry had made innovation as the theme for National Teacher's Day. The ministry defined innovation as the application of creativity, renewal, modification, method and system to find ways to generate new products and better services, meaningful and worth. The changes in education need openness among teachers, this is including changes in technology (Griffin *et al.*, 2012; Kishan, 2007).

Therefore, the study adapted the measurement by Liang *et al.* (2013) which is focused on the implementation of technology in teachers' pedagogy, in which, as according to Chesbrough (2006) and Ertmer & Ottenbreit-Leftwich (2010) the implementation of integrated technology is an open innovation, in which innovation in teaching will be achieved. Integrating the use of technology in teaching can create or influence innovation (Hughes, 1997) in which will assist student learning through teachers' teaching (Koehler and Mishra, 2009). As exemplified by Hughes (1997), the implementation of technology will create a new path to ease teaching pedagogy among teachers. The measurement emphasized on the implementation of technology in all aspects of teacher's pedagogical which are content knowledge, pedagogical knowledge, pedagogical content knowledge, technological content knowledge, technological pedagogical knowledge and Technological pedagogical content knowledge. This measurement has been widely used in variety of teaching profession research as it focused on teachers assessment in the implementation of technology in teaching as the provision of teaching innovation (Harris & Hofer, 2011; Jang & Chen, 2010; Koehler & Mishra, 2009; Yeh *et al.*, 2014).

1.9.3 Job Performance

Performance consists of demonstration of specific behavior design to accomplish specific tasks and produce specific outcomes (Swanson & Holton, 2008),

whereby job performance is the behavior of employees to contribute either negatively or positively to accomplish organizational goals (Colquitt *et al.*, 2011). In advance, Viswesvaran and Ones (2000) stated that task performance is a part of job performance and it stimulates proficiency in which individuals performed formally and recognized as part of their job; activities that contribute to the organization's technical core. Job performance can be achieved through accomplishment (Alonso & Lewis, 2001; Colquitt *et al.*, 2011) and support from management (Randall *et al.*, 1999). Whereas, Judge *et al.* (2001) defined job performance through the satisfaction of work accomplishment among workers (Naceur & Chan Yen, 2001).

Based on the concept in the literature, this study utilized the measurement of job performance developed by Amin *et al.* (2013), Teacher's Job Performance Self-rating Questionnaire (TJPSQ). In the measurement, four dimensions of teacher's routine responsibilities are emphasized which are teaching skills, managements skills, discipline and regularity and interpersonal relationship. The instrument is selected as it is mostly significant in evaluating teachers performance. In additional, the measurement is integrated and specifically measured secondary school teacher's tasks and responsibilities. The measurement emphasized the needs and consciousness of teachers to perform their task performance that is demanding and ever changing due to fulfill the needs of globalization and education changes.

1.9.4 Teacher

Teacher is a person who significantly contribute to student learning (Jones *et al.*, 2006). Whereby, Muhson (2004) stated that teacher is a profession that serves as a knowledge resource for his/her students. In addition, as to carry on the 2015 national teacher's day theme, which is circulated by Minister of Education, teacher is defined as individuals who contributed their services in all forms of educational institutions, a catalyst and support the country's education development. Moreover, teacher is individual who is knowledgeable, highly skilled in their fields and have admirable personality and able to make themselves as role models (KPM, 2015).

Consequently, this study adapted the definition from Malaysian Education Act 1996, in which teacher is a person who is teaching pupil in education institution or a person who provide or issued substances of study or invigilate assessment in/for/or through central distance education. Additionally, teacher is referred to as registered teachers (grade PPP - DG41, DG44, DG48 and DG52) who are governed under this Act, which is a public or civil servant who is teaching in a government school, managed by the ministry of education under the authority of the Minister of Education and this is including principal.

1.9.5 School - National Secondary School (SMK)

According to the Malaysian Education Act 1996, National Secondary School, (1) provide a course of secondary education for five years suitable to student who have just completed primary school, (2) using national language (Bahasa Malaysia) as the main medium of instruction, (3) English language is compulsory, (4) facilitate teaching of other language (Chinese or Tamil language (upon condition), Indigenous language (upon condition) and Arabic, Japanese, German or French or any foreign language (upon condition) and (5) prepare pupils for examination as had been prescribed by the minister. National Secondary School is a government school which is educational institution established and maintain entirely by the Minister of Education in Malaysia.

Therefore, the study employed the definition of school which has been stipulated in Malaysian Education Act 1996 in which school is where ten or more pupils are taught either in a classroom or more, but not including place where teaching is limited to religion alone. Whereby, this study is conducted in National secondary school in Kota Kinabalu, Sabah which referred to as, in the Education Act 1996, a government school providing appropriate secondary education to pupils who had completed their primary education. In additional, the teachers who are teaching in the school are classified as a public employees. Thus, the study limited its operation to the government administered secondary school, in which are focused on

the secondary school in the district of Kota Kinabalu, Sabah. Nevertheless, primary schools (teachers) are excluded in the study due to limitation of resources and time.

1.10 Conclusion

The study is conducted to evaluate the impact of knowledge sharing among teachers in National Secondary School (SMK) on their teaching innovation and job performance. Previous literature signified that knowledge sharing can improve innovation and performance, consequently, it is important to acquire empirical evidence to motivate future implementation. This study is carried out in parallel to the objectives that has been developed, pursuing to answer the research questions. The sample of the study is teachers in National Secondary School. Nevertheless, there are limits towards the study, which it employed quantitative research design through the distribution of questionnaire and only five schools in the district of Kota Kinabalu, Sabah are involved. The measurement of knowledge sharing is *Knowledge Sharing Behaviour Scale (KSBS)*, teaching innovation implies *Technological Pedagogical Content Knowledge (TPACK)* and job performance using *Teacher's Job Performance Self-rating Questionnaire (TJPSQ)*. The conceptual and operational definition briefly explained that the study inferred knowledge sharing as independent variable, while, teaching innovation and job performance as dependent variables. Data of the study are analyzed with SPSS V20 to test the study hypotheses. The next chapter will discuss related literatures, past studies and related models and theories to provide empirical evidence on the proposed variables.

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