

An Empirical Investigation on the Role of Experience in Tacit Knowledge Acquisition among Malaysian Academia

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ABSTRACT

Experience contributes to tacit knowledge acquisition but its role especially in the academic domain remains unclear. This study investigates the role of experience in tacit knowledge acquisition in Malaysian academia using the mixed methods approach with grounded theory as the qualitative approach followed by survey. It is discovered that tacit knowledge is knowledge internalized by the academicians in their work practice. Two types of experience which are in-depth experience and diversity of experience influence the tacit knowledge acquisition. The operational contribution of experience to tacit knowledge lies in an academicians' ability to learn and apply it in an appropriate situation.

Keywords

Tacit Knowledge, Tacit Knowledge Dimensions, Grounded Theory, Socially-constructed Tacit Knowledge, Malaysian Academia

1.0 INTRODUCTION

Seminal literatures in the area of knowledge management and intellectual capital highlighted the importance of tacit knowledge and its potentials and values to individuals and organizations. Tacit knowledge is a dynamic knowledge that grows and changes through experience and learning, and is a powerful force in decision-making, accomplishment of goals and completion of work (Stewart, 2001). Tacit knowledge increases the quality of work

(Haldin-Herrgard, 2004) as it is a reflection of expertise and competencies and relevant to goal attainment of an individual (Horvath et al., 1999).

Organization-wise, tacit knowledge is credited to an organization's competitive advantage because it is difficult to be imitated by other organizations (Baumard, 1999) and it plays an important role in innovation and organizational learning (Nonaka & Takeuchi, 1995). It is a central resource in new product development processes (Kreiner, 2002) and plays an important role in strategic decisions (Brockmann & Anthony, 2002).

While tacit knowledge has been credited with the successes of organizations, it is an ambiguous construct and has been appropriated diversely in research (Gourlay, 2004; Tsoukas, 2003). Two research approaches influence the study of tacit knowledge which are knowledge-as-object approach and tacit knowledge as socially-constructed (Walsham, 2005).

The knowledge-as-object approach views tacit knowledge as a discrete type of knowledge owned individuals, groups or organizations, which can be converted into explicit knowledge, and shared throughout the organization (Nonaka & Takeuchi, 1995), thus the focus for this approach is the mechanism of transferability for tacit and explicit knowledge (Casselmann & Samson, 2005). The second school of thought views tacit knowledge dependent of human action, it is associated with something people do, and more appropriately viewed as the process of knowing and capability to act (Haldin-Herrgard, 2004). Within this

perspective, tacit knowledge is an ongoing social accomplishment (Orlikowski, 2002).

This research adopted the social construction approach of tacit knowledge in exploring the phenomenon in academic domain. Since knowledge cannot be treated independently from the process which it is acquired (Ancori et al, 2000), the acquisition of tacit knowledge is an important aspect in exploring tacit knowledge. According to Koskinen(2003) and Kolodner (1983), experience plays an important role in tacit knowledge acquisition. Therefore, this paper aims to investigate the role of experience in tacit knowledge acquisition in the academic domain.

2.0 LITERATURE REVIEW

The literature review centers on the acquisition of tacit knowledge, role of experience and tacit knowledge acquisition and the conceptualization of tacit knowledge acquisition used in the empirical research.

2.1 Acquisition of Tacit Knowledge

Tacit knowledge is acquired informally and either unconsciously or semi-consciously (Leonard and Sensiper, 1998) through personal experiences (Polanyi, 1966), collaborative experiences (Nonaka & Takeuchi, 1995) and subconscious integration of explicit and tacit knowledge (Gore & Gore, 1999). Most authors agree that the acquisition of tacit knowledge is through experiencing and doing in the pursuit of knowledge performing different tasks and duties in different contexts and situations of his life (Koskinen, 2003; Choo, 2006). This view corresponds to Polanyi's (1966) elaboration on the experience which is obtained through repeatedly performing a task in a similar way or experimenting with new approaches to complete a task and new tacit knowledge is acquired when a familiar task is performed in a new way or when a new task is performed through experimentation. Brown and Duguid (1998) stress that tacit knowledge is revealed in practice and created out of practice. In short, tacit knowledge cannot be taught, trained or educated but can be learnt through active contribution of the learner and the process takes time (Brockmann & Anthony, 2002). Personal contact and observations of others are also important factors in the acquisition of tacit knowledge (Leonard & Sensiper, 1998; Cook & Brown, 1999).

2.2 Experience and Tacit Knowledge

Tacit knowledge can be acquired through on-job training or informal learning at workplace (Howells, 1996; Horvath et al., 1999) such as apprenticeship, discourses and communal story sharing (Choo, 2006). Eraut (2000) associated tacit knowledge acquisition with implicit learning, a kind of unconscious learning from accumulated past personal experiences which form a tacit knowledge

base that enables action. Although tacit knowledge is acquired through experience, it is the ability to learn from experience is important rather than the length of experience (Sternberg et al, 2000). Learning is a social action and requires interaction, and individual learning involves reflections on actions for improvement and gaining new knowledge (Haldin-Herrgard, 2000). Johnson et al (2002) summarized that tacit knowledge builds up on personal skill, through social activity, informal discussion of work problems and internalization. Sharing the same view, McInerney (2002) stressed that tacit knowledge is also created not only by individual experiences but also the networks of people who meet and work with each other that cause knowledge to migrate and created. Kolodner (1983) discovered that experience plays an important role in the transition of a novice to an expert, and expert have a higher level of tacit knowledge due to their ability to translate experience into their work situation.

2.3 Conceptualization of Tacit Knowledge

Tacit knowledge is acquired from personal experience in a particular context. Experience within a particular context like job domain plays an important role in the implicit learning which contributes to tacit knowledge construction. Implicit learning is learning from experience or practice, and it involves transformation of knowledge into situationally appropriate form (Eraut, 2000). The accumulated knowledge forms the knowledge base of an individual, and the application of this knowledge becomes informal and automatic.

3.0 METHODOLOGY

Mixed method approach is chosen for the methodology of the research because it provides the researcher with the tools and ability to compensate for the deficiency of using a single method (Denzin, 1978). In the case of this study, since there is no *a priori theory* on tacit knowledge, the researcher embarked on the qualitative approach first to gain an understanding on tacit knowledge in academic domain. The quantitative approach is performed at a later stage to expand the understanding of tacit knowledge, specifically on the role of experience in tacit knowledge acquisition. Grounded theory (GT) is chosen as the qualitative approach and survey are used in the quantitative approach.

3.1 Grounded Theory Approach

Data are collected during a period of 9 months through interviews. Critical incidence technique is incorporated in the interviews, where participants were asked to recall specific situations or incidents in their professional life that shaped their understanding, perception, views and behavior as a scholar. Theoretical sampling guides the process of selecting participants and directs the data collection process. A total of 24 participants are interviewed,

comprising of 5 females and 19 males. In terms of their academic discipline, there are 5 participants from the medical school, 4 participants are from the engineering disciplines, and another 15 are from business management, arts, pharmacy, sciences and others.

Data is analyzed based on the GT method of analysis where three levels of coding are performed, namely the open coding, axial coding and selective coding. Kappa value is calculated and had a value of 0.91, which signified high agreement in the coding with the expert. In the axial and selective coding stage, paradigm modeling, an analytical tool is used to identify the key themes and cluster them into broad themes which eventually summarizing and categorizing the emerging strategy in a structured form of causal condition →phenomenon →context →intervening condition→ action strategies → consequences. During the whole analysis, the qualitative analysis computer software, QSR NVivo 2.0, is used to organize the vast amount of data and to support the coding process.

3.2 Survey

The questionnaire for the survey was developed based on the findings of the GT approach. It consists of two sections, the demographic section and the scenario-mediated test section. Section A was the background information which includes the information on the respondents' experiences. Information related to two types of experience are included in this section, the in-depth experience and the diversity of experience. There are ten aspects to measure in-depth experience: administration, research activities, publication, university services, community services, consultation, teaching activities, professional activities, awards and contribution. For each aspect, respondents were asked to indicate were then summed in order to compute the total score for in-depth experiences. The length of time they served a particular post or service is taken into consideration. A longer time was given a higher score compared to lesser time. The scores for all items in a particular category total score ranges from 10 to 272. Diversity of experience is measured by summing up the total types of experience respondents have across ten categories: administration, research activities, publication, university services, community services, consultation, teaching activities, professional activities, awards and contribution. A score of 1 is given if the respondent has at least a participation in a category whereas a score of 0 is given if the respondent has no participation in that category. Therefore, the score ranges from 0 (no diversity) to 10 (most diversity of experiences).

Section B was related to the tacit knowledge construct, which encompasses fourteen scenarios accompanied by 4 to 6 response options. A cover letter, the questionnaire and supporting documents

were e-mailed to 20,831 academicians in 20 public institutions of higher learning (PIHL) in Malaysia. During the 6 months data collection, 591 academicians responded. Data are analyzed using SPSS and the analysis of variance (ANOVA) is the statistical technique used in the hypothesis testing of the relationships of contextual experience and tacit knowledge. The significance value of 0.05 is used as the threshold value to differentiate between the groups.

4.0 FINDINGS

The discussion for the findings are divided into two namely the initial findings from the grounded theory and survey. A discussion on the role of experience on tacit knowledge acquisition is also included.

4.1 Tacit Knowledge in Malaysian Academia

From the grounded theory approach, it is discovered that tacit knowledge exists in the PIHL domain as knowledge internalized by the academicians in their work practices. In the context of Malaysian PIHL, the work practice of academicians is centred around the seven academic activities listed on the performance indicators which are teaching, research, publication, writing, public service, consultancy, and management.

Tacit knowledge in academic domain is important for an academician to achieve his/her goals. and is used by the academicians to strategize their actions in order for them to reach their intended goal of fulfilling the 7Ps. This resulted in the internalization of knowledge (tacit) by the academicians. Internalization of knowledge is the implicit process of applying the accumulated knowledge learned from previous experience when faced with challenges in situations related to their work practices.

Three dimensions of tacit knowledge are discovered, namely intellectual-affirmation tacit knowledge, self tacit knowledge and social tacit knowledge. Intellectual-affirmation tacit knowledge is the knowledge of understanding behaviors relating to intellectual capabilities. Self tacit knowledge is the knowledge of understanding behaviors relating to one-self. Social tacit knowledge reflects the understanding of human behaviors and how these behaviors affect an academician maneuvers in fulfilling the 7Ps requirements. Thus, social tacit knowledge is the knowledge in interacting with people.

4.2 The Relationship between Experience and Tacit Knowledge

The scores for all items in the ten aspects for measuring experience were summed up in order to compute the total score for in-depth experiences. The total score ranges from 10 to 272. This score was then divided into three and re-labeled as low

depth experience (10-97), average depth of experience (98-185) and high depth of experience (186-272). The level of tacit knowledge was compared for these three groups of respondents. Two assumptions are made and tested and their findings are discussed below.

Assumption 1: There is significant difference between levels of in-depth experience with tacit knowledge.

The mean of tacit knowledge for the three groups are shown in the table below. Respondents with low in-depth experience has lower tacit knowledge (M=8.70, SD= 4.30) compared to respondents with average (M=10.26, SD=4.48) and high in-depth experience, (M=9.71, SD=3.21). ANOVA test indicates that the differences are significant, $F(2, 579) = 7.834, p = .000$. This means that in-depth experience is related to tacit knowledge.

Table 1: Tacit Knowledge and In-depth Experience

To evaluate which particular difference among the means is really significant, a post hoc procedure was conducted. There was a significant difference between group with low and average in-depth experience, but no significant difference between low group and high as well as between average and high in-depth groups. This indicates that level of tacit knowledge is significantly different between respondents with low in-depth experience and average in-depth experience. Respondents with average and high in-depth experience tend to have similar level of tacit knowledge.

Assumption 2: There is significant difference between levels of experience diversity with tacit knowledge.

Diversity in experience score ranges from 0 for no diversity to 10 for high diversity. The scores were divided into three categories: 1 = low diversity (0-3), 2 = average diversity (4-6), and 3 = high diversity (7-10). This new level of diversity in experience was tested with score of tacit knowledge to see whether respondents with little, average or high diversity of experience differ in their level of tacit knowledge.

The results of analyses show that respondents with low diversity have low level of tacit knowledge (M = 8.33, SD = 4.53) compared to average diversity (M= 8.71, SD = 4.55) and high diversity (M= 9.65, SD = 4.30). The ANOVA test revealed a significant result, $F(2,592) = 4.099, p = .017$.

Table 2: Diversity of Experience and Tacit Knowledge

Diversity of Experience	N	Mean	SD	F	df	sig
low	54	8.33	4.53	3.831	2, 588	.022
average	212	8.71	4.38			
high	325	9.60	4.25			

To evaluate which particular difference among the means is really significant, a post hoc procedure was conducted. There was a significant difference between group with average and high diversity of experience, but no significant difference between low group and average, or between low and high diversity groups. This indicates that there is a significant difference in level of tacit knowledge between respondents with average diversity and respondents with high diversity of experience.

Findings from the survey showed that experience are correlated with tacit knowledge. However, in exploring the role of experience in tacit knowledge

In-depth Experien	N	Mean	SD	F	df	sig
low	383	8.70	4.30	7.834	2,579	.000
average	164	10.26	4.48			
high	35	9.71	3.21			

acquisition, the researcher did a cross-reference with the qualitative data gathered earlier. Examining the qualitative data collected, quoting R023 explanation, "the training process in my field is focused on being objective in actions". And R023 explicitly mentioned that experience from the training process is used in taking actions in the work situations. Another respondent R021 mentioned that the training process in his area of expertise promotes the implicit learning of the experience, and in line with the nature of work performed within his discipline which involves interacting with people accumulates the experience in handling people. In the questionnaire, respondents are also asked to state the length of their service as an academician. It is found that length of service did not have any relationship with tacit knowledge.

Concluding from the survey findings and supported by qualitative data, experience contributed to the tacit knowledge acquisition. However, experience contributed to tacit knowledge through the non-formal or implicit learning.

5.0 DISCUSSION AND CONCLUSION

The acquisition process of tacit knowledge is important in understanding tacit knowledge. Job domain provides the environment for on-the-job training and informal learning which is vital for tacit knowledge acquisition. On-the-job training and experience provides the context for acquiring new

knowledge for the academicians. Informal or implicit learning is the non-formal learning which occurs when academicians perform their job or learn from their previous experience.

Two types of experience influence the construction of tacit knowledge among the academicians, the in-depth experience and the multifaceted experience. In-depth experience reflects the quality of experiences and on the other side, multifaceted experience reflects the quantity of experience accumulated by an academician. In the context of an academician in Malaysian PIHL, the quality of experience is reflected through the level of achievements in their academic activities. The quantity of experience is reflected through their involvement in various academic activities.

However the relationship of experience and tacit knowledge is associated with knowledge internalization, a process of implicit learning from the accumulated past experiences. In this research, length of service, which reflects the length of experience do not have any relationship with tacit knowledge. Therefore, it is an indication that years of experience are less important to tacit knowledge construction than the ability to learn from experience. In the context of the academicians, the ability to acquire on-the-job exposure and apply it to job situations is more relevant to tacit knowledge construction.

Summarizing the tacit knowledge acquisition process, academicians are exposed to different work-related situations and their capabilities to learn from the situations vary, and these are the two factors which distinguish an academician from others. Although tacit knowledge is acquired through experience, the operational contribution of experience to tacit knowledge lies in an academician's ability to learn and apply it in an appropriate situation.

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