



An Assessment of Personal Knowledge Management for Teachers in Malaysian Secondary Schools

Khawla M. Alamen ^{a*}, Zaidatun Bt. Tasir ^b

^{a,b} Faculty of Education, Universiti Teknologi Malaysia (UTM)

^a Email: dananadia2011@gmail.com

Abstract

Personal knowledge management is an interactive process between individuals' ideas and knowledge to facilitate knowledge sharing among them. It provides a framework for individuals to manage, integrate new information to enrich their knowledge assets in an effective manner. This study investigated to what level secondary schools teachers manage their knowledge in Malaysia. A questionnaire was distributed to teachers in secondary schools in Malaysia in five states. A total number of 409 responses were collected from 27 schools. The findings showed the practice of PKM processes is medium. Thus, Malaysian secondary schools need to encourage their teachers to share their personal knowledge to enhance the teacher profession and student achievement.

Keywords: Personal Knowledge Management; Knowledge Management; Retrieving Information; Evaluating Information; Organising Information; Analysing Information; Presenting Information; Collaborating around Information; Securing Information; Secondary Schools.

1. Introduction

Nowadays, as the development of information technology become fast, human being has been transformed into knowledge economy era, and knowledge became the most important resource for economic and social development [1]. As educational systems are knowledge-concentrated systems, teachers' environment offers opportunities and challenges for teachers to teach in innovative manner and to improve their proficiency [2].

* Corresponding author.

Thus, teachers' personal knowledge management is important for the reform and development of educational system as well as society development [1]. However, teachers' knowledge becomes scattered unless it is managed in proper manner [2] and this leads to difficulties in finding and applying new knowledge [3]. Therefore, teachers need manage their personal knowledge in appropriate manner to enhance their profession and learning achievement. This paper investigated to what extent secondary schools teachers in Malaysia manage their personal knowledge.

2. The Literature Review

2.1. Personal Knowledge Management

Despite knowledge management has been found to enrich organizational knowledge, it focuses on organizational level. However, this organizational knowledge cannot be collected or created without individuals from inside and outside the organization. This fact leads to the importance of individuals' development and learning to make them able to participate, contribute, and enrich the organizational knowledge. Personal knowledge management (PKM) can contribute to the individuals' learning because it focuses on individuals rather than the organization itself.

Higgison in reference [4] defined PKM as supporting and managing the personal information and knowledge to become accessible, valuable, and meaningful for individuals, making life easier, and enriching personal capital. Volkel and Abecker in reference [5] defined PKM as the process that allows individuals to manage their knowledge. Furthermore, Jarcho in reference [6] defined PKM as the process that allows individuals to make sense of observations, information, and ideas. According to Efimova in reference [7], personal knowledge management is an interactive process between individuals' ideas and knowledge.

Personal knowledge management is described by Frand and Hixon [8] as a system that is designed by individuals for personal use. It is the system that integrates and organizes the important information and makes it part of the personal knowledge assets, and aims to transform random information into a systematic and applicable knowledge [8]. According to Wright in reference [9], PKM is the capacity and ability to access and apply knowledge and information resources and processes to increase the productivity, effectiveness, and innovation of individuals.

2.2. Personal Knowledge Management for Teachers

In teaching and learning processes, teachers acquire wide range of knowledge from internal sources such as reading, listening, and discussion; and externally sources such as training, seminars, and workshops [10]. The teaching process aims to rearrange and combine different sorts of scattered knowledge into a new organized knowledge, and spread this new knowledge explicitly [1]. Therefore, teachers need to manage their personal knowledge systematically to enhance their explicit knowledge value [1].

Also, Cheng in reference [11] suggests that teachers have to manage their personal knowledge to cope with the acceleration of emerging information.

Personal knowledge management is useful and powerful technique for improving teaching and learning processes. Teachers can use PKM to gather, store, classify, retrieve, search and share knowledge to support their teaching activities [9, 12, 13]. Liu [1] stated that PKM for teachers can improve their professions and competencies, and promote the competitive advantage for their schools. Teachers can use PKM to exchange their personal knowledge and experiences among teacher community to improve their teaching and learning processes [14]. Wright in reference [9] suggests that PKM links problem solving activities with specific cognitive and metacognitive, information, social and learning competencies. Furthermore, PKM can serve as a framework that integrates the general education to technology integration initiatives throughout the curriculum [11, 15]. Thus, technological competencies such as ICT integration competency within classrooms can be improved.

2.3. Personal Knowledge Management Processes

Personal knowledge management processes have been identified by many authors. Frand and Hixon [8] developed Personal Information Management (PIM) Model that includes five processes namely Searching/finding; naming things/making distinctions; evaluating/assessing; and Integrating/relating. Efimova in reference [7] developed Competencies Model that includes three processes namely Ideas, Individuals, and Communities & networks. Wright [9] developed PKM Competencies Model that includes four processes which are: Cognitive competencies; Information competencies; Social competencies; and Learning and development competencies. Zuber-Skerritt in reference [16] developed PKM Values and Actions Model that includes seven processes which are: Advancement of learning and knowledge; Collaboration; Trust, respect, and honesty; Imagination and a vision of excellence; Openness; Non-positivist beliefs; and Success. Finally, Avery and others in reference [17] developed PKM Skills Model that includes seven processes which are: Retrieving information; Evaluating information; Organizing information; Collaborating around information; Analyzing information; Presenting information; and Securing information.

Cheong in reference [18] conducted an assessment for PKM models' components based on the four roles in KM processes that are proposed by Seufert, Back, and Krogh in reference [19]. These four KM processes are capture/locate, create, transfer/share, and apply. The assessment concluded that Avery et al.'s model fits all the KM processes. Therefore, this study used the seven processes identified by Avery and others in reference [17] to assess the practice of PKM for secondary school teachers in Malaysia.

Retrieving information: Is about gathering and collecting information from different resources such as electronic and published sources and discussions. It requires skill such as asking questions, using search engines, and reading. Avery and others in reference [17] stated that the challenge in retrieving information is how to identify and use specific information from large information environment to create new knowledge.

Evaluating information: After retrieving information, individuals need to evaluate the gathered information in regard with the quality and the relevance to the problem at hand. This skill is very important because of the wide availability of information in the current information-rich environment.

Organizing information: Is the most important and critical process of PKM Frand and Hixon [8]. This process requires high ability in connecting and adding new information to old information by using the mental processes of recognition or pattern matching. Technologies such as relational databases, websites, and personal information software can be used to organize and store new and old information in structural ways [17]. Therefore, technological skills are very important for this process because it requires powerful and sophisticated technological tools such as folders, directories, databases, and web sites [17].

Collaborating around information: Is based on the assumption that effective groups and teams are replete with principles for effective collaborative work [17]. It requires some personal principles and skills such as listening; reflecting respect for the understood ideas of the others; improving and following thoughts on shared practices; building win-to-win relationships with others; and solving any conflicts with others. Also, this process requires skills in using technological tools that support and facilitate the efficient exchange of information such as social networks, e-mails, groupware, and instant messages [17].

Analysing information: is the key process of converting data and information into knowledge. It addresses the challenge of converting data into more meaningful information. Analyzing information skill is related to individuals' intelligence and technological tools. Statistical software such as SPSS and electronic spreadsheets such as Microsoft Excel are a good example of the technologies required for this skill [17].

Presenting information: is about how to present the information or knowledge to other people and make them gather new information to enrich their knowledge [17]. Avery and others in reference [17] stated that audience is the key to information presentation, and the presenter must understand disciplinary communities such as the important audience and their norms. Also, it is important to understand the purpose of the presentation and ensure that it is related to the audience [20]. Moreover, the presenter must understand the characteristics of the audience such as who are they, what information they need to know, from what perspective they interpret the information, and how they will use this information [20].

Securing information: is about how individuals can secure their information and involves implementing and developing practices that assure integrity, confidentiality, and actual existence of the information [17]. This skill deals with intellectual property issues and very important especially with the rapid development of the Internet.

While, Dorsey in reference [20] stated that securing information skill is frequently neglected. Distributing information through the digital environment require awareness and skills of using security software such as password management and adobe reader professional that provide safeguarding of information sources.

3. Materials and Methods

This study used a quantitative method in assessing the practice of personal knowledge management of secondary school teachers in Malaysia. Personal knowledge management processes were selected depending on the analysis conducted by Cheong [18] among PKM models and concluded that Avery's et al model fit all knowledge management requirements.

The questionnaire included 50 items as the following: Retrieving information (6 items); Evaluating information (6 items); Organising information (8 items); Analysing information (5 items); Presenting information (9 items); Collaborating around information (9 items); and Securing information (7 items). 5-point Likert scale was used (1= Very Low, 2= Low, 3= Medium, 4= High, 5= Very High).

The target respondents were secondary school teachers in Malaysia. The questionnaire was distributed to 27 schools in four states. The four states were Johor, Pahang, Pinang, and Negeri Sembilan. A number of 409 completed responses were collected and analyzed using SPSS v.20. The data analysis included a reliability analysis to test the internal consistency of each construct variables as suggested by Hair and others [21], and the descriptive analysis using the mean and the standard deviation to assess the level of each personal knowledge management processes practice.

4. Results and discussion

The reliability analysis was conducted to test the internal consistency of personal knowledge management constructs. According to George and Mallery [22], Cronbach alpha value less than 0.5 is unacceptable, greater than or equal 0.5 is poor, greater than or equal 0.6 is questionable, greater than or equal 0.7 is acceptable, greater than or equal 0.8 is good, and greater than or equal 0.9 is excellent. Table 1 shows that the Cronbach Alpha values for PKM were: Retrieving information = .884, Evaluating information= .929, Organising information=.928, Analysing information=.904, Presenting information=.917, Collaborating around information=.905, and Securing information=.864.

Table 1: Reliability Results

PKM Construct	Cronbach Alpha	No. of Items	Rule (George and Mallery [22])
Retrieving information	.884	6	good
Evaluating information	.929	6	excellent
Organising information	.928	8	excellent
Analysing information	.904	5	excellent
Presenting information	.917	9	excellent
Collaborating around information	.905	9	excellent
Securing information	.864	7	good

Table 2 illustrates the results of the descriptive analysis of personal knowledge management processes. The overall mean score of Personal Knowledge Management is 3.50 with a standard deviation at .57. The overall mean score for Personal Knowledge Management practice is calculated by computing a new variable in SPSS for the mean scores of all items of the seven processes. Among the seven processes, Retrieving information showed the highest mean score (M=3.68, SD= .61), followed by Organizing information (M= 3.55, SD=.65), Analysing information (M= 3.52, SD= .67), Evaluating information (M= 3.51, SD= .67), Collaborating around information (M= 3.45, SD= .66), Securing information (M= 3.41, SD= .70). However, Presenting information (M= 3.38, SD= .64) showed the lowest mean score.

Table 2: Descriptive Analysis Results of PKM

PKM Processes	N	Min	Max	M	SD
Retrieving information	409	2.00	5.00	3.68	.612
Evaluating information	409	1.17	5.00	3.51	.669
Organising information	409	1.00	5.00	3.55	.654
Analysing information	409	1.00	5.00	3.52	.667
Presenting information	409	1.00	5.00	3.38	.638
Collaborating around information	409	1.00	5.00	3.45	.662
Securing information	409	1.00	5.00	3.41	.700

5. Conclusion

This study found that the practice of personal knowledge management for teachers in Malaysian secondary schools is medium. It is found that the highest practice was relating to retrieving information; however, the practice of presenting information was the lowest. Also, it is found that the practice of retrieving, evaluating, organizing, and analysis information that are related to personal information are higher than presenting and collaborating information that are related to sharing personal information and knowledge with others. This finding is logical because individuals usually spend more time in collecting information more than sharing this information. Despite the differences between the practice levels of PKM, they are ranged between 3.38 and 3.68 that mean that they are approximately equal.

Because of personal knowledge management depends on information technologies skills, lack of personal knowledge management may be considered as a barrier for good practicing of ICT integration within classrooms. This is in line with studies conducted by Sang and others in reference [23] and Sooknanan in reference [24]. Also, this finding is in line with the studies conducted by Cheng [11]; Cheong and Tsui [25]; and Jafari, Akhavan, and Nikookar [26] which emphasized the good practice of personal knowledge management to guarantee high level of individuals' competencies.

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