KNOWLEDGE MANAGEMENT PRACTICES OF TEACHER EDUCATORS

Khin Thet Swe[1] and Zin Nwe Than[2]

Abstract

The purpose of this study is to explore the knowledge management practices of teacher educators. Descriptive research method was applied to collect data from two hundred and twenty three teachers from two selected Universities in Sagaing Township. In this study, two instruments: "Knowledge Management Practices Questionnaire" to measure the knowledge management practices of teacher educators, and "Universities' Support for Knowledge Management Practices Questionnaire" to elicit the perceptions of teacher educators on universities' support for knowledge management were mainly used. Both instruments used in this study were developed by the researcher. The instrument for teacher educations' knowledge management practices was developed based on the SECI model of Nonaka and Takeuchi (1993, as cited in Cheng, 2015). Again, the instrument for universities' support for knowledge management was based on the use of KM system in universities developed by Al-Zoubi (2014). Data were analyzed by the use of descriptive statistics such as means and standard deviations, independent samples *t* test, one-way ANOVA and Post Hoc multiple comparison tests (Tukey HSD and Games-Howell) and bivariate correlation through SPSS software. The findings of this study indicated that teacher educators from the selected universities often practiced knowledge management. According to the teachers' perceptions, the level of universities' support for knowledge management was high. Moreover, there was a positive correlation between "knowledge management practice" and "universities' support for knowledge management" in selected universities. Therefore, the universities' support for knowledge management is very important for teacher educators in order to reach higher level of knowledge management practices.

Keywords: Tacit Knowledge, Explicit Knowledge, Knowledge Management

Introduction

Human beings live in an ever-changing society so they try to overcome the challenges of the knowledge age. According to the Bloom's Taxonomy, the cognitive domain involves knowledge and the development of intellectual skills. Educators notice how to manage such knowledge in order to promote learning. So, many scholars developed models and concept concerning with the knowledge management. At the era of information technology, a large portion of scientific activities is done in the university and therefore, it is necessary to clarify the position of knowledge management in higher education.

Teacher educators must recognize knowledge management as the most important strategic resource for ensuring their university's long-term success and survival. Knowledge is valuable for the organization but it becomes worthless when there is no transferring and sharing them in the organization. Knowledge management can control such problem since it is based on the best possible strategic design to create, maintain, transfer and apply organizational knowledge to reach competitive goals. Knowledge management helps them to use the right knowledge available to the right processor such as human or computer, at the right time in the right presentations for the right cost.

Significance of the Study

Teacher educators are typical knowledge workers. They are engaged in various knowledge activities, from the collection of teaching materials, writing of teaching plans, accumulation of teaching materials to the assessment of students' learning. Teacher educators try to produce

---

[1] Tutor, Department of Educational Theory, Sagaing University of Education
[2] Dr, Professor and Head, Department of Educational Theory, Sagaing University of Education

qualified and proficient teachers who can make good contribution. They today face so many institutional changes and processes. Moreover, they encounter technological changes, curriculum changes, and they also involve in curriculum development. The existing curriculum is needed to update in accordance with the current situation. So, teacher educators who take a main role in producing skillful teachers need to upgrade, extend and expend knowledge. To win the world competition to all these changes, an education society needs to own teacher educators who can make wide contribution.

Educational institutions must focus how to cultivate knowledge creation culture. Knowledge management is one of teachers' key abilities to catch up with the knowledge society and keep pace with times (Wang, Zhang, Zhan, Li & Wang, 2018). To what extend teacher educators practice knowledge management and how the university manages knowledge management strategy need to be investigated in order to point out the importance of knowledge management and to highlight how to improve the implementation of knowledge management in higher education.

Aim of the Study

The general aim of the study is to investigate the knowledge management practices of teacher educators from selected universities in Sagaing Township. The specific objectives are:

- to find out the extent of knowledge management practices performed by teacher educators,
- to find out whether there are significant differences in teacher educators' knowledge management practices based on their demographic information (gender, age, academic qualification, position and teaching experience) or not,
- to find out the perceptions of teacher educators on universities' support for their knowledge management practices, and
- to examine whether there is a relationship between knowledge management practices of teacher educators and universities' support for their knowledge management practices or not.

Research Questions

The following research questions guide the direction of the study:

1. To what extent do teacher educators perform the knowledge management practices?
2. Are there any significant differences in teacher educators' knowledge management practices based on their demographic information (gender, age, academic qualification, position and teaching experience)?
3. What are the perceptions of teacher educators on universities' support for their knowledge management practices?
4. Is there any relationship between knowledge management practices of teacher educators and universities' support for their knowledge management practices?

Scope of the Study

1. The scope of this study is limited to two universities located in Sagaing Township which produce teachers for Basic Education.
2. The findings of this study may not be generalized to any other universities.

Definitions of Key Terms

This study is guided by the following definitions of key terms.

- ***Tacit Knowledge:*** Tacit knowledge is the knowledge that includes skills, experience, insight, intuition, and judgment and it is difficult to articulate. It tends to be shared among the employees through discussions and personal interactions (Kinyata, 2014). In this study, tacit knowledge can be defined as the personal quality or background knowledge.

- ***Explicit Knowledge*:** Explicit kno

- wledge is the knowledge that can be encoded and made available to others, since it is easily articulated and is transferable from one person to another (Kinyata, 2014). In this study, explicit knowledge can be defined as the knowledge which is in documented form and easily transferable.

- ***Knowledge Management:*** Knowledge management can be defined as a systematic and integrative process of coordinating the organization-wide activities to retrieve, use, share, create and store knowledge, actionable information and expertise of individuals and groups in pursuit of organizational goals (Cheng, 2017).

Theoretical Framework

In this study, knowledge management with the four components of *Externalization, Combination, Internalization, and Socialization* (Nonaka, Toyama, & Konno (2000) is used. In order to investigate knowledge management supported by the universities, the Knowledge Management Framework developed by Al-Zoubi (2014) is used.

SECI Model of Knowledge Management

- *Socialization (tacit - tacit)*: the process in which knowledge and information is informally shared through one's feelings, emotions, experiences and mental model with others in the organization (Kaur, 2015).

- *Externalization(tacit - explicit)*: the process of allowing acquired knowledge and information to be shared, disseminated and transferred to others in the organization through the use of ideas, images, and concepts, figurative and visual language or in a documented form. (Kaur, 2015).

- *Combination (explicit - explicit)*: the process in which explicit knowledge is collected, combined and edited from *Externalization* and then processed to form new knowledge, by using documents and databases (Ale, Chiotti & Galli, 2014).

- *Internalization (explicit - tacit)*: the process in which the old explicit concepts obtained from *Combination* are updated, expanded, extended transformed and then shared by the individuals of the organization in their own tacit knowledge, according to their own styles thus, starting again a new cycle (Kaur, 2015).

Framework for Knowledge Management Support

- *Research Service*: The administrative faculties encourage to hold research seminars, publish research journal annually, publish university annual magazines in order to share and get the new ideas and knowledge in conducting research.

- *Teaching Service*: The university held professional development programme, board of study so that the staff can distribute and refresh their existing knowledge. In addition, the administrative staff encourage group discussion, cooperation.

- *Student Service*: The administrative faculties manage activity to improve students' knowledge and skill. The university provides teaching aids such as projectors, scientific instruments, etc.

Review of Related Literature

Knowledge Management is a process where organizations have formulated ways in the attempt to recognize and archive knowledge assets within the organization that are derived from the employees of various department or faculties and in some cases, even from other organizations that share the similar area of interests or specialization (Firestone, 2001). It is also defined as the act of transforming information and intellectual assets into persisting value for the members of an organization (Laal, 2011). Knowledge starts as *data*—raw facts and numbers—for example, the market value of an institution's endowment. *Information* is data put into context—in the same example, the endowment per student at a particular institution. Information is readily captured in documents or in databases; even large amounts are fairly easy to retrieve with modern information technology systems. Only when information is combined with experience and judgment does it become *knowledge* (Gonzalez & Martins, 2017). In seeking to balance an organization's information culture and its technology culture, knowledge management brings together three core organizational resources people, processes, and technologies to enable the organization to use and share information more effectively (Donoghue, Harris & Weitzman, 1999).

Organizational Knowledge Creation Theory

The theory of organizational knowledge creation depicts the framework on how organizational leaders amplify the professional knowledge created by individuals and later knowledge becomes crystallized as part of knowledge network internally and externally (Hargreaves, 1999).Organizational knowledge creation theory aimed not only to explain the nature of knowledge assets and strategies for managing them, but also to complement the knowledge-based view of the firm and the theory of dynamic capabilities by explaining the dynamic processes of organizational knowledge creation (Nonaka 1994). Two premises were discussed in this effort: tacit and explicit knowledge can be conceptually distinguished along a continuum, and interaction between tacit and explicit knowledge is explained by knowledge conversion

This theory defined knowledge in three parts, indicating that it has complementary properties. First, knowledge is justified true belief. Individuals justify the truthfulness of their beliefs based on their interactions with the world (Nonaka, 1994). Second, knowledge is (i) the actuality of skillful action and/or (ii) the potentiality of defining a situation so as to permit (skillful) action (Stehr, 1994, as cited in Nonaka, 1994). Knowledge allows humans to define, prepare, shape, and learn to solve a task or problem (Nonaka & von Krogh, 2009). Third, knowledge is explicit and tacit along a continuum (Nonaka, 1994). Knowledge that is documented, uttered, formulated in sentences, and captured in drawings and writing is explicit. Tacit knowledge is rooted in action, procedures, routines, commitment, ideals, values, and emotions (Nonaka, Toyama, & Konno, 2000).
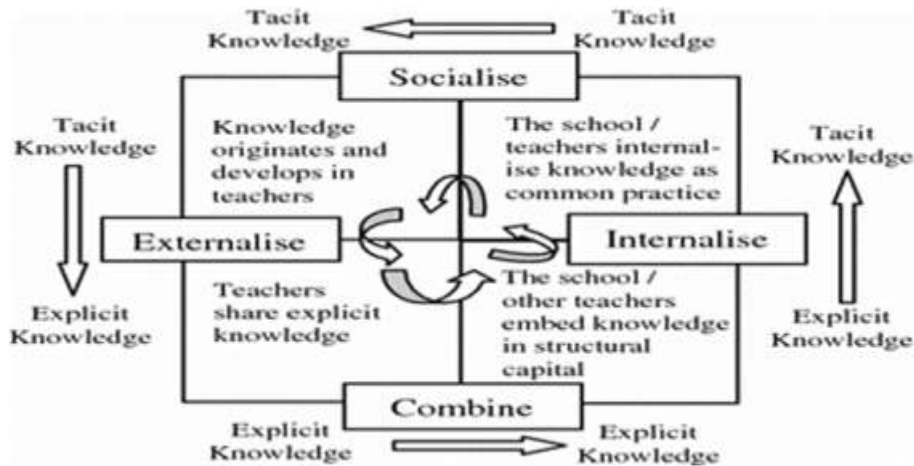
SECI Model of Knowledge Conversion

KM tries to gather, form, maintain, and distribute knowledge. Effective KM requires a continuous knowledge conversion process. Nonaka, Toyama, & Konno (2000) divide the KM process into four modes.

- *Socialization* (tacit to tacit): The first phase of the KM process is sharing and distributing the ideas and the interaction of tacit knowledge with tacit knowledge.
- *Externalization* (tacit to explicit): It requires the expression of tacit knowledge and its translation into comprehensible forms that can be understood by others.

▪ ***Combination*** (explicit to explicit): The explicit knowledge, already exchanged, distributed, and documented or discussed during meetings and sessions, is processed and categorized in order to create new knowledge.

Internalization (explicit to tacit): Internalizing these ideas is effective in creating an understanding and developing a learning culture (learning through action).

Source: Cheng (2015). ***Knowledge Management for School Education***.

Figure 1 Nonaka and Takeuchi's Four Modes of Knowledge Conversion in a School Context

On the other hand, basically, the modern university comprises two cultural hemispheres, the academicians and the management. The application and implementation of a KM system improve the quality of education at universities. An effective KM system requires every academician to practice appropriate management of knowledge in his or her teaching activities, which includes, generating, sharing, acquiring, storing and disseminating knowledge effectively to users of knowledge, especially students (Mohayidin, Azirawani, Kamaruddin & Margono, 2007, as cited in Al- Zoubi, 2014). It is clear that research is the real contribution of the university in knowledge community. The teaching process in student-oriented universities should lead to successful learning, which requires that university professors should concentrate on the learning process itself and its mechanisms represented by acquisition, socialization, externalization, combination, internalization, to produce new knowledge. The learning process is influenced by a variety of factors, such as the curriculum in terms of priority of issues it addresses, flexibility in dealing with these issues, as well as students' awareness and their practice of operations associated with KM in their learning. (Smant, et al., 1999, as cited in Al- Zoubi, 2014).

Methodology

Research Method

Descriptive research method was used to collect the required data in this study.

Participants

The target population of this study was all teacher educators form two selected universities located in Sagaing Township.

Instrumentation

Data were collected from teacher educators of two universities by using the questionnaire. The questionnaire including two parts was developed by the researcher based on the related

literature. In the first part of the questionnaire, 32 items which explored the knowledge management practice of teacher educators were included and each item was rated on five-point Likert scale ranging from never (1) to always (5). In the second part of the questionnaire, there were 22 items, which examined the universities' support for teacher educators' knowledge management practices and each item was rated on five-point Likert scale ranging from strongly disagree (1) to strongly agree (5).

Data Collection Procedure

Before field testing the instrument with a sample of teachers, instruments used in this study were reviewed and revised by a panel of experts who had special knowledge and close relationship with this area from Department of Educational Theory. A sample of one Education College in Sagaing Township was selected for pilot study. The preliminary instrument was field tested with all teachers from that Education College.

In order to measure the reliability of the instrument, the Pearson product-moment correlation method **(Average Item Total Correlation)** was used for internal consistency reliability. The average coefficient of correlation for teacher educators' knowledge management practices and universities' support for knowledge management practices got the high reliability scores of 0.94 and 0.88. After taking the permission from the responsible person, the questionnaires were distributed to two selected Universities located in Sagaing Township on 11th December, 2018 to 15th December, 2018 and collected them after lasting 10 days. Data collected were listed by each university. Based on the results of responses, this study was conducted in order to explore knowledge management practices of teacher educators.

Data Analysis

Descriptive statistics such as means and standard deviations were calculated for teacher educators' perceptions on knowledge management practices and universities' support for knowledge management practices by using SPSS. The decision rules for determining the frequency of knowledge management practices were that the mean value from 1.00 to 1.49 was defined as "never", the mean value from 1.50 to 2.49 was defined as "rarely", the mean value from 2.50 to 3.49 was defined as "sometimes", the mean value from 3.50 to 4.49 was defined as "often" and the mean value from 4.50 to 5.00 was defined as "always". Again, the decision rules for determining the universities' support for knowledge management practices were that the mean value from 1 to 2.33 was defined as "low level", the mean value from 2.34 to 3.67 was defined as "moderate levels" and the mean value from 3.68 to 5 was defined as "high level".

Moreover, the independent samples *t* test and ANOVA were used to compare the differences of knowledge management practices of teacher educators and universities' support for knowledge management practices between two universities based on the demographic information. In addition, Pearson-product moment correlation coefficient was utilized to know the relationship between relationship between knowledge management practices and knowledge management support rated by teacher educators.

Research Findings

According to Table 1, it was found that teacher educators ***often*** performed three dimensions of knowledge management practices such as *Socialization*, *Combination* and *Internalization* but they ***sometimes*** performed only one dimension, *Externalization*. According to the overall mean value, teacher educators from both universities ***often*** performed knowledge management practices.

Table 1 Mean Values and Standard Deviations for Knowledge Management Practices Performed by Teacher Educators in Selected Universities

University	Socialization	Externalization	Combination	Internalization	KM Practices
U_A	3.91 (.687)	2.64 (.696)	3.88 (.717)	3.95 (.755)	3.62 (.796)
U_B	4.16 (.507)	3.00 (.750)	4.15 (.575)	4.22 (.573)	3.84 (.728)
All	**4.01 (.634)**	**2.78 (.738)**	**3.99 (.677)**	**4.05 (.702)**	**3.71 (.777)**

1.00 – 1.49 = never   1.50 – 2.49 = rarely   2.50 – 3.49 = sometimes   3.50 – 4.49 = often
4.50 – 5.00 = always

In order to explore whether there were significant differences in knowledge management practices between two universities, independent samples *t* test was used (See: Table 2). When analyzing the teachers' ratings of four dimensions of knowledge management practices between two groups, there were significantly differences in all dimensions and overall knowledge management practices at the 0.05 level. According to Table 2, it can be said that the perceived levels of teacher educators from the University B were higher than those of teacher educators from University A concerning the knowledge management practices.

Table 2 Independent Samples *t* Test Results for Knowledge Management Practices Performed by Teacher Educators between Two Universities

Dimension	University	N	Mean	T	Mean Difference	df	p
Socialization	U_A	136	3.92	-3.032	-2.45	211	**.003**
	U_B	84	4.16				
Externalization	U_A	133	2.64	-3.680	-.244	216	**.000**
	U_B	85	3.00				
Combination	U_A	135	3.88	-3.133	-.275	205.5	**.002**
	U_B	85	4.16				
Internalization	U_A	137	3.95	-2.991	-.268	211.2	**.003**
	U_B	85	4.22				
KM Practices	U_A	138	3.62	-2.106	-.224	221	**.036**
	U_B	85	3.85				

Note: *p*<0.05

In order to find out whether there were significant differences in the performance of knowledge management practices between male and female teacher educators or not, independent samples *t* test was calculated (See: Table 3). It was found that there was a significantly difference in perceptions of male and female teachers on only one dimension, *Externalization,* at 0.05 level.

Table 3 Independent Samples *t* Test Results for Knowledge Management Practices Performed by Male and Female Teacher Educators

Dimension	Gender	N	Mean	t	Mean Difference	df	p
Externalization	Male	45	2.9750	2.02	.247	216	**.046**
	Female	173	2.7283				

Note: *p*<0.05

On the other hand, there was no significant difference in perceptions of male and female teachers on other dimensions of knowledge management practices: *Socialization*, *Combination* and *Internalization*, and overall knowledge management practices.

In order to find out whether there were significant differences in teacher educators' knowledge management practices according to their age, or not, one-way ANOVA was calculated (See: Table 4). According to Table 4, there were significant differences in three dimensions of knowledge management practices, *Externalization*, *Combination* and *Internalization,* perceived by teacher educators according to their age.

Table 4 ANOVA Results of Knowledge Management Practices Performed by Teacher Educators according to their Age

Dimension		Sum of Squares	df	Mean Square	F	p
Externalization	Between Groups	12.207	7	1.744	3.489	**.001**
	Within Groups	104.468	209	.500		
	Total	116.676	216			
Combination	Between Groups	9.054	7	1.293	2.982	**.005**
	Within Groups	91.528	211	.434		
	Total	100.582	218			
Internalization	Between Groups	6.997	7	1.000	2.089	**.046**
	Within Groups	101.922	213	.479		
	Total	108.919	220			
KM Practices	Between Groups	4.995	7	.714	1.184	.313
	Within Groups	128.973	214	.603		
	Total	133.968	221			

Note: $p<0.05$

Post Hoc Comparisons (Tukey) was calculated to determine the significant source of differences in *Externalization*, *Combination* and *Internalization*. According to Table 5, there were significant differences in perceptions of *Externalization* between teacher educators who were 35-39 years old and teacher educators who were 50-54 years old and between teacher educators who were 35-39 years old and teacher educators who were 55 and above years old at $p<0.05$ level. Similarly, there was a significant difference in perceptions of *Externalization* between teacher educators who were 25-29 years old and teacher educators who were 50-54 years old (See: Table 5).

However, there was no significant difference in *Internalization* among the age groups of teacher educators.

Table 5 Results of Multiple Comparisons for Externalization Performed by Teachers Educators According to their Age

Dimension	Age (I)	Age (J)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Externalization	35-39	50-54	-.781[*]	.232	**.021**	-1.49	-.068
		55≥	-1.01[*]	.247	**.002**	-1.76	-.250
	55≥	25-29	.612[*]	.191	**.034**	.025	1.20
		35-39	1.01[*]	.247	**.002**	.250	1.76

Note: $p<0.05$

In order to determine the significant source of differences in *Combination*, Post Hoc Comparison (Games-Howell) was calculated. According to Table 6, there was a significant

difference in perceptions of *Combination* between teacher educators who were 30 to 34 years old and teachers who were 25 to 29 years old at the $p<0.05$ level.

Table 6 Results of Multiple Comparisons for Combination Performed by Teachers Educators according to their Age

Dimension	Age (I)	Age (J)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Combination	30-34	25-29	.388*	.114	**.024**	.030	.746

Note: $p<0.05$

In order to investigate whether there were significant differences in teacher educators' knowledge management practices according to their academic qualification or not, one-way ANOVA was used. According to Table 7, the findings showed that there were significant differences in perceptions of *Externalization* and *Combination* among teacher educators according to their academic qualification. Post Hoc Comparisons (Tukey) was calculated to determine the significant source of differences in these two dimensions.

Table 7 ANOVA Results of Knowledge Management Practices Performed by Teacher Educators according to their Academic Qualification

Dimension		Sum of Squares	df	Mean Square	F	p
Externalization	Between Groups	9.695	2	4.847	9.607	**.000**
	Within Groups	108.478	215	.505		
	Total	118.173	217			
Combination	Between Groups	5.748	2	2.874	6.575	**.002**
	Within Groups	94.851	217	.437		
	Total	100.599	219			

Note: $p<0.05$

Table 8 shows the results of multiple comparisons of two dimensions according to their academic qualification.

Table 8 Results of Multiple Comparison for Externalization and Combination Performed by Teacher Educators according to their Academic Qualification

Dimensions of Knowledge Management	Academic Qualification (I)	Academic Qualification (J)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Externalization	PhD	Bachelor degree	.738*	.171	**.000**	.3354	1.1421
		Master degree	.487*	.140	**.002**	.1557	.8180
Combination	Bachelor Degree	Master degree	-.396*	.121	**.004**	-.6817	-.1097
		PhD	-.521*	.161	**.004**	-.9003	-.1405

Note: $p<0.05$

       Bachelor degree = BA, BSc   PhD = PhD (Education), PhD (Arts),
       Master degree   = MEd, MA, MSc   PhD (Science)

There were significant differences in perceptions of *Externalization* between PhD degree holders and Master degree holders and between PhD degree holders, and Bachelor degree holders at $p<0.05$ level (See: Table 8). On the other hand, there were significant differences in perceptions of *Combination* between Bachelor degree holders and PhD degree holders and between Bachelor degree holders and Master degree holders.

Again, Table 9 depicts the ANOVA results of knowledge management practices performed by teacher educators according to their position.

Table 9 ANOVA Results of Knowledge Management Practices Performed by Teacher Educators According to their Position

Dimensions of KM Practice		Sum of Squares	df	Mean Square	F	p
Externalization	Between Groups	16.731	4	4.183	8.782	**.000**
	Within Groups	101.442	213	.476		
	Total	118.173	217			

Note: $p<0.05$

According to Table 9, the findings showed that there was a significant difference in teacher educators' perceptions of *Externalization* according to their position. However, there was no significant difference in teacher educators' perceptions of other dimensions such as *Socialization*, *Combination* and *Internalization* and KM Practices according to their position.

Table 10 Results of Multiple Comparisons for Externalization Performed by Teachers Educators according to their Position

Dimensions of Knowledge Management	Position (I)	Position (J)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Externalization	AP	T/D	.949*	.187	**.000**	.4333	1.4662
		AL	.738*	.185	**.001**	.2293	1.2481
		L	.625*	.193	**.012**	.0933	1.1567
	P	T/D	.948*	.258	**.003**	.2371	1.6587
		AL	.736*	.256	**.036**	.0311	1.4426

Note: $p<0.05$

P= Professor   AP= Associate Professor   L= Lecturer   AL= Assistant Lecturer
T/D= Tutor/ Demonstrator

In order to find out which particular groups had the significant differences in *Externalization*, Post Hoc Multiple Comparisons Test (Tukey) was conducted. As shown in Table 10, significant differences were found in perceptions of teacher educators on *Externalization* between associate professor and tutor or demonstrator, between associate professor and assistant lecturer and between associate professor and lecturer. On the other hand, there were significant differences in perceptions of teacher educators on *Externalization* between professor and tutor or demonstrator and between professor and assistant lecturer.

Again, in order to investigate whether there were significant differences in teacher educators' knowledge management practices according to their teaching experiences or not, one-way ANOVA was calculated (See: Table 11).

Table 11 ANOVA Results of Knowledge Management Practices Performed by Teacher Educators according to their Teaching Experiences

Dimension		Sum of Squares	df	Mean Square	F	p
Externalization	Between Groups	11.797	3	3.932	7.911	**.000**
	Within Groups	106.376	214	.497		
	Total	118.173	217			

Note: $p<0.05$

According to Table 11, the findings showed that there were significant differences in perceptions of teacher educators on *Externalization* according to their teaching experiences.

Table 12 Results of Multiple Comparisons for Externalization Performed by Teachers Educators According to their Teaching Experiences

Dimensions of Knowledge Management	Teaching Experiences (I)	Teaching Experiences (J)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Externalization	20-29	1-9	.597*	.152	**.001**	.2032	.9913
		10-19	.509*	.159	**.009**	.0953	.9226
	x≥30	1-9	.496*	.141	**.003**	.1300	.8628
		10-19	.408*	.149	**.035**	.0207	.7955

Note: $p<0.05$

According to the results of Post Hoc Comparisons (Tukey) shown in Table 12, there were significant differences in perceptions of *Externalization* between teacher educators who had 20-29 years of teaching experience and teacher educators who had 1-9 years of teaching experience and between teacher educators who had 20-29 years of teaching experience and teacher educators who had 10-19 years of teaching experience. Similarly, there were significant differences in perceptions of *Externalization* between teacher educators who had 30 years and above teaching experience and teacher educators who had 1-9 years of teaching experience and between teacher educators who had 30 years and above teaching experience and teacher educators who had 10-19 years of teaching experience.

Table 13   Mean Values and Standard Deviations of Universities' Support for Knowledge Management Practices

University	Research Service	Teaching Service	Student Service	Support
U_A	4.02 (.476)	3.97 (.535)	4.23 (.441)	4.21 (.494)
U_B	4.01 (.464)	4.02 (.461)	4.23 (.415)	4.17 (.532)
All	4.05 (.472)	3.99 (.508)	4.22 (.430)	4.19 (.508)

1.00 - 2.33 = low level   2.34 - 3.67 = moderate level   3.68 - 5.00 = high level

Again, Table 13 depicts the mean values and standard deviations of universities' support for knowledge management practices. According to Table 13, teacher educators perceived that they received high levels of support by their universities in all three dimensions: *Research Service, Teaching Service* and *Student Service*. The overall mean value of universities' support for knowledge management practices was 4.19 and it indicated that teacher educators from both universities had high levels of support for knowledge management practices.

In order to analyze the significant differences in perceptions of teacher educators on universities' support for knowledge management practices between two selected universities, independent samples *t* test was calculated but the results showed that there was no significant differences in perceptions of teacher educators on universities' support for knowledge management practices between two selected universities.

Table 14 Correlation between Knowledge Management Practice and Universities' Support for Knowledge Management Practices Rated by Teacher Educators

	KM Practice	**KM Support**
Pearson Correlation Sig. (2-tailed)	1	.256** .000
Pearson Correlation Sig. (2-tailed)	.256** .000	1

**. Correlation is significant at the 0.01 level (2-tailed).

According to Table 14, the correlation between knowledge management practices and universities support for knowledge management practices was .256. In other words, teacher educators' knowledge management practices was positively significantly related to universities' support for knowledge management practices at two universities.

Open-ended Responses

Teachers were asked **three** open-ended questions. The **first** question asked teacher educators to express how they create, capture and restore new knowledge. According to teacher educators' responses, 71 (32.38%) teacher educators answered that they acquired new knowledge by reading academic books or research journals. In addition, 51 (24.3%) teacher educators presented that they could get new knowledge and new idea from group discussions. Similarly, 44 (20.59%) teacher educators proposed that they created new knowledge by doing research themselves or by supervising postgraduate candidates' studies. Again, 27 (12.86%) teacher educators reported that they received knew information by observing other teachers' teaching. Moreover, 17 (8.6%) teacher educators expressed that they could get new knowledge from their superiors or expert teachers.

The **second** open-ended question asked selected teacher educators to express how they share or distribute their existing knowledge. According to their responses, 84 (39.52%) teacher educators said that they shared their knowledge by discussing at professional development program in their universities. Besides, 58 (27.62%) teacher educators proposed that knowledge transfer occurred at the meetings of board of study, workshops or seminars. Moreover, 44 (20.95%) teacher educators reported that they shared their knowledge through social media. Finally, 25 (11.92%) teacher educators expressed that they shared their knowledge by reading research paper at research seminars or conferences.

The **third** open-ended question asked teacher educators to express how their university managed for the extension of knowledge management. According to their responses, 78 (37.86%) teacher educators asserted that their university provided money to buy the required books and journals. Then, 61 (29.61%) teacher educators suggested that the university should hold seminars or workshops annually to improve the research skills and professional development of them. Again, 38 (18.44%) teacher educators proposed that the university should provide professional development activities for teachers. Moreover, 29 (14.04%) teacher educators reported that their

university should also provide English language proficiency course for them to study teaching methods and updated knowledge about education employed in international universities.

Conclusion and Discussion

The word "knowledge" is the most fundamental things for an educational institution. It is considered a valuable resource for organizations and individuals, a precondition for success and a response to modern challenges (Masic, Nesic, Nikolic, & Dzeletovic, 2017). Moreover, this organizations need to prepare themselves internally so that knowledge can circulate among individuals and, in addition, be used in actions that result in some kind of improvement (Gonzalez & Martins, 2017).

Analyses of quantitative data collected from the study attempted to answer the four research questions. **Research question one** evaluated the extent of knowledge management practiced by teacher educators. According to the teacher educators' ratings, it was found that four dimensions of knowledge management: *Socialization*, *Externalization*, *Combination* and *Internalization* were highly practiced by all teacher educators from the selected universities. The results showed that teacher educators from both universities mostly practiced *Internalization* but *Externalization* was the least practiced by teacher educators. It can be assumed that teacher educators often shared and received new knowledge through social interaction or informally. Next, they tried to get knowledge by reading, observing or using Internet website. On the other hand, teacher educators sometimes read the papers in research seminars and they sometimes tried to public their research. This finding can be provided by the study of Hassan Easa (2012) that discovered knowledge management and the SECI model. When analyzing the significant difference in knowledge management practices between two universities, there were significantly differences in all dimension and overall knowledge management practices. According to the result, it can be said that the perceived levels of teacher educators from the University B were higher than those of teacher educators from University A concerning the knowledge management practices.

Next, **research question two** was to find out whether there were significant differences in the performance of knowledge management practices of teacher educators based on their demographic information. According to the teacher educators' rating, there were significant differences in one of the dimensions of knowledge management practices, *Externalization* between male and female teacher educators, among position and among teaching experiences. Moreover, according to the age group, there were significant differences in three dimensions of knowledge management practices: *Externalization, Combination* and *Internalization*. On the other hand, there were also significant differences in two dimensions of knowledge management practices: *Externalization* and *Combination*. This can be assumed that teacher educators who have more experiences with high position often shared their knowledge at the research seminar, board of study and professional development programme.

Again, **research question three** was to find out the levels of teacher educators' perceptions on universities' support for knowledge management practices. According to the result, teacher educators perceived that they received high levels of support by their universities in all three dimensions: *Research Service, Teaching Service* and *Student Service*. Therefore, it indicated that teacher educators from both universities had higher levels of support for knowledge management practices. It indicated that both universities provided required books, journal, internet access and offered professional development programme to teacher educators. According to the independent samples *t* test results, there was no significant difference in all dimensions of universities' support for knowledge management. It can be assumed that both universities provided the available resources for knowledge management. The finding of this research was in line with the previous

study of Lin (2007) who claimed that management needed to cultivate a knowledge management culture involving two phases: research space and evaluation process.

Research question four investigated the relationship between knowledge management practice and universities' support for knowledge management at two selected universities. Based on the research findings, teacher educators' knowledge management practices was positively significantly related to universities support for knowledge management practices at two universities. In other words, it can be assumed that the more the universities' support for knowledge management practices, the higher level of teacher educators' perceptions on knowledge management practices. The result of this study was supported by the framework of the use of KM system in universities developed by Al-Zoubi (2014).

Recommendations for Further Research

This section presents recommendations for further study. According to the available time and resources, a larger sample size should be conducted to increase the statistical power of the results. As this study was conducted in two educational universities, it would be effective to do this research in other educational institutions. Moreover, a qualitative study was also necessary to get more reliable data and to study facilitators and barriers in implementing knowledge management in educational institutions.

Acknowledgements

References

Ale, M. A., Chiotti, O. & Galli, M. R. (2014).*A distributed knowledge management conceptual model for knowledge organizations*. Retrieved August 4, 2018 from www.researchgate.net/publication/ 228627588

Al-Zoubi, D. M. (2014).*Improving teaching and learning at universities- the use of knowledge management*. Albalqa Applied University, Irbid, Jordan. Retrieved July 22, 2018 from http://dx.doi.org/10.3991/ijac.v7i1.3590

Cheng, E. C. (2015).*Knowledge Management for School Education*, Springer Briefs in Education, Retrieved August 2, 2018 from www.springer.com/97898128 72326

Cheng, E. C. (2017). Knowledge Management Strategies for Capitalising on School Knowledge. *VINE Journal of Information and Knowledge Management Systems*, 47(1). Retrieved November 23, 2018 from https://citations.springer.com/item? doi=10.1007/978-981-287-233-3

Donoghue, L. P., Harris, J. G., & Weitzman, B. A. (1999). K*nowledge management strategies that create value*. Retrieved August 23, 2018 frrom http://www.providersedge.com/ docs/km_ articles/KM _Strategies_That_Create_Value.pdf

Firestone, J. M. (2001). Keys issues in knowledge management. *Knowledge and Innovation Journal of the KMCI.* 1(3). 8-38

Gonzalez, R. V., & Martins, M. F. (2017). Knowledge management process: A theoretical-conceptual research. *Gestao & Producao, 24*(2), 248-265. Retrieved November 19, 2018 from http://dx.doi. org/10.1590/0104-530X0893-15

Hargreaves, D. (1999). The knowledge-creation school. *British Journals of Educational Studies, 47*(2), 122-144. Retrieved September 12, 2018from http://citeseerx.ist.psu.edu/viewdoc/download?doi= 10.1.1.131. 8905&rep =rep1&type=pdf

Hassan Easa, N. F. (2012). *Knowledge management and the SECI model: A Study of Innvoations in the Egyptian Banking Sector.* Stirling Management School, University of Stirling, Doctoral Dissertation. Retrieved November 5, 2018 from https://dspace.stir.ac.uk/bitstream/1893/5053 /1/Easa%2C%20Thesis. pdf

Kaur (2015).Knowledge creation and the SECI model. *International Journal of Business Management* Vol 2 (1). Retrieved July 19, 2018 from www.ijbm.co.in/downloads /vol2-issue1/51.pdf

Kinyata, G. L. (2014). The role of knowledge management in higher education institutions: A case study from Tanzania. *International Journal of Management, Knowledge and Learning, 3*(1), 43-58. Retrieve September 25, 2018 from https://ideas.repec.org/v3y2014i1p43-58

Laal, M (2011). Knowledge management in higher education. *Procedia Computer Scie*nce (3), 455-549

Lin, H. F. (2007). A stage model of knowledge management: An emprirical inverstigation of process and effectiveness. *Journal of Information Science OnlineFirst*, 1-17. Retrieved January 3, 2019 from https://pdfs.semanticscholar.org/09dc/ec19a52efc02cc09e 60fda00c53331c7d7ad.pdf

Masic, B., Nesic, S., Nikolic, D., & Dzeletovic, M. (2017). Evolution of knowledge management. *Industrija, 45*(2). Retrieved July 21, 2018 from https://pdfs.semanticscholar.org/ a97e/a42f0bd684 dad89b893 c3147ddda7d5eafc7.pdf

Nonaka, I. (1994). A dynamic theory of organzational knowledge creation. *Organization Science, 5*(1). Retrieved January 3, 2019 from www.content.ebscohost.com/yun565tyr.78.pdf

Nonaka, I., & von Krogh, G. (2009). Tacit knowledge and knowledge conversion: Controversy and advancement in organziational knowledge creation theory. *Organizational Science, 20*(3), 635-652. Retrieved October 27, 2018 from https://ai.wu.ac.at/~kaiser/literatur/Wissensmanagement-2/tacit-knowledge-and-knowledge-conversion-2009.pdf

Nonaka, I., Toyama, R., & Konno, N. (2000). SECI. Ba and Leadership: a Unified Model of Dynamic Knowledge Creation. *Long Range Planning, 33*, 5-34. Retrieved January 2, 2019 from www.ai.wu.ac.at/nonaka-seci-ba-leadership.pdf

Wang, X., Zhang, Q., Zhan, M., Li, X., & Wang, P. (2018).Teachers' Knowledge Management Based on Knowledge Innovation. *EURASI A Journal of Mathematics, Science and Technology Education. 14(4), 1317-1324.* Retrieved August 14, 2018 from www.ejmste.com/pdf-83566-19084