Enhancing Teaching and Learning Through Digital KM at an Open University

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Abstract: This study investigates the utilisation of digital knowledge management (KM) in enhancing teaching and learning at an open university, with a particular focus on Sukhothai Thammathirat Open University (STOU) in Thailand. As a leading open university in Southeast Asia, STOU faces unique challenges in providing higher education opportunities to Thai people both locally and internationally. STOU recruits staff based on qualifications, attitude, and personal values to align with the open university mission and vision. STOU's mission requires its academic and non-academic staff to have differentiated competency, necessitating specialised skill sets in open education, including self-learning textbook writing, mastery of e-learning, and other digital resources planning. This study highlights STOU's capacity-building innovations in digital KM. Qualitative interviews were conducted with lecturers who participated in teaching and learning KM though qualitative interview with lecturers who participates in the KM on teaching and learning. The result of the study revealed that the key to success for enhancing teaching and learning was driven by the leveraging of a global standard framework called the UK Professional Standard Framework, together with certain KM activities such as face-to-face training, extensive online repository of resources, mentoring, and the utilisation of digital platforms. These initiatives equip academic staff with the necessary skills to effectively engage in the digital education landscape and encourage them to improve their teaching and learning. Robust KM practices at STOU significantly improve student passing rates, engagement, and satisfaction. The study offers practical recommendations to optimise digital KM via process-driven practices to contribute to the advancement of higher education in Southeast Asia.

Keywords: Knowledge Management, Open University, Digitalisation, Teaching and Learning

1. Introduction

In the 21st century, strategic knowledge management (KM) enables local and international organisations to create and sustain their unique business propositions and to gain a competitive edge by generating superior product quality, efficiency, and innovation (Almalki, & Al-Shammari, 2023). Knowledge is an intangible asset that increases an organisation's productive and adaptive capabilities (Marquardt, 2011). KM encompasses the efficient and systematic management of knowledge processes, extending beyond mere acquisition to include representation, storage, learning, sharing, reuse, creation, and innovation within an organisation or sector (Nawaz & Gomes, 2014). KM also facilitates the development of knowledge assets and in turn the achievement of organisational mission, goals, and objectives. State-of-the-art KM practices benefit organisations by encouraging knowledge sharing, creativity, and continuous improvement of product or services (Otundo, 2023). Further, KM is related to aligning people, technology, and business processes to create value for customers, as well as enable decision-making, risk management, quality enhancement, cost reduction, and improvement in service quality (Fan & Shum, 2023). This is because KM encourages a collaborative working environment through continuous exchange of information among stakeholders to augment organisational success (Saini, Jain, & Jain, 2023). KM design increasingly leverages new technologies such as crowd computing, AI, big data, the internet of things, and other digital tools (Safaee & Yadegari, 2022). Moreover, KM is associated with an organisation's learning culture (Priyadharshini & Lakshmi, 2021). A strong learning culture is necessary for effective KM, since employees who are more engaged and motivated tend to innovate and create new knowledge with the aim of improving existing working processes (Garvin, Edmondson, & Gino, 2008). Therefore, organisations must employ KM strategies to align people, processes, and culture to maximize its impact.

KM also plays important roles in both for-profit and non-profit organisations, including higher educational institutions. Petrides and Nodine (2003) mentioned that KM practices can empower faculty by helping them collect data and exchange information about which teaching methods work best in different learning settings. As knowledge-driven organisations in teaching, learning, research, publication, and community service (Fullwood & Rowley, 2017), the goal of every university is to produce highly capable graduates to meet the requirements of society and future employers (Umaroh, Putra, Fahrudin, & Arsyad, 2023). Sukhothai Thammathirat Open University (STOU), Thailand's premiere open university, aims to provide lifelong higher education opportunities for Thai people worldwide through distance learning (Sukhothai Thammathirat, 2024). Effectively leveraging the latest digital technology and educational innovations in service of the open university mission requires a unique set of competencies to support online students with diverse learning styles, including KM, pedagogical expertise, and online learning design (Bezuidenhout, 2015; Gulati, 2008); technological skills to

manage online learning tools (e.g., LMS) (Alvarez et al., 2009; Arinto, 2013); the ability to facilitate remote learning and keep distance learners engaged through student-centered learning (Berge, 2009; Chakraborty & Nafukho, 2014); and continuous professional development that keeps pace with the latest knowledge, trends, and technology to elevate KM learning experiences (Aziz & Selamat, 2016).

Previous research on KM in higher education has discussed KM processes, the utilisation of digital technology, cloud-based services, the influence of KM on academic staff satisfaction and teaching motivation, and KM culture (Dneprovskaya & Shevtsova, 2023; Younas, Noor, & Arshad, 2022; Hakiman, Munadi, & Ernawati, 2019; Duong, Kien, & Khoa, 2022; Shaukat, Ahmad, Naveed, & Rehman, 2023). However, there are gaps on the integration of processes, technology, and learning culture towards effective KM, especially in an open university where academic and non-academic staff requires unique competencies to provide teaching and learning in a KM learning environment. Drawing on the United Kingdom Professional Standard Framework (UKPSF) for higher education for the context of an open university, my article addresses this gap by presenting KM initiatives that integrate processes, technology, and learning culture.

2. Literature Review

Knowledge management was defined by Nonaka and Takeuchi (1995) as the process of creating, sharing, and utilising knowledge within an organisation to achieve a competitive advantage. They introduce the concepts of tacit and explicit knowledge and discuss the importance of converting the former (i.e., personal, experienced-based, and context-specific knowledge) into the latter (i.e., formalized and structured knowledge). They also highlight systematic storage and accessibility as aspects of effective KM.

Alavi and Leidner (2001) view KM as a structured, company-wide approach to gathering, organising, and sharing employee knowledge with the goal of making this information accessible throughout an organisation to improve individual performance and overall company effectiveness. They propose a comprehensive framework for KM within organisations that consists of four main processes: knowledge creation, knowledge storage and retrieval, knowledge transfer, and knowledge application. Knowledge creation is the process of generating new knowledge within an organization and includes the sharing of tacit knowledge through social interaction (e.g., face-to-face conversations, shared experiences, and apprenticeships) and converting tacit knowledge into explicit knowledge through articulation, dialogue, and documentation. Knowledge storage and retrieval emphasises the importance of organisational memory and involves capturing, organising, and storing organisational knowledge in repositories for future access and use. This process preserves valuable knowledge assets, such as databases, document management systems, expert systems, or knowledge repositories. These systems should be designed to facilitate easy access, retrieval, and maintenance of knowledge. Knowledge transfer is the process of sharing knowledge among individuals, groups, and organisations. This includes both formal knowledge transfer (e.g., training programs, documentation, knowledge-sharing platforms, and communities of practice) and informal knowledge transfer (e.g., social interactions, mentoring, and informal networks). Knowledge transfer can be cultivated through a culture of trust and collaboration, providing incentives for knowledge sharing, and investing in technological infrastructure that supports knowledge exchange. Knowledge application is the process of utilising knowledge to make decisions, solve problems, and improve organisational performance. The value of knowledge lies in its application, not just its possession. Knowledge application can occur at various levels within an organisation, from individual decision-making to team problem-solving and organisational strategy formulation. Organisations can enhance knowledge application by aligning KM initiatives with business objectives, providing training and support for knowledge users, and creating a culture that encourages experimentation and learning from failures. Knowledge application can also be facilitated by embedding knowledge into organisational processes, routines, and systems to make them more accessible and actionable.

The UK Professional Standards Framework (UKPSF) is a comprehensive set of guidelines and standards developed to enhance the quality and consistency of teaching and learning in higher education. It provides a universal framework for recognizing and benchmarking teaching excellence and professionalism among higher education practitioners. The UKPSF is managed by Advance HE, an organisation dedicated to supporting higher education institutions in their efforts to improve teaching and learning, and consists of three key domains: areas of activity, core knowledge, and professional values.

The first domain outlines five key areas of activity that higher education professionals are expected to engage in: design and plan learning activities, teach and support learning, assess and give feedback to learners, 4) develop effective learning environment, and engage in professional developments. The second domain, core

knowledge, refers to six areas to support teaching and learning: an understanding of subject, appropriate methods of teaching and learning, understanding of how students learn, use of appropriate learning technologies, methods for evaluating teaching effectiveness, and quality assurance and enhancement. The third domain, professional values, refers to core values that support teaching and learning: respect of individual learners, promotion of participation, evidenced-informed approaches, and wider contexts acknowledgement. The UKPSF plays a vital role in enhancing the quality of teaching and learning in higher education. By providing a structured and comprehensive framework for professional development, it supports educators in delivering high-quality education and fostering a positive learning experience for students. Because the open university manages KM learning in a highly diverse learning environment, the UKPSF is an appropriate framework. The UKPSF supports professional development for academic and non-academic staff, knowledge sharing and collaboration, usage of technology in KM, and the achievement of expected learning outcomes of the open university program.

3. Methods and Methodology

3.1 Population and Key Informants

The research population is comprised of lecturers who joined the UKPSF KM Program at Sukhothai Thammathirat Open University, which included 40 persons in 2022. Since this research focuses on the school of management science, the key informants are five lecturers from school of management science at STOU who successfully earned accreditation and a fellowship or a senior fellowship with the UKPSF in the first quarter of 2024.

3.2 Research Instruments

A semi-structured questionnaire was developed for this study concerning the KM practices and processes of UKPSF accreditation to propose a model to expand this practice further in other academic schools or universities with similar settings. All questions were reviewed by three subject matter experts to ensure content validity, passing an index of Item Objective Congruence (IOC) threshold score higher than 0.5. All questions received a score of one.

3.3 Data Collection

The data was collected through unstructured face-to-face interviews with five lecturers from school of management sciences who joined the KM program and could successfully earn UKPSF accreditation.

3.4 Data Analysis

After transcribing the recorded interview audio and validating the transcripts, I identified common themes that emerged across the interviews and coded the data accordingly. Following this, I summarised the findings according to each theme and identified key quotations from the informants. I then drew final conclusions according to the research objective.

4. Results

4.1 STOU KM Process

From the in-depth interview with lecturers who participated in the KM it was found that STOU relies heavily on their human capital to deliver quality education to a diverse student population. The research found that STOU placed a strong emphasis on KM and streamlined the whole process through a dedicated department of human resources development for KM learning, which became the center of excellence for KM. The center is involved in assessing development needs, providing new staff induction, teaching and learning capability enhancement, and allocating special funds for individual and team development. There two targets group of KM initiatives: academic staff and non-academic staff. The focus on these two groups is distinct, such that academic staff's KM goal is to enhance teaching and learning design and execution for online or KM learning environments, while non-academic staff needs to possess service skills to support students in the form of communication, customer service and technology guidance. The goal for both target groups is to enhance organisational learning to promote a culture of continuous learning and collaboration among academic and non-academic staff to deliver

best-in-class KM education to students. Since there are various initiatives for both groups, this article will focus on the KM initiatives for academic staff, specifically the case from the faculty members at the school of management science, the largest academic school in STOU by number of students, as well as academic staff.

As one of its key management initiatives over the past three years, the university has supported the school of management science to train 12 academic staff on the UK professional standards framework and get certified with appropriate levels of teaching and learning design experiences (associate fellowship, fellowship, senior fellowship and principal fellowship). This framework is proven to develop staff on the knowledge, skills, and values required for effective teaching and learning in higher education. The university has worked closely with this business school to execute KM, which the school has expanded upon by linking KM with the practical design and implementation of teaching and learning for lecturers. Based on my interviews with the key informants, I conceptualise effective digital teaching and learning KM for open universities as a four-step model, consisting of a technology-based training program, the creation of a community of practice, omni-channel mentorship programs, and assessment and certification of lecturers.

Step 1: Developing a Technology-Based Training Program. The kick-off training program aligns the UKPSF with KM processes and covers an introduction to the three dimensions of the UKPSF discussed above (areas of activity, core knowledge, and professional values) to ensure all lecturers understand the framework and its application in their practices. At STOU, training sessions were delivered through interactive workshops by senior lecturers who acquired senior fellowship status with practical activities, case studies, and group discussions to facilitate active learning and engagement. The participants were required to actively participate in the quizzes and teaching and planning writing activities. The participants reported that the session is very work-intensive yet inspiring. This is evident from the following participant quotes:

"I now have a clearer grasp of the different dimensions of teaching and learning, and how they interconnect with each other."

"The session helped me gain a deeper understanding of how effective teaching and learning practices should be in higher education in the context of open education."

"This kick-off session inspired my passion for continuous learning and professional growth. I am eager to develop my teaching skills to be a better teacher, aligned with the visions and missions of STOU to be the leading open university in the world."

"I learned how to design more engaging and inclusive learning experiences for my students with diverse backgrounds."

To support the learning of the participants, the training utilised e-learning modules and knowledge repositories in the form of a digital library, soft files, and video for specific topics/episodes, such as key steps to apply for UKPSF accreditation, the three UKPSF dimensions, and how to apply the UKPSF to the open university. that allow participants to review before the session and revisit after the session. The participants reported that these resources support their teaching and planning autonomy since they could not capture 100% of the content during the face-to-face training. These repositories are easily accessible and searchable, allowing lecturers to find relevant resources quickly through STOU e-services, such as intranet and Microsoft Team virtual rooms to facilitate communication and collaboration among participants. These platforms enhance the training experience through knowledge sharing, discussions, and peer support. This approach aligns with the UKPSF's emphasis on teaching and learning activity. Lecturers in STOU develop teaching and learning through writing self-study textbooks that must facilitate independent learning and cater to the unique needs of distance learners. The content must comprehensively cover all necessary information, explanations, and examples to enable students to learn independently. This means that the lecturer requires unique competency in analyse backgrounds of learners before designing the self-study textbooks. The textbook is supplemented with e-learning modules on STOU's Moodle LMS, online tutorials and workshops, and real-life case studies for students. To link the UKPSF with teaching and learning tasks in an open university context, subject matter experts ran a series of online snippet videos and workshops on writing a self-study textbook, preparing e-learning for students, conducting online tutorials, utilising educational technology, and developing effective formative and summative assessments. One of the most popular workshops for lecturers is how to use Class Point, an online engagement technology plugin to support learning and engagement, as well as using AI-based tools for education.

Step 2: Creating Communities of Practice. Communities of practice are groups of lecturers who share a similar interest and field of expertise to learn how to improve their teaching and learning through regular interaction. The CoPs are planned with regular (mainly virtual) meetings to discuss experiences, share insights, and provide

support among lecturers and guided by the master mentor who has achieved senior fellowship in the prior year. Some CoPs were organized during the afternoon as virtual coffee breaks where lecturers gather to discuss their teaching and learning practice where best practices were being shared to the rest of team as the inspiration. Participants reported they felt inspired by their peers' examples of new techniques with impressive results. This CoPs becomes the support system and source of comfort since they feel safe to share their concerns and ideas with the community. Apart from learning though their experiences, lecturers can also learn from their peer experiences to avoid some mistakes that could happen if they follow the same path.

"Through the community, I have been able to enhance my teaching skills, learn more about flipped classroom and project-based learning to apply for business management students."

"When I face challenges or problems or even doubts in my teaching, I know I can turn to the community for help and encouragement."

"I learnt from my peers that students may not turn on their camera during an online course because of their anxiety or discomfort with being on a camera."

"I adopted the new ways of supervising my MBA student dissertation with a weekly flipped classroom workshop with my students, helping them to progress with their research faster."

"I am new to STOU and have never written a self-study textbook before and I got peer guidance on the whole process from researching for a reference, preparing outlines, writing style, and pre- and post-test creation."

The CoPs support peer learning, where lecturers can learn from each other's experiences, case studies, common challenges, and collaboratively develop practical solutions on teaching and learning. This approach aligns with the UKPSF's emphasis on collaborative learning and professional values. In the CoPs, there is a master mentor and instructional design and technology experts who can provide guidance, answer questions, and share advanced knowledge. This access ensures that the learning is both deep and broad, covering all aspects of the UKPSF. During the CoP session, lecturers are encouraged to critically reflect about their practices via online reflective journal Microsoft team to document their experiences, challenges, and insights related to the three UKPSF dimensions. These journals can be shared within the CoPs, contributing to collective knowledge.

Step 3: Establishing an Omni-Channel Mentorship Program. Because effective mentorship supports professional development and knowledge transfer, STOU established a mentorship program aligned with the UKPSF that pairs mentors and mentees. These pairings consider compatibility in terms of subject matter, teaching style, and professional goals. The mentor is a senior lecturer with more than 5 years of experience who has been qualified at the minimum fellowship status. The mentee will be paired with a mentor in a related field in the subcategory of business management. The mentorship program is designed to provide a seamless experience through multiple channels, enhancing flexibility in terms of appointment scheduling and technology such as Line (the most popular social media platform in Thailand), Microsoft Teams, in-person discussion, and resource support in the form of videos and digital documents to cater to the diverse needs and preferences of lecturers in the program. The mentorship program can happen with a mix of face-to-face and online to suit the convenience and availability of mentor and mentee, but the only condition is that mentee should agree on the topic of discussion with pre-readings before the session to make it effective for both. The mentorship programs focus on providing support on teaching and learning practices of the participants and resolving some struggles or issues with empathy and co-created solutions. Sometimes, mentees invited mentors to join and observe their teaching class to provide comments and rooms for improvement. The mentorship program resulted in faster career progression and effective reflective practices, as evidenced by the following responses:

"Weekly meetings with my mentor have provided a structured space to reflect on my teaching experiences, critically analyse my methods, and identify areas for improvement. This mentorship process has helped me become more self-aware and proactive in seeking feedback from students and colleagues to continuously enhance my teaching effectiveness."

"I systematically evaluate my instructional strategies, assessment methods, and student engagement techniques in light of the framework's guidance."

"I have developed the habit of maintaining a reflective journal, documenting my teaching experiences, challenges faced, and lessons learned. This process lifted me up when I felt down and struggles with learning design issues."

Step 4: Assessing and Certifying Lecturers. This final step in the KM process focuses on the assessment and certification of educators under the UKPSF, which requires lecturers to develop portfolios that demonstrate their engagement with the UKPSF dimensions. These portfolios should include evidence of their activities, reflections, feedback, and any other relevant materials. The draft will be sent for internal peer review among certified senior lecturers. This robust process aims to improve teaching and learning, as well as reflective writing, with the goal of creating a safe learning environment for lectures to improve themselves. This helps improve the structure of participants' writing and allows them to develop their teaching and learning portfolio before submitting to UKPSF. Once the final version is ready, it will be sent to UKPSF to review and assess before certified under the appropriate category of the UKPSF (Associate Fellow, Fellow, Senior Fellow, Principal Fellow). This certification acknowledges their commitment to teaching excellence and professional development. Apart from getting the accreditation from UKPSF, the improved teaching and learning among participants resulted in a significantly higher passing rate of students, with 90% of research-based graduate students finishing their degree as planned with great results, as well as an increase in student satisfaction (4.5 out of 5.0) in key areas. A best-practices case of organising entrepreneurial marketing bootcamps was recognised and published in tier 1 Thai Journal called ThaiJo to disseminate the entire learning plan to the academic community.

5. Conclusions

The results of this study on STOU's teaching and learning KM demonstrate the efficacy of the UKPSF for organizing and replicating the KM process. However, the context of open universities is different from other universities; there is a need to customise KM processes to meet UKPSF requirements. Open university KM processes must also be flexible enough to meet the needs of diverse participants from different academic fields. Digital KM processes are especially critical to improving KM accessibility and flexibility. As a result, I propose the following four-step model for the effective organisation of digital KM for open universities, which can also be applied to other universities: Step 1: Developing a Technology-Based Training Program, Step 2: Creating Communities of Practice, Step 3: Establishing an Omni-Channel Mentorship Program, and Step 4: Assessing and Certifying Lecturers. Because KM continues to evolve, these steps can be enacted as an ongoing, circular process. This will help ensure that academic staff can continuously improve their teaching and learning to align with the mission and vision of the university. The primary contribution of this study to the field of KM is the proposed application of KM to enhance teaching and learning in the higher education context via the proposed digital teaching and learning KM model depicted in Fig 1.

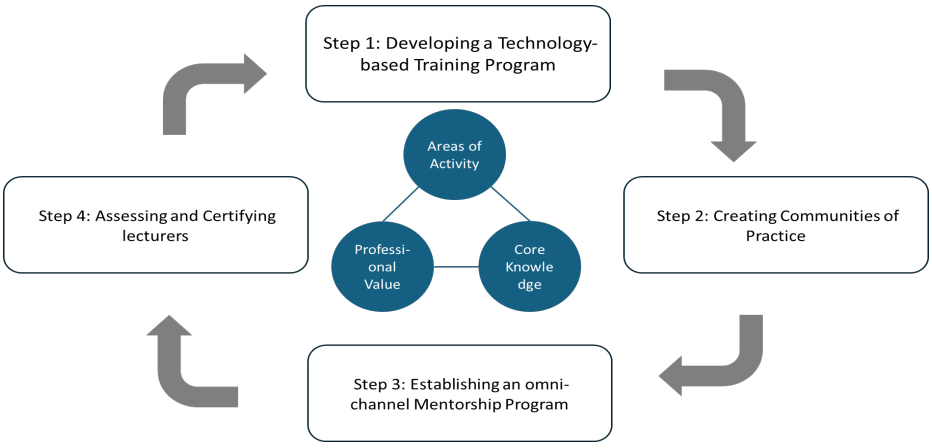

Figure 1: Proposed Digital KM Model for Teaching and Learning

Source: Prepared by the Author

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