International Journal on Management Education & Emerging Technology
ISSN: 2583-9438

Strengthening Instructional Delivery Through a Strategic Knowledge Management Framework at DMMMSU

Lea A. Catapang[1], Jenilyn L. Aban-Asirot[2], Gleezel Anne B. Allaga[3], Rowena T. Badua[4], Ronica M. de Leon[5], Merlyn A. Manalang[6], Arriane Michelle F. Fabro[7], Randulph I. Navasca[8]

[1,2,3,4,5,6,7,8] Don Mariano Marcos Memorial State University

[1]lea.catapang@polytechnic.bh, [2]jlaban@dmmmsu.edu.ph,[3]gleezel.anne.allaga@qsu.edu.ph, [4]rbadua@dmmmsu.edu.ph, [5]rmasangkay@dmmmsu.edu.ph, [6]mmanalang@dmmmsu.edu.ph, [7]amfabro@dmmmsu.edu.ph, [8]rnavasca@dmmmsu.edu.ph

[1] https://orcid.org/0009-009-1186-967X, [2] https://orcid.org/009-0005-5996-1038,[3] https://orcid.org/0009-0002-2465-2719,[4] https://orcid.org/0009-0004-9684-8619,[5] https://orcid.org/0009-0001-5551-758X, [6] https://orcid.org/0009-0007-1962-2853,[7] https://orcid.org/0009-0004-1503-7911,[8] https://orcid.org/0009-0004-7739-5028

Abstract	Article Info
The Don Mariano Marcos Memorial State University (DMMMSU) confronts persistent instructional limitations stemming from fragmented digital systems, inconsistent knowledge governance, and the constrained functionality of platforms such as Google Classroom and Meet. In alignment with national policies promoting digital transformation and institutional resiliency, this policy brief proposes a Strategic Knowledge Management Framework to optimize instructional delivery across modalities. By integrating Moodle and Microsoft Teams into a unified Learning Management System (LMS), the framework supports secure content organization, role-based access, and dynamic knowledge sharing of both tacit and explicit information. Preliminary assessments indicate gaps in platform integration, instructional continuity, and faculty support, validating the need for systemic reform. Key policy recommendations include adopting the LMS hybrid model, forming a Strategic Knowledge Management System, initiating faculty capacity-building programs, and establishing institutional protocols for digital governance and content lifecycle management. The proposed strategy aims to foster an innovation-driven academic culture that strengthens stakeholder satisfaction and ensures DMMMSU's long-term instructional resilience.	*Keywords:* instructional delivery, instructional practices, knowledge management framework, LMS, policy, strategy

Date of Submission: 30/03/2025
Date of Review: 03/04/2025
Date of Acceptance: 28/04/2025
IJMEET / Volume 3, Issue 2,2025
ISSN: 2583-9438

INTRODUCTION

Knowledge storage plays a key role in knowledge utilization and consequently in organizational sustainability. The study of Demir, Budur, Omer, & Heshmati (2023) on the Links between Knowledge Management and Organizational Sustainability suggests that organizations should develop systems that store experiences and generate and share knowledge. In this way, stored knowledge will be conveniently used for sustainable development. At the organizational level, employing techniques and resources of knowledge management transforms the intellectual resources of employees into a sustained advantage for the organization. On a worldwide level, sustainable development principles are applied to promote a sustainable global community (Mikalauskienė & Atkočiūnienė, 2019). Another study by Shujahat, Sousa, Hussain, Nawaz, Wang, & Umer (2019) confirms that knowledge-worker productivity mediates between two knowledge management processes (knowledge creation and knowledge utilization) and innovation. Moreover, the results signify the overarching role of the human and cultural approach to knowledge management over the Big Data and IT and system-based approaches.

Recently, Knowledge Management Systems (KMS) have emerged as a prominent area of study within educational institutions. This rise in prominence is driven by the need to recognize the value and effectiveness of knowledge within these systems (Mohammed, 2022). In Higher Educational Institutions (HEIs), academics remain as the fundamental aspect of), serving as creators and disseminators of knowledge. Previous studies have proven that individual, technological, and limited organizational components are the persisting issues of organizational knowledge management. (Al-Kurdi, El-Haddadeh, & Eldabi, 2020). Effectively handling knowledge is crucial for any organization to survive and prosper in the turbulent environments of the modern era (Pellegrini, Ciampi, Marzi, & Orlando, 2020). In particular, the unparalleled upheavals caused by the COVID-19 pandemic have underscored the importance of developing tactics to handle such widespread emergencies and guide us into a new era. As stewards and providers of essential services, public institutions should remain operational and expand their efforts, all while preparing for an unpredictable tomorrow (Iacuzzi, Fedele, & Garlatti, 2021).

The Don Mariano Marcos Memorial State University (like any other learning institution) faced difficulties in establishing a good learning continuity plan, considering validity, usability, accessibility, effectiveness, and cost efficiency. Even at the epilogue of the pandemic, learning management systems are continually challenged by suspensions of face-to-face classes due to high heat index and extreme weather disturbances believed to be brought about by global warming and climate change. The need for alternative yet high-quality methods of delivering instruction is further heaped on, as the university expands its academic reach via admission of enrollees overseas. Therefore, a different DMMMSU knowledge management plan for instruction will intend to provide a new structured approach to the institution's learning management system.

This knowledge management initiative shall include the proposed knowledge management strategy, implementation, monitoring, and evaluation of the DMMMSU-Learning Management System (LMS), particularly on content, pedagogy, learning feedback, and knowledge collaboration among educators and students. By strategy, the proponents mean a general plan to achieve better learning outcomes, teaching productivity, and clientele satisfaction. Implementation refers to the proposed method of capturing, storing, managing, and distributing educational content and pedagogical knowledge across the institution. Moreover, monitoring and evaluation shall involve observing, checking alignment, and scrutinizing the implemented knowledge management strategy as a basis for system reviews and informed decisions.

According to Alaarj et al. (2016), as cited by Li et al. (2020), the capacity for effective knowledge within organizations is built through sharing, creating, innovating, and absorbing knowledge. Consequently, these resources shape knowledge management practices and thus influence organizational performance. Regardless of the type of organization, it is fundamental that a) documentation systems and processes make sure that they contain the required valuable knowledge, b) are maintained appropriately, and c) management evaluation and review procedures sufficiently utilize the records to make plans in the next period. Hence, a KM initiative for DMMMSU instruction is of practical and enduring importance.

LITERATURE REVIEW

The Don Mariano Marcos Memorial State University (DMMMSU), the only state university in La Union, Philippines, was established through Presidential Decree 1778 and has since evolved into a multi-campus institution offering 109 academic programs, including doctoral, master's, and baccalaureate degrees (DMMMSU, 2023). With its philosophy of "total human development with appropriate competencies," DMMMSU has demonstrated a strong commitment to instructional excellence, evidenced by the reaccreditation of 20 programs to Level IV by the Accrediting Agency of Chartered Colleges and Universities of the Philippines (AACCUP). The university's faculty is recognized for pedagogical expertise and a sustained effort to cultivate a dynamic, learner-centered environment. As part of its institutional evolution, DMMMSU has embraced technology-enhanced learning modalities, especially during the COVID-19 pandemic, through the deployment of a comprehensive Learning Management System (LMS) that facilitates blended instruction and wider student engagement.

However, to sustain and strategically elevate instructional quality, DMMMSU must integrate a Strategic Knowledge Management (SKM) framework that goes beyond technological adoption. SKM refers to the deliberate processes by which institutions acquire, share, and apply knowledge to improve decision-making, instructional design, and organizational performance (Ferreira, Mueller, & Papa, 2020). When contextualized within DMMMSU's LMS infrastructure, SKM practices have the potential to elevate instructional delivery by converting teaching artifacts, learning analytics, and curriculum data into actionable insights. LMS platforms within a normative SKM model becomes digital repositories and collaborative working environments for knowledge creation, sharing, and reuse, which are the heart of resilience in instruction and strategic planning (Cheng, 2018).

Many Higher Education Institutions (HEI's) in the Philippines are adopting Knowledge Management (KM) strategies to in accordance with the Commission on Higher Education's (CHED's) outcomes-based education and quality assurance mandates (Development Bank, 2021). According to Stensaker et al. (2017), this move is geared towards institutional responsiveness and more data-informed teaching practices to address the needs of a diverse learner context. International universities engaged in intensive research are implementing SKM frameworks to improve the quality of instruction and guide planning, policy development, and faculty empowerment strategically. These trends are evidences of the need to establish instructional resilience through systems that can facilitate knowledge creation, dissemination, and reuse in academic communities. Hence, aiming to strengthen instructional delivery at DMMMSU by utilizing a strategic knowledge management framework is appropriate, timely, sensible, and significant. It aligns institutional practices with national education reforms and global needs and standards.

METHODOLOGY

This study made use of mixed-methods approach to examine the instructional delivery and knowledge management practices at Don Mariano Marcos Memorial State University (DMMMSU). The quantitative part utilized survey questionnaires for faculty, other instructional personnel, and students who were engaged in online, blended, and face-to-face learning modalities. The aim was to assess the users' engagement with existing LMS platforms, digital competency, teaching-learning challenges, and the perceived utility of Moodle and Microsoft Teams in enhancing pedagogical outcomes.

The qualitative component includes the use of structured interviews with university administrators, LMS coordinators, and IT specialists. The focus was on generating insights into institutional readiness, governance structures, and strategic priorities in digital learning. Focus group discussions with faculty champions, student leaders, and instructional designers added more meaning and depth to the analysis by giving light to experiences and perspectives regarding content delivery, instructional collaboration, and system innovation.

To contextualize the findings, the study reviewed institutional documents such as the university manuals, ICT policy frameworks, LMS performance reports, strategic plans, and instructional assessment records Furthermore, the platform usage analytics from Google Classroom, Google Meet, Moodle, and Microsoft

Teams, where available, were examined to assess patterns of engagement, feature utilization, and operational scalability. The adoption of this methodology ensures that the recommendations generated from the study are based on empirical data, experiences of stakeholders, and institutional context. This shall strengthen the foundation for policy interventions for knowledge governance and resilience of the institution.

1. Objective Definition

The study purports to enhance excellence and responsiveness of the Don Mariano Marcos Memorial State University (DMMMSU) in terms of instruction through a designed and implemented comprehensive Knowledge Management Framework. This will help address serious gaps in the existing learning management practices in the university. In particular, Moodle and Microsoft Teams will be integrated and utilized as the main tools for digital transformation. When the technological infrastructure is aligned with pedagogical goals, it is expected that instructional delivery is enhanced, collaborative learning environments are fostered and there is support in continuous academic innovation in the modalities. It ensures that the curricular content and pedagogy remain valid, contextually relevant, organized, and accessible to all clients and service-providers. It also seeks to modernize the facilitation of instruction, giving of academic feedback, and collaboration. Generally, this will improve the overall quality, efficiency and responsiveness of the instructional services of DMMMSU leading to increase clientele and stakeholder satisfaction.

2. Scenario Development

The Don Mariano Marcos Memorial State University (DMMMSU) is a dynamic and expanding academic institution. It is committed to exploring and addressing the demands of flexible, technology-enhanced instruction in the aim of delivering quality education. In the emergence and widespread use of technology platforms such as Google Classroom and Google Meet in instructional delivery, DMMMSU however, currently operated without a unified system for managing, sharing, and preserving instructional knowledge. This fragmented approach results in isolated information silos across departments. Moreover, it leads to duplication of efforts, waste of time, missed opportunities for pedagogical innovation, and a weak institutional memory. Problems that hampered the conduct of face-to-face classes such as the COVID-19 pandemic and the subsequent transition to hybrid and remote learning further showed the limitations of the university's existing knowledge management practices. Both teachers and learners experienced inconsistent access to instructional materials and communication tools, revealing a lack of strategic alignment in digital resource management. Without a specific and formal Knowledge Management Plan, instructional strategies remained unevenly implemented and digital content was often disorganized or underutilized.

To address these challenges and abate future related problems, this policy brief proposes the formal implementation of a Strategic Knowledge Management (KM) Framework anchored in the integration of Moodle and Microsoft Teams. The initiative will be led by a cross-functional Knowledge Management System and a committee tasked with overseeing design, deployment, and continuous improvement. The proposed framework aims to establish an interconnected digital learning network that supports organizational knowledge management with secure and scalable knowledge sharing and well-maintained instructional innovation. Having role-based access controls, a centralized repository, and metadata-enhanced search capabilities to streamline resource management, and reduce redundancies are the key features of the proposed KM framework. With this, DMMMSU therefore, seeks to institutionalize knowledge stewardship and enhance instructional delivery aligned with the country's educational reforms and global standards considering technology and innovation as catalyst of quality higher education.

4. Data Collection

The mixed-method design was used to effectively assess the instructional landscape and the feasibility of implementing the strategic Knowledge Management Framework at DMMMSU. Quantitative data are collected by conducting surveys among faculty members, instructional support personnel, and students across different modalities to study their perceptions, usage patterns, and readiness to adopt Moodle and Microsoft Teams. The survey questionnaire gathered data on accessibility, effectiveness, and collaborative potential of the current learning platforms. It also included information on instructional support needs and knowledge-sharing

behavior.

To complement quantitative data, interviews were conducted with key stakeholders, academic leaders, IT personnel, and LMS administrators. This sought to determine institutional challenges, governance practices, and strategic priorities on digital learning and knowledge stewardship. Focus group discussions involving faculty innovators, student representatives, and instructional designers provided nuanced insights into user experience, organizational culture, and institutional preparedness for systemic digital transformation. Additionally, the study included content analysis and document reviews of existing manuals, institutional reports, strategic plans, ICT policies, and LMS evaluation records to contextualize findings within historical and policy frameworks. Where feasible, usage analytics from platforms such as Google Classroom, Meet, Moodle, and Microsoft Teams were examined to compare engagement levels, feature utilization, and platform effectiveness, thereby guiding strategic decisions in LMS selection and optimization. This comprehensive data collection strategy is intended to generate actionable insights that inform policy formulation and institutional reforms aimed at enhancing instructional delivery through sustainable knowledge management practices.

RESULTS & DISCUSSION

1. ORGANIZATIONAL CONTEXT

The only state institution in La Union, Philippines is Don Mariano Marcos Memorial State University (DMMMSU). DMMMSU was founded by Presidential Decree 1778, issued by former President Ferdinand E. Marcos.

Founded on the philosophy of "total human development with appropriate competencies," the school was created by combining five (5) previous La Union institutions: Sapilang Elementary School in Bacnotan, La Union; Southern Ilocos Polytechnic State College in Agoo, La Union; Don Mariano Marcos Memorial State College in Bacnotan, La Union; La Union School of Arts and Trade in City of San Fernando, La Union; and Community College of La Union in City of San Fernando, La Union. Two national centers are also housed in the institution namely, the Sericulture Research and Development Institute (SRDI) and the National Apiculture Research, Training, and Development Institute (NARTDI)(Don Mariano Marcos Memorial State University, 2023). The university offers 109 academic programs, including 13 doctorates, 31 master's degrees, 58 baccalaureate degrees, and 7 diploma/certificate programs.

Furthermore, the University has 20 academic programs that have been reaccredited to Level IV by the Accrediting Agency of Chartered Colleges and Universities of the Philippines (AACCUP). Don Marcos Memorial State University is an SUC with a strong commitment to instruction, research and extension. The faculty are renowned for their expertise and dedication to fostering a vibrant learning environment. It encompasses three campuses and an open university namely: South La Union Campus; Mid-La Union Campus; North La Union Campus; and Open University Systems. Each campus is headed by a chancellor/executive director responsible for directing the implementation of different plans fostering the improvement of various activities proposed by the university.

With all the achievements, developments, and changes that are happening to the institution, the university recognizes the growing relevance of technology-enabled learning. In recent years, the university has actively transitioned to blended learning modes, particularly during the COVID-19 epidemic. The use of a complete Learning Management System (LMS) to improve DMMMSU's instructional delivery and student engagement is really a must.

Implementing a sophisticated LMS provides DMMMSU with a huge opportunity to improve instructional delivery, increase student engagement, and create a more dynamic and accessible learning environment. The LMS will empower faculty, increase student learning experiences, and help to DMMMSU's continuing success in an ever-changing educational landscape by offering a consolidated platform for teaching, learning, and communication.

Philosophy

Total human development with appropriate competencies.

Mission

Provides high quality instruction, research and extension.

Vision

A globally competitive university**.**

To effectively embrace this vision, DMMMSU should also envision a future where the LMS serves as the central hub for all learning activities, fostering a dynamic and interactive educational experience for students, faculty, and staff.

2. STRATEGIC GOALS OF DMMMSU

Don Mariano Marcos Memorial State University has already identified several key strategic goals that will guide the development in the coming years. These goals include:

- Enhance Institutional Quality, Program Excellence and Responsive Academic Programs
- Uphold operational and scientific research programs
- Promote Responsive Management and Governance
- Support Vibrant Extension and Community Programs
- Sustain Dynamic Linkages and Collaborations
- Nurture Meaningful Student Services and Development
- Boost Efficient and Effective Resource Generation
- Foster Strong, Collaborative and Supportive Relationships between the University and its Alumni

Suggested Strategic Goals

The following are suggested additional strategic goals for the proposed Learning Management System of the university:

Enhanced Learning Experience. There should be a centralized platform for accessing the various course materials, encouraging online collaborations and communications, and delivering an interactive learning activity. Faculty members should encourage student participation in online conversations, forums, and collaboration activities to enhance the quality and consistency of instruction across DMMMSU.

Efficient Communication. There should be an automate administrative and general activities, providing reports on student performance, monitor course progress and allow students and faculty to access various materials needed in their teaching and learning and also participate in learning activities at any time and from any location by using online forums, announcements, and messaging tools, instructors, students, and administrators may communicate more effectively to be able to facilitate the creation and dissemination of best practices in teaching.

Faculty and Staff Development. Provide faculty and staff with training and assistance for using the LMS to create engaging and effective online learning environments. Promote a culture of knowledge sharing among faculty members.

Key Stakeholders

Any LMS implementation will have an impact on several persons or stakeholders. To be successful in the implementation of the proposed learning management system it requires the involvement and support of the various stakeholders. The following are stakeholders and suggested roles in the proposed learning management system:

The **University President** will be the overall steering and will give support, approval and guidance for the LMS implementation promoting its use and benefits to the university community. The university President

will also secure and approve appropriate budget allocation for the LMS and continuous maintenance. Moreover, a committee to oversee the LMS implementation will also be approved by the university president.

The **Vice President for Academic and International Affairs** will be the Chairperson for the LMS implementation committee, composed of representatives from various departments overseeing the training and development of the faculty and staff on the implementation of the proposed LMS on instruction.

The **Director for Instruction** will be developing policies and guidelines for the use of the LMS aligned with DMMMSU's academic and strategic goals as approved by the vice-president for Academic and International Affairs.

Campus Chancellors/ Executive Director of the different operating units from NLUC, MLUC, SLUC and OUS will be advocating the use of the LMS, and they will provide and assist in the different training sessions and technical assistance that will be conducted for the faculty and staff. They will also be identifying and inviting experts within their colleges or departments. Further, they will be monitoring and assessing in general the specific challenges and will eventually report it to the committee created on the usage of the proposed LMS.

The different **Campus Heads (Deans, Directors, etc.)** will be promoting and encouraging the utilization of LMS in their respective faculty for innovative teaching and learning methods. They will also be identifying certain problems and challenges faced during the use of the LMS and will be collaborating to the LMS committee to address the identified challenges or issues.

The **faculty** will be an active participant and the end-user of the LMS and will be introduced with different training programs, workshops to develop their skills and their proficiency. They will interact with the LMS the most frequently of any stakeholder. The faculty will need many accesses to score each learner's submission of assignments. Solutions for automated grading and feedback can reduce this workload (EdTech Books, 2023). Moreover, the faculty will be providing feedback on the usage and their experiences on the effectiveness of the proposed LMS.

The LMS Committee (IT Support, Instructional Designers, LMS administrator etc.) will provide technical support and troubleshooting assistance to faculty and students using the LMS. They will be creating user guides and tutorials to help the faculty and staff navigate the usage of the LMS.

The **Instructional Designer** (part of the LMS committee) will play an important role in the LMS by maximizing the tools and underlying framework. The course design will shape the experience of both the teacher and the student even with the best tools at hand. Optimizing the LMS's potential is the instructional designer's job. In certain cases, one individual may fulfil the roles of both instructional designer and instructor. Designing the user experience within the learning context is a crucial responsibility of the instructional designer, as mentioned in the UX section (EdTech Books,2023).

The **LMS administrator and IT staff** will be designing and delivering courses to the learners. The LMS administrator may be someone in the institution and is maintained by personnel and will be assigned as a contact person. This is the person responsible for keeping the LMS operational, secure, and up to current (EdTech Books,2023).
Students will also be embracing the functionalities of the LMS. They will be participating in the different online activities such as online discussions, access learning materials, assignments to be submitted electronically created by their course instructor and could also provide feedback on their learning experiences on the usage of LMS.

3. KNOWLEDGE MANAGEMENT STRATEGY

Various authors defined the concept of knowledge management strategy. According to Shannak et al., (2012), KM Strategy is the description of the method or approach of an organization to follow the management in handling its resources and assets wherein we can make use of the organization's resources and assets. Also, the

authors highlighted that KM Strategy is a document containing the descriptions of knowledge and roles of all employees at all levels. For Abell and Oxbrow (2006), it is the creation and management of a corporation or institution which leads to employees creating, sharing, learning, enhancing, organizing and utilizing knowledge leading to an improved organization. Zheng, Yang and McLean (2010) specified that through organizational KM Strategy guides the organization in creating and distributing knowledge-based assets. Hence, it is a plan used by organizations that groups, creates, uses, and distributes collection knowledge inside a group. Keeping knowledge accessible involves keeping it in a location that is convenient for access.

3.1 KNOWLEDGE MANAGEMENT FRAMEWORK

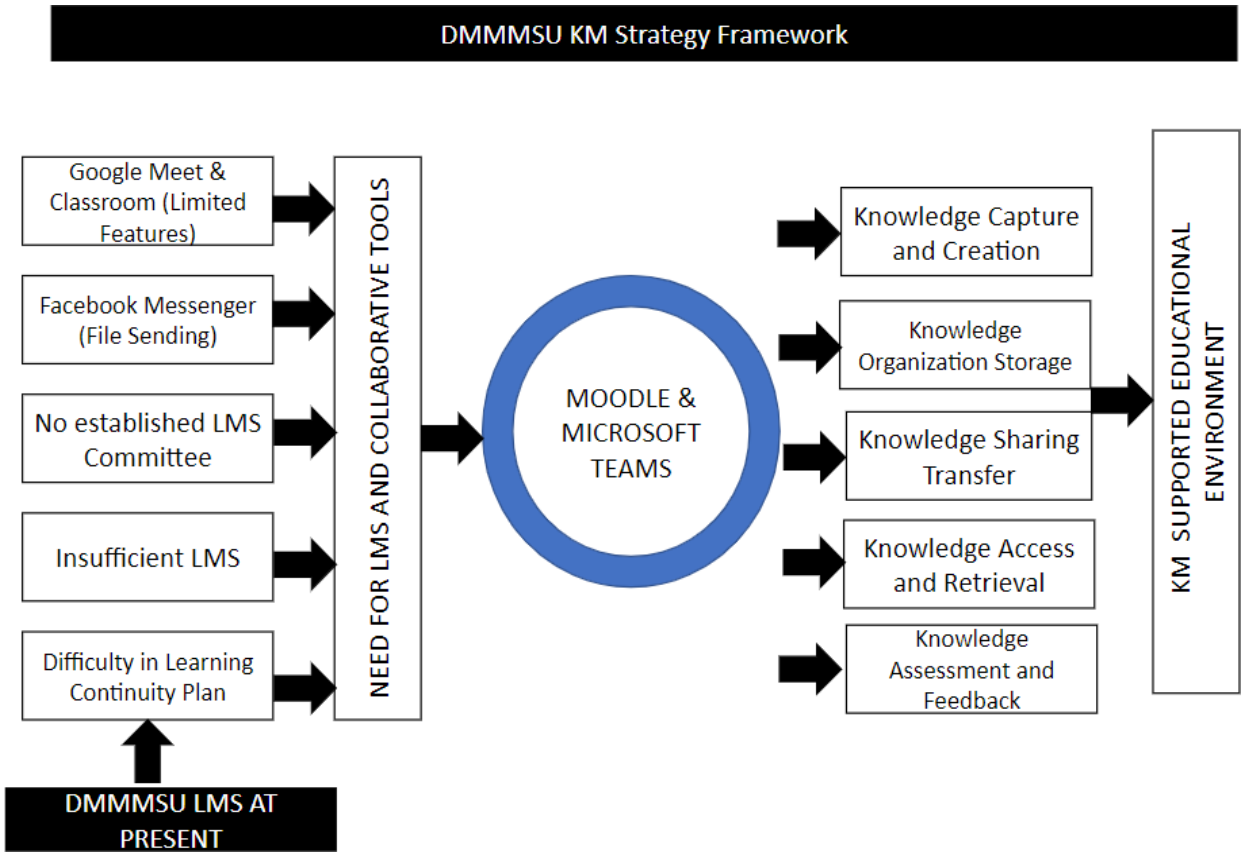

Figure 1. Proposed DMMMSU KM Strategy Framework

The Proposed DMMMSU Knowledge Management (KM) Strategy Framework reflects a timely and strategic response to the university's evolving instructional needs. As illustrated in Figure 1, the current instructional landscape at Don Mariano Marcos Memorial State University (DMMMSU) is marked by fragmented digital practices, such as reliance on Facebook Messenger for file sharing, limited functionality in Google Meet and Classroom, and the absence of a formal LMS committee. These conditions impeded DMMMSU to implement a comprehensible continuity plan. It was made difficult also to sustain instructional resilience due to work and class disruptions during the COVID-19 pandemic.

As a solution, DMMMSU's adoption and utilization of the Moodle and Microsoft Team is an important shift for a more integrated and scalable virtual ecosystem. As an open LMS, Moodle is a customizable learning pathway. It allows various assessment tools better-enhanced content organization. Microsoft Teams on the other hand, is a good complement for Moodle since it enables synchronous collaboration, threaded discussions, and great integration of productivity tools. Both platforms are a great support to the focused Knowledge Management function reflected in the framework namely, knowledge capture and creation, organization and storage, sharing or transfer, access and retrieval, and assessment with feedback. The goal of the Commission on Higher Education with its mandate for outcomes-based education, digital transformation, and quality assurance can be achieved using learning practices supported by good knowledge management. According to

Santos et al (2024) and Ferreira et al. (2020), Higher Education Institutions (HEIs) internationally are also utilizing and benefitting from Knowledge Management frameworks. Some European universities incorporate Microsoft Teams and Moodle as part of their best practices in learning management (Stensaker et al., 2017).

A knowledge management in DMMMSU indicates its commitment to quality service and sustainability. When knowledge management in instruction is institutionalized in DMMMSU, it does not only improve instruction but it contributes to the university's bigger goals and global competitiveness.

KM Goals and Objectives

The primary goal of this KM Plan is to enhance the quality of instruction through the adoption of collaborative tools such as Moodle and Microsoft Teams. At present, DMMMSU is utilizing tools with limited features such as Google Meet, Google Classroom, and Facebook Messenger. Thus, leveraging new technology is expected to increase the performance and learning outcomes significantly of students on all campuses in all programs. The plan will include enhanced technological educational skills that cater to the continuous professional development of DMMMSU faculty. It is expected that teachers, instructors, and professors will engage and be committed to this undertaking. Additionally, the plan aims to adopt and integrate Moodle and Microsoft Teams as part of DMMMSU instruction to facilitate teaching effectively, may it be face-to-face or distance learning. Lastly, the plan strives to create effective technological tools for classroom assessment, enabling the assessment and monitoring of students' learning progress even during asynchronous or synchronous classes.

KM strategies and approaches to achieve DMMMSU goals

To achieve KM goals and objectives of DMMMSU instruction, it is essential to apply the following several strategies and approaches. First, the Intercollege Knowledge Collaboration. One of DMMMSU's quality objectives that is related to instruction is to increase the percentage of board passers to 38%. Now, to achieve this, Colleges with topnotchers and high percentage of board passers must share their knowledge and best practices through a knowledge-sharing platform such as Moodle and Microsoft Teams. Inputs from, faculty, staff and even students may include relevant knowledge and information to have improvement in teaching and learning. Also, another strategy is Continuous Development and Review of Curriculum. Colleges with courses having a percentage of board passers lower than the national rate must revisit their curriculum and develop a review process. This should involve all necessary faculty and staff. Third, is Establishment of Communities of Practice. DMMMSU has been involved in numerous Extension Projects and Activities but has not ventured on COP. Different academic departments can work together and include faculty members to share knowledge, learn with pears and develop professionally specifically in the field of instruction. Lastly, is having Content Repositories. It is important to maintain all that material as knowledge sharing becomes ingrained in the organization's culture so that both present and future employees may take advantage of it. Moodle and MS Teams have features that would allow the sharing of educational resources such as, learning plans, learning syllabi, eBooks, online references and other instructional materials in a centralized repository that would be accessible to the faculty member in need.

A work environment where workers support one another's development and share in the organization's knowledge base is advantageous. Results will come from the organization's combined efforts, not simply the activities of a select few. Everyone will thus need to contribute to make it a part of DMMMSU culture.

Strategies for promoting a culture of knowledge sharing and collaboration

For DMMMSU to effectively communicate and promote a knowledge-sharing culture within the organization, several strategies may be used:

- **Mentorships.** Experienced employees can teach and guide less experienced employees for knowledge to be shared. Trained faculty members, especially the IT experts who will be chosen to train for the adoption and utilization of Moodle and Microsoft Teams, shall re-echo and mentor the knowledge received from the rest of the faculty members.
- **Continuous training and workshops**. In conducting continuous training and workshops, knowledge will be easily disseminated, wherein updates for the collaborative tools will be highlighted and shared.

- **Having Collaborative Tools such as Moodle and Microsoft Teams.** The two collaborative tools have unique features that would promote teamwork and partnerships. Faculty Creation of Knowledge Management Team. With the leadership of this team, knowledge can be stored, organised, distributed, and properly managed.

4. THE PROPOSED KNOWLEDGE MANAGEMENT SYSTEM

As Don Mariano Marcos Memorial State University (DMMMSU) continues to evolve into a more complex and interconnected academic institution, the need for a robust and strategic approach to knowledge management becomes increasingly critical. Effective knowledge management (KM) in higher education requires not only a culture of collaboration, openness, and continuous learning, but also the integration of digital tools and processes that facilitate seamless knowledge transfer across disciplines and organizational units. To meet these demands, DMMMSU must embed KM principles into its institutional goals, foster regular interaction among faculty, students, and administrators, and promote a dynamic learning culture that values both formal and informal knowledge exchange.

Central to this transformation is the deployment of a Learning Management System (LMS) integrated with collaborative technologies. LMS platforms have become indispensable not only for online and asynchronous learning but also for enhancing face-to-face instruction. Their role was especially magnified during the COVID-19 pandemic, which exposed gaps in digital infrastructure and underscored the importance of scalable, resilient learning environments. Advanced LMSs now support comprehensive KM functions—such as content curation, feedback loops, and analytics while enabling interoperability through Learning Tools Interoperability (LTI) standards. These features allow seamless integration with third-party applications, enriching the learning experience and supporting personalized, data-informed instruction.

Figure 2 illustrates a model of an LMS powered by the Microsoft 365 Suite, showcasing a wide array of applications that collectively support KM processes. Tools such as Teams, OneNote, SharePoint, Planner, Forms, and Power BI enable students and faculty to collaborate on academic tasks, manage projects, share resources, and analyze learning data. This ecosystem supports the full KM cycle:

- Knowledge capture and creation through apps like Whiteboard, Forms, and Stream
- Organization and storage via OneDrive, Lists, and SharePoint
- Sharing and transfer through Teams, Outlook, and Loop
- Access and retrieval using metadata-enhanced search and centralized repositories
- Assessment and feedback through Power BI, Insights, and Viva Learning

This integration aligns with global best practices in digital transformation for education. Internationally, institutions are leveraging Microsoft-integrated LMS platforms to streamline workflows, enhance collaboration, and improve instructional agility. Nationally, the Commission on Higher Education (CHED) encourages Philippine HEIs to adopt digital ecosystems that support outcomes-based education, faculty development, and institutional resilience.

By adopting this integrated KM system, DMMMSU positions itself to not only improve instructional delivery but also institutionalize knowledge stewardship ensuring that expertise, resources, and innovations are systematically captured, shared, and reused. This strategic move supports the university's broader goals of academic excellence, digital fluency, and global competitiveness.

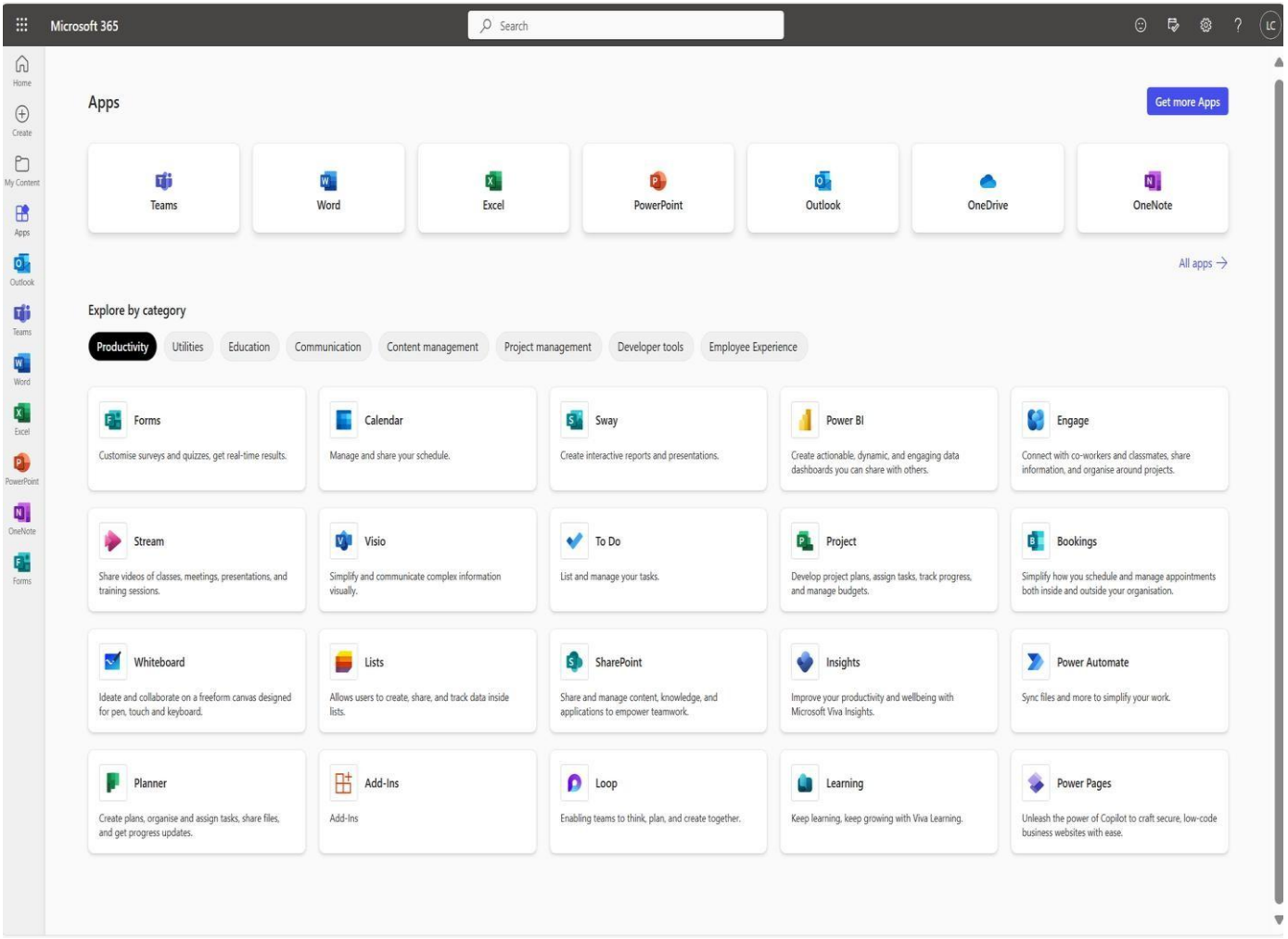

Figure 2: MS Suite integrated in a Learning Management System

While DMMMSU has relied on Google Classroom and Google Meet for its learning management and collaboration needs, these platforms have proven insufficient in addressing the institution's growing demand for a more flexible, scalable, and comprehensive digital ecosystem. Their limited features particularly in content organization, cross-platform interoperability, and data analytics highlight the urgent need to upgrade DMMMSU's technological infrastructure. In response, the university has prioritized the development of a Strategic Knowledge Management System anchored in the integration of Microsoft 365 tools and Moodle, designed to capture, store, organize, share, and assess instructional knowledge across academic units. This initiative seeks to address the fragmented nature of digital practices, mitigate disruptions brought by educational transitions, and reinforce institutional memory and instructional continuity through a culture of knowledge stewardship and innovation.

Moodle

Moodle (Modular Object-Oriented Dynamic Learning Environment) is a free web application for educational purposes. It is based on the philosophy of social constructionist pedagogy, which emphasises the need for collaboration and community building (Devi & Aparna, 2020). The array of resources provided by Moodle is, in aspects, more adaptable than that of Google Classroom. Moodle is structured in order not to induce limitations of spaces and obstruct means of communication. Its goal is to inspire enthusiasm, promote creativity, enhance problem-solving skills, empower learners participating in a learning reality, and promote lifelong learning. In this virtual world of academic training, the experienced anti-spaces should fulfil the gap of physical absence and shortage of teachers and learners, resulting in legitimate interaction, variability of ways of presenting contents, and modelling synchronous and asynchronous, individual and collective dynamics, fertile in significant learning (Elihami et al.2021).

Moodle offers several unique features that aim to facilitate both synchronous and asynchronous web conferencing and highly organised scholarly cooperation. The course design guidelines advise on how to maximise the course potential for different trainers and learners, promoting constructs such as defining a terms table, differentiating descriptions and activities for different days, using conditional activities work instructions, defining course requirements for final evaluation, and allocating points and scores according to different work instructions (Morze et al.2024). The Moodle platform allows the creation of several types of activities by the instructor, such as discussion forums, wikis, e-book resources, quizzes with several question types, and the possibility for chat and scheduled messages. One of the advantages of Moodle compared to Google Classroom is its customization and flexibility. It can be tailored to fit the knowledge management requirements of any educational institution allowing them to adjust the LMS according to their curriculum, teaching and administrative needs (Gamage et al.2022).

Scalability is another area where Moodle outshines Google classroom. It can accommodate thousands of users maintaining consistent performance and reliability across various organisation sizes. It can effectively host through organisation's private servers or cloud-based services enabling them to expand as their base expands and evolves. Moreover, its open-source structure allows organisations maximum control over their data ensuring data protection and privacy concerns (Ukov et al. 2021).

Microsoft Teams

Microsoft Teams stands out for its communication tools combining chat, video calls, meetings and phone calls in one place. This seamless integration not only enhances communication between students and teachers but also facilitates interaction among all members of the institution including administrative staff. On the other hand, Google Meet is effective for classroom communication but primarily focuses on announcements and assignments rather than offering the real time communication features found in MS Teams (Wichanpricha, 2021).

An advantage of Microsoft Teams lies in its integration with the Microsoft Office 365 suite. This seamless connection with applications like Word, Excel, PowerPoint, OneNote, SharePoint and others enables users to collaborate on documents within the platform itself, access files through SharePoint and OneDrive and manage schedules with Outlook (Hlazunova et al.2024). Although Google Meet integrates with Google Workspace, a tool it may not match the versatility of professional tools offered by Microsoft that are widely used in environments reliant on Microsoft products. Moreover, MS Teams offers rooms, which are perfect for dividing a big class into smaller discussion groups. While Google Classroom allows sessions through Google Meet its functionalities are generally not as robust as what MS Teams provides. MS Teams supports an array of third party integrations enabling schools and universities to customise the platform to meet their specific educational and administrative requirements (Hu et al.2022). Although Google Classroom has some integrations, the breadth and simplicity of integration in MS Teams are typically more advanced.

As DMMMSU expands its operations it's essential that its systems can scale effectively. Both Moodle and Microsoft Teams are built to handle a user base and vast amounts of data without performance issues. This scalability ensures that as DMMMSU grows further its educational and administrative capacities can expand seamlessly without requiring system upgrades.

4.1 Knowledge Capture and Creation

4.1.1 Methods and Tools for Capturing Tacit and Explicit Knowledge

Moodle and MS Teams are learning management platforms with powerful features for capturing both tacit and explicit knowledge. Moodle has interactive tools such as Forum, Chat, Glossary and Workshop that can help facilitate tacit knowledge capture. In the Forum and Chat features, teachers and students can engage in sound discussions, Q & A, share experiences, exchange ideas, insights and thoughts promoting tacit knowledge capture. MS Teams has also similar features, like Chat and Meetings/Calls, supporting real-time formal and informal conversations, and video/audio conferencing allowing the capture of knowledge and skills through observation and dialogue.

Lecture videos when combined with written learning materials are proven to be effective instruments for learning (Robertson & Flowers, 2020). Similarly, demonstration is a valuable teaching tool specially for illustrating technical skills (Ekeyi, 2013; R et al., 2019). Therefore, video demonstrations can be used to optimise learning as it can appeal to different learning styles and aid in a more complete understanding of specific processes and procedures. Recorded demonstrations are additional learning materials which give students the opportunity to watch demonstrations repeatedly and acquire tacit knowledge that takes time to grasp. It is a tool in capturing knowledge and building skills. Through the Microsoft Teams, educators can upload this type of learning material in the File Library and students can access it any time on the SharePoint Videos page.

To enhance further the learning acquired, instructors and professors usually allot consultation hours in every subject they handle. This is the time where students can clarify and ask questions which they were not able to raise in class. This support to student learning is an effective tool in student care as it addresses their academic needs (Bignotia et al., 2019). Slow learners can utilize this opportunity to cope up with the pacing of lessons, shy students can ask questions without hesitation and fast learners can inquire higher order questions. It breaks the common barriers and limitations to learning and therefore creating opportunities for capturing and creating new knowledge. This important strategy in addressing common challenges in learning can also be done virtually as the schedule of consultation hours can also be customised in Moodle.

Moreover, students' academic success is fostered through collaboration (Awang-Hashim et al., 2023). Tertiary students are typically more outspoken in expressing their comprehension and offering their views with their classmates. Therefore, it is essential to encourage teamwork in doing projects and to resolve shared problems encountered in the classroom. Students will be motivated to participate in thoughtful conversations if they are provided with a platform and tools for collaboration. Moodle's Workshop activities enable students to collaborate and assess each other's work thereby promoting tacit knowledge capture and flow. It also has the Glossary tool where teachers and students can contribute and share terminologies, enriching the collective understanding of ideas and insights of the class. Additionally, MS Teams has channels reserved for specific topics or projects enabling focused discussions for knowledge sharing and accumulation. Its digital whiteboard feature allows teachers and students to brainstorm and conceptualise collaboratively, capturing tacit knowledge as it is generated.

Moodle integrated with MS Teams facilitates explicit knowledge capture through its methods and tools. Moodle's Quizzes, Assignments, and Wikis allow the capture of explicit knowledge in a structured format through students' work submissions. Furthermore, MS Teams Planner helps students and teachers to manage tasks related to document processes, workflows and project plans capturing explicit knowledge related to project management.

4.1.2 Processes for Creating New Knowledge through Innovation and Collaboration

Academic setting is an ideal place where knowledge creation occurs every moment. With innovation and collaboration, new ideas, approaches, and solutions are born daily. Microsoft Teams can be effectively used as a knowledge creation tool due to the effectiveness of collaboration realised on the platform. Users can set up think tanks, discussions forums and brainstorming sessions on MS Teams and encourage sharing the ideas irrespective of how brilliant or dissenting they can be. Since MS Teams allow a variety of media to be uploaded and shared, those seeking to contribute can use texts, audios or videos as responses and remarks. For instance, on Moodle, some instructors may task students to work on a project where the course concepts are used with the purpose of solving real-life situations. The project itself can serve as new knowledge, as it results in the creation of new valuable information. Another example can be setting up research groups or communities of practice where similar interests of faculty and students share and discuss ideas, research, trends, and innovation taking place regarding the subject or area of investigation.

4.1.3 Roles and Duties in Knowledge Gathering and Development

The following are the key people to effective knowledge management. Their role is to ensure that the processes of gathering and creating knowledge are organised and sustainable.

- A Knowledge Management Officer will oversee the KM procedures and ensure that tools like Moodle and MS Teams are utilised effectively for capturing and producing knowledge.
- Faculty Members will be responsible for capturing both implicit and explicit knowledge. Tacit knowledge is captured through their teaching methods and interactions on MS Teams while explicit knowledge is documented as they create and share course materials on Moodle.
- The IT Support Team is not only responsible for infrastructure maintenance necessary in the KM systems' operation but also for providing the needed technical assistance to faculty and students.
- Students will contribute to knowledge creation through their participation in discussions, projects and feedback mechanisms.

4.2 Knowledge Organization and Storage

4.2.1 Taxonomy and classification schemes for organising knowledge assets.

Moodle and MS Teams have well-structured taxonomy and classification schemes. Both support hierarchical organisation simplifying content management and navigation. In Moodle, course creators can organise courses into categories (English, Mathematics, Business, etc.) and subcategories- for example Trigonometry, Algebra, etc. under the mathematics category. And in each subcategory, contents can be divided into topics or sections. Moreover, Moodle site is managed by administrators who can assign, re-assign and remove users (course creators, teachers and students) to effectively monitor and regulate site access and permissions. MS Teams also features a taxonomy and classification scheme like Moodle differing only in terminologies and focus. Courses or Projects are created in Teams, with each team is the channel for the specific topics or tasks and inside each channel are tabs for specific contents and tools. Owners, with permissions, have the authority overseeing team setting, management, and membership. With permissions, Team members engage in team tasks and contribute content. And guests with restricted access can only view and take part in specific activities.

4.2.2. Selection of Knowledge Repositories

As LMS, Moodle with MS Teams provides a range of powerful features for generating, storing and managing knowledge repositories. The course content storage can store vast amounts of course related information- course materials, students' submissions, student's assessments, results and analytics, feedback, etc.- administrative documents and operational data. Different types of resources such as labels, URLs, pages, books etc., can be connected, embedded or uploaded directly into the course environment allowing easy access and retrieval. It seamlessly integrates with other repositories like Wiki's, OneDrive Dropbox, etc. allowing teachers and students to directly link and import resources.

4.2.3 Metadata Standards and Tagging Conventions

Moodle integrated with MS Teams includes various features for metadata standards and tagging conventions to effectively organise, access and retrieve educational and administrative contents. It includes metadata for Courses (course name, description, ID, category, start and end dates, etc.), Resources (type, name, description, visibility settings, etc.), and Users role (teacher, student, enrolment status, guest). Moodle's metadata features also include tracking data, for activity completion. This information indicates whether students have viewed a resource or finished an activity. This aspect adds dynamism to the metadata system enabling instructors to track student progress.

Additionally, Moodle provides effective tagging features for robust content organisation, searchability and user engagement. This platform allows for tagging at both course level and site level aiding in categorising and accessing content from courses. In MS Teams, channels can be grouped by topics, projects or departments with each channel having its unique set of tags. This helps users quickly find the channel and access the information they require. When files are shared in Teams or stored in SharePoint (through MS Teams) they adopt the extensive metadata capabilities of SharePoint. Users can assign metadata like project names, document types (report, proposal, invoice) and other custom fields set by the organisation.

4.3 Knowledge Sharing and Transfer

4.3.1 Channels and platforms for sharing knowledge across the organisation

Moodle offers the option to design courses with a mix of multimedia elements like videos, documents and interactive tasks. These courses can become resources for sharing knowledge within the organisation on a long-term basis. It has features that enables the organisation to establish and manage databases containing practices, templates or other useful materials that employees can access and contribute to the knowledge base fostering a culture of learning and knowledge exchange. Integration with MS Teams, enables the creation of channels for various topics, projects or teams. These channels facilitate information sharing to ensure it reaches the appropriate individuals promptly. Through MS Teams, it can seamlessly integrate with SharePoint and OneDrive streamlining the process of sharing documents and collaborating on them in real time promoting not only knowledge sharing but also collaborative knowledge development.

4.3.2 Training and Development Programs to Facilitate Knowledge Transfer

Moodle with MS Teams offers extensive features supporting training and development programs to facilitate knowledge transfer. It provides flexibility to create training programs designed to bridge skill deficiencies within the organisation. Diverse assessments and interactive learning activities features can guarantee achievement of the learning outcomes. Its integration with MS Teams makes Moodle capable of hosting live training sessions, webinars and digital classrooms that can be recorded and shared with others, thereby promoting knowledge sharing and collaboration. It can also integrate with other LMS and collaborative tools enhancing the effectiveness of training initiatives.

4.3.3 Communities of Practice (CoP) and Other Knowledge Exchange Forums

Structured Course Management, Collaborative Tools, Communication and Interaction, Group Management, Resource Sharing, Tracking and Reporting, Accessibility, and Customization and Flexibility are comprehensive features of Moodle (integrated with MS teams) instrumental in creating and sustaining Communities of Practice. These features provide a common ground for learning environment's best practices, knowledge sharing, and continuous learning helping CoPs to achieve their goals.

4.4 Knowledge Access and Retrieval

4.4.1 Access Control and permissions for managing knowledge access

Moodle (with MS Teams) implementation of Role Based Access Control (RBAC) system safeguards that all users have the necessary information to effectively carry out their roles. For instance, students can view course materials, submit assignments, take quizzes and receive results and feedback while faculty can manage the course, grade assignments, and access resources intended only for them. Its access control and permission system are designed to provide control on what teachers, students and guests can view and do within the platform. Additionally, Moodle ensures that knowledge and resources are accessible only to those with appropriate permissions, thereby providing a more secure and organised learning environment.

4.4.2 Search Capabilities and Tools for Retrieving Relevant Information

Moodle (with MS Teams) offers a range of tools designed to help teachers, students, and administrators efficiently retrieve information related to courses, resources, analytics and other user-generated content essential to their roles. Firstly, students can easily find course materials and assignments, post specific topics and ask questions in forums. Secondly, teachers can quickly locate specific resources, activities, and students' submissions streamlining course management. And lastly, administrators can effectively manage course, users and site-wide search to retrieve relevant information. With its global search feature, it can be integrated with powerful search engines like Solr and ElasticSearch ensuring efficient access to contents the users need.

4.4.3 User interfaces and navigation structures for ease of access.

Moodle's user-friendly interface design, navigation structures, accessibility features, user training support, administrative tools, and continuous improvements and updates ensure easy access and use for diverse users. Moreover, its adaptive design allows full operation on other devices, including smartphones, tablets, laptops and desktop computers.

4.5 Knowledge Assessment and Feedback

An essential component of DMMMSU's Knowledge Management System (KMS) is a robust and continuous process of knowledge assessment and feedback, embedded within the integrated functionality of Moodle and

Microsoft Teams. This stage ensures that captured instructional knowledge leads to informed decision-making, improved learner outcomes, and ongoing pedagogical innovation.

4.5.1 Assessment Mechanisms

Through Moodle, faculty members can deploy diverse formative and summative assessments such as:

- Quizzes, assignments, and forums with automated grading and analytics.
- Rubric-based evaluations to align with program-level outcomes.
- Outcome mapping tools for tracking alignment with CHED-mandated learning competencies.

Microsoft Teams complements this by:

- Enabling real-time presentations and oral defenses using Teams Meeting integration.
- Supporting adaptive group assessments via integrated apps like Forms, Whiteboard, and OneNote.
- Facilitating peer reviews and collaborative feedback using shared class notebooks and threaded discussions.

4.5.2 Feedback Loops

Effective feedback mechanisms are crucial for knowledge refinement. The system encourages:

- Instructor-to-student feedback via annotations, voice notes, and interactive rubrics.
- Student-to-instructor input through surveys, Microsoft Forms, or Viva Insights.
- Automated progress tracking, giving learners insights into strengths and gaps via LMS dashboards and Power BI visualizations.

4.5.3 Data-Informed Insights

The KMS uses analytics dashboards and learning data to guide instructional decisions:

- Power BI integration enables faculty to visualize class performance, engagement levels, and content effectiveness.
- Activity logs and completion reports in Moodle offer granular insights for both instructors and administrators.
- Feedback summaries help assess knowledge dissemination efficiency and flag areas of instructional inconsistency.

4.5.4 Institutional Knowledge Reflection

At the organizational level, feedback becomes actionable knowledge through:

- Regular KM committee reviews of feedback metrics.
- Faculty development sessions based on performance analytics.
- Repository enhancement, faculty share revised materials to LMS knowledge banks for future reuse and refinement.

4.5.5 Benefits to DMMMSU's Instructional Ecosystem

By implementing this knowledge assessment and feedback cycle, DMMMSU ensures:

- Evidence-based instructional enhancements across departments.
- Continuous learner support through responsive feedback designs.
- Improved institutional memory, reducing redundancy and preserving pedagogical insights.

5. GOVERNANCE AND LEADERSHIP

1. ROLES AND RESPONSIBILITIES OF KM GOVERNANCE BODIES AND LEADERS

A.1. University President

The President of the University shall manage and direct the implementation of the Learning Management System, cooperate with the LMS Committee to define priorities for Knowledge Management Programs, organize and supervise their implementation, ensure an efficient management and use of Learning Management System.

A.2. Vice President for Academic Affairs

The Vice President for Academic Affairs is the head academic officer of the institution and has the responsibility for education policy as well as academic programs. This encompasses reviewing and enhancing

LMS, evaluating student learning, promoting student advancement, formulating budgets, designing programs and curricula and stimulating better teaching and learning.

A.3. Campus Chancellors

Campus chancellors at NLUC, MLUC, SLUC, and OUS will provide hands-on assistance and guidance during various faculty training sessions. They will pay close attention to the challenges that arise as the new LMS is rolled out - their comments and suggestions should be submitted to the Oversight Committee leading the LMS rollout. Therefore, one approach to providing support is to develop through feedback loops involving senior academic management leadership to resolve impasses within the policy implementation system.

A.4. Director for Instruction

The role of the director of instruction is critical in leading curriculum and instructional improvements within the school system. They coordinate the entire instructional program and emphasize the need for continuous improvement of curriculum and instructional programs to achieve excellence in public education. Directors play a central role in the development and implementation of programs designed to improve the service and professionalism of trainers and ensure compliance with relevant agency regulations and guidelines. In addition, they are involved in educational support and supervision to improve teaching performance, emphasizing the importance of teacher training and capacity building to improve educational practice. Overall, classroom leaders are key players in improving the quality of school education and creating a conducive learning environment.

A.5. Deans/Program Chairs

The Dean and Program Director will develop and oversee the strategic vision for the institution's academic programs and the effective use of the learning management system, align the learning management system and instructional strategies with the overall mission and goals of the institution, and identify and implement new technologies or improvements in instructional methods. Learning experiences, managing budgets and allocating resources (e.g., funding, staff, technology) to support the effective implementation of learning management systems and instructional plans, providing training and professional development opportunities for teachers to effectively utilize learning management systems and best teaching practices, developing learning Manage system usage policies and guidelines and ensure compliance with agency and regulatory requirements.

A.6. Faculty

Instructors should master the features and functionality of an LMS to teach course content, engage students, and facilitate learning. They should receive training and support from the institution to improve their skills in integrating learning management systems into teaching practice. Faculty are responsible for developing course materials, assessments, and activities within the LMS platform. You should design learning experiences that leverage the capabilities of your learning management system to increase student engagement and learning outcomes. Teachers are the primary point of contact for students within the learning management system, providing advice, feedback and support. They should answer student questions, monitor student progress, and provide timely feedback through the learning management system. Teachers use LMS to manage assessments such as quizzes, quizzes, and assignments, and to provide feedback to students. You should leverage the data and analytics capabilities of your learning management system to monitor student performance and identify opportunities for improvement.

Faculty provide feedback and suggestions to program directors and deans regarding the effectiveness of the learning management system and possible opportunities for improvement. You will participate in the assessment and evaluation of the LMS, thereby contributing to the ongoing improvement of the institution's teaching environment.

A.7. IT Experts

IT specialists manage e-learning services, technical support and course delivery systems, select e-learning technologies that emphasize factors such as reliability, student data security, ease of use and effectiveness, and provide e-learning support to teachers and staff.

2. POLICIES AND PROCEDURES FOR MANAGING KNOWLEDGE ASSETS

B.1. Faculty Course Development

a. Teachers must complete training before teaching online courses to improve teaching techniques and methods and redesign courses to accommodate online courses.

b. Learning activities for online courses will be developed in accordance with DMMMSU's in-person instruction policy. Online instructors are encouraged to promote and demonstrate positive online interactions.
c. Instructors will follow the same course content guidelines when teaching online. Courses must include faculty demographic information, school and department name, office hours, start and end dates, final exam time, course description, textbook, goals and objectives, measurable learning outcomes, student evaluations, mission, attendance policy, etc. Essay policy, assessment methods, course schedule and rubrics.
d. Instructors must submit a copy of the latest syllabus/study plan for all subjects covered prior to the start of the course. Teachers working on the same topic should work together to update the content and reform of courses and study plans. Teachers are guided by the curriculum/study plan.
e. Follow a course development process to ensure that online and hybrid courses are designed to help students develop the knowledge and skills needed to achieve measurable course-level learning objectives.
f. Faculty teaching online courses must meet the needs of students with disabilities and limited abilities and accommodate or support this population whenever possible.

B.2. Online Course Scheduling

a. Scheduling for online and hybrid courses follows the same process as in-person courses.
b. Courses will be conducted according to the approved schedule. Any changes must be approved by the Chancellor.

B.3. Ownership of Material

a. DMMMSU holds the copyright for all materials published by the institution, whether in print or electronic format. In some cases, the work remains the intellectual property of the individual author.
b. Faculty who wishes to use the intellectual property of others must obtain permission from the faculty member who produced the intellectual material or acknowledge the producer when distributing his or her material.

B.4. Identity Verification

a. Online student authentication and identity are protected by the username and password used to access the LMS. A secure login and password are required to access student accounts.

B.5. Late Registration/Adding or Dropping Subjects

a. Student registration deadlines will be announced via email and on the DMMMSU official website.
b. The same late registration policy and schedule apply to students taking online courses.
c. Students taking online courses can add and drop courses within the time specified by the registrar's office.

B.6. Submission of Activities

a. Punctuality should be always maintained as stated in the DMMMSU Faculty Handbook.
b. Students should abide by the academic calendar and deadlines published by professors.

B.7. Examination and Grading System

a. The schedule for midterm and final examinations will be established by the Registrar and approved by the Chancellor/Executive Director. Faculty members shall administer their midterm and final examinations as scheduled. Any deviation should be communicated to the Program Chair.
b. At the beginning of the semester, faculty members should inform their students on the criteria for grading. Some aspects that can be considered for grading are: periodic examinations, term papers, projects, oral report/presentation, and class participation. The weight allocation for each aspect is dependent on what needs to be given emphasis by the faculty.
c. Examinations are an integral part of instruction and shall be administered by the faculty member concerned in accordance with the University policies as a basis for evaluating student performance.
d. The "INC" mark denotes a class standing which is passing throughout the term without the final examination and/or certain requirements of the course. Completion is a special examination and/or submission of requirements within one (1) school year; otherwise, a grade of "5.00" shall be automatically entered in the student's permanent records by the Registrar.

B.8. Reporting Cases of Cheating and Other Forms of Dishonesty

a. Any form of dishonesty and/or deceit, especially cheating during oral/written examination or any class work using any medium, shall be subject to penalty as provided for in the Student Code of Discipline.

3. MECHANISMS FOR ENSURING COMPLIANCE WITH LMS POLICIES AND STANDARDS

C.1. KM Audits and Assessments

a. Conduct periodic reviews and analysis of the use and implementation of the institution's LMS, scope, timeline and key performance indicators. From this analysis, the areas of noncompliance, improvement of KM processes and management of ongoing KM initiatives will be determined.

b. Faculty members should be regularly reporting on the efficacy of their LMS use.

c. Student perceptions of the LMS Implementation will be measured using the outcome measure of a survey instrument at the end of the term.

C.2. Training and Awareness Program

a. The faculty members must attend workshops and training that will be provided by the LMS manager which has all information about that tool. He/she will also have online reference materials before entering the first semester of teaching this new course, and faculty members will have chances to attend these training sessions by academic year. This type of training will give enough tools, limits, and real- time delivering of teaching.

b. Provide instructions to students on how to navigate the course in the LMS Dashboard.

c. Train the faculty members and students on how the system should be used and understand the data privacy and security measures.

CONCLUSION AND RECOMMENDATION

This paper presented a Strategic Knowledge Management Plan for Don Mariano Marcos Memorial State University which intends to provide a new structured approach to the institution's learning management system. It could serve as a basis in implementing new knowledge management strategies, choosing a learning management system platform, and creating a knowledge management committee for the institution.

Adopting a robust Learning Management System (LMS) such as Moodle integrated with MS Teams is a powerful solution to address the increasing need of DMMMSU to manage its expanding knowledge base and to mitigate the challenges brought by education disruptions. The advanced features of these LMSs create an interconnected environment that supports all facets of delivery and instructions. It tackles the limitations of Google Classroom and Google Meet by providing greater flexibility, scalability and customization options. Together, they enhance not only synchronous and asynchronous learning but also face-to-face or physical classes.

Moodle's open-source nature, adaptability and extensive resources combined with MS Teams seamless communication and collaboration capabilities enable DMMMSU to tailor the LMS to fit into its educational needs and ensure an effective knowledge capture and creation, storage and retrieval, and transfer and sharing. These platforms facilitate management of both tacit and explicit knowledge, promoting knowledge creation and distribution.

The role-based access control and advanced metadata features in both Moodle and MS Teams ensure secure, organised, and efficient management of educational content. Their integrated search capabilities and user-friendly interfaces further enhance the accessibility and usability of knowledge resources. As DMMMSU continues to expand, the scalability of Moodle and Teams will support its growing user base and data management needs without compromising performance.

Implementing this LMS, DMMMSU can foster a culture of continuous learning and collaboration and successfully navigate the ever-changing educational landscape. This initiative will ensure that DMMMSU

achieves its goal of providing instructional innovation, quality education and effective knowledge management for its stakeholders.

The University Knowledge Management System, especially in the area of instructional support, the proponents strongly recommend a set of targeted strategic actions. First, a comprehensive review of the Proposed Knowledge Management Plan should be conducted by both the university institutional planning, MIS, and Academic Affairs to assess its feasibility, relevance, and alignment with institutional goals. The outcome of this consensus is an input to revisions. It should be made where necessary to refine the framework and ensure its effectiveness. Finally, the university is encouraged to institutionalize the adoption and implementation of the plan to promote instructional innovation, enhance digital resource management, and support sustainable knowledge-sharing practices across all levels.

REFERENCES

[1] Abell, A., & Oxbrow, N. (2006). Competing with knowledge: the information professional in the knowledge management age. Facet Publishing.

[2] Al-Kurdi, O. F., El-Haddadeh, R., & Eldabi, T. (2020). The role of organisational climate in managing knowledge sharing among academics in higher education. International Journal of Information Management, 50,217-227.https://doi.org/10.1016/j.ijinfomgt.2019.05.018

[3] Asian Development Bank. (2021). *Improving instructional quality: Focus on faculty development*.

[4] Awang-Hashim, R., Yusof, N., Benlahcene, A., Kaur, A., & Shanmugam, S. K. S. (2023). Collaborative learning in tertiary education clasooms:what does it entail? Malaysian Journal of Learning & Instruction/Malaysian Journal of Learning & Instruction, 20. https://doi.org/10.32890/mjli2023.20.2.1

[5] Berdrow, I. (2010). King among kings: Understanding the role and responsibilities of the department chair in higher education. Educational Management Administration & Leadership, 38(4), 499-519. https://doi.org/10.1177/1741143210368146

[6] Bichsel, J. (2013). The state of e-learning in higher education: An eye toward growth and increased access (Research Report). EDUCAUSE Center for Analysis and Research. https://library.educause.edu/-/media/files/library/2013/6/ers1304.pdf

[7] Bignotia A. T., Abadiano C., & Alhambra C. M.. (2019). Evaluation of the university consultation hours in the learning journey of college students of SPU Manila SY 2018-2019. Journal of Advances in Humanities and Social Sciences

[8] Cheng, E. C. K. (2018). A normative knowledge management model for school development. *International Journal of Learning and Teaching*, 4(1), 76–82.

[9] Demir, A., Budur, T., Omer, H. M., & Heshmati, A. (2023). Links between knowledge management and organisational sustainability: does the ISO 9001 certification have an effect? Knowledge Management Research & Practice, 21(1), 183–196. https://doi.org/10.1080/14778238.2020.1860663

[10] Devi, K. S. & Aparna, M. (2020). Moodle–An effective learning management system for 21st century learners. Alochana Chakra Journal. researchgate.net

[11] Don Mariano Marcos Memorial State University. (2022). New Student Code of Discipline. Retrieved from https://sites.google.com/view/student-affairs-and-services/student-discipline

[12] Don Mariano Marcos Memorial State University. (2020). Faculty manual 2020 edition.

[13] Don Mariano Marcos Memorial State University. (2023). History of DMMMSU. Retrieved from https://www.dmmmsu.edu.ph/history-of-dmmmsu/

[14] EdTech Books. (2023). Learning Management Systems: Stakeholders and Usability. Retrieved from https://edtechbooks.org/learning_management_systems/stakeholders_and_usability

[15] Ekeyi, D. N. (2013). Effect of demonstration method of teaching on students' achievement in agricultural science. World Journal of Education, 3(6). https://doi.org/10.5430/wje.v3n6p1

[16] Elihami, E., Musdalifah, M., & Hasan, H. (2021, February). Increasing the higher of think through moodle application: The effects of learning procees in the higher education system. In Journal of Physics: Conference Series (Vol. 1783, No. 1, p. 012054). IOP Publishing. iop.org

[17] Ferreira, J., Mueller, J., & Papa, A. (2020). Strategic knowledge management: Theory, practice and future challenges. Journal of Knowledge Management, 24(2), 121–126.

[18] Gamage, S. H., Ayres, J. R., & Behrend, M. B. (2022). A systematic review on trends in using Moodle for teaching and learning. International journal of STEM education, 9(1), 9. springer.com

[19] Hermanto, F. M., (2022). The director's strategy in improving the services of education and skills training participants sailers on politeknik pelayaran malahayati. Jurnal Curere, doi: 10.36764/jc.v6i1.716

[20] Hlazunova, O. H., Korolchuk, V. I., & Voloshyna, T. V. (2024). Digitalization of Education in a School on the Basis of Microsoft Teams Platform: Effectiveness of Synchronous and Asynchronous Learning. In Leading and Managing Change for School Improvement (pp. 198-234). IGI Global. [HTML]

[21] Hu, X. E., Hinds, R., Valentine, M., & Bernstein, M. S. (2022). A" Distance Matters" Paradox: Facilitating Intra-Team Collaboration Can Harm Inter-Team Collaboration. Proceedings of the ACM on Human-Computer Interaction, 6(CSCW1), 1-36. [PDF]

[22] Iacuzzi, S., Fedele, P., & Garlatti, A. (2021). Beyond Coronavirus: the role for knowledge management in schools responses to crisis. Knowledge Management Research & Practice, 19(4), 433–438. https://doi.org/10.1080/14778238.2020.1838963

[23] Jzero. (2024). Ensuring LMS compliance with global educational standards. JzeroBlog. https://jzeroblog.com/2024/05/16/ensuring-lms-compliance-with-global-educational-standards/

[24] Li, C., Ashraf, S. F., Shahzad, F., Bashir, I., Murad, M., Syed, N., & Riaz, M. (2020). Influence of knowledge management practices on entrepreneurial and organizational performance: a mediated-moderation model. Frontiers in Psychology, 11, 577106.https://doi.org/10.3389/fpsyg.2020.577106

[25] Mikalauskienė, A., & Atkočiūnienė, Z. O. (2019). Knowledge management impact on sustainable development. Montenegrin Journal of economics, 15(4), 149-160.10.14254/1800-5845/2019.15-4.11

[26] Mohammed, A. A. (2022). Assessing the Success of the Perceived Usefulness for Knowledge Management Systems: A Case Study of Iraqi Higher Education. International Journal of Knowledge Management (IJKM), 18(1), 1-24. http://doi.org/10.4018/IJKM.291098

[27] Morze, N., Terletska, T., & Varchenko-Trotsenko, L. (2024, May). Implementing innovative teaching methods for asynchronous learning using Moodle LMS. In CEUR Workshop Proceedings (No. 3679, pp. 147-163). CEUR-WS, Німеччина. kubg.edu.ua

[28] Ohlone Community College. (2013). Vice President, Academic Affairs (Academic Management). Ohlone Community College.

[29] Pellegrini, M.M., Ciampi, F., Marzi, G. and Orlando, B. (2020), "The relationship between knowledge management and leadership: mapping the field and providing future research avenues", Journal of Knowledge Management, Vol. 24 No. 6, pp. 1445-1492. https://doi.org/10.1108/JKM-01-2020-0034

[30] Robertson, B., & Flowers, M. J. (2020). Determining the impact of lecture videos on student outcomes. Learning and Teaching, 13(2), 25–40. https://doi.org/10.3167/latiss.2020.130203

[31] R, P., Omprakash, A., & Kumar, A. (2019). Video demonstration as a teaching-learning method for a core clinical skill among undergraduate medical students: An interventional study. National Journal of Physiology, Pharmacy and Pharmacology, 0, 1. https://doi.org/10.5455/njppp.2019.9.0310629032019

[32] Shannak, R., Masa'deh, R., & Akour, M. (2012). Knowledge management strategy building: Literature review. European Scientific Journal, 8(15), 143-168.

[33] Shujahat, M., Sousa, M. J., Hussain, S., Nawaz, F., Wang, M., & Umer, M. (2019). Translating the impact of knowledge management processes into knowledge-based innovation: The neglected and mediating role of knowledge-worker productivity. Journal of Business Research, 94, 442-450.https://doi.org/10.1016/j.jbusres.2017.11.001

[34] Stensaker, B., Bilbow, G. T., Breslow, L., & van der Vaart, R. (2017). *Strengthening teaching and learning in research universities*. Palgrave Macmillan.

[35] Ukhov, P. A., Ryapukhin, A. V., Biriukova, N. A., Biryukova, A. K., & Borschenko, D. A. (2021). Comparison of two platforms for distance learning students of Moscow Aviation Institute: Microsoft Teams and LMS Moodle. Revista de la Universidad del Zulia, 12(35), 181-193. unirioja.es

[36] Wichanpricha, T. (2021). Synchronous online learning through Microsoft Teams at tertiary level: Academic English course. Journal of Educational and Social Research, 11(5), 123-140. semanticscholar.org

[37] Zheng W., Yang B. & McLean G. N. (2010). Linking organizational culture, strategy and organizational effectiveness; mediating role of knowledge management. Journal of Business Research, 63,763-771

ACKNOWLEDGMENTS

The researchers are sincerely grateful to the administrators of Don Mariano Marcos Memorial State University (DMMMSU) and the faculty of the College of Graduate Studies of DMMMSU Mid-La Union Campus (MLUC) for their strong support, guidance, and scholarly insights from the conception up to the completion of this study. Moreover, the researchers are deeply appreciative of the teaching and instruction personnel, students, and other stakeholders who willingly shared their precious time, effort, and insights to strengthen the rigor and relevance of this work. A heartfelt thanks is also extended to the researchers' family, friends, and colleagues for their unwavering support and encouragement. Above all, this work is would not be made possible without the Lord Almighty's loving guidance, wisdom, and inspiration.