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EFFECTIVENESS OF THE TEACHING STRATEGIES OF THE LIBRARY AND INFORMATION SCIENCE FACULTY MEMBERS

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ABSTRACT

This study explores the effectiveness of various teaching strategies employed by Library and Information Science (LIS) faculty members in both face-to-face and online learning environments. Grounded in behaviorism, cognitivism, connectivism, and constructivism, the research evaluates strategies such as lectures, brainstorming, role-playing, independent learning, simulations, project-based methods, and the use of community resources. These approaches were assessed for their impact on student engagement, learning outcomes, and academic satisfaction among 324 Bachelor of Library and Information Science (BLIS) students across selected institutions in the National Capital Region (NCR). The quantitative research design utilized stratified random sampling and a structured survey instrument. Statistical analyses revealed that the Lecture Method was the most effective strategy in face-to-face settings, while Independent Learning ranked highest in online environments. Although teaching strategies demonstrated overall effectiveness, significant differences emerged between modalities. For instance, lectures and role-playing were more effective in physical classrooms, while independent learning excelled in virtual formats. Brainstorming and community resources showed consistent effectiveness across both environments. Despite these findings, the study identified several challenges in the implementation of teaching strategies within Library and Information Science (LIS) education, particularly in relation to limited resources, technical barriers, and communication difficulties. These challenges can impact the overall effectiveness of teaching methods, particularly in online environments where student engagement and real-time feedback can be limited. To address these issues, it is recommended that academic institutions implement regular faculty training sessions, which focus on both pedagogy and technology integration. This would help faculty stay up to date with innovative teaching methods and tools, enhancing the learning experience for students. Moreover, a shift toward more student-centered pedagogical approaches can further engage students, allowing them to take more ownership of their learning. This could include more interactive and flexible assignments and learning formats tailored to individual student needs. Additionally, enhancing the curriculum to better align with the evolving demands of LIS education is essential. This could involve incorporating more digital tools and resources, along with practical applications, to ensure that students are well-prepared for the ever-changing field of Library and Information Science. In conclusion, this study contributes to a deeper understanding of effective teaching practices in LIS education and provides actionable insights for academic institutions, educators, and policymakers. By addressing the identified challenges and implementing these recommended strategies, institutions can not only improve the quality and effectiveness of teaching but also foster dynamic and inclusive learning environments that promote academic excellence and empower students to succeed in their academic and professional endeavors.

KEYWORDS: Polytechnic University of the Philippines, Master in Library and Information Science, Teaching Strategies, Library and Information Science Faculty Members.

CHAPTER 1

THE PROBLEM AND ITS SETTINGS

INTRODUCTION

In the field of Library and Information Science (LIS) education, faculty members' teaching strategies have a significant impact on students' learning outcomes. Studies have shown that information literacy can be successfully integrated into various disciplines (Clairoux et al., 2013), as well as positive results from library staff advocating for curriculum integration (Stubbings & Franklin, 2006). In the field of education, instructors are the foundation that shapes the intellectual futures of the next generation. They do more than just provide information; they also generate knowledge, foster critical thinking, and maintain academic integrity (OpenOregon, 2020). This responsibility is especially important in the field of Library and Information Science (LIS), where critical thinking and information literacy are essential (MacDonald, 2023).

The Commission on Higher Education (CHED) acknowledges the significant contribution of faculty in LIS, as highlighted in CMO 24 s. 2015 (PhilippineGo, 2023). This memorandum emphasizes the necessity for LIS educators to possess both subject matter expertise and teaching proficiency. LIS faculty members are tasked with nurturing curiosity, improving research skills, and deepening the understanding of information sciences, thus acting as stewards of knowledge dissemination (Raju, 2023).

Assessing the teaching effectiveness of LIS faculty is critical in light of these expectations. While expertise in the subject matter is essential, strong communication skills are equally vital (Simonson, 2021). Understanding the instructional strategies employed by LIS educators is crucial to enhancing student learning outcomes and fostering a positive educational environment (Santos, 2021).

As higher education evolves with new pedagogical approaches, technological advancements, and changing societal demands, the role of LIS academic staff becomes increasingly important (Levine, 2021). According to CHED Memorandum Order (CMO) No. 24 series of 2015, the LIS program demands professionals who possess comprehensive knowledge of the subject and effective teaching skills to prepare future information specialists (CHED, 2015). This memorandum emphasizes the importance of expertise in information management, knowledge organization, and information technology, alongside pedagogical skills (Pangantihon, 2020).

Despite the increasing interest in effective teaching strategies across disciplines, there is a notable research gap in LIS education. Existing literature lacks a thorough examination of the teaching strategies used by LIS faculty, which limits our understanding of how these educators can enhance student learning, engagement, and satisfaction. Addressing this gap is essential for designing faculty development initiatives aimed at improving effectiveness of teaching strategies in Library and Information Science education.

This study aims to explore the various teaching strategies employed by LIS educators and assess their effectiveness. It seeks to provide a comprehensive analysis of the learning experience by focusing on student perceptions and evaluations of teaching strategies. It targets to determine the specific instances where teaching strategies meet or fall short of student expectations (Fisher, 2023).

Theoretical Framework

This study utilizes four foundational learning theories—Behaviorism, Cognitivism, Connectivism, and Constructivism—to analyze the effectiveness of various teaching strategies in Library and Information Science (LIS) education. These theories provide a framework for understanding how each teaching strategy is implemented and how students engage with and process their learning experiences. Behaviorism focuses on observable behaviors and guides the assessment of lecture methods, emphasizing structured content delivery and measurable outcomes. Cognitivism, which centers on mental processes, informs the evaluation of independent learning by promoting deeper cognitive engagement, self- direction, and active knowledge processing. Connectivism emphasizes the role of technology and community resources in learning, offering insight into how networks and tools can enhance access to knowledge. Finally, Constructivism stresses the importance of experiential learning, shaping the evaluation of participatory strategies such as brainstorming, role-playing, simulations, and project-based learning.

By integrating these theories, the study provides a comprehensive framework to assess the impact of different teaching strategies on students' learning experiences. The key strategies—lecture method, brainstorming, role-playing, independent learning, simulation, project method, and the use of community resources—are adapted from these theories to formulate the Statement of the Problem, which aims to evaluate the effectiveness of these strategies.

The survey questions were designed to align with these theoretical perspectives, ensuring that the analysis accurately captures the effectiveness of each strategy. Beyond evaluating teaching methods, this approach also identifies areas for improvement, offering practical insights for the development of more effective teaching strategies in LIS education.

Conceptual Framework

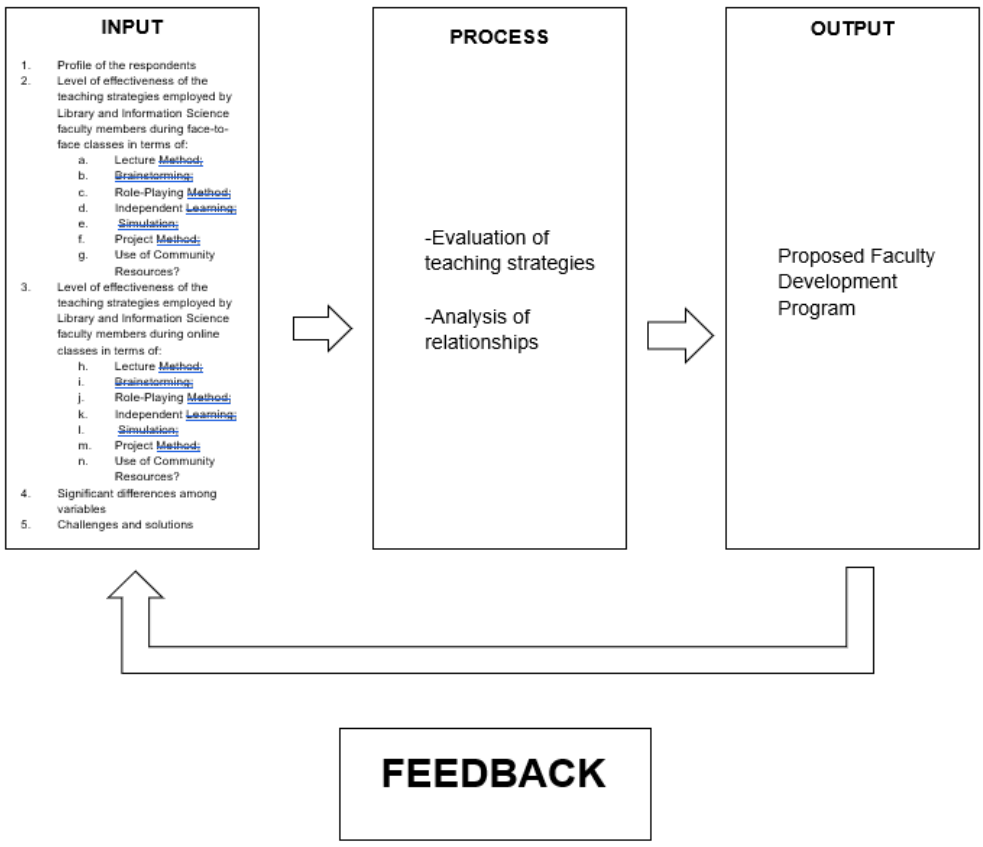

Figure 1: ***Paradigm of the Study.***

The conceptual framework utilized for this study derives from the Input- Process-Output (IPO) framework that shows the overall outline of the study. The input consists of the following: 1.) demographic information about respondents, including age, year level and academic performance; 2.) The level of effectiveness of the teaching strategies employed by Library and Information Science faculty members during face-to-face classes; 3.) The level of effectiveness of the teaching strategies employed by Library and Information Science faculty members during online classes; 4.) Significant relationship and difference of each variable; 5.) Challenges encountered and possible solutions.

Process indicates the evaluation of teaching strategies and the analysis of relationships. Output refers to the recommended faculty development program for the effectiveness of teaching strategies.

Statement of the Problem

This study aims to determine the teaching strategies used by the faculty members and student-preferred teaching strategies of the selected school offering Library and Information Science courses during the second semester of the 2023- 2024 academic year.

Specifically, it attempted to answer the following questions:

1. What are the demographic profiles of the respondents in terms of:

1.1. Year Level;

1.2 Academic Performance (including grades, class participation, and examination results)?

2. What is the level of effectiveness of the teaching strategies employed by Library and Information Science faculty members during face-to-face classes in terms of:

2.1. Lecture Method;

2.2. Brainstorming;

2.3. Role-Playing Method;

2.4. Independent Learning;

2.5. Simulation;

2.6. Project Method;

2.7. Use of Community Resources?

3. What is the level of effectiveness of the teaching strategies employed by Library and Information Science faculty members during online classes in terms of:

3.1. Lecture Method;

3.2. Brainstorming;

3.3. Role-Playing Method;

3.4. Independent Learning;

3.5. Simulation;

3.6. Project Method;

3.7. Use of Community Resources?

4. Is there a significant difference in the level of effectiveness of teaching strategies between face-to-face and online classes?

5. Is there a significant relationship between the level of effectiveness of teaching strategies during face-to-face classes and the academic performance of the respondents?
6. Is there a significant relationship between the level of effectiveness of teaching strategies during online classes and the academic performance of the respondents?
7. What challenges do the respondents encounter regarding the quality of the teaching strategies employed?

Hypotheses

Based on the issues raised above, the researcher presented the following hypotheses:

1. There is no significant difference in the level of effectiveness of teaching strategies employed by Library and Information Science faculty members during face-to-face and online classes.
2. There is no significant relationship between the level of effectiveness of teaching strategies during face-to-face classes and the academic performance of the respondents?
3. There is no significant relationship between the level of effectiveness of teaching strategies during online classes and the academic performance of the respondents?

Scope and Limitation of the Study

The scope of the study focuses on the teaching strategies employed by faculty members in selected universities and colleges within the National Capital Region (NCR) that offer Bachelor of Library and Information Science (BLIS) programs. This study is limited to BLIS students enrolled in the second semester of Academic Year 2023–2024.

Significance of the Study

In the course of conducting this study, several individuals and organizations will benefit from its findings:

Bachelor of Library and Information Science (BLIS) Students - As the primary respondents to this study, BLIS students will gain valuable insights into the efficacy of teaching strategies used in their academic programs. Students can make informed educational decisions and advocate for pedagogical approaches that best meet their needs and preferences if they understand which instructional methods are most conducive to their learning.

Faculty Members - This study has practical implications for faculty who are responsible for delivering instruction in BLIS programs. Faculty members can learn about best practices for engaging and supporting BLIS students in their academic journey by evaluating the effectiveness of teaching strategies in both face-to-face and online class settings. Furthermore, the findings may inform faculty development initiatives aimed at improving pedagogical skills and encouraging innovative teaching practices in the LIS discipline.

Educational Institutions - The study's results can directly benefit educational institutions that provide BLIS programs by identifying effective teaching strategies and areas for improvement that allows institutions to improve the quality of their syllabus. Furthermore, the study may help with the accreditation process by demonstrating a commitment to evidence-based teaching practices and student- centered learning outcomes.

Researchers and Future Researchers - This study will add to the existing body of knowledge on teaching strategies and student learning outcomes in the field of Library and Information Science education. The study contributes to the body of knowledge about pedagogical practices in LIS programs by empirically investigating the effectiveness of teaching strategies. Future researchers can build on these findings to investigate new approaches to improving teaching

effectiveness and student engagement in the LIS discipline, thereby advancing scholarly discourse and innovation in higher education.

Definitions of Terms

Academic Performance: Operationally, it is the level of accomplishment and proficiency that BLIS students achieve in their academic activities, commonly reflected in their tests and assignments or their cumulative performance or GPA. They address the results of their learning process as determined by different academic parameters.

Brainstorming: Operationally, this refers to an instructional technique used by faculty members in Schools of Library and Information Science (SLIS) to foster creativity and critical thinking among students. It involves encouraging students to generate ideas, solutions, or insights related to a specific topic or problem in an open and collaborative setting. For BLIS students, brainstorming is designed to stimulate active participation, promote diverse perspectives, and develop problem- solving skills. This method emphasizes free-flowing discussions and the exploration of multiple possibilities, enabling students to think critically and contribute creatively to group learning activities.

Effectiveness: Operationally, it is the degree to which the teaching strategies employed by LIS faculty members successfully enhance student learning, engagement, and academic performance. It is measured through student perceptions and evaluations, assessing clarity of instruction, participation, knowledge retention, and overall satisfaction.

Face-to-Face (f2f) Classes: Operationally, it encompasses face to face teaching in classrooms where the faculty members directly teach BLIS students thus enabling them to interact in real time with the students. They support the type of replies and individual response to the questioner.

Independent Learning: Operationally, this means that students enrolled in Bachelor of Library and Information Science (BLIS) program manage their learning process. They look deliberately for information, sources, and experiences which will afford them new learning not only in school but in other settings, thus, they become independent learners, and learn to develop lifelong habits.

Lecture Method: Operationally, this refers to an instructional strategy employed by faculty members in Schools of Library and Information Science (SLIS) to deliver content through structured verbal explanations and presentations. It involves the systematic organization of subject matter and its clear communication to students, often supported by visual aids or multimedia tools. For BLIS students, the lecture method serves to provide foundational knowledge, clarify complex concepts, and guide learners in understanding the theoretical framework of the course. This method emphasizes the direct transfer of information from faculty to students, ensuring a comprehensive understanding of the subject matter.

Library and Information Science (LIS): Operationally, this pertains to the multi-faceted discipline that deals with acquirement, processing, storage, and distribution of information materials in different media or forms of outputs-print, non- print, electronic, and multi-media. In terms of BLIS, LIS entails getting acquainted with principles theories and practices of libraries, archives, information centres and information technologies. It involves absorbing methodological and practical competencies that are needed for efficient managing and providing the access to the info in the concentrations of the targets of the different categories of users in various contexts, such as educational establishments,

governmental organizations, companies, and communities.

Online Classes: Operationally, it is education that is conducted online and through other technology enhanced means of communication. This mode of delivery allows communication in an asynchronous or synchronous basis between the faculty members and the BLIS students, multiple ways of learning and accessibility.

Project-Based Method: Operationally, this pertains to a teaching strategy used by instructors in LIS education and training processes. Group or team activities involving practical projects or tasks that do not necessarily necessitate higher-order thinking skills but that demands originality and the ability to apply theories learnt in class to produce some results; skills that will be useful in improving critical thinking ability.

Role-Playing Method: Operationally, this relates to an instructional method used by instructors in LIS education where BLIS students act out or are assigned certain roles playing roles and solving fictionalized real-life problems or making decisions. This method is used with the view of developing practical skills and sharpening the aspect of critical reasoning.

Simulation: Operationally, this involves a mode of instructional delivery deployed by faculty members within Department of Library and Information Science (DLIS). Closely related to practical assessment, it implies the development of settings or situations to match actual working conditions in the scope of interest; in the case of BLIS students, these are hypothetical situations that refer to the content of the course to enable them to transform the received theory into practice while solving problems in a controlled manner.

Teaching Strategies: Operationally, it is defined as the strategies, activities, and processes used by LIS faculty members to teach and enhance the learning of BLIS students. It comprises a set of approaches to teaching and learning that is used to meet learning needs and learning goals.

Use of Community Resources: Operationally, this refers to a teaching strategy employed by faculty members that integrates the utilization of local resources, institutions, and environments into the instructional process. For BLIS students, this approach involves connecting classroom learning with real-world applications by engaging with community libraries, archives, museums, or other relevant local resources. It aims to enhance students' practical knowledge, foster collaborative learning, and bridge the gap between theoretical concepts and their real-world implementation. This method emphasizes experiential learning by leveraging the community as an extension of the classroom to enrich the educational experience.

CHAPTER 2

REVIEW OF RELATED LITERATURE AND STUDIES

This chapter presents all the reviewed literature and studies related to the very conduct of this study. The information presented here also strengthens the urgency and relevance of the study problem being investigated by the researcher.

Effectiveness of Face-to-Face Modality Teaching Strategies

According to Lomardi (2021), the effectiveness of face-to-face instruction process or practice has been studied extensively. For example, one research paper discussed the outcomes of active learning in a traditional context inside a classroom through group discussions, practical assignments on learning engagement and the student's performance. When contrasting active learning methods with the regular lecturing model, it was ascertained that they improved learning outcomes and students' engagement.

In addition, Li (2023) discussed a meta-analysis focusing on the effectiveness of teaching techniques in traditional classroom settings across various subjects. Similarly, the study of Ghani (2021) regarding the categorization of learning-teaching approaches found three main categorizations: Experiential Learning, Problem-Based Learning, and Collaborative Learning. These findings underscore the importance of using strategies that engage students, thus enabling face-to-face learning to be as effective as possible.

Moreover, Braig (2023) explained that the flipped classroom strategy has steadily gained adoption as a modern instruction technique in conventional classrooms, enhancing learners' engagement techniques. As a result, a study was conducted to compare performances and determine the effects of flipped instruction on learning achievement among undergraduate students. The study revealed that applying the flipped classroom, where students review course materials independently and engage in group activities during class, results in higher achievements and student satisfaction compared to the ordinary learner-instructor model.

Furthermore, in the study of Timotheou (2022), it was proven that the amalgamation of information technology into typical physical classrooms improves students' interaction and understanding. Consequently, an effort was made to find out the effectiveness of teaching through multimedia resources, which included interactive simulations and videos integrated into conventional classroom teachings. Additionally, the results showed that the integration of multimedia into the teaching process significantly affected students' knowledge and motivation, while also improving memory of the studied material. This demonstrated technology's potential in augmenting traditional teaching and learning methods.

It can hardly be overstated how important these principles are for enhancing traditional classroom teaching methods. For instance, according to the study of Schmidt et al. (2019), using instruction techniques based on cognitive theories enhances students' academic performance. Moreover, Odum (2021) recommends using multimedia, worked examples, and active learning techniques to promote in- person deep understanding and knowledge retention.

Similarly, in the study of Closs (2021), it was hypothesized that the physical learning environment significantly affects teaching practices and learners' perceptions in face-to-face settings. Subsequently, research was conducted to determine the effect of classroom configurations on learning processes and learner participation. In conclusion, it was found that the set-up of the learning environment within a physical class is critical, as studies on workspace quality, natural

lighting, and modifiable furniture have demonstrated that these factors positively affect students' engagement and performance.

Moreover, the study conducted by Ozan (2019) established that formative assessment practices increase the effectiveness of teaching and learning in face-to- face classroom settings. To investigate this further, one study synthesized the literature to review feedback and its effects on students. It was found that immediate and proper feedback, given to teachers and students during face-to-face interactions, aids in improving learning. This highlights the importance of continuous evaluation and briefings in the teaching process.

Comstock (2023) discussed that culturally responsive teaching has emerged as a valuable initiative for teaching learners in conventional classrooms, particularly in diverse learning environments. For example, a study found the usefulness of incorporating students' culture, experience, and perspectives into teaching techniques to promote pluralism and engagement. Therefore, to stimulate identification with all students' cultures, teachers should use integrative strategies and content to create a positive learning climate for every student.

Furthermore, studies conducted by Bremner (2022) have shown that adopting learner-centered teaching methods in conventional classrooms improves learners' motivational levels. Specifically, the study highlighted the benefits of problem-solving, collaboration, and engagement in enhancing students' self- organization and responsibility for learning. Thus, shifting the focus from the teacher to the student enables learners to take control of their learning process, thereby developing critical thinking and a deeper understanding.

Another study by Bot-Lee (2021) indicates that various instructional strategies, such as learner-centered methodologies, active learning techniques, flipped instruction, technology integration, formative assessment methods, instructional design principles, and culturally responsive practices, improve teachers' effectiveness and student outcomes in traditional classroom settings. By implementing these evidence-based tactics, educators can establish vibrant and captivating learning environments that foster students' academic achievements, analytical reasoning, and lifelong learning skills.

Effectiveness of Online Modality Teaching Strategies

The shift towards online learning has prompted educators to explore novel teaching techniques suitable for virtual environments. For instance, a study by DeCoito (2022) investigated the efficacy of utilizing asynchronous online discussions to enhance student engagement and participation in virtual classrooms. The results demonstrated that these conversations improved student engagement and knowledge building by facilitating meaningful peer-to-peer interaction and collaborative learning experiences.

Another innovative approach adapted for online settings is the flipped classroom model, which has been modified to include scheduled in-person sessions along with online resources for instructional delivery. In this context, Jia (2023) examined the influence of asynchronous pre-class videos on the learning objectives of students in an online course. Notably, findings indicated that pre-class video viewing substantially improved students' understanding and readiness for in-person interactions, thereby underscoring the potential of flipped instruction to enhance online teaching efficacy.

Furthermore, to help advance online learning settings, institutions have also made use of multimedia and interactive resources. Numerous studies confirm that utilizing multimedia and interactive tools improves comprehension and

engagement in online learning settings. For example, Abdulrahaman (2020) examined the significance of multimedia principles such as coherence, contiguity, and signaling in online education. Ultimately, results indicated that well-crafted multimedia presentations improved student learning outcomes by decreasing cognitive overload and enhancing information processing. This clearly highlights the importance of multimedia-enhanced teaching methods in online education.

In addition, the online modality has effectively integrated inquiry-based and collaborative learning strategies to enhance student engagement and foster critical thinking skills. For instance, Lazarevic (2023) investigated the use of online collaborative inquiry tasks to promote deep learning in virtual classrooms. The research concluded that cooperative inquiry tasks in online courses promote higher- order thinking and problem-solving skills through meaningful interaction and collaborative knowledge construction.

Moreover, the integration of synchronous virtual classrooms in online learning set-ups has fostered engagement and real-time interaction. For example, a study by Wang (2022) examined the effectiveness of synchronous online instruction in increasing student engagement and satisfaction. The findings revealed that synchronous sessions enhanced student engagement and perceived instructional effectiveness by promoting peer interaction, active involvement, and instructor feedback.

Over time, online courses have also utilized adaptive learning technologies to provide personalized instruction and support for students. In this regard, Capuano (2020) examined the efficacy of adaptive learning platforms in enhancing student retention and academic achievement. Importantly, results indicated that by customizing instruction to individual student needs, these technologies improved learning outcomes and increased course completion rates.

Additionally, online learning set-ups have also incorporated formative assessment techniques. Research has shown that formative assessment methods, such as online discussions, quizzes, and polls, improve student engagement and instructional efficacy in virtual classrooms. For example, a study by Hopfenbeck (2023) highlighted the correlation between formative assessment use and students' academic achievement in online courses. These findings underscore the significance of continuous assessment and feedback in supporting student development in online education.

Another significant strategy adapted in online learning is Culturally Responsive Teaching. Specifically, online instruction has incorporated culturally responsive teaching strategies to foster inclusivity and diversity. For instance, a study on culturally relevant pedagogy in online courses found that these strategies led to higher levels of student satisfaction and engagement. Thus, integrating diverse perspectives and experiences into course material is an effective approach (Ferlazzo, 2020).

Finally, learning-centered teaching strategies have also been utilized in online instruction. Research indicates that learner-centered teaching strategies in online courses enhance student empowerment and foster self-directed learning. For example, a study by Boonstra (2020) highlighted the importance of student autonomy and active engagement in virtual learning. By offering choices, encouraging collaboration, and fostering reflection, teachers can enhance student performance and motivation in online environments.

In summary, many research papers highlight the efficacy of employing diverse teaching methods to enhance instruction and promote student engagement in online learning environments. These strategies include synchronous virtual

classrooms, flipped instruction, multimedia-enhanced presentations, asynchronous discussions, formative assessment strategies, adaptive learning technologies, culturally sensitive practices, and learner-centered approaches. By leveraging these scientifically proven techniques, educators can create interactive and engaging online classrooms that accommodate the diverse needs of remote students (Kim, 2019).

Challenges Encountered with the Quality of the Teaching Strategies Performed

One significant challenge in instructional methods is the discrepancy between standardized teaching approaches and the diverse demands and inclinations of students. Research suggests that a one-size-fits-all approach to teaching fails to accommodate the varied learning styles and abilities of students, leading to disinterest and subpar educational outcomes. To address this issue, educators must implement differentiated instructional strategies that cater to the individual needs and preferences of students, ensuring a more personalized and effective learning experience (Pozas, 2019).

Another notable obstacle to effective teaching is the lack of resources. Limited access to technology, instructional materials, and professional development opportunities restricts teachers' ability to implement innovative and effective teaching strategies. This study underscores the importance of providing adequate resources and support to teachers, emphasizing that addressing resource disparities is essential for enhancing teaching effectiveness and improving student learning outcomes. Ensuring equitable access to resources is crucial for providing high-quality education to all students (Zhang, 2020).

Time constraints also present a substantial challenge, particularly in crowded classroom settings. Faculty members often juggle multiple responsibilities, including administrative tasks, committee obligations, and research duties, which can detract from lesson planning and preparation. As a result, teachers may default to routine or basic methods that prioritize efficiency over effectiveness. Balancing the demands of high-quality instruction with time limitations is essential to improving teaching outcomes and ensuring that students receive the best possible education (Barcelona, 2023).

Furthermore, the absence of institutional support for innovative teaching strategies presents a significant barrier. Promoting innovative pedagogy can be difficult due to the perception that teaching is secondary to research. Research emphasizes the need for institutional leadership and policies that prioritize teaching effectiveness and actively support faculty development initiatives. Without this institutional support, teachers may struggle to implement effective teaching practices, hindering their ability to innovate and improve educational experiences (Lin, 2022).

In addition, a survey of 1,391 active instructors from 20 Latin American nations further illustrates this issue, revealing that many instructors did not emphasize the skills outlined in the 21st-century competencies framework, such as the four Cs (critical thinking, collaboration, creativity, and communication). Despite the growing need for these skills, most instructors employed similar tactics across various skills, including project-based learning, oracy exercises, literacy strategies, and collaboration. This research highlights the broader issue of under-emphasizing essential skills in the classroom, which extends beyond the Latin American context (Varas et al., 2023).

Warman (2015) explored the importance of evaluating higher education quality for accountability, accreditation, and progress, particularly in veterinary education. The study stresses the importance of evaluation techniques that influence

instructional practices, such as student assessments and peer observations. To improve instructional practices, institutions must foster a culture that values teaching quality while considering potential costs, faculty time, and emotional reactions to assessment methodologies. Effective evaluation plays a crucial role in driving change and enhancing teaching practices.

Ultimately, without adequate institutional support, educators may face significant obstacles in improving their teaching quality. The study emphasizes that institutional leadership and policies that prioritize teaching effectiveness are essential for fostering a culture of innovation. Supporting faculty development through resources, training, and recognition can help create an environment where innovative teaching practices thrive. Moreover, institutional policies should incentivize and reward excellence in teaching, reinforcing the value of effective pedagogy and encouraging continuous improvemen.

Solutions to the Challenges in the Quality of the Faculty Members' Teaching Strategies

One key strategy to address challenges in teaching is focusing on the professional development of educators, particularly in specific areas of expertise. Research suggests that professional development programs enhance student learning and improve teaching practices by equipping educators with the necessary knowledge, skills, and resources. By focusing on hiring, training, motivating, and retaining self-directed faculty, institutions can help teachers overcome barriers and continuously improve their pedagogical practices (Earl, 2021).

Another important aspect is the interaction between faculty and students, which often occurs through fulfilling teaching and learning roles, conducting research, and engaging in mutual learning. Encouraging cooperation and interaction among faculty members can help share successful teaching practices and foster a collaborative environment. Professional Learning Communities (PLCs) are an effective model for this, as they enable faculty to collaborate, analyze issues, and explore innovative teaching approaches that improve overall teaching quality (Steyn, 2019).

In addition to collaboration, recognizing and rewarding faculty members for their creativity in teaching is essential for improving instructional quality. Institutions must demonstrate commitment to teaching development by offering grants, awards, and promotions to those who excel in pedagogy (Palmer, 2023). Moreover, adopting technology and digital tools can further enhance teaching practices and help address concerns regarding the quality of instructional methods. The integration of technology through TPACK (Technological Pedagogical Content Knowledge) can improve teaching by providing faculty with the necessary tools, resources, and training (Becirovic, 2023).

Furthermore, cultivating a growth mindset among faculty is essential for fostering adaptability and perseverance in challenging teaching situations. A growth mindset encourages faculty to view challenges as opportunities for improvement, promoting an environment that values innovation and excellence in teaching (Freeman, 2023). Aligning institutional policies with research-based teaching principles is another crucial factor in improving teaching effectiveness. Institutions should ensure that policies related to hiring, promotion, and evaluation prioritize student learning outcomes and teaching quality (Scott, 2021).

Moreover, offering coaching and mentoring can greatly enhance teaching efficacy and foster professional growth. Mentorship helps mitigate burnout and boosts job satisfaction, offering faculty guidance and feedback to refine their teaching methods (Coston, 2019). Fostering interdisciplinary collaboration is another avenue to improve teaching

practices. By encouraging cross-disciplinary learning, faculty members can share ideas, increase creativity, and enhance problem-solving skills, leading to better student outcomes (Lorenzetti, 2021).

Supporting academic research on teaching and learning plays a vital role in addressing instructional challenges. Investing in research allows faculty to experiment with new methods, assess their effectiveness, and share their findings to improve teaching practices (Patdfield, 2021). Lastly, adopting a student-centered approach to teaching can significantly enhance instructional effectiveness. Approaches like problem-based learning, cooperative learning, and active learning create inclusive and engaging environments that foster critical thinking and deeper student engagement (Tuomainen, 2023).

Finally, challenges in online teaching must be addressed, as highlighted by Kibaru (2018). Issues such as lack of computer literacy, inadequate support, and student readiness for online learning hinder the development of high-quality online courses. Institutions must adapt to the evolving nature of online education and address these emerging challenges to improve course quality.

Synthesis of the Studies and Literature Reviewed

The literature review reveals certain similarities and differences with the present study's findings concerning the effectiveness of teaching-learning among LIS lecture faculty members. Studies on face-to-face instruction emphasize the effectiveness of interactive teaching techniques. Lombardi (2021) found that active learning, including group discussions and practical assignments, enhances student engagement and performance compared to traditional lectures. Similarly, Ghani (2021) identified three key approaches—Experiential Learning, Problem-Based Learning, and Collaborative Learning—that boost students' interest and knowledge retention. Other innovations, like flipped classrooms, have shown significant improvements in learning outcomes and satisfaction (Braig, 2023).

In addition, integrating technology into physical classrooms has also proven impactful. Timotheou (2022) revealed that multimedia tools, such as interactive videos and simulations, enhance knowledge retention and motivation. Closs (2021) highlighted the importance of classroom configurations, showing that modifiable environments positively influence student participation and performance. Additionally, formative assessment practices, as discussed by Ozan (2019), underscore the importance of timely feedback in improving learning outcomes.

Moreover, culturally responsive teaching, as noted by Comstock (2023), fosters inclusivity by integrating students' cultural contexts into the curriculum, promoting engagement in diverse classrooms. Bremner (2022) highlighted the benefits of learner-centered approaches, which empower students to take responsibility for their learning, fostering critical thinking and self-organization.

As a result, the shift to online learning has prompted significant innovations to maintain and enhance instructional effectiveness. Asynchronous methods, such as pre-class videos in flipped classrooms (Jia, 2023), and synchronous virtual classrooms (Wang, 2022), have improved engagement and preparedness. Multimedia-enhanced teaching (Abdulrahaman, 2020) and adaptive learning technologies (Capuano, 2020) have been instrumental in personalizing instruction and reducing cognitive load.

Additionally, inquiry-based and collaborative strategies have shown promise in fostering critical thinking in virtual environments (Lazarevic, 2023). Formative assessments, including online quizzes and polls, have also proven effective

in supporting student progress (Hopfenbeck, 2023). Furthermore, culturally responsive practices, as well as learner-centered approaches, have emerged as vital for promoting inclusivity and engagement in diverse online classrooms (Ferlazzo, 2020; Boonstra, 2020).

Despite these advancements, both traditional and online learning face challenges, such as time constraints, lack of institutional support, and resource disparities (Barcelona, 2023; Zhang, 2020). Addressing these requires professional development programs, as noted by Earl (2021), and fostering a growth mindset among educators (Freeman, 2023). Interdisciplinary collaboration (Lorenzetti, 2021), mentorship programs (Coston, 2019), and research-based policy alignment (Scott, 2021) further support teaching innovation.

In conclusion, to enhance instructional quality, institutions must provide resources for technological integration (Becirovic, 2023) and foster a culture valuing pedagogical creativity through grants and awards (Palmer, 2023). Promoting student-centered approaches, such as problem-based and active learning, ensures deeper engagement and critical thinking (Tuomainen, 2023).

CHAPTER 3
METHODOLOGY

This chapter presents the different processes used in the study, such as the method of research used, population and sample size, sampling technique used, descriptions of respondents, instrumentation, data-gathering procedure, and statistical treatment of data.

Methods of Research

This research used the quantitative method, which utilizes a structured questionnaire that identifies the BLIS faculty members' teaching strategies. Bhandari (2023) defines quantitative research as the collection and analysis of numerical data. It can be used to identify patterns and averages, create hypotheses, investigate causality, and extrapolate results to bigger populations. It is described as a methodical examination of events through the use of statistical, mathematical, or computational techniques along with the collection of numerical data. In addition, Rana et al. (2021) indicates that quantitative method enables us to rank priorities, calculate effect sizes, assess the degree of efficacy evidence, and ascertain the relationships' strength. According to Zyoud et al. (2024), when collecting and interpreting data, quantitative methods offer a high degree of neutrality and accuracy. Additionally, Kumar (2014) stated as cited in Zyoud et al. (2024), in extensive research initiatives, the use of quantitative methodologies might lead to automation and scalability. Advances in technology and data analytics have enabled researchers to effectively collect, manage, and assess massive quantities of quantitative data.

This is especially significant in the realm of education, as enhancing educational outcomes requires an understanding of the connections between instructional practices and student learning outcomes. To enhance student learning outcomes, educators can employ data-driven decision-making and discover the most effective teaching practices by utilizing quantitative research (Wubbels & Brekelmans, 2005; Luzano, 2023). Quantitative research methods in education concentrate on basic group designs for research and assessment, statistical analysis procedures for group design data, and analytical techniques for investigating correlations between categorical and continuous variables (Siripipatthanakul et al., 2023).

Population, Sample Size, and Sampling Technique

The population for this study comprises students from selected schools in the National Capital Region, currently enrolled in the 2nd semester of the Academic Year 2023-2024. The researcher employed stratified random sampling, a probability sampling technique, to ensure a representative and comprehensive sample. Stratified random sampling involves first dividing the population into distinct subgroups or strata based on specific characteristics, and then randomly selecting participants from each subgroup (Hassan, 2023). In this study, the students were categorized into strata based on characteristics such as the institution they attend, year level (e.g., 1st, 2nd, 3rd, or 4th-year students), and academic performance (e.g., high, average, or low GPA). The selected institutions were chosen based on the number of students enrolled in the BLIS program to ensure that schools with higher student populations in the program were adequately represented, providing a broader perspective on the teaching strategies and their effectiveness. By including institutions with varying enrollment numbers, the researcher aimed to capture a diverse range of student experiences across different educational contexts. This approach ensured that each subgroup was proportionally represented, reflecting a wide range of academic, institutional, and demographic factors. Through this method, the researcher was able to achieve a diverse and accurate representation of the student population, allowing for a more robust analysis of the effectiveness

of teaching strategies in the BLIS program.

Table 1: Frequency Distribution of the Respondents.

Respondents	Population	Sample size
Respondent 1	106	39
Respondent 2	24	9
Respondent 3	151	56
Respondent 4	213	79
Respondent 5	162	60
TOTAL	**656**	**243**

The respondents were determined using Cochran, W. G. sampling technique. Given a desired precision level, desired confidence level, and the expected fraction of the attribute present in the population, the Cochran formula helps you determine the optimal sample size. Cochran's method is thought to be particularly useful in scenarios with big populations.

The formula for obtaining the ideal sample:

$$n_0 = \frac{z^2 \times p \times (1-p)}{e^2}$$

Where:

e = desired level of precision, the margin of error

p = the fraction of the population (as percentage) that displays the attribute

z = the z-value, extracted from a z-table

This formula is used to compute an ideal size for a desired level of precision, that is recommended for studies with infinite populations.

Cochran's Formula for finding the sample size:

$$n_0 = \frac{z^2 pq}{e^2} \quad n = \frac{n_0}{1 + \frac{n_0 - 1}{N}}$$

Where:

n = sample size

p question = is the estimate proportion of the population attributed in the

N = population

e = margin of error at (0.05)

q = is 1 – p

Description of Respondents

For this study, the selection of respondents will involve identifying students enrolled in Bachelor of Library and Information Science (BLIS) programs within the National Capital Region (NCR). The NCR comprises various educational institutions that offer BLIS courses. The selection process will account for several factors, as institutions with larger student populations provide a more diverse and comprehensive dataset, which can lead to statistically significant and generalizable findings. These larger schools contribute a broader perspective on teaching strategies, thereby enhancing the credibility and impact of the research. On the other hand, institutions with smaller populations

allow for a more focused and qualitative approach, offering valuable insights into specific teaching strategies. By incorporating both large and small institutions, the study aims to achieve a diverse and thorough analysis, making the findings more robust and applicable across different educational contexts.

Research Instrument

This study employed a single questionnaire consisting of four distinct sections, each designed to collect essential data. Part 1 focuses on gathering demographic data from respondents, providing crucial contextual details that provide insight into their profiles. Parts II and III were adapted from Mojares' (2013) study to systematically assess six common teaching strategies used in Library and Information Science (LIS) education. Part IV builds on the previous sections by incorporating a 10-item Likert-scale questionnaire, modified from Herrera and Gabbales' (2022) research, to evaluate the challenges encountered in implementing these strategies and explore potential solutions.

The questionnaire went through a comprehensive review process, starting with a detailed examination by a panel, followed by expert validation to ensure its reliability and validity. To further evaluate its effectiveness, a pilot test was conducted from April 12 to April 17, 2024, with thirty (30) BLIS students from various institutions in Regions IVA and IVB. The pilot testing aimed to assess the clarity and comprehensiveness of the questionnaire, ensuring it could effectively capture the necessary data from participants. The reliability of the instrument was confirmed with a Cronbach's Alpha coefficient of 0.97, demonstrating that the questionnaire is highly reliable, consistent, and capable of yielding accurate data. These results validate that the questionnaire is a strong and dependable tool for assessing the effectiveness of teaching strategies used by BLIS faculty members.

The following Likert scale was used to interpret the responses in this study, evaluating both the effectiveness of teaching strategies and the challenges faced by faculty members. Higher ratings indicated more favorable perceptions, while lower ratings reflected areas of concern. The rating scale categorizes responses based on their mean range and corresponding verbal interpretation. For evaluating effectiveness, a mean range of 4.21 to 5.00 indicates that respondents Strongly Agree, signifying that the item is considered Very Effective. A mean range of 3.41 to 4.20 corresponds to Agree, meaning the item is Effective. When the mean range falls between 2.61 and 3.40, it is interpreted as Neutral, indicating the item is Moderately Effective. A mean range of 1.81 to 2.60 signifies Disagree, suggesting the item is Slightly Effective. Lastly, a mean range of 1.00 to 1.80 indicates Strongly Disagree, meaning the item is Not Effective. For assessing challenges, a mean range of 4.21 to 5.00 corresponds to Strongly Agree, indicating that the task is not at all challenging.

A mean range of 3.41 to 4.20 is interpreted as Agree, suggesting that the task is slightly challenging. When the mean range falls between 2.61 and 3.40, it is considered Neutral, meaning the task is moderately challenging. A mean range of 1.81 to 2.60 is interpreted as Disagree, indicating that the task is very challenging. Lastly, a mean range of 1.00 to 1.80 corresponds to Strongly Disagree, signifying that the task is extremely challenging.

Additionally, the study used a classification system for students' academic performance based on their mean scores. This classification allowed for a structured way to analyze and compare academic performance across different student groups and to examine the correlation between these performance levels and the teaching strategies employed. The mean academic performance is categorized into different levels based on the scores achieved. Students who score 95 and above are considered to have an Outstanding level of performance. Those who score between 90 and 94 are rated

as Very Satisfactory. A score range of 85 to 89 is deemed Satisfactory, while scores between 80 and 84 are classified as Fairly Satisfactory. Students scoring 75 to 79 falls into the Poor category, and those with scores 74 and below are rated as having a Very Poor level of performance.

Data Gathering Procedures

The preliminary data for this study was gathered by conducting research in various libraries, web sources, and interviews to obtain pertinent information. After the validation and pilot testing of the survey instrument, the researcher wrote a letter to the Deans of the selected schools, requesting permission to survey the schools. Upon receiving approval for the data collection request, the researcher applied for Ethics Clearance from the University Research Ethics Center. After successfully passing the application and obtaining ethics clearance, the researcher uploaded the required documents to the administrators of the selected schools. Upon approval, the survey was distributed to the students.

The survey was administered using Google Forms for institutions with access to online platforms. However, some institutions preferred onsite data collection using printed questionnaires, which were distributed and collected in person. The data collection period ran from May 24, 2024, to July 5, 2024. After the survey responses were gathered, the completed questionnaires were systematically arranged, sorted, and tallied. The data were then forwarded to the institutional statistician for analysis. The collected data were treated, analyzed, and interpreted to answer the sub-problems in the study.

Statistical Treatment of Data

To give the study context, the results are translated to more complex statistical measures, such as the percentage, mean, and rank calculation. In a special situation, the variance in respondents' perceptions was presented using these more sophisticated statistical measures, specifically:

1. **Frequency.** This indicates the number of responses generated in the questionnaire items referring to BLIS students' profiles in terms of age, gender, and year level. The actual response of respondents to certain items or questions in the questionnaire was represented by the checkmarks next to their selection.

2. **Weighted Mean.** This tool was used to calculate the average value of the data. It is equivalent to the sum of item values divided by the total number of items.

$$x = \frac{\sum(fx)}{N}$$

Where:

x = mean

f = frequency

fx = sum of the items N = number of cases

3. **Wilcoxon signed-rank.** This is a non-parametric rank test for statistical hypothesis testing used either to test the location of a population based on a sample of data, or to compare the locations of two populations using two matched samples. This will be used to differentiate the assessment of online and face-to-face classes.

$$W = \sum_{i=1}^{N_r} [sgn(x_{2,i} - x_{1,i}) \times R_i$$

Where:

W = test statistic

N_r = sample size, excluding pairs where $x_1 = x_2$

sgn = sign function

$x_{1,i}, x_{2,i}$ = corresponding ranked pairs from two distributions

R_i = rank i

4. **Spearman's rank correlation.** This was employed to examine the relationship between teaching strategies and academic performance. This test is appropriate for ordinal data, such as students' grades, and assesses how strongly the ranks of one variable (teaching strategy effectiveness) correspond with the ranks of another variable (academic performance). The study will use these statistical methods to analyze the perceptions of students and their academic outcomes in the context of different teaching strategies. In the results section, these statistical methods will be clearly connected to the variables being tested to ensure clarity and consistency in the interpretation of findings. The findings from these analyses will be presented in tables to enhance organization and understanding. To describe the student's academic performance in Library and Information Science subjects, the scale below will be used:

$$p = 1 - \frac{6\sum d_i^2}{n(n^2-1)}$$

Where:

ρ = Spearman's rank correlation coefficient

d_i = difference between the two ranks of each observation

n = number of observations

CHAPTER 4

RESULTS AND DISCUSSIONS

This chapter presents the results of the study on the effectiveness of the teaching strategies used by Library and Information Science faculty in both in-person and online settings. The researcher investigated how methods such as lectures, brainstorming, role-playing, and independent learning affect student engagement and performance using data that was gathered from 324 respondents of various ages and academic standings. The chapter gives insights into the perception regarding infrastructural differences in learning modalities and the diverse issues affecting faculty members, ranging from poor management of class, availability of tools/resources, absence of leaner technical skills, and communication challenges, among others.

1. Profile of the respondents

Table 2: Frequency and Percentage Distribution of the Respondents in terms of Age.

Age Bracket	Frequency	Percentage
18 – 19 years old	44	13.58
20 – 21 years old	156	48.15
22 – 23 years old	89	27.47
24 – 25 years old	23	7.10
26 – 27 years old	4	1.43
28 years old and above	8	2.47
Total	**324**	**100.00**

The data in Table 2 presents the age distribution of respondents. This shows the frequency and percentage of respondents within the specific age brackets. The largest group of respondents, with a frequency of 156 or 48.51% is from the 20 – 21 years old, while the smallest group comprises of 4 respondents or 1.23% is from the 26 – 27 years old. The second-largest group consists of 89 respondents, representing 27.47% of the total is from the 22 – 23 years old; third-largest group includes 44 respondents or 13.58% is from the 18 – 19 years old; 24 – 25 years old there are 23 respondents in this age bracket, making up 7.10% of the total; and the 28 years old and above comprises of 8 respondents or 2.47%, showing that very few of the respondents are nearing 30 or older.

Table 3: Frequency and Percentage Distribution of the Respondents in terms of Year Level.

Year Level	Frequency	Percentage
1st Year	48	14.81
2nd Year	120	37.04
3rd Year	77	23.77
4th Year	79	24.38
Total	**324**	**100.00**

Table 3 presents the frequency and percentage distribution of respondents according to their year level. The highest respondents are from the 2nd year level with a frequency of 120 or 37.04% while the lowest is from the 1st year with a frequency of 48 or 14.81%. The second to the highest is from the 4th year with a frequency of 79 or 24.38%, followed by the 3rd year respondents with a frequency of 77 or 23.77%.

Table 4: Frequency and Percentage Distribution of the Respondents in terms of Academic Performance.

Grade	Frequency	Percentage
75 – 80	5	1.54
81 – 86	17	5.25
87 – 92	100	30.86

93 – 98	191	58.95
99 – above	11	3.40
Total	**324**	**100.00**

Table 4 presents the frequency and percentage distribution of respondents according to their academic performance. The highest response from the respondents stated that they got 93 – 98 grades with a frequency of 191 or 30.86% while 5 or 1.54% of the respondents got a grade of 75 – 80. Next to the largest response with a frequency of 100 or 30.86% said that they got a grade of 87 – 92; followed by 81 – 86 grade with a frequency of 17 or 5.25%; 17 or 5.25% got a grade of 81 – 86 and 11 or 3.40% got a grade of 99 above.

2. Level of Effectiveness in the Teaching Strategies During Face-to-Face Modality

Table 5: Level of Effectiveness in the Teaching Strategies During Face-to-Face in terms of Lecture Method.

Strategies	Mean	Verbal Description
Lecture Method		
In a Face-to-Face setting, the professors present the subject matter with an attention- getting techniques which gives the idea of what the lesson is about.	4.32	Strongly Agree
In a Face-to-Face setting, the professors comprehensively explain the topic to clarify ideas.	4.38	Strongly Agree
In a Face-to-Face setting, the professors are resourceful in explaining lessons that are not familiar to the students.	4.29	Strongly Agree
Grand Mean	**4.33**	**Strongly Agree**

Legend: "Strongly Disagree (1.00 – 1.80)", "Disagree (1.81 – 2.60)", "Neutral (2.61 – 3.40)", "Agree (3.41 – 4.20)", "Strongly Agree (4.21 – 5.00)"

Table 5 presents the mean distribution of respondents' responses on the effectiveness of teaching strategies employed by library and information science faculty members during face-to-face teaching, specifically focusing on the lecture method. "Professors comprehensively explain topics to clarify ideas" got the highest-rated indicator with a mean of 4.38 and verbal interpretation of Strongly Agree, suggesting respondents most strongly recognize the faculty's thoroughness in explaining concepts; next is "Professors present the subject matter with attention-getting techniques, giving an idea of the lesson's content" with a mean of 4.32 and a verbal interpretation of Strongly Agree, this shows respondents strongly agree that professors effectively use engaging techniques to introduce topics; and in "Professors are resourceful in explaining unfamiliar lessons to students" with a mean of 4.29 and verbal interpretation of Strongly Agree got the lowest among three indicators, while still rated highly, implying a slightly lesser agreement compared to the other aspects. Overall, with a grand mean of 4.33, which corresponds to the verbal description of "Strongly Agree," indicates that respondents perceive the lecture method as highly effective in face- to-face settings.

The results indicate that the lecture method is highly effective in face-to- face instruction, as students benefit significantly from direct instruction, which enhances their understanding of complex concepts in Library and Information Science (LIS). Professors can provide comprehensive explanations and in-depth discussions, ensuring that students grasp both fundamental and advanced LIS topics with clarity. In this method, students have the opportunity to ask questions in real-time, allowing them to clarify misunderstandings instantly and engage more deeply with the material. This structured approach fosters active learning, immediate feedback, and a solid foundation in LIS concepts, making it a valuable instructional strategy for both foundational knowledge and advanced studies.

These results confirmed previous studies by Lombardi (2021) and Closs (2021), which found that the lecture method is highly effective in face-to-face teaching. Lombardi emphasized the importance of comprehensive explanations and

engaging techniques in enhancing student understanding, while Closs highlighted the positive impact of resourcefulness in teaching unfamiliar lessons.

Both studies align with the findings that the lecture method is perceived as highly effective in improving student engagement and learning outcomes.

Table 6: Level of Effectiveness in the Teaching Strategies Employed During Face-to-Face in terms of Brainstorming Method.

Strategy	Mean	Verbal Description
Brainstorming		
In a Face-to-Face setting, the professors encourage us by asking triggering questions and accept their insight about the subject matter.	4.30	Strongly Agree
In a Face-to-Face setting, the professors provide avenue for students think and speak out freely and creatively about all possible solutions to given problem.	4.40	Strongly Agree
In a Face-to-Face setting, the professors directed students to list all possible options when choosing for a topic.	4.05	Agree
Grand Mean	**4.25**	**Strongly Agree**

Legend: *"Strongly Disagree (1.00 – 1.80)", "Disagree (1.81 – 2.60)", "Neutral (2.61 – 3.40)", "Agree (3.41 – 4.20)", "Strongly Agree (4.21 – 5.00)"*

Table 6 presents the mean distribution of respondents' responses regarding the effectiveness of the brainstorming method as a teaching strategy employed by library and information science faculty members in face-to-face settings. the highest- rated aspect is the "Encouraging Creativity and Free Expression" with a mean of 4.40 and verbal interpretation of "Strongly Agree," indicating that respondents strongly agree that professors create a conducive environment for students to think and express ideas freely and creatively; next is "Encouraging Participation through Triggering Questions" with a mean of 4.30 and a verbal interpretation of "Strongly Agree," this suggests that professors are perceived as effective in using triggering questions to encourage student insights and participation; in "Directing Students to List Possible Options" with a mean of 4.05 and "Strongly Agree" verbal interpretation, while still positively rated, this aspect received the lowest score, suggesting slightly less agreement about the effectiveness of professors in guiding students to list all possible options during brainstorming. With a grand mean of 4.25, which corresponds to the verbal description of strongly Agree, this indicates that respondents generally view the brainstorming method as highly effective in face-to-face teaching.

The results indicate that the brainstorming method in face-to-face settings is highly effective in fostering critical thinking and encouraging insightful discussions. Students valued the open environment for idea expression and interactive engagement, making it a dynamic learning strategy. While the method promoted creativity and participation, the process of guiding students in listing topic options could benefit from more structured support. To enhance this method, faculty can use triggering questions to encourage deeper thinking and ensure that all students actively contribute, making discussions more engaging. Combining spontaneity with structured reflection or incorporating small group work allows students to refine their ideas before sharing them with the larger group. This balanced approach maximizes engagement, deepens understanding, and strengthens collaborative problem-solving skills, ensuring that brainstorming serves as an effective tool for learning and idea generation.

These findings align with previous studies.by Kumar (2015) found that brainstorming fosters a free and open environment that encourages everyone to participate, leading to a rich array of creative solutions. Similarly, Widiastuti

et al. (2022) emphasized that brainstorming encourages participation, creative expression, collaboration, and the development of critical thinking skills among students. These studies suggest that brainstorming is effective in promoting creativity and active participation in face-to-face educational settings.

However, contrasting findings exist. Goswami et al. (2017) evaluated brainstorming as a teaching-learning tool among postgraduate medical biochemistry students and identified several challenges. The research highlighted those brainstorming sessions can become unfocused, may lead to superficial discussions, and might not cater to all learning styles. Additionally, or instance, a meta-analysis by Goldenberg and Wiley (2019) found that individual learner differences can impede successful brainstorming sessions, with some students struggling to relate to abstract ideas or producing numerous underdeveloped concepts.

Table 7: Level of Effectiveness in the Teaching Strategies Employed During Face-to- Face in terms of Role-Playing Method.

Strategy	Mean	Verbal Description
Role Playing Method		
In a Face-to-Face setting, the professors provide situations that encourage students to become realistic and apply personal experiences on their final role-playing presentation.	4.32	Strongly Agree
In a Face-to-Face setting, the professors encourage enactment/reenactment of real-life problem situations to understand the lesson.	4.18	Agree
In a Face-to-Face setting, the professors provide a way to help students express their feelings.	4.18	Agree
Grand Mean	**4.23**	**Strongly Agree**

***Legend**: "Strongly Disagree (1.00 – 1.80)", "Disagree (1.81 – 2.60)", "Neutral (2.61 – 3.40)", "Agree (3.41 – 4.20)", "Strongly Agree (4.21 – 5.00)"*

Table 7 evaluates the effectiveness of the role-playing method as a teaching strategy employed by library and information science faculty members in face-to-face settings, based on the respondents' responses. The highest-rated item, "Encouraging Realism and Personal Application" with a mean of 4.32, suggesting that respondents strongly agree that professors effectively create realistic situations that allow students to apply personal experiences during role-playing; "Reenactment of Real-Life Situations" and "Helping Students Express Feelings" both rated equally with a mean of 4.18, this indicates that respondents agree, that professors effectively use enactments or reenactments of real-life situations to facilitate understanding of the lesson and showing that professors are viewed as effective in providing avenues for students to express their emotions during role-playing activities. With an overall mean of 4.23, corresponding to the verbal interpretation of "Strongly Agree," indicates that respondents generally perceive the role-playing method as highly effective in face-to-face teaching. The results indicate that the role-playing method in face-to-face settings is highly effective, particularly in integrating personal experiences into the learning process. It enhances engagement, problem-solving, and emotional expression, making it a preferred instructional strategy. While reenacting real-life situations received positive feedback, further refinements could enhance its impact. In this method, faculty can design realistic scenarios that mimic Library and Information Science (LIS) challenges, such as reference desk interactions and cataloging disputes, allowing students to develop critical skills in a practical context. Providing structured opportunities for students to express their thoughts and emotions during these activities fosters both cognitive and emotional development.

These results confirmed previous studies by Schmidt et al. (2019) and Odum (2021), which found that role-playing is highly effective in face-to-face teaching for fostering realism and emotional engagement. Schmidt emphasized that creating realistic scenarios helps bridge theoretical knowledge with practical application, while Odum highlighted the value of role-playing in helping students express emotions and deepen their understanding through reenactments. Both studies align with the findings that respondents strongly agree on the effectiveness of the role-playing method in enhancing student engagement and understanding.

Table 8: Level of Effectiveness in the Teaching Strategies Employed During Face-to-Face in terms of Independent Learning Method.

Strategy	Mean	Verbal Description
Independent Learning		
In a Face-to-Face setting, the professors allow students to do in-depth understanding of the lesson.	4.11	Agree
In a Face-to-Face setting, the professors give minimal guidance and monitors progress of learning from time to time.	3.97	Agree
In a Face-to-Face setting, the professors give students freedom to study.	4.29	Strongly Agree
Grand Mean	**4.12**	**Agree**

Legend: "Strongly Disagree (1.00 – 1.80)", "Disagree (1.81 – 2.60)", "Neutral (2.61 – 3.40)", "Agree (3.41 – 4.20)", "Strongly Agree (4.21 – 5.00)"

Table 8 shows the effectiveness of the independent learning method as a teaching strategy employed by library and information science faculty members in face-to-face settings. The highest-rated indicator "Giving Students Freedom to Study" with a mean of 4.29, reflecting strong agreement that professors effectively grant students the freedom to study independently; in "Allowing In-Depth Understanding" with a mean of 4.11, respondents agree that professors effectively allow students to deepen their understanding of lessons during independent learning activities; and in "Providing Minimal Guidance and Monitoring" with a mean of 3.97 and a verbal interpretation of Agree, got the lowest-rated aspect, suggesting that respondents feel professors could improve in providing timely minimal guidance and progress monitoring. With a grand mean of 4.12, corresponding to the verbal description of "Agree" which indicates that respondents view the independent learning method as effective, though not as highly rated as some other teaching methods.

The results indicate that the independent learning method in face-to-face settings is highly effective, particularly in providing students with the freedom to study independently. Students appreciated the flexibility and autonomy encouraged by faculty, making it a preferred learning strategy. However, minimal guidance and progress monitoring received slightly lower ratings, highlighting the need for more structured support to ensure students stay on track. In this method, faculty should provide strategic guidance while promoting student autonomy, ensuring that learners receive the necessary support to master core Library and Information Science (LIS) concepts while taking ownership of their education. Encouraging independent exploration of LIS topics and providing timely feedback fosters critical thinking, problem-solving, and self-directed learning.

These results confirmed previous studies by Boonstra (2020) and Capuano (2020), which found that independent learning methods effectively foster autonomy and deeper understanding in students. Boonstra highlighted the importance of granting students the freedom to direct their learning, aligning with the highest-rated indicator in the findings. Similarly, Capuano emphasized the role of minimal guidance in promoting self-paced learning, though both

studies also noted the need for balance in providing timely monitoring and support. These findings support the conclusion that while independent learning is effective, there is room for improvement in faculty monitoring and guidance.

Table 9: Level of Effectiveness in the Teaching Strategies Employed During Face-to- Face in terms of Simulation Method.

Strategy	Mean	Verbal Description
Simulation		
In a Face-to-Face setting, the professors assigned the students a practical examination to assess their adaptability skills.	4.30	Strongly Agree
In a Face-to-Face setting, the professors give a highly realistic account of reality, showing how events can be managed in terms of complexity.	4.22	Strongly Agree
In a Face-to-Face setting, the professors conduct simulation activities of the students in a controlled environment ensuring safety and appropriate conditions.	4.13	Agree
Grand mean	**4.22**	**Strongly Agree**

Legend: *"Strongly Disagree (1.00 – 1.80)", "Disagree (1.81 – 2.60)", "Neutral (2.61 – 3.40)", "Agree (3.41 – 4.20)", "Strongly Agree (4.21 – 5.00)"*

Table 9 shows the level of effectiveness of teaching strategies used by Library and Information Science faculty during face-to-face simulation methods. The respondents find "Practical examinations" in a face-to-face setting highly effective in assessing students' adaptability skills with a mean of 4.30 with a verbal interpretation of Strongly Agree; in "Realistic Scenarios for Complexity Management," with a mean of 4.22, reflects a strong agreement on the importance of simulating realistic and complex scenarios to enhance students' learning experiences; and in "Controlled Simulation Activities" with a mean of 4.13, the respondents agree that conducting simulations in a controlled and safe environment is effective, though it is slightly less emphasized compared to the other strategies. This overall mean of 4.22 consolidates the perception that face-to-face simulation methods are highly effective teaching strategies.

The results indicate that the simulation method in face-to-face settings is highly effective, particularly in assessing adaptability skills and managing real-world scenarios. By promoting hands-on learning, simulations provide students with practical experience; however, controlled environment simulations could be further refined to enhance their effectiveness. In this method, faculty can introduce diverse real-world scenarios, such as library management tasks, cataloging exercises, and information retrieval challenges, allowing students to develop problem-solving skills in a structured setting. Incorporating case studies that involve practical decision- making in areas like information ethics and user services enables students to apply their knowledge to complex, real-world contexts.

These results confirmed previous studies by Timotheou (2022) and Lazarevic (2023), which highlighted the effectiveness of simulation methods in enhancing practical skills and critical thinking. Timotheou emphasized the value of practical examinations in assessing students' adaptability, aligning with the highest- rated indicator in the findings. Lazarevic supported the importance of realistic and complex scenarios to foster problem-solving and higher-order thinking. Both studies agree that controlled and safe simulation environments are essential for effective learning, supporting the conclusion that face-to-face simulation methods are highly effective teaching strategies.

Table 10: Level of Effectiveness in the Teaching Strategies Employed During Face-to- Face in terms of Project Method.

Strategy	Mean	Verbal Description
Project Method		
In a Face-to-Face setting, the professors require students to make in-depth study of research or issues.	4.22	Strongly Agree
In a Face-to-Face setting, the professors require recitation to check if the students are attentive in memorizing different project methodologies.	4.19	Agree
In a Face-to-Face setting, the professors set students' minds to do specific steps in making tangible output.	4.20	Agree
Grand Mean	**4.20**	**Agree**

Legend: "Strongly Disagree (1.00 – 1.80)", "Disagree (1.81 – 2.60)", "Neutral (2.61 – 3.40)", "Agree (3.41 – 4.20)", "Strongly Agree (4.21 – 5.00)"

Table 10 presents the respondents' evaluation of the Project Method as a teaching strategy employed by Library and Information Science faculty members in face-to-face settings. The highest-rated item requires in-depth study of research or issues with a mean of 4.22, indicating that this aspect of the project method is highly valued; on "Guiding Students in Tangible Output Creation" with a mean of 4.20, respondents agree that providing specific guidance to students for producing tangible outputs is an effective approach; and "Recitation to Ensure Memorization of Project Methodologies" with a mean of 4.19 got the lowest, respondents agree that conducting recitation to verify students' attentiveness and ability to memorize project methodologies is effective. With a grand mean of 4.20, it suggests that while respondents view the Project Method positively overall, there is room for improvement to achieve stronger agreement. This analysis highlights the importance of structured research tasks, active participation, and practical guidance in fostering effective learning through the Project Method.

The results indicate that the Project Method in face-to-face settings is highly effective in fostering deep understanding through research. Students valued structured guidance and active engagement, making it a valuable learning approach. While well-received, the memorization of methodologies could be further reinforced to enhance retention. In this method, faculty can introduce diverse real- world scenarios, such as designing cataloging systems, auditing community resources, and planning library outreach programs. Incorporating case studies that involve decision-making in areas like information ethics and user services allows students to apply their knowledge in complex contexts. Providing clear guidelines and structured instructions helps students confidently navigate project-based tasks, while regular recitation and feedback sessions enhance engagement and deepen understanding. Encouraging collaboration and peer reviews fosters teamwork and exposes students to diverse perspectives, enriching their learning experience. Additionally, integrating project management software streamlines workflows and familiarizes students with relevant technologies, ensuring they develop practical problem-solving skills and are well-prepared for professional roles. By balancing structured research tasks, hands-on application, and methodology reinforcement, this approach strengthens students' comprehension, critical thinking, and readiness for real-world challenges in library and information science.

These results confirmed previous studies by Varas et al. (2023) and Jia (2023), which emphasized the effectiveness of the project method in fostering critical thinking and producing tangible outcomes. Varas highlighted the value of structured research tasks in enhancing students' analytical skills, aligning with the highest- rated item in the findings. Similarly, Jia underscored the importance of providing specific guidance to ensure students successfully create tangible outputs. Both studies also noted the role of active participation, such as recitations, in reinforcing learning. These findings support the conclusion that the project method is an effective teaching strategy, with opportunities for refinement to achieve even greater impact.

Table 11: Level of Effectiveness in the Teaching Strategies Employed During Face-to- Face in terms of Community Resources.

Strategy	Mean	Verbal Description
Community Resources		
In a Face-to-Face setting, the professors bring school close to the community by utilizing its resources.	4.06	Agree
In a Face-to-Face setting, the professors guarantee that the instruction written in lectures is easy to understand by the audiences coming from both the school and the community.	4.16	Agree
In a Face-to-Face setting, the professors enrich classroom activities by providing hands on learning experiences outside the school.	4.03	Agree
Grand Mean	**4.08**	**Agree**

Legend: *"Strongly Disagree (1.00 – 1.80)", "Disagree (1.81 – 2.60)", "Neutral (2.61 – 3.40)", "Agree (3.41 – 4.20)", "Strongly Agree (4.21 – 5.00)"*

Table 11 presents the mean and verbal interpretation of respondents' perceptions regarding the effectiveness of teaching strategies employed by Library and Information Science faculty members during face-to-face classes using community resources. The highest rated indicators "Making lectures easy to understand for both school and community audiences" with a mean of 4.16, respondents agree that professors successfully make lectures easy to understand for both school and community audiences, rating this strategy slightly higher than the others; next is "Utilizing Community Resources" with a mean of 4.06, respondents agree that professors effectively connect the school with the community by utilizing its resources in face-to-face settings. Enriching classroom activities by providing hands-on learning experiences outside the school" with a mean of 4.03 received the lowest score, indicating that while respondents agree on its effectiveness, it is slightly less emphasized compared to other aspects. With a grand mean of 4.08, it suggests that while respondents view the Community Resources method positively overall, there is room for improvement to achieve stronger agreement. This analysis highlights the importance of clear instructional materials, community engagement, and practical learning opportunities in fostering effective teaching through the Community Resources method.

The results indicate that the Community Resources method is effective in bridging school learning with real-world experiences. Students appreciated the accessibility of instructional content, making it a valuable and engaging approach. While hands-on learning outside the school was well-received, further enhancements could maximize its impact. In this method, faculty can collaborate with local libraries and information centers to provide students with practical, hands- on experiences. Inviting industry professionals as guest speakers and integrating community-driven projects into the curriculum can offer valuable real-world insights. Additionally, encouraging students to utilize community resources for research, along with structured guidance, will strengthen their practical skills and understanding of real-world applications in Library and Information Science (LIS).

This backed up the observation pointed out by Miller et. al (2021), that implies that well-organized and interesting lectures are well appreciated due to the effectiveness whereby complicated information is presented to learners. Such lectures make it easier for the students to grasp and understand the content being delivered through an organized manner.

3. Level of Effectiveness in the Teaching Strategies During Online Modality

Table 12: Level of Effectiveness in the Teaching Strategies Employed During Online in terms of Lecture Method.

Strategy	Mean	Verbal Description
Lecture Method		
In an online class setting, the professors present the subject matter using visual aids which gives the idea of what the lesson is about.	4.38	Strongly Agree
In an online class setting, the professors are creative in explaining the topic by using cue words to clarify ideas.	4.17	Agree
In an online setting, the professors enrich classroom activities by providing hands on learning experiences outside the school.	3.87	Agree
Grand Mean	**4.14**	**Agree**

Legend: *"Strongly Disagree (1.00 – 1.80)", "Disagree (1.81 – 2.60)", "Neutral (2.61 – 3.40)", "Agree (3.41 – 4.20)", "Strongly Agree (4.21 – 5.00)"*

Table 12 presents the mean and verbal interpretation of the respondents' responses regarding the effectiveness of the lecture method used by Library and Information Science faculty during online classes. Professors presenting the subject matter with visual aids received the highest mean score of 4.38, interpreted as "Strongly Agree." This indicates that respondents highly appreciate this strategy as effective for understanding lessons; next is the creativity of professors in explaining topics by using cue words was rated with a mean score of 4.17**,** verbally described as "Agree." This shows effectiveness, though slightly lower than the use of visual aids; and last is Professors enriching activities with hands-on learning experiences outside the school had the lowest mean score of 3.87, still within the "Agree" range. While effective, this strategy was less favorably rated compared to the other two. The overall or grand mean for all strategies under the lecture method is 4.14, which corresponds to "Agree." This suggests that, in general, the respondents find the lecture method effective during online classes.

The results indicate that the Lecture Method in online settings is highly effective, particularly in its use of visual aids to enhance content delivery. Students appreciated creative explanations using cue words, which made lessons clearer and more engaging. However, hands-on learning experiences received the lowest rating, highlighting the need for more interactive activities to complement traditional lectures. To enhance clarity, engagement, and interactivity, faculty can incorporate dynamic visual aids such as videos, infographics, and digital presentations, making complex topics more accessible and visually appealing. Employing storytelling techniques and creative cues helps explain concepts effectively, ensuring students grasp key ideas. Additionally, regular feedback and Q&A sessions during or after lectures can further support student understanding, participation, and overall engagement, creating a more interactive and immersive learning experience.

These results contradict previous studies by Freeman et al. (2014) and Theobald et al. (2020), which found that traditional lecture methods are less effective than active learning strategies, as students in lecture-based settings were 1.5 times more likely to fail compared to those in active learning environments. Similarly, Lombardi and Shipley (2022) highlighted that flipped classrooms and interactive learning approaches result in significantly higher student performance and engagement than passive lecture formats. Additionally, Deslauriers et al. (2019) found that while students may perceive lecture- based methods as effective, their actual comprehension and retention improve significantly when active learning strategies are incorporated. These findings suggest that while online lectures with visual aids are appreciated by students, integrating more interactive and student-centered teaching methods could further enhance learning outcomes.

Table 13: Level of Effectiveness in the Teaching Strategies Employed During Online in terms of Brainstorming Method.

Strategy	Mean	Verbal Description
Brainstorming		
In an online class setting, the professors stimulate students by asking triggering questions and accept their reactions and perceptions of the task.	4.15	Agree
In an online class setting, the professors stimulate students by asking triggering questions and accept their reactions and perceptions of the task presented to them.	4.21	Strongly Agree
In an online class setting, the professors emphasize diverse perspectives over conventional responses.	4.20	Agree
Grand Mean	**4.19**	**Agree**

Legend: *"Strongly Disagree (1.00 – 1.80)", "Disagree (1.81 – 2.60)", "Neutral (2.61 – 3.40)", "Agree (3.41 – 4.20)", "Strongly Agree (4.21 – 5.00)"*

Table 13 presents the mean and verbal interpretation of the respondents' responses regarding the effectiveness of the brainstorming method used by Library and Information Science faculty during online classes. A similar item focusing on stimulating students with triggering questions about a specific task achieved the highest mean score of 4.21, interpreted as "Strongly Agree." This indicates that this specific focus on tasks is considered the most effective approach; followed by Encouraging diverse perspectives over conventional responses received a mean score of 4.20, interpreted as "Agree." This indicates strong support for the strategy but slightly less enthusiasm compared to the task-focused stimulation; Professors asking triggering questions and accepting students' reactions and perceptions received a mean score of 4.15, interpreted as "Agree." This shows effectiveness but is the lowest-rated item among the three. The overall or grand mean for all strategies under the brainstorming method is 4.19, corresponding to "Agree." This suggests that respondents find the brainstorming method generally effective in online teaching.

The results indicate that the Brainstorming Method in online settings is highly effective, particularly in stimulating students through triggering questions and encouraging diverse perspectives. Students valued the opportunity to think creatively and share unconventional ideas, making it an engaging and interactive approach. However, while the method fosters participation, further enhancements in student engagement could improve its effectiveness. To strengthen online brainstorming, faculty can engage students with open-ended, real-world questions related to Library and Information Science (LIS)—such as designing library systems or addressing information access challenges—to encourage creative problem- solving. Breakout rooms allow for smaller group discussions, ensuring that diverse perspectives are explored before presenting to the entire class. Additionally, incorporating gamified activities like timed challenges or idea competitions can make sessions more dynamic and engaging. Rotating facilitator roles among students further empowers them to take ownership of discussions, enhancing their leadership skills, confidence, and active participation. By combining structured collaboration, interactive discussions, and engaging techniques, online brainstorming can be a highly effective tool for deepening critical thinking and creative problem-solving in LIS education.

These results align with studies by Bremner (2022) and DeCoito (2022), which emphasize that brainstorming fosters creativity, collaboration, and critical thinking, making it an effective teaching strategy in both in-person and online settings. However, Batdı (2021) contradicts these findings, revealing that despite its benefits, brainstorming can be hindered by participant dominance and off-topic discussions, which may reduce its effectiveness in promoting critical thinking. Similarly, Shih et al. (2009) found that computer-supported brainstorming may lead to productivity losses, as participants can become overly focused on others' ideas or struggle with the cognitive load of processing multiple

contributions. These studies suggest that while brainstorming remains a valuable tool in online education, its effectiveness depends on structured facilitation, balanced participation, and strategies to minimize cognitive overload.

Table 14 shows the mean and verbal interpretation of the respondents' responses regarding the effectiveness of the role-playing method used by Library and Information Science faculty during online classes. The table evaluates how professors use role-playing to enhance learning during online classes by creating realistic, problem-based, or adaptable scenarios. Professors providing situations that encourage students to become realistic and apply personal experiences in their role-playing presentations received the highest mean score of 4.15**,** interpreted as "Agree." This suggests this strategy is effective and well-received; next is Professors using various scenarios to assess students' adaptability skills scored 4.07, interpreted as "Agree." This reflects moderate effectiveness, slightly higher than the second item but not as high as the first; and Professors conducting enactments or reenactments of real-life problem situations to help students understand lessons scored a mean of 4.01, also interpreted as "Agree." This is the lowest score among the items, indicating effectiveness but with room for improvement. The overall or grand mean for the role-playing method is 4.08**,** which corresponds to "Agree." This indicates that the role-playing method is generally perceived as effective in online teaching.

Table 14: Level of Effectiveness in the Teaching Strategies Employed During Online in terms of Role-Playing Method.

Strategy	Mean	Verbal Interpretation
Role Playing Method		
In an online class setting, the professors provide situations that encourage students to become realistic and apply personal experiences on their final role-playing presentation.	4.15	Agree
In an online class setting, the professors provide enactment/reenactment of real-life problem situations to understand the lesson.	4.01	Agree
In an online class setting, the professors try different scenarios to assess the adaptability skills of the students.	4.07	Agree
Grand Mean	**4.08**	**Agree**

Legend: *"Strongly Disagree (1.00 – 1.80)", "Disagree (1.81 – 2.60)", "Neutral (2.61 – 3.40)", "Agree (3.41 – 4.20)", "Strongly Agree (4.21 – 5.00)"*

The results indicate that the Role-Playing Method in online settings is highly effective, particularly in applying personal experiences to role-playing presentations. Students appreciated real-life enactments to enhance understanding, making it an engaging and interactive strategy. However, while effective, the assessment of adaptability skills through different scenarios could be further refined to maximize learning outcomes. To enhance virtual role-playing, faculty can implement structured strategies such as pre-recorded role assignments, decision-tree activities, and gamification elements to boost student engagement. Small-group projects and role-switching activities encourage collaboration and creativity, ensuring students gain diverse perspectives and develop problem-solving skills. Additionally, offering asynchronous options such as video submissions or forum- based role-plays provides flexibility and addresses potential connectivity issues.

The findings support the studies by Schmidt et al. (2019) and Odum (2021), which emphasize that role-playing enhances students' understanding by simulating real-life scenarios, bridging the gap between theoretical knowledge and practical application. However, contrasting research highlights potential limitations of this method. Ching (2014) found that while role-playing can be beneficial in online case- based learning, it may lead to uneven participation and

superficial engagement, limiting its impact on deep learning. Similarly, Madzlan et al. (2023) identified that technical issues and lack of immediate feedback can reduce the effectiveness of asynchronous online role-play among ESL learners. These studies suggest that, while role-playing remains a valuable teaching strategy in online education, its success depends on structured implementation, balanced participation, and technological support to mitigate potential drawbacks.

Table 15: Level of Effectiveness in the Teaching Strategies Employed During Online in terms of Independent Learning Method.

Strategy	Mean	Verbal Interpretation
Independent Learning		
In an online class setting, the professors provide lessons/reading materials in advance to allow students to study on their own time.	4.28	Strongly Agree
In an online class setting, the professors inspire flexibility on student output criteria and submission time.	4.34	Strongly Agree
An online class setting, the professors allow students to do their own reviewer.	4.31	Strongly Agree
Grand Mean	**4.31**	**Strongly Agree**

Legend: *"Strongly Disagree (1.00 – 1.80)", "Disagree (1.81 – 2.60)", "Neutral (2.61 – 3.40)", "Agree (3.41 – 4.20)", "Strongly Agree (4.21 – 5.00)"*

Table 15 presents the mean and verbal interpretation of the respondents' responses regarding the effectiveness of the independent learning method used by Library and Information Science faculty during online classes. This method evaluates how professors support independent learning by providing resources, flexibility, and self-assessment opportunities during online classes. Professors inspiring flexibility in student output criteria and submission time scored the highest mean of 4.34, interpreted as "Strongly Agree." This indicates that respondents find this strategy the most effective among the three. Allowing students to create their own reviewers received a mean score of 4.31, interpreted as "Strongly Agree." This demonstrates high effectiveness, slightly below the flexibility-focused strategy. Professors providing lessons/reading materials in advance for students to study on their own received a mean score of 4.28**,** interpreted as "Strongly Agree." This suggests strong approval of this strategy for fostering independent learning. The overall or grand mean for the independent learning method is 4.31, corresponding to "Strongly Agree." This suggests that the respondents perceive this method as highly effective in online teaching.

The results indicate that the Independent Learning Method in online settings is highly effective, particularly in providing flexibility through advanced reading materials and self-paced study. Students strongly appreciated the autonomy in managing academic tasks, making it a preferred learning approach. However, while well-received, enhancing structured guidance could further improve its effectiveness. To support independent learning, faculty should provide structured yet adaptable resources tailored to the Library and Information Science (LIS) field, such as curated reading lists, engaging video tutorials, and interactive virtual tools for library management or cataloging. Offering flexibility in deadlines and diverse output options allows students to manage their learning at their own pace, fostering a personalized and self-directed educational experience.

The results further supported the studies of Boonstra (2020) and Capuano (2020), which showed that learner-centered approaches and adaptive learning technologies empower students to take control of their learning, enhancing autonomy and academic outcomes in independent learning methods.

Table 16 shows the mean and verbal interpretation of the respondents' responses regarding the effectiveness of the simulation method used by Library and Information Science faculty during online classes. This method evaluates how professors employ simulation techniques to enhance learning through practical and interactive online class activities. Conducting simulation activities without exposing students to harmful environments scored the highest mean of 4.17, interpreted as "Agree." This indicates strong approval of this safe and practical simulation approach. Assigning students a practical examination to assess their adaptability skills received a mean score of 4.16, interpreted as "Agree." This shows that respondents find this approach effective. Demonstrating a procedure and assessing whether students can replicate the same process scored the lowest mean of 3.96**,** but it is still interpreted as "Agree." This suggests that while effective, this approach is perceived as slightly less impactful compared to the other items. The overall or grand mean for the simulation method is 4.10**,** corresponding to "Agree." This suggests that respondents generally perceive the simulation method as effective for online teaching.

Table 16: Level of Effectiveness in the Teaching Strategies Employed During Online in terms of Simulation Method.

Strategy	Mean	Verbal Interpretation
Simulation		
In an online class setting, the professors assigned the students a practical examination to assess their adaptability skills.	4.16	Agree
In an online class setting, the professors demonstrate a procedure and assess if the students can replicate the same process.	3.96	Agree
In an online class setting, the professors conduct simulation activities without exposing us to harmful environment.	4.17	Agree
Grand mean	**4.10**	**Agree**

Legend: *"Strongly Disagree (1.00 – 1.80)", "Disagree (1.81 – 2.60)", "Neutral (2.61 – 3.40)", "Agree (3.41 – 4.20)", "Strongly Agree (4.21 – 5.00)"*

The results indicate that the Simulation Method in online settings is highly effective, particularly in assessing adaptability skills through practical examinations. Students appreciated the safe online environment for simulations, making it a valuable and engaging learning approach. However, replicating demonstrated procedures received a slightly lower rating, highlighting the need for improved hands-on guidance to enhance learning outcomes. To strengthen online simulations, faculty should design interactive tasks that mirror real-world library functions, such as cataloging records, managing digital archives, and addressing user service issues, helping students develop practical skills relevant to the Library and Information Science (LIS) field. Providing clear, step-by-step demonstrations, followed by opportunities for independent task replication, enhances the hands-on learning experience and builds student confidence.

The results present contrasting findings regarding the effectiveness of online simulations. Linder and Weissblueth (2022) compared face-to-face and online simulation training and found that online simulations may lack the immediacy and hands-on engagement of in-person experiences, potentially reducing their effectiveness in certain educational contexts. Similarly, Sapuan and Chan (2024) explored simulation-based learning in open and distance education, highlighting that technical challenges and limited student engagement can hinder the success of online simulations. These studies suggest that while online simulations provide safe and practical learning opportunities, their effectiveness may be compromised by reduced interactivity and technological limitations, requiring careful implementation and support to maximize their impact.

Table 17: Level of Effectiveness in the Teaching Strategies Employed During Online in terms of Project Method.

Strategy	Mean	Verbal Interpretation
Project Method		
In an online class setting, the professors require construction of ideas gathered and organized through visual illustration.	4.20	Agree
In an online class setting, the professors instill discipline on finishing small tasks before the deadline to avoid delays.	4.23	Strongly Agree
In an online class setting, the professors groom students to always list the sequence of activities to avoid making wrong output.	3.99	Agree
Grand Mean	**4.14**	**Agree**

Legend: *"Strongly Disagree (1.00 – 1.80)", "Disagree (1.81 – 2.60)", "Neutral (2.61 – 3.40)", "Agree (3.41 – 4.20)", "Strongly Agree (4.21 – 5.00)"*

Table 17 presents the mean and verbal interpretation of the respondents' responses regarding the effectiveness of the project method used by Library and Information Science faculty during online classes. This method evaluates how professors guide students in completing projects through organized strategies and structured activities during online classes. Professors instilling discipline in finishing small tasks before deadlines to avoid delays achieved the highest mean score of 4.23, interpreted as "Strongly Agree." This indicates that this strategy is seen as the most effective for fostering responsibility and timely task management. Professors requiring students to gather and organize ideas through visual illustrations received a mean score of 4.20**,** interpreted as "Agree." This reflects strong approval for using visual aids to enhance idea development. Professors encouraging students to list the sequence of activities to avoid incorrect outputs received a mean score of 3.99, interpreted as "Agree." While still effective, this is the lowest-rated item, suggesting room for improvement. The overall or grand mean for the project method is 4.14, corresponding to "Agree." This indicates that the project method is generally perceived as effective in online teaching.

The results indicate that the Project Method in online settings is highly effective, particularly in instilling discipline through task management and meeting deadlines. Students appreciated the use of visual illustrations for organizing ideas, making it a valuable and structured learning approach. However, structuring activities in a sequence received a slightly lower rating, highlighting the need for improved guidance in project planning. To enhance time management and organization, faculty should help students break down tasks into smaller, manageable steps with clear deadlines, ensuring a more structured workflow. Utilizing visual aids such as digital diagrams, flowcharts, or concept maps can help students organize and present their ideas more effectively, with faculty providing templates and structured guidance to support the process.

The findings confirm previous studies on project-based learning (PBL), with Hindun et al. (2024) highlighting its effectiveness in enhancing students' science literacy and collaborative skills, demonstrating its role in fostering comprehensive understanding and teamwork. Similarly, Kokotsaki et al. (2016) found that PBL improves student engagement by encouraging knowledge sharing and discussion, reinforcing its potential to promote active participation and deeper learning. However, contrasting findings suggest that PBL's effectiveness may not be universal. Gratchev and Jeng (2018) observed that combining PBL with traditional teaching methods did not significantly enhance students' learning experiences, indicating that its success depends on implementation and context. Additionally, Parrado-Martínez and Sánchez-Andújar (2020) found that PBL had little impact on students' perceived teamwork, communication, and creativity skills, suggesting that its benefits may not uniformly apply across all learning areas. These studies indicate that while PBL is generally effective in online teaching, its success relies on structured implementation, relevant application, and alignment with specific learning objectives.

Table 18: Level of Effectiveness in the Teaching Strategies During Online in terms of Community Resources Method.

Strategy	Mean	Verbal Interpretation
Community Resources		
In an online class setting, the professors uploaded video materials taken within the community to promote the potential of the community environment.	4.10	Agree
In an online class setting, the professors guarantee that the instruction written in lectures is easy to understand by the audiences both from school and their community.	4.15	Agree
In an online class setting, the professors enrich classroom activities by giving them task which involves getting particular materials available from their surroundings.	4.14	Agree
Grand Mean	**4.13**	**Agree**

Legend: *"Strongly Disagree (1.00 – 1.80)", "Disagree (1.81 – 2.60)", "Neutral (2.61 – 3.40)", "Agree (3.41 – 4.20)", "Strongly Agree (4.21 – 5.00)"*

Table 18 presents the mean and verbal interpretation of the respondents' responses regarding the effectiveness of the community resources method used by Library and Information Science faculty during online classes. This method assesses how professors integrate resources from the community to enhance learning experiences during online classes. Professors ensuring that written instructions in lectures are easy to understand for audiences from both the school and the community scored the highest mean of 4.15**,** interpreted as "Agree." This indicates strong approval for the clarity of instructional materials. Professors giving tasks that involve acquiring materials available from the community received a mean score of 4.14, interpreted as "Agree." This suggests a high level of effectiveness, slightly below the highest-rated item. Professors uploading video materials taken within the community to promote its potential received a mean score of 4.10**,** interpreted as "Agree." This reflects effectiveness, though slightly less appreciated compared to other items. The overall or grand mean for the community resources method is 4.13, corresponding to "Agree." This indicates that respondents generally find this method effective for online teaching.

The results indicate that the Use of Community Resources Method in online settings is highly effective, particularly in ensuring instructional materials are accessible and easy to understand for both school and community audiences. Students appreciated the integration of real-world materials into learning, making it a valuable and practical approach. However, uploading community-based video materials received the lowest rating, highlighting the need for improved utilization of digital resources to enhance community engagement. To strengthen this method, faculty should focus on curating and integrating high-quality community-based digital content, ensuring that videos, case studies, and real-world examples are effectively incorporated into online instruction. Encouraging collaborations with local organizations, libraries, and information centers can provide students with valuable insights and practical exposure to Library and Information Science (LIS) applications.

These results confirm previous studies by Ferlazzo (2020) and Comstock (2023), which found that culturally responsive teaching and clear instructional materials enhance student engagement and inclusivity in diverse learning environments. Similarly, Jiménez-Zarco et al. (2023) found that learners in online communities experience improved learning performance and higher satisfaction, suggesting that integrating community resources enhances educational experiences. Ramos (2023) further emphasized the importance of social, cognitive, and teaching presences in fostering effective learning environments through online educational communities. However, contrasting findings exist. Darling-Hammond et al. (2020) noted that online teaching in K–12 education faces challenges such as limited access to

community resources and varying levels of student engagement, which can hinder the effectiveness of community-based learning. These findings suggest that while community resources can enhance online learning, their impact depends on accessibility, structured integration, and student engagement levels.

4. Significant Difference Between the Level of Effectiveness Level of Effectiveness in the Teaching Strategies During Face-to-Face and Online Classes

Table 19 shows the significant differences between the effectiveness of various teaching strategies used by Library and Information Science faculty members during face-to-face and online classes. The findings indicate that the lecture method is significantly more effective in face-to-face settings, with a mean of 4.33, compared to online settings, which have a mean of 4.14, leading to the rejection of the hypothesis. Similarly, role-playing is more effective in face-to-face teaching, with a mean of 4.23, compared to online teaching, which has a mean of 4.08, also resulting in the rejection of the hypothesis. Simulations and the project method are both more effective in face-to-face settings, with means of 4.22 and 4.20, respectively, compared to online settings, which have means of 4.10 and 4.14, leading to the rejection of the hypothesis for both strategies. On the other hand, independent learning is significantly more effective in online settings, with a mean of 4.31, compared to face-to-face settings, which have a mean of 4.12, resulting in the rejection of the hypothesis. However, there is no significant difference in the effectiveness of brainstorming between face-to-face and online settings, with means of 4.25 and 4.19, respectively, leading to the failure to reject the hypothesis. Similarly, the use of community resources shows no significant difference between face-to-face and online settings, with means of 4.08 and 4.13, respectively, also leading to the failure to reject the hypothesis.

Table 19: Significant Difference Between the Level of Effectiveness in the Teaching Strategies During Face-to-Face and Online Classes.

Strategies	Mean of Face-to- Face	Mean of Online	p-values	Decision	Remark
Lecture Method	4.33	4.14	<0.0001	Reject Ho	Significant
Brainstorming	4.25	4.19	0.2025	Failed to Reject Ho	Not Significant
Role Playing Method	4.23	4.08	0.0004	Reject Ho	Significant
Independent Learning	4.12	4.31	0.0138	Reject Ho	Significant
Simulation	4.22	4.10	0.0015	Reject Ho	Significant
Project Method	4.20	4.14	0.0329	Reject Ho	Significant
Community Resources	4.08	4.13	0.5802	Failed to Reject Ho	Not Significant

***Note**: "If p value is less than or equal to the level of significance (0.05) reject Ho, otherwise failed to reject Ho."*

The study highlights that the effectiveness of various teaching strategies used by Library and Information Science (LIS) faculty varies significantly between face-to-face and online settings. Findings indicate that lecture, role-playing, simulation, and project-based methods were significantly more effective in face-to- face instruction, as these methods rely heavily on interactive engagement, real-time feedback, and hands-on learning experiences. In contrast, independent learning proved more effective in online environments, where flexibility and access to digital resources support self-paced study. Meanwhile, brainstorming and the use of community resources were equally effective in both learning formats, highlighting their adaptability to different instructional settings.

These findings suggest that teaching methods should be strategically tailored to their respective environments to optimize learning outcomes. Face-to- face instruction is particularly well-suited for interactive and experiential strategies, such as lectures, role-playing, and project-based learning, which benefit from direct student engagement and

collaborative activities. Conversely, online learning environments are more effective in fostering independent learning, allowing students to manage their pace and utilize digital tools for research and self-assessment. Brainstorming, which thrives in both settings, can be further enhanced with structured facilitation and interactive discussions. To maximize the effectiveness of both instructional formats, a blended learning approach is recommended, combining the engagement of face-to-face methods with the flexibility and resource accessibility of online learning. Faculty should receive training in adaptive teaching strategies, equipping them to effectively integrate technology and modify instructional methods based on learning environments.

These results confirmed previous study by Jia (2023) emphasized the effectiveness of online independent learning methods, highlighting their ability to support flexibility and self-paced learning. Additionally, Lazarevic (2023) demonstrated that simulations and interactive methods enhance student outcomes, particularly in hands-on, face-to-face environments. The findings also align with Ferlazzo (2020), which noted that community-based teaching strategies remain effective across different modalities, showing consistent results regardless of the teaching format.

5. Significant Relationship Between the Level of Effectiveness in the Teaching Strategies During Face-to-Face and Academic Performance

Table 20 presents the correlation between the effectiveness of teaching strategies used by Library and Information Science faculty and academic performance during face-to-face classes. There is a very weak, positive, but not significant relationship between the lecture method and academic performance with a coefficient of 0.029 and p-value of 0.6067 which failed to reject the hypothesis; in brainstorming there is a very weak, positive, and not significant relationship between brainstorming and academic performance with a 0.004 coefficient and p-value of 0.2394 which made the failure of the hypothesis; There is a very weak, negative, and not significant relationship between Role Playing and academic performance with a coefficient of -0.066 and p-value of 0.5148 which also made the failure of the hypothesis; in independent learning there is a very weak, negative, and do not significant relationship between independent learning and academic performance with a -0.036 coefficient and p-value of 0.5148 which made the failure of the hypothesis; in simulation there is a very weak, negative, and not significant relationship between simulation and academic performance with a -0.060 coefficient and p-value of 0.2812 which made the failure to reject the hypothesis; in Project Method there is a very weak, positive, and not significant relationship between the project method and academic performance with a 0.007 coefficient and p-value of 0.9015 which failed to reject the hypothesis; and community resource, there is a very weak, negative, and not significant relationship between community resources and academic performance with a -0.073 coefficient and p-value of 0.1895 which failed to reject the hypothesis.

Table 20: Significant Relationship Between the Level of Effectiveness in the Teaching Strategies in terms of Face-to-Face and Academic Performance.

	Strategies	Coefficient	Interpretation	p- values	Decision	Remark
Academic Performance	Lecture Method	0.029	Positive Very Weak Relationship	0.6067	Failed to Reject Ho	Not Significant
	Brainstorming	0.004	Positive Very Weak Relationship	0.2394	Failed to Reject Ho	Not Significant
	Role Playing Method	-0.066	Negative Very Weak Relationship	0.5148	Failed to Reject Ho	Not Significant
	Independent Learning	-0.036	Negative Very Weak Relationship	0.5148	Failed to Reject Ho	Not Significant
	Simulation	-0.060	Negative Very Weak	0.2812	Failed to	Not

			Relationship		Reject Ho	Significant
	Project Method	0.007	Positive Very Weak Relationship	0.9015	Failed to Reject Ho	Not Significant
	Community Resources	-0.073	Negative Very Weak Relationship	0.1895	Failed to Reject Ho	Not Significant

Note: *"If p value is less than or equal to the level of significance (0.05) reject Ho, otherwise failed to reject Ho."*

The findings indicate that teaching strategies used by Library and Information Science (LIS) faculty in face-to-face settings do not have a significant direct impact on students' academic performance. The relationships between these methods and academic outcomes were weak and not statistically significant, suggesting that other factors may play a more critical role in determining student success. This highlights the need to shift the focus beyond traditional academic metrics and instead emphasize skill development, critical thinking, and engagement as key measures of learning effectiveness. Faculty should prioritize holistic learning outcomes by integrating critical thinking, problem-solving, and collaboration into their teaching approaches. A blended learning approach, which combines multiple teaching strategies, can enhance student engagement and foster deeper understanding. Incorporating evidence-based practices and leveraging technology-enhanced methods—such as virtual simulations and gamification—can improve the effectiveness of instruction and provide students with more interactive and practical learning experiences.

These results support the findings, highlighting weak and non-significant correlations between teaching strategies and academic performance. Magsucang et al. (2020) revealed that while teaching strategies enhance student engagement, their direct impact on academic outcomes is minimal. Similarly, Wallace et al. (2021) noted variability in the relationship between active learning methods and academic performance, emphasizing the role of external factors such as motivation and prior knowledge.

6. Significant Relationship Between the Level of Effectiveness in the Teaching Strategies During Online Modality and Academic Performance

Table 21 presents data on the correlation between the effectiveness of teaching strategies used by Library and Information Science faculty members during online classes and students' academic performance. The relationship between the Lecture Method's effectiveness in online classes and academic performance is very weakly positive and not significant with a 0.012 coefficient and p-value of 0.8668 which failed to reject the hypothesis; in Brainstorming there is a very weakly positive and not significant relationship between the brainstorming effectiveness in online classes and academic performance with a -0.017 and p-value of 0.2982 which failed to reject the hypothesis; in Role Playing method, the relationship between Role Playing Method effectiveness in online classes and academic performance is very weakly negative and not significant with a -0.017 coefficient and p-value of 0.7668 which failed to reject the hypothesis; in Independent Learning, the relationship between Independent Learning effectiveness in online classes and academic performance is very weakly positive and not significant with a 0.085 coefficient and p-value of 0.1272 which failed to reject the hypothesis; in simulation, the relationship between Simulation effectiveness in online classes and academic performance is very weakly positive and not significant with a coefficient of 0.062 and p-value of 0.2680 which failed to reject the hypothesis; in Project Method, the relationship between Project Method effectiveness in online classes and academic performance is very weakly negative and not significant with a -0.030 coefficient and p-value of 0.5948 which failed to reject the hypothesis; and in Community Resources, the relationship between the use of Community Resources in online classes and academic performance is very weakly positive and not significant with a 0.025 coefficient and 0.6495 p-value which failed to reject the hypothesis.

Table 21: Significant Relationship Between the Level of Effectiveness in the Teaching Strategies During Online Modality and Academic Performance.

	Strategies	Coefficient	Interpretation	p- values	Decision	Remark
Academic Performance	Lecture Method	0.012	Positive Very Weak Relationship	0.8668	Failed to Reject Ho	Not Significant
	Brainstorming	0.058	Positive Very Weak Relationship	0.2982	Failed to Reject Ho	Not Significant
	Role Playing Method	-0.017	Negative Very Weak Relationship	0.7668	Failed to Reject Ho	Not Significant
	Independent Learning	0.085	Positive Very Weak Relationship	0.1272	Failed to Reject Ho	Not Significant
	Simulation	0.062	Positive Very Weak Relationship	0.2680	Failed to Reject Ho	Not Significant
	Project Method	-0.030	Negative Very Weak Relationship	0.5948	Failed to Reject Ho	Not Significant
	Community Resources	0.025	Positive Very Weak Relationship	0.6495	Failed to Reject Ho	Not Significant

Note: *"If p value is less than or equal to the level of significance (0.05) reject Ho, otherwise failed to reject Ho."*

The analysis indicates that the teaching strategies examined—Lecture Method, Brainstorming, Role-Playing, Independent Learning, Simulation, Project Method, and Community Resources—had only very weak correlations with academic performance, none of which were statistically significant. This suggests that these strategies had minimal direct impact on students' academic outcomes, with no single method demonstrating a substantial influence on performance. These findings highlight the need to explore other potential factors that may play a more critical role in academic achievement. To strengthen the connection between teaching strategies and student performance, faculty should adopt evidence-based approaches, such as project-based learning and simulations, while ensuring that instructional methods are clearly aligned with learning objectives. Regular assessment of teaching effectiveness through student performance data and feedback is essential to refine instructional practices.

This aligns with the study by Rahmawati and Rahmi (2021), which found that while online lectures can be effective, their impact on grades depends on student attention and the quality of lesson delivery. Similarly, Stumm and Ren et al. (2022) noted that collaborative methods like brainstorming do not always improve academic performance without clear guidance. However, contrasting findings suggest otherwise. Khalid and Quick (2016) discovered a significant positive correlation between teaching presence and learning satisfaction, indicating that well-structured instructional strategies can enhance student outcomes. Likewise, Szeto (2015) found that learning outcomes are more influenced by the quality of teaching presence than by social and cognitive presence. These studies suggest that certain online teaching strategies can positively impact academic performance, challenging the non-significant relationships observed in the current findings.

7. Challenges Encountered with Quality of the Teaching Strategies

Table 22 shows the mean and verbal interpretation of the respondents' experiences regarding the challenges encountered with classroom management in the context of teaching strategies used by Library and Information Science faculty. This table evaluates the level of difficulty professors face in various aspects of classroom management during online classes. Professors had difficulty assessing students' leadership abilities in every task due to time constraints. This item received the highest mean score of 2.96, still interpreted as "Neutral." This suggests a slightly higher degree of difficulty compared to the other two items, but not to a critical extent. Professors struggled to give grades because

students used different strategies to handle group tasks. This item scored a mean of 2.84, also interpreted as "Neutral." It indicates a moderate level of difficulty in this area. Professors had difficulty assigning students leadership tasks due to their classroom performance and behavior. This item received a mean score of 2.81, interpreted as "Neutral." This suggests that the challenge is neither strongly felt nor completely absent. The overall or grand mean for classroom management challenges is 2.87, which falls within the "Neutral" range. This indicates that respondents perceive these challenges as moderate and not significantly problematic.

Table 22: Challenges Encountered with Quality of the Teaching Strategies in Classroom Management

Challenges	Mean	Verbal Description
Classroom Management		
The professors had difficulty assigning students leadership task because of their classroom performance and behavior.	2.81	Neutral
The professors had difficulty giving grades because students have different strategies used in handling their groups.	2.84	Neutral
The professors had difficulty in assessing students 'leadership ability in every task because of time constraints.	2.96	Neutral
Grand Mean	**2.87**	**Neutral**

Legend: *"Strongly Disagree (1.00 – 1.80)", "Disagree (1.81 – 2.60)", "Neutral (2.61 – 3.40)", "Agree (3.41 – 4.20)", "Strongly Agree (4.21 – 5.00)"*

The analysis indicates that the classroom management challenges examined— assessing students' leadership abilities, grading group tasks, and assigning leadership roles—were perceived as moderate by faculty, with no single issue emerging as a significant concern. This suggests that while faculty encounter some difficulties in managing online classrooms, these challenges have a minimal direct impact on instructional effectiveness. These findings highlight the need to explore other potential factors, such as instructional design and student participation, that may play a more critical role in improving classroom management in online settings. To strengthen faculty's ability to manage classrooms effectively, instructors should adopt structured approaches, such as clear leadership evaluation rubrics, standardized grading criteria for group work, and defined role assignments, while ensuring that these strategies are aligned with learning objectives. Regular assessment of classroom management strategies through faculty and student feedback is essential to refine instructional practices and enhance the overall online learning experience.

These results validated the findings of Zhang (2020) and Barcelona (2023), which highlighted that resource limitations and time management issues present significant barriers to effective teaching.

Table 23 presents the mean and verbal interpretation of the respondents' experiences regarding challenges encountered in resources for online teaching by Library and Information Science faculty. This table evaluates resource-related challenges faced by professors in adapting to online teaching modalities. Professors also reported a lack of an adequate number of webcams to support online teaching. This item scored slightly higher with a mean of 2.67, still interpreted as "Neutral." While this indicates a moderate level of difficulty, it is not viewed as highly problematic. Professors indicated they lacked new models of laptops to cater to the demands of online teaching. This item received a mean score of 2.58, interpreted as "Neutral." This suggests that this challenge is present but not perceived as critical. The overall or grand mean for resource-related challenges is 2.63, which falls within the "Neutral" range. This indicates that the challenges related to resources are acknowledged but are not perceived as severe or highly impactful on teaching strategies.

Table 23: Challenges Encountered with Quality of the Teaching Strategies in Resources.

Challenges	Mean	Verbal description
Resources		
The professors lacked a new model of laptop to cater online modality.	2.58	Neutral
The professors lacked enough number of webcams to cater online modality.	2.67	Neutral
Grand Mean	**2.63**	**Neutral**

Legend: *"Strongly Disagree (1.00 – 1.80)", "Disagree (1.81 – 2.60)", "Neutral (2.61 – 3.40)", "Agree (3.41 – 4.20)", "Strongly Agree (4.21 – 5.00)"*

The analysis indicates that the resource-related challenges examined— availability of webcams and access to updated laptops—were perceived as moderate by faculty, with no single issue emerging as a significant barrier to online teaching. Professors reported a lack of an adequate number of webcams, presenting a moderate challenge but not one that critically affected instruction. Similarly, the absence of new laptop models to support online teaching demands was acknowledged as a difficulty, though it was not seen as a major hindrance. The overall perception of resource-related challenges suggests that while faculty face some limitations in technological resources, these issues are not viewed as significantly disruptive to their teaching strategies. These findings highlight the need to explore other factors, such as digital literacy, institutional support, and access to online teaching tools, that may play a more critical role in optimizing online instruction. To enhance faculty efficiency in online teaching, institutions should consider providing access to updated equipment, offering technology grants, or implementing support programs to address gaps in digital resources. Additionally, faculty training on maximizing available technology and integrating alternative teaching solutions can help mitigate resource-related constraints. Regular assessment of resource needs and institutional support structures is essential to ensure that faculty have the necessary tools to deliver effective online instruction.

This matches the study conducted by Wildana et al. (2020) found that while online learning facilitates the use of various applications, internet access and internet packages restrict the effectiveness of online learning. Similarly, Owens et al. (2018) highlighted that interaction with students, student engagement, flexibility, and technology are relevant factors to faculty satisfaction with online teaching. These studies suggest that while resource-related challenges exist, they are not perceived as severely hindering online teaching effectiveness. However, contrasting findings exist. A study by Muhammad and Kainat (2020) found that internet access problems, a lack of interaction between teachers and students, and a lack of technological facilities challenge the efficacy of online learning. This suggests that in some contexts, resource-related challenges can significantly impact online teaching effectiveness.

Table 24: Challenges Encountered with Quality of the Teaching Strategies in Technical Skills.

Challenges	Mean	Verbal Description
Technical Skills		
The professors lacked the necessary ICT- related devices for online modality.	2.62	Neutral
The professors lacked stable internet connection at home.	2.62	Neutral
Grand Mean	**2.62**	**Neutral**

Legend: *"Strongly Disagree (1.00 – 1.80)", "Disagree (1.81 – 2.60)", "Neutral (2.61 – 3.40)", "Agree (3.41 – 4.20)", "Strongly Agree (4.21 – 5.00)"*

Table 24 shows the mean and verbal interpretation of the respondents' experiences regarding challenges in technical skills encountered by Library and Information Science faculty during online teaching. This table evaluates technical skill-related challenges faced by professors in adapting to the online teaching environment. Professors indicated they lacked the necessary ICT-related devices for online teaching. This item received a mean score of 2.62, interpreted as

"Neutral." This suggests that while this challenge is acknowledged, it is not seen as a significant barrier. Professors also reported difficulties with the lack of stable internet connections at home. This item also scored 2.62**,** interpreted as "Neutral." This reflects a similar level of perceived difficulty as the first item. The overall or grand mean for technical skill-related challenges is 2.62, which falls within the "Neutral" range. This indicates that respondents acknowledge these challenges but do not view them as highly impactful on their ability to deliver online teaching.

The analysis indicates that the technical skill-related challenges examined— lack of ICT-related devices and unstable internet connections—were perceived as moderate by faculty, with no single issue emerging as a major obstacle to online teaching. Professors acknowledged limited access to ICT devices as a challenge, but it was not considered a critical barrier to effective instruction. Similarly, unstable internet connections at home posed some difficulty but were not viewed as highly disruptive. The overall perception of technical skill-related challenges suggests that while faculty encounter some difficulties in adapting to online teaching due to resource limitations, these issues do not significantly hinder their ability to conduct classes. These findings highlight the need to explore other factors, such as digital proficiency, institutional IT support, and training programs, that may play a more essential role in enhancing online teaching effectiveness. To strengthen faculty adaptability to online teaching, institutions should consider providing access to ICT resources, improving internet support for faculty, and offering training on alternative digital tools that require minimal connectivity. Additionally, establishing institutional support systems, such as troubleshooting assistance and technical workshops, can further help faculty navigate online teaching challenges. Regular assessment of faculty technical needs is essential to ensure they have the necessary resources and support to optimize their online teaching experience.

These results confirm previous studies by Wildana et al. (2020), who found that while online learning facilitates the use of various applications, limitations in internet access and connectivity hinder its overall effectiveness. Similarly, Owens et al. (2018) highlighted that faculty satisfaction with online teaching is influenced by factors such as student engagement, interaction, flexibility, and technological support. These studies suggest that while technical skill-related challenges exist, they are generally perceived as moderate obstacles rather than significant barriers to online teaching effectiveness. Nevertheless, contrasting findings suggest otherwise. Muhammad and Kainat (2020) found that internet access issues, limited interaction between teachers and students, and inadequate technological facilities can severely impact the effectiveness of online learning. This implies that in certain contexts, technical skill-related challenges may play a more significant role in hindering online teaching performance.

Table 25: Respondent Assessment on the Challenges Encountered with Quality of the Teaching Strategies in Communication.

Challenges	Mean	Verbal description
Communication		
The professors struggled in finding free time to read all the students feedback during evaluation.	2.95	Neutral
The professors experienced less in-person student-teacher interaction.	3.10	Neutral
The professors experienced uneasiness meeting their students in an online space.	2.73	Neutral
Grand Mean	**2.93**	**Neutral**

Legend: *"Strongly Disagree (1.00 – 1.80)", "Disagree (1.81 – 2.60)", "Neutral (2.61 – 3.40)", "Agree (3.41 – 4.20)", "Strongly Agree (4.21 – 5.00)"*

Table 25 presents the mean and verbal interpretation of the respondents' experiences regarding communication challenges encountered by Library and Information Science faculty during online teaching. This table evaluates the difficulties professors face in maintaining effective communication with students in an online teaching environment. Professors experienced less in-person interaction with students, which scored the highest mean of 3.10, interpreted as "Neutral." This indicates that while this challenge is acknowledged, it is not perceived as highly problematic. Professors struggled to find free time to read all student feedback during evaluation. This item received a mean score of 2.95, interpreted as "Neutral." This suggests a moderate level of difficulty, but not a severe challenge. Professors felt uneasy meeting their students in an online space. This item scored the lowest mean of 2.73, still interpreted as "Neutral." This suggests that this challenge is present but less significant compared to the other two items. The overall or grand mean for communication-related challenges is 2.93, which falls within the "Neutral" range. This indicates that respondents perceive communication challenges as moderate but not severely impactful on their teaching strategies.

The analysis indicates that the communication challenges examined— limited in-person interaction, difficulty managing student feedback, and discomfort in online meetings—were perceived as moderate by faculty, with no single issue emerging as a critical barrier to online teaching. Professors acknowledged reduced face-to-face interaction with students as the most noticeable challenge, though it was not considered highly problematic. Similarly, difficulty in managing student feedback during evaluations posed a moderate challenge, reflecting the demands of tracking and responding to student concerns in an online setting. Meanwhile, uneasiness in meeting students in a virtual space was the least significant challenge, suggesting that most faculty members have adjusted to online communication tools. The overall perception of communication-related challenges suggests that while faculty encounter difficulties in fostering engagement and managing interactions in an online environment, these issues do not severely impact their teaching effectiveness. These findings highlight the need to explore other factors, such as student participation, faculty workload, and digital communication strategies, that may influence communication effectiveness in online teaching. To enhance faculty- student communication in online settings, institutions should consider implementing structured interaction strategies, such as scheduled virtual office hours, designated feedback sessions, and streamlined communication platforms to improve accessibility and responsiveness. Additionally, training on digital communication best practices and time management strategies can help faculty manage student interactions more effectively. Regular evaluation of communication processes and faculty feedback mechanisms will ensure that strategies remain aligned with both faculty and student needs, ultimately fostering a more interactive and engaging online learning environment.

This aligns with the study by Halpern (2016), which explored how information literacy instruction can reduce information anxiety in online learners, suggesting that while communication challenges exist, they can be mitigated through effective instructional strategies. Similarly, Campbell et al. (2023) examined the effects of teaching information literacy in online psychology courses and found that although communication challenges are present, they do not significantly impede teaching effectiveness. However, contrasting findings suggest otherwise. Fuller et al. (2016) found that computer-mediated communication apprehension (CMCA) can serve as a barrier to instructor communication competence in online teaching environments, negatively affecting both the quality and quantity of communication. This suggests that in certain contexts, communication challenges can significantly impact online teaching effectiveness, particularly when instructors struggle with adapting to digital interaction methods.

CHAPTER 5

SUMMARY, CONCLUSIONS, RECOMMENDATIONS

This chapter provides an overview of the key findings from the study on the effectiveness of various teaching strategies used by library and information science faculty in both face-to-face and online settings.

Summary of Findings

After reviewing the collected data, the key findings of the study are as follows:

1. Profile of the Respondents

The demographic profile of students reveals that the majority of respondents belong to the 20–21 age group (48.51%), while the smallest group consists of students aged 26–27 (1.23%). In terms of year level, the highest number of respondents are from 2nd year (37.40%), whereas 1st-year students constitute the smallest group (14.81%). Regarding academic performance, most students reported grades between 93–98 (30.86%), while the fewest respondents had grades ranging from 75–80 (1.54%). These findings provide insight into the student composition, their academic standing, and distribution across different year levels.

2. Level of Effectiveness of the Teaching Strategies Employed by Library and Information Science Faculty Members During Face-to-Face Classes

2.1 The findings indicate that the lecture method is perceived as a highly effective teaching strategy in face-to-face settings, as reflected in the overall grand mean of 4.33, corresponding to "Strongly Agree." The highest-rated indicator, “Professors Comprehensively Explain Topics to Clarify Ideas” (Mean: 4.38), suggests that students highly value clear and thorough explanations provided by faculty members. Conversely, the lowest-rated indicator, “Professors Are Resourceful in Explaining Unfamiliar Lessons” (Mean: 4.29), while still categorized as "Strongly Agree," indicates slightly lower agreement regarding the faculty’s ability to utilize diverse strategies in presenting complex concepts. These findings suggest that while lecture-based instruction is effective, further enhancements in resourcefulness and adaptive teaching strategies could further strengthen its impact on student learning.

2.2 The findings indicate that the brainstorming method is perceived as a highly effective teaching strategy in face-to-face settings, as reflected in the overall grand mean of 4.25, corresponding to "Strongly Agree." The highest-rated aspect, “Encouraging Creativity and Free Expression” (Mean: 4.40), suggests that faculty members effectively foster a conducive learning environment that promotes open idea generation and creative thinking. Meanwhile, the lowest-rated aspect, “Directing Students to List Possible Options” (Mean: 4.05), while still rated positively, indicates slightly lower agreement regarding the faculty’s effectiveness in guiding students to explore multiple solutions during brainstorming sessions. These findings suggest that while the brainstorming method enhances creativity and student engagement, further emphasis on structured guidance and critical thinking strategies could strengthen its effectiveness in fostering comprehensive idea development.

2.3 The findings indicate that the role-playing method is perceived as highly effective in face-to-face teaching, with an overall mean of 4.23, corresponding to "Strongly Agree." The highest-rated aspect was “Encouraging Realism and Personal Application” (Mean: 4.32), suggesting that professors effectively create realistic scenarios that allow students to apply personal experiences during role- playing. Both “Reenactment of Real-Life Situations” and “Helping Students Express Feelings” received a mean score of 4.18, indicating that professors successfully facilitate lesson comprehension through enactments while also providing opportunities for students to express

emotions. Overall, these findings highlight that role-playing is an effective teaching strategy in engaging students, enhancing realism, and promoting experiential learning in face-to-face settings.

2.4 The findings indicate that the independent learning method is perceived as an effective teaching strategy in face-to-face settings, as reflected in the overall grand mean of 4.12, corresponding to "Agree." The highest-rated aspect, “Giving Students Freedom to Study” (Mean: 4.29), suggests that faculty members effectively promote student autonomy in learning. Conversely, the lowest-rated aspect, “Providing Minimal Guidance and Monitoring” (Mean: 3.97), while still rated positively, indicates that respondents believe there is room for improvement in faculty support, particularly in providing timely guidance and progress monitoring. These findings suggest that while the independent learning method is effective in fostering student autonomy, enhancing faculty support and structured monitoring mechanisms could further strengthen its impact on student learning outcomes.

2.5 The findings indicate that simulation methods are perceived as highly effective teaching strategies in face-to-face settings, as reflected in the overall grand mean of 4.22, corresponding to "Strongly Agree." The highest-rated aspect, “Practical Examinations” (Mean: 4.30), suggests that students find this approach highly effective in assessing adaptability skills. Meanwhile, the lowest-rated aspect, “Controlled Simulation Activities” (Mean: 4.13), while still positively rated, indicates slightly lower agreement regarding the emphasis on structured and safe simulation exercises. These findings suggest that simulation methods enhance hands-on learning and skill development, with practical examinations being the most valued approach, while ensuring a structured and controlled environment can further improve its effectiveness.

2.6 The findings indicate that the Project Method is perceived as an effective teaching strategy in face-to-face settings, with an overall grand mean of 4.20, corresponding to "Agree." The highest-rated aspect, “In-Depth Study of Research or Issues” (Mean: 4.22), suggests that students highly value the research- oriented approach, emphasizing its role in developing critical thinking and analytical skills. Meanwhile, the lowest-rated aspect, “Recitation to Ensure Memorization of Project Methodologies” (Mean: 4.19), while still positively rated, indicates slightly lower agreement on the emphasis of recitation in reinforcing learning. These findings highlight the importance of structured research tasks, active participation, and practical guidance in fostering effective learning through the Project Method, while also suggesting opportunities for improvement in instructional strategies to enhance engagement and knowledge retention.

2.7 The findings indicate that the Community Resources method is perceived as an effective teaching strategy in face-to-face settings, with an overall grand mean of 4.08, corresponding to "Agree." The highest-rated aspect, “Making Lectures Easy to Understand for Both School and Community Audiences” (Mean: 4.16), suggests that professors are highly effective in ensuring clarity and accessibility of instructional materials for diverse audiences. The lowest-rated aspect, “Enriching Classroom Activities by Providing Hands-On Learning Experiences Outside the School” (Mean: 4.03), while still rated positively, indicates that this strategy is slightly less emphasized. Overall, these findings highlight the importance of clear instructional materials, community engagement, and practical learning opportunities in enhancing the effectiveness of the Community Resources method, while also suggesting potential areas for improvement to achieve stronger agreement among respondents.

3. Level of Effectiveness of the Teaching Strategies Employed by Library and Information Science Faculty Members During Online Classes

3.1 The findings indicate that the lecture method is perceived as an effective teaching strategy in online classes, with an overall grand mean of 4.14, corresponding to "Agree." The highest-rated aspect, “Professors Presenting the

Subject Matter with Visual Aids" (Mean: 4.38), highlights that respondents highly value the use of visual aids in enhancing lesson comprehension. Conversely, the lowest-rated aspect, "Professors Enriching Activities with Hands-On Learning Experiences Outside the School" (Mean: 3.87), while still rated positively, indicates that this strategy is less emphasized compared to others. Overall, the findings suggest that the lecture method is effective in online teaching, with respondents particularly appreciating visual aids for improving understanding, though incorporating more hands-on learning opportunities could enhance its impact further.

3.2 The findings indicate that the brainstorming method is perceived as an effective teaching strategy in online classes, with an overall grand mean of 4.19, corresponding to "Agree." The highest-rated aspect, "Stimulating Students with Triggering Questions About a Specific Task" (Mean: 4.21, Strongly Agree), suggests that respondents find this task-focused approach to be the most effective in fostering engagement and critical thinking. Conversely, the lowest-rated aspect, "Professors Asking Triggering Questions and Accepting Students' Reactions and Perceptions" (Mean: 4.15, Agree), indicates that while effective, it is viewed as slightly less impactful compared to other strategies. Overall, the results suggest that the brainstorming method is generally effective in promoting engagement and idea generation in online teaching, with particular strength in task-specific strategies, while there is room to improve how student reactions and perceptions are incorporated.

3.3 The findings indicate that the role-playing method is perceived as an effective teaching strategy in online classes, with an overall grand mean of 4.08, corresponding to "Agree." The highest-rated aspect, "Professors Providing Situations That Encourage Students to Become Realistic and Apply Personal Experiences in Their Role-Playing Presentations" (Mean: 4.15, Agree), suggests that this strategy is highly effective and well-received by students. Conversely, the lowest-rated aspect, "Professors Conducting Enactments or Reenactments of Real- Life Problem Situations to Help Students Understand Lessons" (Mean: 4.01, Agree), indicates that while effective, there is room for improvement in how real-life problem scenarios are utilized to enhance understanding. Overall, the results suggest that the role-playing method effectively promotes engagement and understanding in online teaching, particularly when scenarios encourage realism and personal application, with opportunities for enhancement in the use of problem reenactments.

3.4 The findings indicate that the independent learning method is perceived as a highly effective teaching strategy in online classes, with an overall grand mean of 4.31, corresponding to "Strongly Agree." The highest-rated aspect, "Professors Inspiring Flexibility in Student Output Criteria and Submission Time" (Mean: 4.34, Strongly Agree), highlights that respondents find this strategy most effective in fostering autonomy and adaptability. The lowest-rated aspect, "Professors Providing Lessons/Reading Materials in Advance for Students to Study on Their Own" (Mean: 4.28, Strongly Agree), while slightly lower, still reflects strong approval for its contribution to independent learning. Overall, the results suggest that the independent learning method effectively supports autonomy, flexibility, and resourcefulness in online teaching, with all aspects rated highly by respondents.

3.5 The findings indicate that the simulation method is perceived as an effective teaching strategy in online classes, with an overall grand mean of 4.10, corresponding to "Agree." The highest-rated aspect, "Conducting Simulation Activities Without Exposing Students to Harmful Environments" (Mean: 4.17, Agree), highlights strong approval for the safe and practical implementation of simulations. The lowest-rated aspect, "Demonstrating a Procedure and Assessing Whether Students Can Replicate the Same Process" (Mean: 3.96, Agree), while still effective, is perceived as slightly less impactful compared to other strategies. Overall, the results suggest that the simulation method effectively enhances practical and interactive learning in online settings, particularly through safe and

engaging activities, with opportunities to improve in guiding students through replicative processes.

3.6 The findings indicate that the project method is perceived as an effective teaching strategy in online classes, with an overall grand mean of 4.14, corresponding to "Agree." The highest-rated aspect, “Professors Instilling Discipline in Finishing Small Tasks Before Deadlines to Avoid Delays” (Mean: 4.23, Strongly Agree), suggests that respondents view this strategy as the most effective for fostering responsibility and time management. The lowest-rated aspect, “Professors Encouraging Students to List the Sequence of Activities to Avoid Incorrect Outputs” (Mean: 3.99, Agree), while still rated positively, indicates room for improvement in providing structured project sequencing. Overall, the results suggest that the project method effectively promotes organization, accountability, and structured learning in online teaching, with opportunities to enhance task sequencing strategies for improved student outcomes.

3.7 The findings indicate that the community resources method is perceived as an effective teaching strategy in online classes, with an overall grand mean of 4.13, corresponding to "Agree." The highest-rated aspect, “Professors Ensuring That Written Instructions in Lectures Are Easy to Understand for Both School and Community Audiences” (Mean: 4.15, Agree), highlights strong approval for the clarity and accessibility of instructional materials. Conversely, the lowest- rated aspect, “Professors Uploading Video Materials Taken Within the Community to Promote Its Potential” (Mean: 4.10, Agree), while still considered effective, received slightly less appreciation compared to other indicators. Overall, these findings suggest that the community resources method enhances online learning by integrating local resources and ensuring clear instructional content, with opportunities to further improve engagement through multimedia materials.

4. Significant Relationship between Level of Effectiveness of teaching strategies between Face-to-Face and Online Classes

The findings reveal significant differences in the effectiveness of teaching strategies in face-to-face and online settings among Library and Information Science faculty members. Lectures (4.33 vs. 4.14), role-playing (4.23 vs. 4.08), simulations (4.22 vs. 4.10), and project-based learning (4.20 vs. 4.14) are significantly more effective in face-to-face settings, benefiting from real-time interaction and immediate feedback. Conversely, independent learning is more effective online (4.31 vs. 4.12), as students engage better with self-paced study and digital resources. However, brainstorming (4.25 vs. 4.19) and community resource use (4.08 vs. 4.13) show no significant difference, indicating adaptability in both modalities.

5. Significant Relationship between the Level of Effectiveness of Teaching Strategies during Face-to-Face Classes and the Academic Performance of the Respondents

The correlation between teaching strategies and academic performance during face- to-face classes revealed very weak and non-significant relationships across all methods. The lecture method ($r = 0.029$, $p = 0.6067$), brainstorming ($r = 0.004$, $p = 0.2394$), and project method ($r = 0.007$, $p = 0.9015$) showed weak positive but non- significant correlations. In contrast, role-playing ($r = -0.066$, $p = 0.5148$), independent learning ($r = -0.036$, $p = 0.5148$), simulation ($r = -0.060$, $p = 0.2812$), and community resources ($r = -0.073$, $p = 0.1895$) exhibited weak negative but non- significant relationships. These findings suggest that teaching strategies alone do not significantly impact academic performance, highlighting the potential influence of other factors such as student motivation, engagement, and external learning conditions.

6. Significant Relationship Between the Level of Effectiveness of Teaching Strategies during Online Classes and the Academic Performance of the Respondents

The analysis of teaching strategies used by Library and Information Science faculty in online classes reveals no statistically significant correlation with students' academic performance. All strategies, including Lecture Method, Brainstorming, Role-Playing, Independent Learning, Simulation, Project-Based Learning, and Community Resources, showed very weak positive or negative relationships, with p- values exceeding 0.05. Among them, Independent Learning had the highest weak positive correlation (0.085, $p = 0.1272$), while Role-Playing and Project-Based Learning showed weak negative correlations. These results suggest that the perceived effectiveness of these methods in online learning does not strongly impact student performance, highlighting the need to explore other influencing factors such as student engagement, instructional design, and technology use.

7. Challenges Respondents Encounter Regarding the Quality of the Teaching Strategies

7.1 Challenges Respondents Encounter Regarding the Quality of the Teaching Strategies in Classroom Management

The findings indicate that professors face moderate difficulties, as reflected in the overall mean of 2.87, which falls within the "Neutral" range. Among the specific challenges, assessing students' leadership abilities due to time constraints had the highest mean score of 2.96, suggesting a slightly greater difficulty compared to other aspects. Grading group tasks was also a concern, with a mean score of 2.84, as students employed varying strategies, making evaluation complex. Additionally, assigning leadership tasks based on student performance and behavior had a mean score of 2.81, indicating moderate difficulty but not a significant issue. Overall, the results suggest that while classroom management challenges exist, they are not highly problematic. Faculty members experience some difficulties, but these are generally manageable within the online learning environment.

7.2 Challenges Respondents Encounter Regarding the Quality of the Teaching Strategies in Resources

The findings indicate that professors experience moderate difficulties in accessing necessary resources, as reflected in the overall mean of 2.63, which falls within the "Neutral" range. Among the specific challenges, the lack of an adequate number of webcams received the highest mean score of 2.67, suggesting a moderate difficulty in ensuring proper video communication during online classes, though it is not highly problematic. Similarly, the lack of updated laptop models was also identified as a challenge, with a mean score of 2.58, indicating that while this issue is present, it does not significantly hinder teaching effectiveness. Overall, the results suggest that resource limitations exist but do not severely impact faculty members' ability to conduct online classes.

7.3 Challenges Respondents Encounter Regarding the Quality of the Teaching Strategies in Technical Skills

The findings indicate that while professors experience moderate difficulties, these challenges are not perceived as significant barriers, as reflected in the overall mean of 2.62 (interpreted as "Neutral"). Among the specific challenges, the lack of necessary ICT-related devices for online teaching and unstable internet connections at home both received a mean score of 2.62. This suggests that while these issues exist, they are manageable and do not critically affect faculty members' ability to conduct online classes. Overall, the results indicate that while technical skill-related challenges are acknowledged, they do not severely impact faculty members' effectiveness in online teaching. Addressing these issues through infrastructure improvements and institutional support may further enhance the online teaching experience.

7.4 Challenges Respondents Encounter Regarding the Quality of the Teaching Strategies in Communication

The findings indicate moderate difficulties, but these are not highly problematic, as reflected in the overall neutral rating (2.93). The lack of in-person interaction was the most notable challenge, affecting student engagement. Difficulty in reading all student feedback was also a concern, though manageable. The least significant issue was discomfort in meeting students online, suggesting minimal impact. Overall, while communication challenges exist, they do not severely hinder online instruction. Enhancing student engagement, feedback management, and faculty confidence in virtual interactions can further improve communication effectiveness

CONCLUSIONS

1. Profile of the Respondents

The majority of students belong to the 20–21 age group, are in their 2nd year of study, and have academic grades ranging from 93–98. This suggests that the student population is predominantly composed of young adult learners who are in the middle of their academic journey and generally perform well academically.

2. Level of Effectiveness in Teaching Strategies During Face-to-Face classes

2.1 Level of Effectiveness in the Teaching Strategies During Face-to-Face Using Lecture Method

The faculty's ability to comprehensively explain topics and clarify ideas received the highest rating, indicating that students strongly agree on its effectiveness in enhancing their learning. This shows that clear and structured explanations play a crucial role in helping students grasp complex concepts and retain information more effectively. The results suggest that effective communication and instructional clarity are key strengths of faculty in delivering lessons. Continuous refinement of these skills will further improve student comprehension and engagement in the learning process.

2.2 Level of Effectiveness in the Teaching Strategies Employed During Face-to-Face Using Brainstorming Method

The ability of the faculty members to create an open environment that allows students to think and express their ideas freely and creatively received the highest rating. This shows that fostering an open and supportive classroom atmosphere is highly effective in encouraging student participation and creativity. The results suggest that creating such an environment is a key strength of the faculty in enhancing student engagement and learning.

2.3 Level of Effectiveness in the Teaching Strategies Employed During Face-to-Face Using Role-Playing Method

Most of the respondents strongly agreed that professors effectively create realistic situations that allow students to apply personal experiences during role- playing. This shows that incorporating personal experiences into realistic scenarios is highly effective in enhancing student learning. The results highlight the importance of realism and personal application in teaching strategies.

2.4 Level of Effectiveness in the Teaching Strategies Employed During Face-to-Face Using Independent Learning Method

The faculty’s ability to effectively grant students the autonomy to study independently received the highest rating. This demonstrates that allowing students freedom in their studies significantly enhances their learning experience. The results suggest that fostering independence is a key strength of the faculty's teaching approach.

2.5 Level of Effectiveness in the Teaching Strategies Employed During Face-to-Face Using Simulation Method

The majority of respondents strongly agreed that practical examinations in a face-to-face setting are highly effective in assessing students' adaptability skills. This indicates that practical exams are a valuable tool for evaluating how well students can adapt to real-world scenarios. The results suggest that incorporating practical assessments is a key strength of the teaching approach.

2.6 Level of Effectiveness in the Teaching Strategies Employed During Face-to-Face Using Project Method

Most of the respondents strongly agreed that the faculty's requirement for an in-depth study of research or issues is highly valued. This suggests that thorough investigation and analysis are crucial components of the project method, significantly enhancing its effectiveness. The results highlight the importance of in-depth study in fostering a deeper understanding and appreciation of research among students.

2.7 Level of Effectiveness in the Teaching Strategies Employed During Face-to-Face Using Community Resources

The majority of respondents strongly agreed that the faculty's approach to making lectures easy to understand for both school and community audiences shows that faculty members successfully make lectures accessible to a broad audience. This suggests that making lectures easy to understand is a crucial component of the teaching strategy, significantly enhancing its effectiveness. The results highlight the importance of clarity and accessibility in fostering effective learning.

3. Level of Effectiveness in the Teaching Strategies During Online Modality

3.1 Level of Effectiveness in the Teaching Strategies Employed During Online Using Lecture Method

Most participants strongly agreed that the faculty's use of visual aids in presenting the subject matter is highly effective. This indicates that respondents greatly appreciate this strategy for understanding lessons. The results highlight the significant impact of visual aids in enhancing comprehension and learning.

3.2 Level of Effectiveness in the Teaching Strategies Employed During Online Using Brainstorming Method

The majority of respondents strongly agreed that the faculty's focus on stimulating students with triggering questions about specific tasks is highly effective. This indicates that this specific focus on tasks is considered the most effective approach. The results highlight the importance of engaging students with targeted questions to enhance their understanding and learning.

3.3 Level of Effectiveness in the Teaching Strategies Employed During Online Using Role Playing Method

Most respondents agreed that the faculty's provision of situations that encourage students to become realistic and apply personal experiences in their role- playing presentations is effective and well-received. The results highlight the value of incorporating personal experiences into role-playing to enhance student engagement and learning.

3.4 Level of Effectiveness in the Teaching Strategies Employed During Online Using Independent Learning Method

A significant number of respondents strongly agreed that the faculty inspires flexibility in student output criteria and submission time. This indicates that respondents find this strategy the most effective approach. The results highlight the importance of flexibility in enhancing student satisfaction and effectiveness in the learning process.

3.5 Level of Effectiveness in the Teaching Strategies Employed During Online Using Simulation Method

Most participants strongly agreed that the faculty's approach to conducting simulation activities without exposing

students to harmful environments is highly effective. This indicates strong approval of this safe and practical simulation method. The results highlight the value of providing safe yet effective learning experiences through simulations.

3.6 Level of Effectiveness in the Teaching Strategies Employed During Online Using Project Method

The faculty's approach to instilling discipline in finishing small tasks before deadlines to avoid delays is highly effective. This indicates that this strategy is seen as the most effective for fostering responsibility and timely task management. The results highlight the importance of discipline in enhancing students' ability to manage tasks efficiently and meet deadlines.

3.7 Level of Effectiveness in the Teaching Strategies Employed During Online Using Community Resources Method

Most of the respondents surveyed agreed that the faculty ensures written instructions in lectures are easy to understand for audiences from both the school and the community. This indicates strong approval for the clarity of instructional materials. The results highlight the importance of clear and accessible instructions in enhancing understanding and learning for diverse audiences.

4. The respondents perceive the challenges in the teaching strategies used by Library and Information Science faculty as generally manageable and neutral in impact across key areas. While there are slight challenges in classroom management due to time constraints, as well as minor limitations in resources, technical skills, and communication, none of these issues significantly affect the quality of teaching. These findings suggest that the existing teaching strategies are adequate, with no major obstacles hindering their effectiveness. Future improvements may focus on addressing these mild challenges to enhance overall teaching quality further.
5. The findings indicate that the effectiveness of various teaching strategies in face- to-face Library and Information Science classes has no significant correlation with academic performance. All methods, whether lecture-based, interactive, or independent learning, showed only very weak positive or negative relationships, with p-values exceeding the significance threshold. This suggests that while teaching strategies may support engagement, they do not directly impact academic success. Instead, external factors such as student motivation, prior knowledge, and learning environment likely play a more critical role.
6. The findings indicate that the effectiveness of various teaching strategies in online Library and Information Science classes has no significant correlation with students' academic performance. All strategies, whether lecture-based, interactive, or independent learning, showed only very weak positive or negative relationships, with p-values exceeding the significance threshold. This suggests that other factors, such as student engagement, instructional design, technology access, and learning environment, may play a more critical role in academic success.

7. Challenges Respondents Encounter Regarding the Quality of the Teaching Strategies

7.1 Challenges Respondents Encounter Regarding the Quality of the Teaching Strategies in Classroom Management

The highest-rated challenge, assessing students' leadership abilities in every task due to time constraints, suggests that faculty members experience moderate difficulty in evaluating students' leadership skills during online classes. The time constraints inherent in virtual learning environments may limit opportunities for in- depth observation and assessment. While this challenge is not critical, it indicates the need for improved assessment strategies that allow faculty to effectively evaluate leadership abilities despite the limitations of online instruction.

7.2 Challenges Respondents Encounter Regarding the Quality of the Teaching Strategies in Resources

The challenge of limited availability of webcams for online teaching presents a moderate difficulty for faculty members in facilitating effective video communication during online classes. While this issue is acknowledged, it is not considered highly problematic. This suggests that faculty members can still manage online teaching despite webcam limitations, but access to additional or improved webcam resources could enhance the quality of virtual instruction and student engagement.

7.3 Challenges Respondents Encounter Regarding the Quality of the Teaching Strategies in Technical Skills

The challenges related to limited access to ICT-related devices and unstable internet connections indicate that faculty members acknowledge these difficulties but do not perceive them as critical barriers to online instruction. While these challenges may cause occasional disruptions, they remain manageable within the current online teaching framework. This suggests that faculty members have adapted to these technical limitations, but improvements in access to ICT resources and internet stability could further enhance their teaching efficiency and overall online learning experience.

7.4 Challenges Respondents Encounter Regarding the Quality of the Teaching Strategies in Communication

The findings indicate that reduced in-person interaction with students is recognized as a challenge in online teaching; however, it is not perceived as a significant barrier to instructional delivery. While the absence of face-to-face engagement may impact on student participation and rapport-building, faculty members have generally adapted to virtual communication methods. This suggests that while in-person interaction remains beneficial, its limitation in online settings does not critically affect teaching effectiveness. Implementing strategies to enhance student engagement and interaction in virtual classrooms may further improve the online learning experience.

Recommendations

Based on the findings and conclusions, the study suggests the following recommendations:

1. Institutions should implement targeted strategies to improve student engagement and academic performance in LIS education. To encourage more mature students to enroll, flexible learning options such as blended or weekend classes, scholarships, and career transition programs should be offered, along with partnerships with public and private libraries for upskilling opportunities. Strengthening outreach programs in high schools through career talks, library awareness campaigns, and open-house events can help attract more first-year students to the program. Additionally, academic support initiatives like peer tutoring, study groups, and LIS skill-building workshops can assist students in improving their performance.
2. To enhance Library and Information Science (LIS) face-to-face teaching, faculty members should adopt interactive and community- driven strategies that foster deeper learning. Integrating real-world examples, multimedia, and practical applications can make lessons more engaging and relevant. Structured brainstorming, role-playing, and independent learning should incorporate clear expectations, feedback mechanisms, and self-assessment tools to balance autonomy with guidance. Simulation methods must include safety protocols and structured debriefing sessions to reinforce learning outcomes, while project-based learning should focus on peer reviews and real-world applications rather than memorization. Expanding off- campus learning opportunities through field trips, community service, and guest lectures can further enrich student experiences. These approaches will create a dynamic and practice-oriented LIS education that prepares students for real-world challenges.
3. To strengthen LIS online teaching strategies, faculty members should integrate virtual hands-on activities such as

interactive digital archives and online cataloging exercises to enhance engagement in lecture- based learning. Structured brainstorming discussions using breakout rooms, digital whiteboards, and live polls can encourage student participation, while pre-recorded case scenarios and interactive simulations can better simulate librarian-client interactions and ethical decision-making in role-playing activities. Independent learning should be enhanced with self-paced modules, open educational resources, and interactive quizzes to track progress. Simulation-based learning can be improved with step-by-step instructional videos and screen- sharing tutorials, allowing students to better understand and replicate LIS tasks. In project-based learning, detailed guidelines, workflow templates, and project management tools can help students organize tasks efficiently. Expanding the use of community resources by collaborating with public libraries and historical societies can further enrich learning through local video documentaries, interviews, and virtual fieldwork activities. These improvements will ensure a structured, engaging, and application-driven LIS online learning experience.

4. Faculty members should continue integrating brainstorming activities in both face-to-face and online settings, using structured techniques such as mind mapping and digital collaboration tools (e.g., virtual whiteboards and discussion forums) to enhance engagement. Similarly, the use of community resources should be strengthened by leveraging digital platforms for virtual guest lectures, online field trips, and interactive case studies. Expanding access to digital libraries and professional forums will further enhance student engagement and real- world learning experiences across both modalities.
5. To optimize the effectiveness of role-playing, independent learning, simulation, and community resource-based teaching, faculty members should focus on improving student motivation, assessment alignment, and real-world application of concepts. In role-playing, incorporating structured reflection activities and rubric-based assessments can help measure learning outcomes. Independent learning can be enhanced through guided study plans, targeted mentorship, and regular formative assessments, ensuring that self-directed efforts lead to better academic performance. Simulation methods should emphasize real- world relevance by integrating case studies, industry-based scenarios, and professional certification opportunities. Community resource- based learning should include localized projects, service-learning components, and direct collaboration with LIS professionals to bridge the gap between theoretical knowledge and academic success.
6. Faculty members should implement structured assessment strategies, interactive engagement techniques, and technology-enhanced guidance across various teaching methods. Lecture-based learning should incorporate structured outlines, quizzes, and discussions to reinforce key concepts. Brainstorming sessions should use guided frameworks, real-world applications, and digital tools to maintain focus and relevance. Role-playing should integrate rubric-based assessments and reflection sessions for deeper learning. Independent learning needs self-paced modules, study guides, and mentorship to ensure adequate support. Simulation methods should apply real-world case studies and virtual activities, while project-based learning must emphasize task sequencing, milestone assessments, and peer reviews for better learning outcomes. Community resource-based learning should expand collaborations with libraries, archives, and LIS professionals to strengthen the connection between theoretical knowledge and practical applications.
7. Faculty members should implement structured leadership assessment strategies such as rubric-based evaluations, peer assessments, and asynchronous leadership tasks to effectively evaluate students' leadership abilities despite time constraints. To enhance online teaching quality, institutions should provide adequate access to webcams and training on optimizing available technology for better video communication and engagement. Additionally,

institutional support and capacity-building initiatives through ICT training programs, technical assistance, and digital resource hubs are essential to help faculty members improve their technical skills and adapt more efficiently to online teaching. To further enhance confidence and familiarity with online platforms, faculty should participate in workshops on virtual engagement strategies, peer mentoring, and faculty discussion forums. Institutions should also encourage camera-on policies, icebreakers, and interactive discussions to create a more engaging and comfortable virtual learning environment.

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