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Instructional Leadership and Teacher Effectiveness in Online Learning

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Abstract:

This study investigated the relationship between instructional leadership and teacher efficacy in the context of online learning during the COVID-19 pandemic. The objectives were to examine how leadership practices influence teachers' confidence and effectiveness in delivering online instruction. A descriptive survey design was adopted, involving 7 deans/principals, 197 teachers, and 100 students. Data were analyzed using correlational analysis to explore the association between instructional leadership and teacher efficacy. Findings indicate that deans/principals actively engaged in key instructional leadership roles, and teachers demonstrated adequate self-efficacy and collective efficacy in online teaching. A significant positive correlation emerged between instructional leadership and teacher efficacy, highlighting the impact of leadership practices on teachers' capability to provide quality online instruction. Key factors such as technology, training, administrative support, stakeholder involvement, and self-motivation influenced teacher efficacy in online learning, acting as both enablers and constraints. This study contributes to our understanding of the critical role of instructional leadership in enhancing teacher efficacy, particularly during educational crises, and suggests improvements to online education quality through strategic leadership.

Keywords:

Online learning,
instructional leadership,
teacher efficacy,
collective teacher efficacy

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在线学习中的教学领导力和教师效率

摘要:

本研究调查了在新冠肺炎大流行期间在线学习背景下教学领导力与教师效能之间的关系。目的是研究领导实践如何影响教师在线教学的信心和有效性。采用描述性调查设计，涉及 7 名院长/校长、197 名教师和 100 名学生。使用相关分析法分析数据，以探索教学领导力与教师效能之间的关联。研究结果表明，院长/校长积极参与关键的教学领导角色，教师在在线教学中表现出足够的自我效能和集体效能。教学领导力与教师效能之间存在显著的正相关关系，突出了领导实践对教师提供优质在线教学能力的影响。技术、培训、行政支持、利益相关者参与和自我激励等关键因素影响教师在线学习的效能，既是推动因素，也是制约因素。本研究有助于我们了解教学领导力在提高教师效能方面的关键作用，尤其是在教育危机期间，并建议通过战略领导力提高在线教育质量

关键词: 在线学习、教学领导力、教师效能、教师集体效能

1. Introduction

The COVID-19 pandemic has had a significant impact on the educational sector. Community quarantine requirements necessitate a digitization push, forcing educational institutions worldwide to reinvent traditional classroom instruction and shift to an online learning paradigm for ongoing access to education. The pandemic and the accompanying implementation of social distancing protocols resulted in a rapid transition to online learning for most higher education institutions worldwide in March and April 2020, irrespective of whether teachers were prepared. This shift from traditional face-to-face learning entails the upskilling of school leaders and teachers to cope with new learning modalities, ensuring that learning remains accessible to students even when faced with challenges. Consequently, it has become evident that educational systems are vulnerable to external threats (McCauley 2021). Rodrigues (2021) noted that the digital transformation of instructional delivery involves logistical and behavioral changes. Teachers' capacity to educate online is crucial to the quality of online learning.

To ensure that all students have equal access to high-quality teaching and learning, it is necessary to examine a variety of factors related to teachers' adoption and use of online teaching, particularly to assist institutions in improving teaching and learning in online spaces (Kebritchi et al., 2017). It is critical to recognize that teachers' judgment of their preparation for online learning is a complex issue (Martin, et al., 2019). Teachers' conviction of their efficiency in terms of student engagement, instructional tactics, classroom management, and student discipline, for example, is one of these views; hence, their role as drivers of innovation

and progress in schools (Gilbert, et al., 2020). Teacher efficacy is one of the most important factors for predicting teacher effectiveness and performance in schools (Hyun, et al., 2017; Angelle & Teague, 2014; Gümüş & Bellibaş, 2021). Teachers' self-efficacy refers to their perceptions of their ability to influence and cope with students who struggle with motivation and learning (Karaman-Kepeneci & Aydin, 2008), whereas collective teacher efficacy refers to their perceptions that their collective efforts can have a positive impact on students (Goddard, 2001 as cited by Liu, 2024).

Supervisor leadership has a favorable impact on teachers' efficacy. There is a link between principal behavior and teacher efficacy (Voekel & Chrispeels, 2017). This suggests that teachers' perceptions of administrators' leadership conduct affect their ability to teach effectively (Oppermann & Lazarides, 2021). Individual teachers' mentoring and perceptions of principals' leadership actions have a favorable impact on overall efficiency. While researching the links between school administrators' instructional leadership behaviors and teacher efficacy, it was discovered that teachers' efficacy increased depending on perceived instructional leadership. Furthermore, the association between instructional leadership and collective teacher efficacy is mediated by teachers' self-efficacy (Chalikias et al., 2020). Furthermore, the good experiences that teachers have at work, mostly in terms of satisfaction, mediate the association between the principal's leadership style and personal teacher efficacy (Yamin et al., 2016). Furthermore, this association has a beneficial effect on instructors' self-efficacy but has no effect on their effectiveness. As a result, these two factors are significantly positively associated (Gawlik, 2018).

Several studies on teacher self-efficacy, collective teacher efficacy, and instructional leadership have already been conducted; however, all have been quantitative and conducted in traditional face-to-face classroom contexts. Researchers have indicated that the distinctions between face-to-face and virtual classroom contexts are significant enough to justify a separate study and comparison of the aspects and characteristics of teaching and learning experiences (Rice, 2006). As a result, more research and initiatives aimed at improving teacher self-efficacy in online learning are worthwhile investments in time and money because they can lead to increased student achievement (Corry & Stella, 2018). Some scholars have conducted qualitative studies on teachers' self-efficacy (Chao, et al., 2017; Kormos & Nijakowska, 2017; Sharma, et al., 2014). Furthermore, to acquire more authentic findings, instructors' perceptions of efficacy must be assessed not only through surveys, but also through interviews and observations (Chao, et al., 2017; Bent, et al., 2016; Zee, et al., 2016).

In the middle of the pandemic, the University of Saint Louis, a private Catholic educational institution in the Northern Philippines, shifted to flexible learning to ensure that students continue to receive education. Universities offer four types of flexible learning: fully online, blended, electronic, and printed correspondences. The majority of students are enrolled in the full online modality, in which teaching and learning are provided online via the university's learning management system, which had been in use for a long time before the pandemic. Various communication applications such as Zoom, Google Meet, Microsoft Teams, Discord, and Facebook Messenger are used to facilitate online learning. Teachers use both synchronous and asynchronous online learning methods for hybrid learning. Teachers must present lectures and discussions with students through videoconferencing once per week for synchronous learning. Teachers use a learning management system to make learning content or electronic modules available to students, and learning activities are posted to students to complete within a week.

Although teachers and school administrators have attended in-service training and webinars on online learning, and students have evaluated teachers' online facilitation/teaching, no studies on school leadership and teacher efficacy in online learning have been conducted.

The findings should provide a solid foundation for the upskilling and professional development of both school leaders and teachers. Using the various literature gaps presented, this study investigates the relationship between instructional leadership and teacher efficacy in online learning, and provides scholarly studies as a foundation for better support for teachers in online learning environments.

2. Methods

2.1. Research Methodology

Figure 1 outlines the research methodology and divides the research process into key stages. The first stage is research instrument validation, which involves ensuring that the tools used to collect the data are reliable and valid. The second stage was data collection, which focused on gathering the necessary data to answer the research questions. The last stage is data analysis and interpretation, which involves processing and interpreting the collected data to draw conclusions and answer research questions.



Fig. 1 Research methodology (authors' design)

Teachers' characteristics, deans' and principals' instructional leadership, and teachers' self-efficacy and collective efficacy were described using a descriptive survey design. A correlational methodology was used to investigate the relationship between instructional leadership provided by school heads and teachers' self-efficacy and collective efficacy. This study was conducted at the University of Saint Louis, Northern Philippines. The school implemented online learning methodologies across all academic levels.

Table 1. Distribution of the teacher- respondents of the study (compiled by the authors)

Department	Total Population	Sample Size	
		N	%
Elementary	23	23	11.68
Junior High School	57	48	24.37
Senior High School	53	38	19.29
Accountancy, Business and Hospitality	23	13	6.60
Engineering, Architecture, and Information Technology Education	38	26	13.20
Education, Arts, and Sciences	40	34	17.26
Health and Allied Sciences	25	15	7.61
TOTAL	259	197	76.06

There are seven academic departments at the University: Elementary; Junior High School (JHS), Senior High School (SHS), School of Accountancy, Business and Hospitality (SABH), School of Engineering, Architecture and Information Technology Education (SEAITE), School of Education, Arts, and Sciences (SEAS), and School of Health and Allied Sciences (SHAS) (Table 1). The online learning model is supported by a learning management system that was used before the COVID-19 pandemic.

2.2. Research Instruments

2.2.1. Instructional Leadership Questionnaire

The ILQ was adapted and used to assess respondents' perceptions of deans/principals' instructional leadership behavior in online learning. Akram, Kiran, and İLGAN (2017) created and validated the scale. The questionnaire included seven dimensions: instructional resource provider (IRP), maintaining visible presence (MVP), teacher professional development (TPD), maximizing instructional time (MIT), monitoring student progress (MSP), feedback on teaching and learning (FTL), and curriculum implementer (CI). For IRP (7 items), MVP (6 items), TPD (7 items), MIT (6 items), MSP (4 items), FTL (5 items), and CI (5 items), the total internal consistency of the 40 items was 0.95, and the alpha reliability of the seven dimensions was 0.87, 0.86, 0.82, 0.78, 0.78, and 0.80, respectively.

2.2.2. Michigan Nurse Educators' Sense of Efficacy for Online Teaching (MNESEOT) Instrument

MNESEOT is based on Tschannen-Moran and Woolfolk-Teacher Hoy's Self-Efficacy Scale (TSES) (Tschannen-Moran & Hoy, 2001). The TSES is a 24-item questionnaire with three subscales: student engagement efficacy (SE), instructional strategies (IS), and classroom management efficacy (CM) (CM). Each subscale has eight items, each of which is evaluated on a nine-point scale ranging from nothing (1) to a lot (9). The reliability coefficients for the original scale were $\alpha = 0.94$ for the total scale and 0.87, 0.91, and 0.90 for the SE, IS, and CM subscales, respectively.

2.2.3. The CTES

The CTES was used to determine respondents' overall efficacy beliefs. Tschannen-Moran and Barr (2004) developed this scale. The CTES is a 12-item scale with two subscales: instructional techniques (IST) and student discipline (Student Discipline) (SD). Each subscale has six items that are answered on a 9-point Likert scale ranging from none at all (1) to a lot (9). The total scale had an internal consistency of 0.97, whereas the IS and SD subscales had an internal consistency of 0.96 and 0.94, respectively.

2.3. Data Analysis

The quality of instructional leadership provided by the school heads, teachers' self-efficacy, and collective

efficacy were described using the mean. Scoring and interpretation guides were considered for the descriptive analysis of the deans'/principals' instructional leadership, teacher self-efficacy, and collective efficacy (Tables 2 and 3).

Table 2. Scoring and interpretation guide for deans/principal instructional leadership (by the authors)

Range	Descriptive Value (DV)	Interpretation
4.50 – 5.00	Always	The dimension is constantly observed.
3.50 – 4.49	Often	The dimension is observed in many cases.
2.50–3.49.	Sometimes	The dimension is observed from time to time.
1.50 – 2.49	Rarely	The dimension is seldom observed.
1.00 – 1.49	Never	The dimension was not observed.

Table 3. Scoring and Interpretation guide for teachers' self-efficacy and collective teacher efficacy (Atalay, 2019)

Range	Descriptive Value (DV)	Interpretation
8.13–9.00	Sufficient	Individual/shared skills are adequate to promote student learning and engagement in online learning.
7.24 – 8.12		
6.35 – 7.23		
5.46 – 6.34	Moderately Sufficient	The individual skill or shared skill is sufficient to promote student learning and engagement in online learning.
4.57 – 5.45		
3.68 – 4.56		
2.79 – 3.67	Insufficient	Individual or shared skills are not enough to promote student learning and engagement in online learning.
1.90 – 2.78		
1.00 – 1.89		

The Pearson product-moment correlation (r) was used to determine the associations between the variables.

3. Results and Discussion

Table 4 presents the deans/principals' instructional leadership behaviors. As gleaned, all dimensions of instructional leadership, including instructional resources, professional development, time, monitoring students' progress, feedback on teaching-learning, and curriculum implementation, were similarly rated by both teachers and deans/principals. Except for visible presence, all the dimensions of instructional leadership were often observed by deans/principals as instructional leaders. The highest mean score was found in the curriculum implementation dimension. This means that as instructional leaders, deans/principals were often fully cognizant of this dimension. They keep track of curriculum implementation by ensuring that teachers teach the required curriculum, encouraging lesson planning to make the curriculum more effective, encouraging teachers to engage their students in learning activities, meeting teachers to get reports on curriculum implementation, and ensuring that students' grades contain information on curriculum implementation.

Table 4. Deans'/Principal Instructional Leadership Behavior (compiled by the authors)

Dimension	Teachers		Deans/ Principals		Average	DV
	Mean	DV	Mean	DV		
Instructional Resource	4.24	Often	4.26	Often	4.25	Often
Visible Presence	2.28	Rarely	4.64	Always	3.46	Sometimes
Professional Development	4.36	Often	4.47	Often	4.42	Often
Instructional Time	4.29	Often	4.48	Often	4.39	Often
Monitoring Student Progress	4.14	Often	3.86	Often	4.00	Often
Feedback on Teaching-Learning	4.31	Often	4.43	Often	4.37	Often
Curriculum Implementation	4.38	Often	4.57	Always	4.48	Often

Despite concerns regarding rigor and effectiveness, schools have embraced online learning to guarantee that it will continue despite the COVID-19 pandemic. In today's educational environment, effective online leadership is becoming increasingly vital (Nieuwoudt, 2020). This abrupt change in the educational landscape poses many questions about leading and supporting learning in a digital/virtual/online work environment; thus, deans/principals need to exercise digital instructional leadership (Glenn & Glenn, 2020). Online schools place a high value on educational administrators, who are responsible for building an environment in which faculty members feel driven to achieve specified goals and objectives and have the skills and support structures in place to fulfill students' expectations (McMahon, 2021). Student achievement, a healthy classroom climate, good teaching and learning activities, and, most importantly, sustaining the school's high academic standards, all benefit from instructional leadership (Voelkel & Chrispeels, 2017). Accordingly, head teachers should use instructional leadership skills to help teachers build a shared mission and vision, as well as a collaborative culture that can help ensure quality education. Instructional resources, visible presence, professional development, instructional time, student achievement monitoring, feedback on teaching and learning, and curriculum implementation were among the seven dimensions. Except for visible presence, which is rarely practiced, this study discovered that deans/principals practiced the six dimensions of instructional leadership more frequently from among the seven components. Provision of instructional resources, professional development, maximizing instructional time, gathering feedback on teaching and learning, and curriculum implementation are among these dimensions.

Academic coaches offer online instructional assistance to students and faculty. The major contextual component that affects result expectancy is the provision of classroom resources, which are linked to instructional leadership activities (Sindhvad, et al., 2020). As instructional leaders, deans/principals always provide services to teachers' critical instructional needs by delivering online resources and materials. This means that they can manage time and money, utilize existing material resources, and mobilize human resources when

planning innovations. In their capacity as instructional resource providers, deans/principals encourage teachers to freely use online instructional materials, organize and deliver online instructional materials to teachers, ensure that students and teachers have sufficient access to online instructional resources, and recommend online resources in areas that teachers require. It is important to remember that institutions should make every effort to guarantee that every student and faculty member has access to the necessary resources (Dhawan, 2020).

The principal's primary responsibility is instructional leadership, which involves overseeing the teaching and learning processes in curriculum development. As a result, principals must approach curriculum evaluation as a collaborative task and process (Arrieta, 2021). According to the findings of this study, deans/principals maintain an environment in the classroom that promotes effective functioning of instructional content, arrangement, interventions, management, and monitoring. It is necessary to implement online learning while ensuring that the school's intended learning outcomes are met (Glenn & Glenn, 2020). The monitoring of curriculum implementation focuses on teachers' enactment of the curriculum, quality of materials and their effects on student achievement, and professional development to support teacher learning and curriculum implementation (Bent, et al., 2016; Akram & Muhammad Khan, 2020; Nieuwoudt, 2020). If school heads follow up on school operations and processes on a regular basis and address day-to-day school issues, their visible presence is greatly felt. According to the findings of this study, deans/principals are rarely physically visible in all aspects of online learning. They rarely attend co-curricular, synchronous, or asynchronous learning activities to identify online instructional issues. Similarly, they held a few meetings to discuss online instructional issues and other teachers' concerns about online learning. Learning management systems or online learning should be used by school principals to expand the use of updated data in teaching and facilitate learning from teachers, students, and parents (Chao, et al., 2017). To improve the quality of learning practices and student learning outcomes in schools, school principals must monitor and evaluate online learning in a planned, programmed, and

continuous manner and use the monitoring and evaluation results for professional development (Oppermann & Lazarides, 2021).

The COVID-19 pandemic has changed the manner in which school administrators have worked. School leaders are expanding their roles as instructional leaders to include safe schooling and setting the tone for future learning, while also expanding their role as instructional leaders to include digital instructional leadership (Karaman & Aydin, 2008). The findings of this study demonstrate that the instructional leadership of school leaders is applicable to online learning. Effective instructional leadership is required in atypical circumstances to ensure continuous learning.

Table 5. Teachers' self-efficacy in online learning (compiled by the authors)

Dimension	Mean	Description
Student Engagement	8.03	Sufficient
Classroom Management	8.02	Sufficient
Instructional Strategies	8.05	Sufficient
Use of Computers	8.12	Sufficient

Table 5 presents teachers' self-efficacy in online learning. As revealed, teachers' self-efficacy in relation to student engagement, classroom management, instructional strategies and use of computers are sufficient for online learning. This finding indicates that the skills of teachers in relation to these dimensions are sufficient to promote learning in an online modality. The highest mean rate of computer use was achieved. This means that teachers have enough skills to use their knowledge of copyright law to provide resources for online students, navigate the University's online platform to successfully create an online course and teach an established online course, use asynchronous discussions to maximize interactions between students in an online course, use synchronous discussions to maximize interaction between students in an online course, use computers for word processing, Internet searching, and e-mail communication, comfortably facilitate student participation in online teaching, and navigate the Internet to provide links and resources to students in an online course. Although teacher self-efficacy is still being empirically validated in face-to-face settings, it is still a relatively new concept in online education. Self-efficacy, or one's level of confidence in one's ability to perform a task, is a significant factor among teachers and students using online platforms, and increased efficacy can encourage online activities. Teachers' confidence in supporting learning through online learning is satisfactory, according to this study. Teachers, in particular, have sufficient abilities in student engagement, classroom management, instructional tactics, and computer use to ensure that learning occurs online. Faculty and student outcomes in online course delivery are influenced by online instructor self-efficacy (Dhawan, 2020).

A prerequisite for learning is student engagement, fueled by motivation. Teachers of online learning must use digital support tools to better meet students' needs, which are predictors of engagement (Dhawan, 2020). Furthermore, positive student-teacher and student-student connections are critical for online learning platforms to drive students to participate in learning activities (Voelkel & Chrispeels, 2017). Teachers have adequate skills to assist students think critically, inspire students, help students value learning, foster individual student creativity, and increase comprehension of a student who is failing in online learning, according to this study. To keep students in online courses, the curriculum must be presented in more accessible and case-based ways so that they can understand the importance of each learning objective and assessment. The integration of active learning strategies that can utilize the variable time, which is not common in traditional classroom settings, is a possibility (Dhawan, 2020). Teachers in online learning have sufficient skills to respond to difficult questions from students, gauge student comprehension, craft questions or assignments that require students to think by relating ideas to prior knowledge and experience, adjust their lessons for different learning styles, use a variety of assessment strategies, and provide an alternative explanation, according to this study.

In the COVID-19 pandemic situation, teachers' ability to innovate in designing and gathering resources, learning methods, and selecting appropriate applications in line with the materials and procedures will examine their success in conducting online learning. This means that teachers must be able to manage online learning, which includes using reliable sources, navigating online platforms, creating and establishing online courses, using asynchronous and synchronous discussions, using computers for word processing, Internet searching, email communication, and facilitating student participation. According to the findings of this study, teachers are confident in promoting successful online learning. Given the advancements in information and communication technology in the twenty-first century, the need to develop teachers' capabilities for online teaching cannot be overstated (McMahon, 2021). Teachers' self-efficacy must be developed so that they are more open to new teaching methods, set more challenging goals for themselves, demonstrate a higher level of planning and organization, direct their efforts toward problem-solving, seek assistance, and adjust their teaching strategies when faced with difficulties (Corry & Stella, 2018). Teachers' self-efficacy, along with student engagement, classroom management, instructional strategies, and computer use, will ensure effective instructional delivery in the online learning modality, just as in face-to-face learning.

Table 6 shows the teachers' collective efficacy in online learning. The results revealed that teachers' collective teacher efficacy, instructional strategies, and

student discipline are sufficient for online learning. This suggests that teachers' shared beliefs positively affect students' online learning.

Table 6. Teachers' collective efficacy in online learning (compiled by the authors)

Dimension	Mean	Description
Instructional Strategies	8.10	Sufficient
Student Discipline	8.04	Sufficient

Regarding instructional strategies, teachers have enough collective belief that they can produce meaningful online learning, get students to believe they can do well in online learning, help students master complex content in online learning, promote a deep understanding of academic concepts through online learning, help students think critically, and foster student creativity in online learning. Following the pandemic's educational reform, the renewal of the school environment appears to be moving toward greater openness to working team consultation. Collaborative work, which is viewed as a way to break down barriers between teachers and other types of staff in complementary services, can contribute to students' overall development by ensuring greater consistency in the interventions. Collective teacher efficacy is a major factor influencing student achievement (Voelkel & Chrispeels, 2017). This means that student achievement is based on faculty members' collective belief that they can improve student achievement. One way for school administrators to improve student achievement is to work to increase faculty efficacy beliefs. The concept of collective teacher efficacy suggests that when teachers pool their efficacy, it has a greater impact on student achievement (Dilekli & Tezci, 2020). According to this study, teachers' shared beliefs about instructional strategies and student discipline were sufficient to positively affect students' online learning.

Specifically, two significant outcomes emerged in terms of collective teacher efficacy. To begin, online learning teachers must have sufficient shared beliefs in their abilities to provide meaningful learning, persuade students that they can succeed, support students in grasping topics, promote deep comprehension, assist students in critical thinking, and nurture student creativity. Second, in online learning, teachers have a sufficiently shared belief in their ability to set clear expectations for student behavior, establish rules and procedures that facilitate learning, respond to defiant students, control disruptive behavior, get students to follow learning policies, and help students feel safe. These findings are supported by previous studies that found that schools with high collective teacher efficacy have superior instructional quality, and teachers with high collective teacher efficacy have better classroom management (Sharma, et al., 2014). Teachers' ability to support students' online learning was demonstrated by the sufficient level of collective efficacy reported in this study. Teachers' collective efficacy is an essential predictor that can be used to improve students' academic progress. Furthermore, instructors' collective efficacy affected their performance and output. Instructors with high collective efficacy were more likely to devote themselves to educational goals, whereas teachers with poor collective efficacy were more likely to disengage. Teachers who believe in the benefits of collaboration contribute to the educational quality of their students. Therefore, it is crucial to determine teachers' collective self-efficacy.

As shown in table 7, the instructional leadership behavior of deans/principals was significantly and positively related to teachers' self-efficacy and collective efficacy in online learning. This suggests that the dean's/principal's instructional leadership behavior has an impact on teachers' self-efficacy and collective efficacy in online learning.

Table 7. The relationship between instructional leadership and teachers' efficacy in online learning (compiled by the authors)

Instructional Leadership	Self-Efficacy			Collective Efficacy		
	Student Engagement	Classroom Management	Instructional Strategies	Student Engagement	Instructional Strategies	Student Discipline
Instructional Resource	0.242**	0.234**	0.262**	0.200**	0.269**	0.288**
Visible Presence	0.205**	0.221**	0.250**	0.234**	0.327**	0.331**
Professional Development	0.281**	0.273**	0.313**	0.294**	0.362**	0.369**
Instructional Time	0.389**	0.370**	0.399**	0.365**	0.437**	0.452**
Monitoring Student Progress	0.330**	0.314**	0.355**	0.327**	0.363**	0.356**
Feedback on Teaching-Learning	0.336**	0.325**	0.360**	0.311**	0.395**	0.390**
Curriculum Implementation	0.360**	0.346**	0.371**	0.321**	0.379**	0.350**

Note:

*Significant at 0.01

**Significant at the 0.05 level

Specifically, the higher the leader's instructional resources, visible presence, professional development, instructional time, monitoring of student progress, feedback on teaching and learning, and curriculum implementation, the more positive the teacher's self-efficacy across its dimensions: student engagement,

classroom management, instructional strategies, and use of computers.

Likewise, the higher the leader's instructional resources, visible presence, professional development, instructional time, monitoring student progress, feedback on teaching-learning, and curriculum

implementation, the more positive the collective teacher efficacy across its dimensions: instructional strategies and student discipline. The importance of teachers' views on their capacity to influence student achievement, both collectively and individually, is a vital component of effective school change. Because most educational institutions have transitioned to online learning platforms as a result of the pandemic, it is important to examine how teachers individually and as a team foster meaningful learning as well as how school administrators assist teachers in achieving student success. According to research, a strong focus on organizational vision and institutional values aids leaders' decision-making and informs key decisions in uncertain times (Akram & Muhammad Khan, 2020; Tschannen-Moran & Barr, 2004). The primary goal of this study is to examine the link between instructional leadership and teacher efficacy in online learning. The study found that deans' instructional leadership behaviors had a beneficial effect on instructors' self- and collective efficacy in online learning.

Various studies on teachers' self-efficacy completed prior to the COVID-19 pandemic have confirmed this finding, indicating a robust and favorable association between principals' instructional leadership practices and instructors' self-efficacy (Sindhvad, et al., 2020; Arrieta, 2020). Therefore, instructional school leaders play a critical role in assisting teachers in improving instruction in their classrooms through monitoring, feedback, professional development, and assistance with the curriculum and assessments. Similarly, pre-pandemic research on collective teacher efficacy has found that instructional leadership has a direct and positive impact on collective teacher efficacy (Sharma, 2014; Zee, et al., 2016). This means that instructional leaders use tactics to boost collective efficacy within schools or teams and leverage team expertise. Teachers' confidence in their abilities to achieve the most challenging conditions would be strengthened by actions such as offering opportunities for collaborative sharing or witnessing colleagues executing best practice. Strong instructional leadership skills are necessary to improve teachers' performance. As a resource provider, he/she is able to manage time, condition the classroom, and motivate teachers; as an instructional resource person, he/she is able to promote effective classroom conditions to support learning outcomes; as a communicator, he/she communicates the school's vision and purpose to teachers; and as a meaningful presence, they interact with and influence all school staff. The findings of this study, which have been verified by numerous studies conducted before and after the pandemic, clearly indicate the role of instructional leadership in boosting teachers' self-efficacy and collective efficacy. It is therefore critical for deans and principals to continue their instructional roles, particularly in exceptional situations such as the present epidemic, to guarantee that teachers

provide high-quality education for students' academic performance.

4. Conclusion

The study concludes that the ability of teachers to provide meaningful education despite an unexpected change in online learning is influenced by deans' or principals' instructional leadership behaviors. Instructional leaders must effectively manage factors that enable online learning. Given the favorable relationship between instructional leadership and teacher efficacy, continuing professional development opportunities must be considered for both educational managers and teachers.

Schools could implement a functional leadership development plan for educational managers to help them advance their instructional leadership skills in managing instructional resources, maintaining visible presence, providing professional development opportunities for teachers, maximizing instructional time, monitoring student progress, listening to feedback on teaching and learning, and implementing the intended curriculum.

Differentiated professional development programs for teachers can be organized, conducted, and monitored to address teachers' varying degrees of online teaching efficacy, based on departments and fields of specialization. Specifically, a capacitating approach to improve students' skills in classroom management and maintaining student discipline may be implemented for teachers in the business and hospitality, engineering and architecture, and computer-related fields. A training program for college teachers to improve their skills in ensuring student engagement in online learning should also be conducted. Teachers' effectiveness in online learning will improve because of these capacity-building and training activities.

Schools may reinvent their digital learning platforms to include offline e-learning to enhance distant learning contexts for students deprived of strong Internet connectivity, as this has been continuously mentioned as an issue for both teachers and students. Learners can use their learning management system even if they do not have access to the Internet through offline e-learning. This means that they will be able to access and complete courses on their phones or computers without having to connect to the Internet.

The findings of this study may be incorporated into the syllabi of courses related to leadership development and advancement in graduate studies, notably doctoral degrees. A study instrument based on the identified parameters that permit and limit teacher efficacy can be constructed, verified, and used to further investigate the relationship between these factors and teacher efficacy in online learning. Furthermore, the findings of this study can be used to create a framework for teachers' ongoing professional development.

Author Contributions

Conceptualization, D.J.T.; methodology, H.C.; software, H.C.; validation, D.J.T.; formal analysis, D.J.T.; investigation, H.C. and D.J.T.; resources, D.J.T.; data curation, D.J.T.; writing—original draft preparation, H.C.; writing—review and editing, D.J.T.; visualization, H.C.; supervision, D.J.T.; project administration, H.C. All authors have read and agreed to the published version of the manuscript.

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Institutional Review Board Statement

The study was conducted in accordance with the Declaration of Helsinki and approved by the Research Ethics Review Committee for Research Involving Human Research Participants, University of Saint Louis, Philippines.

Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Data Availability Statement

The data presented in this study are available on request from the corresponding author.

Conflicts of Interest

The authors declare no conflicts of interest.

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