Minnesota Journal of Business Law and Entrepreneurship

Volume 2026, No. 2

ISSN: 1540-3270

Impact of Social Skills and Self-Efficacy on Teachers' Digital Competence in LMS-Based Online Learning Among Higher Education Teachers

[1]Susmita das, [2]Prof.(Dr.) Prem Shankar Srivastava

[1]Research Scholar, The ICFAI University Tripura, Agartala, India.

[2]The ICFAI University, Tripura, Agartala, India.

Abstract

Background: The rapid growth of digital technology and Learning Management Systems (LMS) has significantly transformed the field of online education and increased the importance of teachers' digital competence. In LMS-based teaching environments, social skills and self-efficacy are considered important factors that influence teachers' effectiveness in delivering online instruction and managing virtual learning activities.

Aim: The present study aimed to examine the impact of social skills and self-efficacy on teachers' digital competence in LMS-based online learning environments.

Methodology: A quantitative descriptive along with correlational type design was used for this study. The information was gathered from 300 teachers who are engaged in LMS based online teaching, using a structured questionnaire, made up of scales for Digital Competence and Social Skills and Self-Efficacy. For the statistical work we relied on SPSS, so descriptive statistics were done, along with Pearson correlation and then multiple regression analysis.

Results: The findings revealed moderate to high levels of digital competence, social skills, and self-efficacy among teachers. Significant positive relationships were found between social skills and digital competence ($r = 0.682$, $p < 0.01$) and between self-efficacy and digital competence ($r = 0.745$, $p < 0.01$). Regression analysis showed that social skills and self-efficacy significantly predicted teachers' digital competence, with self-efficacy emerging as the strongest predictor.

Conclusion: The study concluded that social skills and self-efficacy significantly enhance teachers' digital competence in LMS-based online learning environments.

Keywords: Digital Competence, Social Skills, Self-Efficacy, LMS-Based Online Learning, Teachers, Educational Technology

1. Introduction

The rapid advancement of digital technologies has significantly transformed the educational landscape across the world. Learning Management Systems (LMS) have emerged as a vital tool in the realm of online education over the past few years, allowing educators to orchestrate instruction, administer assessments, and engage with students online. Online learning became commonplace during and after the COVID-19 pandemic and teachers had to quickly shift their practice to the online environment. In the context of the online education, the role of teachers' digital competence has become an important variable that affects the effectiveness and quality of online education. Digital "competence is defined as educators' confident, critical and creative use of digital technologies for teaching, communication, collaboration and professional development (Redecker, 2017). The digital competence of teachers is not only in the technical aspects of digital tools, but also in pedagogical understanding, communication skills, problem-solving skills and the confidence to use digital tools in the classroom. Digital competence in the educational context is the use of information and communication technologies (ICT) in a way

that improves the quality of teaching and learning (Pettersson 2018). The teachers who are more digitally competent are more able to create interesting online learning activities, use the tools of LMS for learning, and assist students in virtual environments (Hamid et al., 2019).

Self-efficacy is one of the key psychological factors that affect teachers' digital competence. Self-efficacy is the person's confidence in their ability to execute particular activities effectively. The teachers who have high self-efficacy have high motivation, adaptability, and desire to use innovative teaching technologies in teaching. Hatlevik and Hatlevik (2018) highlighted that ICT self-efficacy of teachers has a positive impact on the use of digital technologies in teaching. Technology savvy teachers are more likely to face these difficulties with online teaching and master LMS-supported teaching processes. Besides the self-efficacy, social skills also have a significant impact on the effectiveness of teachers in online learning environment. Social skills encompass communication, cooperation, interaction with peers, emotional awareness and the development of positive relationships with students and staff. In LMS-based online learning, it is essential for teachers to be effective communicators, provide timely feedback, and keep students engaged, despite being physically distant. In relation to teachers, Schonert-Reichl (2017) emphasized the importance of social and emotional skills in the teaching profession and how it can benefit students' learning experiences. Well-developed social skills can assist teachers to build interactive and supportive virtual classrooms, fostering students' participation and collaboration in the classroom.

Going online has been good and bad for teachers. LMS platforms provide flexibility, accessibility, and innovative teaching tools, but there are still difficulties for teachers to adapt to technology and digital pedagogy. Dhawan (2020) noted that with the onset of COVID-19, online learning has become a must for education, yet it also revealed the gaps between the technological readiness and digital skills of teachers. The use of online platforms, virtual teaching and communication with students posed challenges for many teachers. In a similar fashion, Instefjord and Munthe (2017) stated that teacher training, technological exposure, and continuous professional development are significantly related to professional digital competence in teachers. Effective teachers feel more confident using technology in their teaching, when they are supported and given opportunities to learn and use digital technology. The study also highlighted the need for systematic training and collaborative learning settings in educational institutions to nurture teachers' digital competence.

Teachers' management of digital instructional strategies and involvement in students' learning using online platforms are also crucial to the effectiveness of LMS-based online learning. Martin et al. (2019) identified a number of important competencies that are necessary to be successful at teaching online, including technological skills, communication skills, instructional design, and learner support. Strong digital and interpersonal skills enable teachers to provide quality online learning and meaningful learning experiences (Ergül et al., 2023). Moreover, digital pedagogy in modern education demands teachers to keep up with the technological trends. Tondeur et al. (2020) highlighted the need for technological pedagogical knowledge and digital competence to enhance the effectiveness of online teaching. Teachers who are better equipped with confidence and social interaction skills can make effective and creative use of the LMS platform. Hence, it is important to understand the relationship between social skills, self-efficacy, and teachers' competence in the digital world for improving the quality of online learning systems.

2. Aim of the Study

The aim of the present study is to examine the impact of social skills and self-efficacy on teachers' digital competence in LMS-based online learning environments.

3. Objectives of the Study

1. To assess the level of digital competence among teachers engaged in LMS-based online learning.
2. To examine the relationship between teachers' social skills and their digital competence in online teaching environments.
3. To analyze the influence of self-efficacy on teachers' digital competence in LMS-based online learning.

4. Hypotheses of the Study

The hypotheses of the present study were formulated to examine the relationship and predictive influence of social skills and self-efficacy on teachers' digital competence in LMS-based online learning environments. Alternative hypotheses were developed based on the objectives and variables of the study.

S. No.	Alternative Hypotheses (H_1)
1	There is a significant relationship between teachers' social skills and digital competence in LMS-based online learning.
2	There is a significant relationship between teachers' self-efficacy and digital competence in LMS-based online learning.
3	Social skills and self-efficacy significantly predict teachers' digital competence in LMS-based online learning.

5. Literature Review

Akgün et al. (2024) found that teachers with high self-efficacy were more confident and adaptable in using digital tools and Learning Management Systems (LMS) for online teaching. The study highlighted that professional training and technological exposure significantly improved teachers' online teaching competence. It also identified digital skills and institutional support as key factors influencing effective online education.

Alenezi et al. (2023) found a significant positive relationship between teachers' self-efficacy, digital competence, and effectiveness in using LMS technologies. Teachers with higher digital competence were better at managing online teaching, communication, and student engagement. The study concluded that technological confidence improved teaching quality and reduced online teaching stress, emphasizing the need for continuous professional development.

Cabero-Almenara et al. (2023) found that digital competence includes technological knowledge, communication, collaboration, and pedagogical skills essential for online education. The study revealed that many teachers were not adequately prepared for effective LMS-based teaching and highlighted the importance of digital competence frameworks, continuous training, and institutional support.

Chiu (2024) reported that teachers with greater technological self-efficacy showed higher readiness to use LMS platforms. Digital competence was identified as a key predictor of successful online teaching and student engagement. The study also found that self-efficacy positively influenced teachers' willingness to adopt innovative teaching methods and recommended structured training and ongoing support.

Falloon (2023) found that digital competence extends beyond technical skills to include critical thinking, communication, collaboration, and pedagogical application of technology. Teachers with higher digital competence were more effective in engaging students and facilitating online learning. The study emphasized the importance of continuous professional development and institutional support for enhancing digital teaching effectiveness.

García-Martínez et al. (2023) found that effective communication, teamwork, empathy, and interpersonal skills support successful online teaching practices. Teachers with stronger social skills demonstrated better collaboration and interaction with students and colleagues, leading to improved engagement, motivation, and learning outcomes in digital environments.

Koehler et al. (2022) highlighted that effective technology integration requires a combination of technological, pedagogical, and content knowledge (TPACK). The study found that teachers with higher TPACK levels were more confident and competent in LMS-based instruction and online teaching, emphasizing the importance of technology integration frameworks.

Lucas et al. (2023) reported that digitally competent teachers were more actively involved in professional learning, collaborative teaching, and innovative instructional practices. The study found a positive relationship between

digital competence, teacher motivation, commitment, and confidence in using LMS and digital communication tools.

Panisoara et al. (2024) found that higher motivation and self-efficacy were associated with greater digital competence and adaptability to online teaching. Confidence in technology reduced anxiety, improved teaching performance, and encouraged participation in digital training and professional development programs.

Redecker (2017), through the DigCompEdu framework, identified key areas of educators' digital competence, including professional engagement, digital resources, teaching, assessment, student empowerment, and facilitating students' digital competence. The framework emphasized the importance of both technological and pedagogical skills for effective digital education.

Scherer et al. (2023) found that digital competence, technological confidence, and prior online teaching experience significantly influenced teachers' readiness for online education. Institutional support and professional development opportunities were also identified as important factors in enhancing preparedness for LMS-based teaching.

Şimşek et al. (2024) reported that teachers with strong communication and social interaction skills adapted more effectively to LMS-based online education. Positive teacher–student interactions improved engagement, collaboration, participation, and overall learning experiences in virtual classrooms.

Tondeur et al. (2023) found that teachers who participated in structured professional development programs demonstrated higher technological skills, confidence, and effectiveness in online teaching. The study emphasized that continuous professional development and institutional support are essential for enhancing digital competence and readiness for technology-based education.

Zhao et al. (2024) investigated the relationship between LMS-based online learning and teachers' digital competence, with self-efficacy and communication skills as mediating factors. The study found that technological self-efficacy and communication skills significantly enhanced teachers' online teaching competence. Teachers who were confident in using technology and possessed strong communication skills were more effective in managing LMS platforms, collaborating with students, and facilitating virtual learning. The study also revealed that communication skills improved student interaction and collaboration in online classrooms.

6. Research Methodology

6.1. Research Design

This study adopted a quantitative research approach with a descriptive and correlational design to examine the impact of social skills and self-efficacy on teachers' digital competence in LMS-based online learning. The descriptive design was used to assess the current level of teachers' digital competence, social skills, and self-efficacy. The correlational design helped identify the relationship among the selected variables. Furthermore, predictive analysis was employed to determine the extent to which social skills and self-efficacy predict teachers' digital competence in online teaching environments.

6.2. Research Setting

The study was carried out with teachers working in Higher Education Teacher, where Learning Management Systems (LMS) like Google Classroom, Moodle, Microsoft Teams, Blackboard and Canvas were being used in an active way for online teaching and learning. The chosen institutions were also keeping up with digital teaching practices regularly and they used online academic communication as well, pretty consistently.

6.3. Population of the Study

The population in this study included teachers who worked in Higher Education Teacher, and who were basically engaged in LMS-based online teaching, teachers like day to day. More or less the target population was made up

of those teachers who already had some prior experience working with digital platforms for online instruction, for handling assignments, for student interaction, and for academic communication too.

6.4. Sample Size

We selected a total of 300 teachers from Higher Education Teacher, as the sample for the present study. The sample size was considered enough for statistical analysis, and for making sense of the relationships among the study variables. Both male and female teachers were taken, including those with different teaching experiences and also varied educational backgrounds, so it's not just one type of person.

6.5. Sampling Technique

The study used a convenience sampling approach, not really too strict or anything, for choosing the participants. Essentially, teachers who happened to be around, were genuinely willing, and stayed actively involved in LMS based online teaching were brought into the study. Convenience sampling was seen as a good fit, mainly because the teachers were easy to reach, and they were already available since they were doing online education practices.

6.6. Variables of the Study

Independent Variables

1. Social Skills
2. Self-Efficacy

Dependent Variable

1. Teachers' Digital Competence

6.7. Research Instruments

The data for the present study were collected using a structured questionnaire designed on a five-point Likert scale to measure the perceptions of teachers regarding the selected variables. The response categories were:

1 = Strongly Disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

The scale was used to assess teachers' digital competence, social skills, and self-efficacy in LMS-based online learning environments.

Section A: Digital Competence Scale

The Digital Competence Scale consisted of 19 items coded from DC1 to DC19. This section measured teachers' ability to use digital technologies, LMS platforms, online communication tools, digital teaching resources, and virtual classroom management systems effectively (Ergül & Taşar 2023).

Section B: Social Skills Scale

The Social Skills Scale consisted of 23 items coded from SS1 to SS23. This section assessed teachers' communication skills, interpersonal interaction, collaboration, empathy, teamwork, emotional understanding, and student engagement during online learning (Hamid et al., 2019).

Section C: Self-Efficacy Scale

The Self-Efficacy Scale consisted of 10 items coded from SE1 to SE10. This section measured teachers' confidence in using digital technologies, managing online teaching, operating LMS platforms, and conducting virtual learning activities effectively (Schwarzer & Jerusalem 2010).

6.8. Validity and Reliability of the Instrument

The questionnaire was made after a thorough look through related literature about digital competence, social skills, self-efficacy and online learning settings. For the content validity, specialists in education and educational technology reviewed the instrument, and they checked whether the items felt appropriate or not. Then some needed changes were done following those expert ideas, in order to make the statements clearer, more relevant in practice, and less ambiguous than before. In addition, for reliability purposes, a pilot run was done with a small set of teachers, just to be sure before the final data collection started. Cronbach's Alpha coefficient was applied to evaluate reliability, and the reliability figures that came out suggested a good level of internal consistency, so everything seemed quite stable.

6.9. Data Collection Procedure

The data got collected in both online and offline modes using structured questionnaires, not sure why, the whole thing was done like that. Prior permission was obtained from the concerned Higher Education Teacher The participants were told about the objectives and the purpose of the study, and their involvement was completely voluntary. Teachers were asked to give honest responses, based on their own experiences with LMS based online teaching, as they had handled it.

6.10. Statistical Analysis

The data that was collected were coded tabulated, and later analysed using the Statistical Package for Social Sciences (SPSS). In the process, both descriptive and inferential statistical methods were basically used to examine the information. For instance, descriptive statistics like frequency, percentage, mean and standard deviation were applied to sum up the demographic background plus the answers tied to digital competence social skills and self-efficacy. A reliability check via Cronbach's Alpha was also done, to see how consistently the instrument works internally. Then Pearson correlation analysis was used, in order to look at the association among the variables. Finally, multiple regression analysis was running to figure out the extent to which social skills and self-efficacy help predict teachers' digital competence, basically.

6.11. Ethical Considerations

During the whole study, ethical principles were adhered to rather strictly, so everything was handled in a careful sort of way. Everyone took part in the research on a voluntary basis, and informed consent was secured from all the participants. Confidentiality, alongside anonymity, for the respondents was maintained throughout the process, meaning during data gathering, the later analysis, and even the final write up. The data that were collected were intended only for scholarly and research purposes, and in no case was any personal information of the participants revealed in any form.

7. Results

In this present study, it was noticed that teachers who took part in LMS based online learning showed moderate—to high levels of digital competence, social skills, and self-efficacy in general. When the association was checked, it pointed to a quite noticeable positive connection between social skills and digital competence, and also between self-efficacy and digital competence among teachers. The findings also teachers hinted that those teachers who had stronger communication abilities, and who felt more sure about working with digital technologies, were usually more capable of managing the online teaching atmosphere. Then, the multiple regression analysis did confirm that both social skills and self-efficacy were meaningfully predicting teachers' digital competence, while self-efficacy looked like the most powerful factor, shaping the more successful LMS-based online teaching practices.

Minnesota Journal of Business Law and Entrepreneurship

Volume 2026, No. 2

ISSN: 1540-3270

Table 1: Descriptive Statistics of Study Variables (N = 300)					
Variables	**Number of Items**	**Mean**	**Std. Deviation**	**Minimum**	**Maximum**
Digital Competence	19	53.37	10.75	20.00	89.00
Social Skills	23	57.02	10.99	27.00	91.00
Self-Efficacy	10	24.80	4.98	10.00	40.00

Table 1 shows the descriptive statistics for the big variables used in the study. You can see that the mean score for digital competence among teachers was 53.37, (SD = 10.75), which points to a sort of moderate but still teachers high level of digital competence when it comes to LMS-based online learning settings. The mean score for social skills came out to 57.02 (SD = 10.99), so it seems the teachers had satisfactory interpersonal plus communication abilities. And then for self-efficacy, the mean score was 24.80 (SD = 4.98). This suggests that teachers generally had a reasonable sense of assurance for managing online teaching tasks and also the LMS platforms, overall.

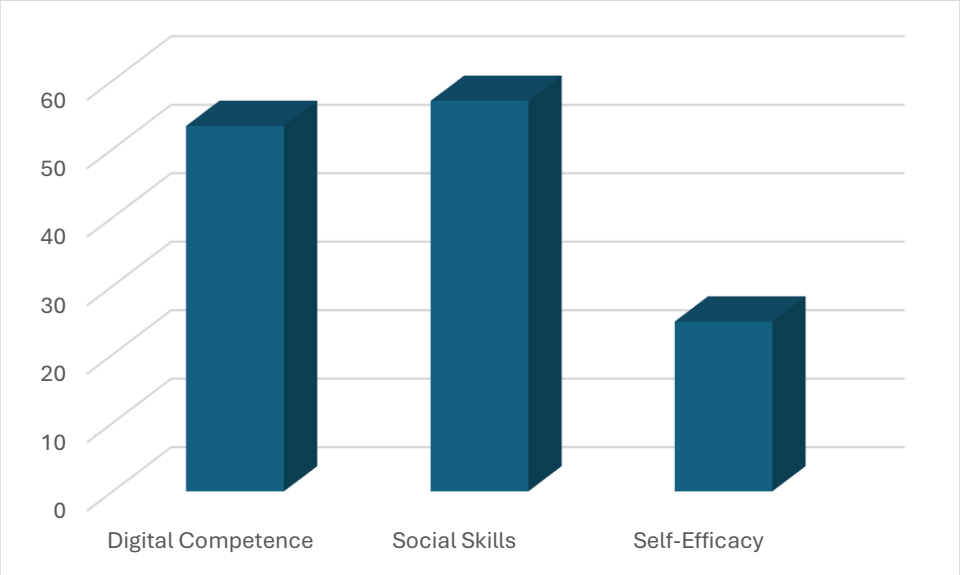

Figure 1: Descriptive Statistics of Study Variables (N = 300)

Table 2: Descriptive Analysis of Digital Competence Scale				
Variable	**Mean**	**Std. Deviation**	**Skewness**	**Kurtosis**
DC1	2.64	0.65	0.004	0.227
DC2	2.72	0.60	-0.055	-0.188
DC3	2.84	0.66	0.046	0.384
DC4	2.61	0.79	-0.024	-0.057
DC5	2.94	0.67	0.078	0.336
DC6	2.64	0.63	-0.001	0.266
DC7	2.72	0.69	0.140	-0.139
DC8	2.90	0.73	0.005	0.342
DC9	2.83	0.59	-0.030	-0.110
DC10	2.93	0.69	0.220	0.185
DC11	2.81	0.64	-0.027	-0.219
DC12	2.66	0.70	0.031	0.014
DC13	2.93	0.72	-0.096	0.273
DC14	2.89	0.77	-0.030	-0.138
DC15	2.83	0.69	-0.190	0.270

DC16	2.83	0.68	0.231	0.245
DC17	3.04	0.69	0.136	-0.031
DC18	2.77	0.69	0.167	0.062
DC19	2.85	0.65	-0.132	0.851

The outcomes from the Digital Competence Scale showed that the respondents, demonstrated a moderate sort of digital competence across all the items. The biggest mean score showed up for DC17 (M = 3.04), and then it went on to DC5 and DC10, which suggests that teachers were a bit more confident with some particular LMS related digital teaching actions. Also the skewness plus kurtosis figures stayed inside the acceptable ranges, so the data still looked normally distributed enough, for more parametric statistical analysis later on.

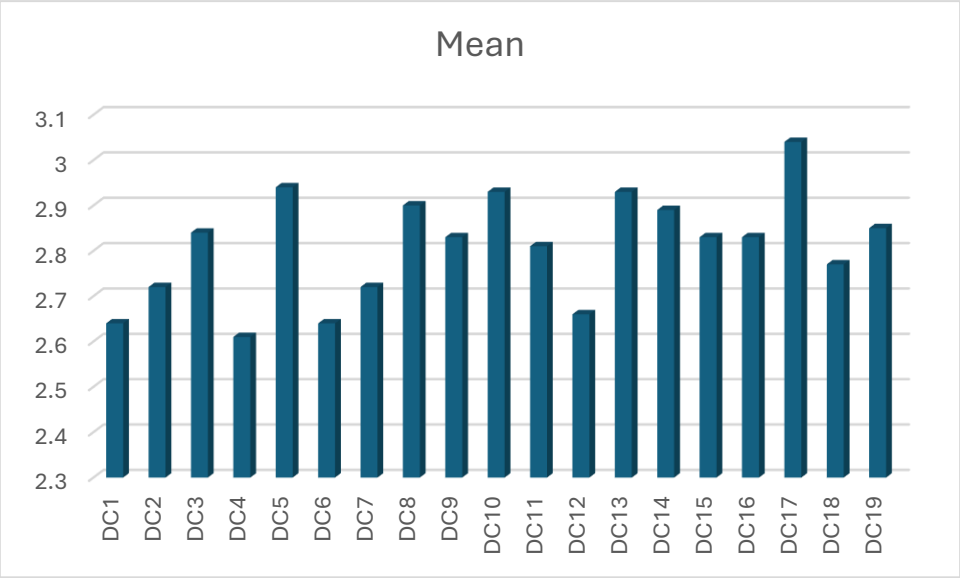

Figure 2: Descriptive Analysis of Digital Competence Scale

Table 3: **Descriptive Analysis of Social Skills Scale**

Variable	Mean	Std. Deviation	Skewness	Kurtosis
SS1	2.47	0.64	0.125	-0.208
SS2	2.49	0.60	0.189	-0.350
SS3	2.43	0.59	0.190	-0.316
SS4	2.44	0.57	0.171	-0.468
SS5	2.49	0.64	0.025	-0.232
SS6	2.41	0.64	0.264	-0.076
SS7	2.52	0.65	0.188	-0.231
SS8	2.54	0.58	-0.169	-0.433
SS9	2.45	0.58	-0.019	-0.491
SS10	2.49	0.59	-0.120	-0.442
SS11	2.63	0.58	-0.073	-0.335
SS12	2.50	0.54	0.200	-0.955
SS13	2.61	0.59	0.110	-0.470
SS14	2.64	0.56	-0.074	-0.514
SS15	2.51	0.60	0.099	-0.373
SS16	2.59	0.59	-0.032	-0.364
SS17	2.36	0.59	0.157	-0.225

SS18	2.47	0.61	0.187	-0.260
SS19	2.42	0.62	-0.024	-0.278
SS20	2.33	0.57	0.171	-0.253
SS21	2.46	0.57	0.222	-0.465
SS22	2.41	0.59	0.171	-0.310
SS23	2.36	0.59	0.225	-0.131

Table 3 shows that teachers generally demonstrated moderate social skills in LMS based, online learning settings. The top mean score showed up for SS14 (M= 2.64), then came SS11 along with SS16. Overall, it seems teachers had fairly good communication ability and interpersonal engagement skills that are needed in online teaching and for keeping students involved. Also, the skewness along with the kurtosis numbers, suggest the dataset was following an almost normal distribution, more or less.

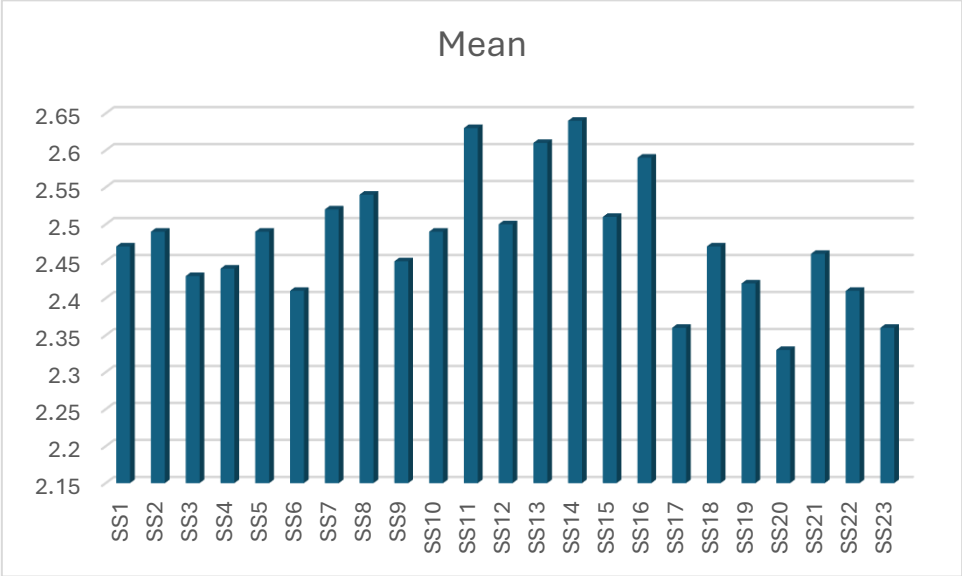

Figure 3: Descriptive Analysis of Social Skills Scale

Table 4: **Descriptive Analysis of Self-Efficacy Scale**				
Variable	**Mean**	**Std. Deviation**	**Skewness**	**Kurtosis**
SE1	2.57	0.61	-0.124	-0.266
SE2	2.58	0.59	0.289	-0.544
SE3	2.55	0.60	-0.090	-0.314
SE4	2.49	0.64	-0.103	-0.242
SE5	2.38	0.64	0.073	-0.176
SE6	2.54	0.63	0.192	-0.299
SE7	2.40	0.61	0.098	-0.221
SE8	2.38	0.59	0.231	-0.206
SE9	2.43	0.59	-0.028	-0.422
SE10	2.48	0.61	0.020	-0.311

The results from the Self-Efficacy Scale showed the moderate levels of self confidence among teachers when it comes to LMS based online teaching tasks, you know. The top average score showed up for SE2 (M = 2.58), and it was pretty close to SE1 plus SE3, honestly. Overall these findings suggest that teachers had a fairly solid sense of certainty about steering digital teaching instruments and handling virtual classroom routines. For the normality

part, the assumptions were met too, because the skewness and kurtosis numbers stayed in the acceptable boundaries.

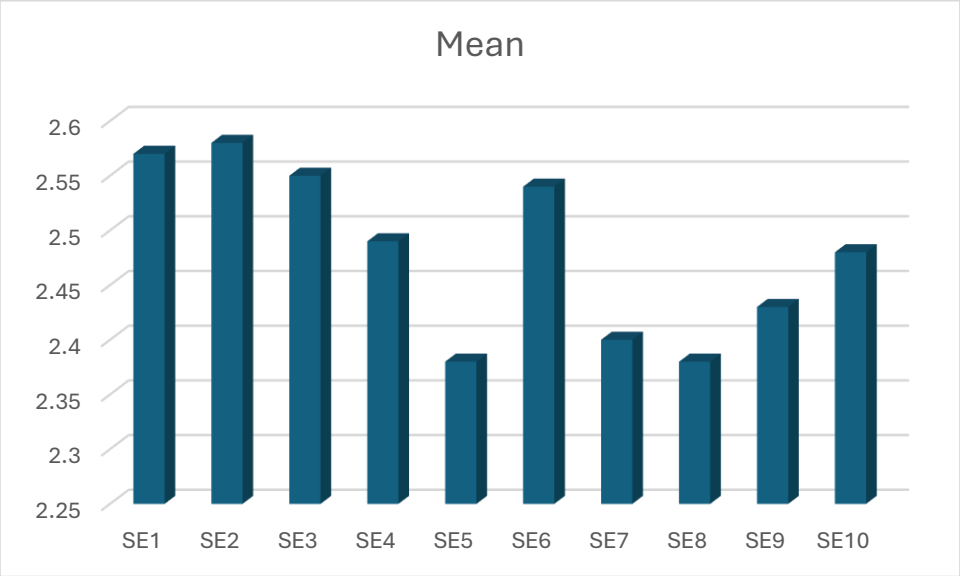

Figure 4: Descriptive Analysis of Self-Efficacy Scale

Table 5: Correlation Analysis among Social Skills, Self-Efficacy, and Digital Competence			
Variables	**Digital Competence**	**Social Skills**	**Self-Efficacy**
Digital Competence	1		
Social Skills	0.682**	1	
Self-Efficacy	0.745**	0.618**	1

$p < 0.01$

The correlation analysis showed a rather strong, positive connection between social skills and digital competence ($r = 0.682$, $p < 0.01$). And in the same line self-efficacy also came out as strongly positive with digital competence ($r = 0.745$, $p < 0.01$). So basically the results suggest that teachers with better communication abilities, plus those with higher levels of confidence, tended to be more digitally competent when using LMS based online learning environments. Because of that, the null hypotheses that claimed there were no significant relationships among the variables were rejected.

Table 6: Multiple Regression Analysis Predicting Digital Competence

Predictor Variables	**B**	**Std. Error**	**Beta**	**t-value**	**Sig.**
Constant	12.418	2.315	—	5.363	0.000
Social Skills	0.421	0.058	0.384	7.258	0.000
Self-Efficacy	0.736	0.089	0.512	8.267	0.000

Model Summary

R	**R^2**	**Adjusted R^2**	**F-value**	**Sig.**
0.801	0.642	0.639	266.714	0.000

In the regression analysis, it was shown that social skills, and self-efficacy, really did predict teachers' digital competence in LMS-based online learning surroundings. Basically the whole model accounted for 64.2% of the

variance in digital competence, that is $R^2 = 0.642$. When looking at what mattered most, self-efficacy came through as the main predictor with $\beta = 0.512$, and then social skills were next with $\beta = 0.384$. Also, the regression model in general was statistically significant, $F = 266.714$, $p < 0.001$. So, the null hypothesis, meaning the one claiming that social skills and self-efficacy do not significantly predict digital competence, was not supported and therefore rejected.

8. Hypotheses Testing

The results showed that there was a significant positive correlation between teachers' social skills and digital competence in online learning in LMS platforms ($r = 0.682$, $p<0.01$). Communication competence, collaborative skills, interpersonal interaction skills and emotion understanding were the factors that showed a significant correlation with digital competence among teachers engaged in online teaching. The factors that showed significant correlation with digital competence among teachers involved in online teaching were communication competence, collaborative skills, interpersonal interaction skills and emotion understanding. These teachers had a better understanding of engaging students, managing virtual classrooms, and using LMS for teaching effectively. The findings show that social skills are significant in improving teachers' digital competence in online learning environments using LMS.

The study also revealed that there was a significant positive correlation between teacher's self-efficacy and digital competence ($r = 0.745$; $p < 0.01$). Teachers with higher levels of confidence about using digital technologies and managing online teaching activities demonstrated high level of digital competence. Self-efficacy helped to enhance motivation, adaptability, and solving technological problems in teaching with LMS. These findings suggest that self-efficacy is an important factor influencing teachers' effectiveness in digital learning environments.

In addition, the findings of multiple regression analysis showed that social skills and self-efficacy were significant predictors in teachers' digital competence in LMS-based online learning. The regression model accounted for 64.2% of the variance in digital competence with $R^2 = 0.642$, $p < 0.001$. Self-efficacy and social skill were the most significant predictors, followed by the others. The results revealed that teachers who had more confidence and interpersonal skills can better adapt to the online teaching environment and use LMS platforms. The findings underscore that improving teachers' digital competence in the modern online education requires not only their digital competence but also social skills and self-efficacy.

9. Conclusion

In the present study, it was found that social skills and self-efficacy play a significant role in improving teachers' digital competence in LMS-based online learning environments. The findings indicate that teachers with strong communication skills, effective interpersonal interaction, and higher confidence in using digital technologies tend to perform better in online teaching. The study also revealed positive relationships among social skills, self-efficacy, and digital competence, indicating that these variables are closely associated with one another. Furthermore, self-efficacy emerged as the strongest predictor of teachers' digital competence. The study highlights the importance of continuous professional development, technological training, and supportive learning environments to enhance teachers' readiness and effectiveness in modern online education systems.

References

[1] Digital Competence Cabero-Almenara, J., Barroso-Osuna, J., Gutiérrez-Castillo, J. J., & Palacios-Rodríguez, A. (2021). The teaching digital competence of health sciences teachers. A study at Andalusian universities. *International Journal of Environmental Research and Public Health, 18*(5), 2552. https://doi.org/10.3390/ijerph18052552

[2] Digital Literacy Pettersson, F. (2018). On the issues of digital competence in educational contexts: A review of literature. *Education and Information Technologies, 23*(3), 1005–1021. https://doi.org/10.1007/s10639-017-9649-3

[3] Educational Innovation Tondeur, J., Scherer, R., Siddiq, F., & Baran, E. (2020). Enhancing pre-service teachers' technological pedagogical content knowledge (TPACK): A mixed-method study. *Educational Technology Research and Development, 68*(1), 319–343. https://doi.org/10.1007/s11423-019-09692-1

[4] Educational Psychology García-Martínez, I., Montenegro-Rueda, M., Fernández-Batanero, J. M., & Román-Graván, P. (2023). Social skills and collaborative competence among teachers in digital education contexts. Frontiers in Psychology, 14, 1198432. https://doi.org/10.3389/fpsyg.2023.1198432

[5] Educational Psychology Hatlevik, O. E., & Hatlevik, I. K. R. (2018). Examining the relationship between teachers' ICT self-efficacy for educational purposes, collegial collaboration, lack of facilitation and the use of ICT in teaching practice. *Frontiers in Psychology, 9*, 935. https://doi.org/10.3389/fpsyg.2018.00935

[6] Educational Psychology Panisoara, I. O., Lazar, I., Panisoara, G., Chirca, R., & Ursu, A. S. (2024). Motivation, self-efficacy, and digital competence among teachers in virtual education settings. Behavioral Sciences, 14(1), 44. https://doi.org/10.3390/bs14010044

[7] Educational Psychology Şimşek, Ö., & Ateş, H. (2024). Social interaction skills and teachers' adaptation to LMS-based online education. Interactive Learning Environments, 32(3), 721–736. https://doi.org/10.1080/10494820.2023.2178845

[8] Educational Technology Akgün, F., & Greenhow, C. (2024). Teachers' digital competence and self-efficacy in online learning environments: A systematic review. Computers & Education Open, 6, 100189. https://doi.org/10.1016/j.caeo.2024.100189

[9] Educational Technology Alenezi, F. A., & Alotaibi, H. M. (2023). The relationship between teachers' digital competence, self-efficacy, and online teaching performance in LMS-supported education. Education and Information Technologies, 28(9), 11345–11367. https://doi.org/10.1007/s10639-023-11654-8

[10] Educational Technology Al-Fraihat, D., Joy, M., Masa'deh, R., & Sinclair, J. (2020). Evaluating e-learning systems success: An empirical study. *Computers in Human Behavior, 102*, 67–86. https://doi.org/10.1016/j.chb.2019.08.004

[11] Educational Technology Cabero-Almenara, J., Barroso-Osuna, J., Rodríguez-Gallego, M. R., & Palacios-Rodríguez, A. (2023). Digital competence frameworks and teacher preparedness in virtual learning environments. Sustainability, 15(4), 3321. https://doi.org/10.3390/su15043321

[12] Educational Technology Chiu, T. K. F. (2024). Understanding teachers' readiness for LMS-based teaching: The role of digital competence and technological self-efficacy. Computers & Education, 203, 104842. https://doi.org/10.1016/j.compedu.2024.104842

[13] Educational Technology Falloon, G. (2023). From digital literacy to digital competence: The teacher's role in online learning systems. British Journal of Educational Technology, 54(2), 561–578. https://doi.org/10.1111/bjet.13255

[14] Educational Technology Koehler, M. J., Mishra, P., & Cain, W. (2022). What is technological pedagogical content knowledge (TPACK)? Journal of Education, 193(3), 13–19. https://doi.org/10.1177/002205741319300303

[15] Educational Technology Lucas, M., Bem-Haja, P., Siddiq, F., Moreira, A., & Redecker, C. (2023). The relation between teachers' digital competence and professional engagement in online education. Education Sciences, 13(5), 488. https://doi.org/10.3390/educsci13050488

[16] Educational Technology Redecker, C. (2017). European framework for the digital competence of educators: DigCompEdu. Luxembourg: Publications Office of the European Union. https://doi.org/10.2760/159770

[17] Educational Technology Scherer, R., Howard, S. K., Tondeur, J., & Siddiq, F. (2023). Profiling teachers' readiness for online teaching and learning in higher education. Computers in Human Behavior, 139, 107534. https://doi.org/10.1016/j.chb.2022.107534

[18] Educational Technology Tondeur, J., Scherer, R., Siddiq, F., & Baran, E. (2023). Enhancing teachers' digital competence through professional development: Evidence from online learning environments. Teaching and Teacher Education, 123, 103998. https://doi.org/10.1016/j.tate.2022.103998

[19] Educational Technology Zhao, Y., Llorente, A. M. P., & Gómez, M. C. S. (2024). LMS-based online learning and teachers' digital competence: Mediating effects of self-efficacy and communication skills. Education and Information Technologies, 29(2), 2451–2474. https://doi.org/10.1007/s10639-023-11902-x

[20] Ergül, D. Y., & Taşar, M. F. (2023). Development and validation of the teachers' digital competence scale (TDiCoS). Journal of Learning and Teaching in Digital Age, 8(1), 148-160.

[21] Ergül, D. Y., & Taşar, M. F. (2023). Development and validation of the teachers' digital competence scale (TDiCoS). Journal of Learning and Teaching in Digital Age, 8(1), 148-160.

[22] Hamid, S., Jabeen, A., & Mahmood, Z. (2019). The development of a social skills scale for adolescents. Clinical and Counselling Psychology *Review*, *1*(1), 15-27.

[23] Hamid, S., Jabeen, A., & Mahmood, Z. (2019). The development of a social skills scale for adolescents. Clinical and Counselling Psychology Review, 1(1), 15-27.

[24] ICT in Education Zhao, Y., Llorente, A. M. P., & Gómez, M. C. S. (2021). Digital competence in higher education research: A systematic literature review. *Computers & Education, 168*, 104212. https://doi.org/10.1016/j.compedu.2021.104212

[25] Learning Management Systems Martin, F., Budhrani, K., Kumar, S., & Ritzhaupt, A. (2019). Award-winning faculty online teaching practices: Roles and competencies. *Online Learning, 23*(1), 184–205. https://doi.org/10.24059/olj.v23i1.1329

[26] LMS-Based Teaching Trust, T., & Whalen, J. (2020). Should teachers be trained in emergency remote teaching? Lessons learned from the COVID-19 pandemic. *Journal of Technology and Teacher Education, 28*(2), 189–199.

[27] Online Learning Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19 crisis. *Journal of Educational Technology Systems, 49*(1), 5–22. https://doi.org/10.1177/0047239520934018

[28] Schwarzer, R., & Jerusalem, M. (2010). The general self-efficacy scale (GSE). Anxiety, Stress, and Coping, 12(1), 329-345.

[29] Social Skills Schonert-Reichl, K. A. (2017). Social and emotional learning and teachers. *The Future of Children, 27*(1), 137–155. https://doi.org/10.1353/foc.2017.0007

[30] Teacher Digital Skills Instefjord, E., & Munthe, E. (2017). Educating digitally competent teachers: A study of integration of professional digital competence in teacher education. *Teaching and Teacher Education, 67*, 37–45. https://doi.org/10.1016/j.tate.2017.05.016

[31] Teacher Education Redecker, C. (2017). *European framework for the digital competence of educators: DigCompEdu*. Publications Office of the European Union. https://doi.org/10.2760/159770

[32] Teacher Self-Efficacy Chiu, T. K. F. (2021). Digital support for student engagement in blended learning based on self-determination theory. *Computers in Human Behavior, 124*, 106909. https://doi.org/10.1016/j.chb.2021.106909

[33] Hamid, S., Jabeen, A., & Mahmood, Z. (2019). The development of a social skills scale for adolescents. *Clinical and Counselling Psychology Review*, *1*(1), 15-27.

[34] Ergül, D. Y., & Taşar, M. F. (2023). Development and validation of the teachers' digital competence scale (TDiCoS). *Journal of Learning and Teaching in Digital Age*, *8*(1), 148-160.

[35] Schwarzer, R. (2012). *The General Self-Efficacy Scale (GSE).* Freie Universität Berlin.

[36] Schwarzer, R., & Jerusalem, M. (1995). *Generalized Self-Efficacy Scale*. In J. Weinman, S. Wright, & M. Johnston (Eds.), *Measures in health psychology: A user's portfolio. Causal and control beliefs* (pp. 35–37). NFER-NELSON.