

Time Management as a Moderator between Teaching Competencies and Classroom Performance in Higher Education

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This article may be cited as Saleem, A., & Akhtar, Z. (2025). Time Management as a Moderator between Teaching Competencies and Classroom Performance in Higher Education. *ProScholar Insights*, 4(4), 123-132.

<https://doi.org/10.55737/psi.2025d-44133>

Abstract: In higher education, strong teaching competencies are essential for effective classroom performance. Faculty often face excessive workloads that disrupt their time, potentially creating a gap between their capabilities and their actual teaching skills. This suggests the influence of a crucial behavioral factor: time management. This study investigated the direct relationships between teaching competencies, time management, and classroom performance among university faculty. Crucially, it examined whether time management acts as a moderator, strengthening the positive effect of teaching competencies on performance. A quantitative, cross-sectional survey design was employed. Data were collected from 218 full-time faculty members across various disciplines using stratified random sampling. Teaching competencies and time management were measured using validated self-report scales. Classroom performance was assessed through a multi-source approach, combining self-reports with official student evaluation scores to mitigate bias. Data were analyzed using correlation and moderated regression analysis (Hayes PROCESS Model 1). The results confirmed significant positive correlations between all main variables. Moderated regression analysis revealed that both teaching competencies ($\beta = 0.38$, $p < .001$) and time management ($\beta = 0.42$, $p < .001$) were significant independent predictors of classroom performance. Most importantly, a significant interaction effect was found ($\beta = 0.11$, $p = .006$). In conclusion, time management is an important moderating variable that amplifies teaching competencies. In higher education, a dual-focused approach to faculty development is imperative for unlocking full teaching potential. This study suggested that time management is an important moderating variable that amplifies teaching competencies.

Keywords: Soft Skills, Teaching Competencies, Classroom Performance, Higher Education, Moderation Analysis



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Introduction

Effective teaching is a complex process encompassing many competencies in subject matter knowledge, pedagogical skills, communicative abilities, and classroom management techniques. The competencies mentioned above are vital for any successful teaching since they have been proven to be positively related to classroom performance and students' learning outcomes (Gul et al., 2021; Choi et al., 2014). Effective teaching is a multifaceted process that requires a complex set of competencies dealing with specific subject matter, pedagogical skills, communication skills, and classroom management techniques. The mentioned competencies are to be positively related to classroom performance and student learning outcomes, therefore critical for effective teaching. An effective teacher needs to apply his or her different skills of subject matter, pedagogical, communication, and classroom management strategies

in his or her teaching practices. These are necessary skills of an effective teacher that have been positively associated with classroom efficiency and students' learning results (Bembenuddy et al., 2015). Of late, the competencies and their influence on classroom performance are among the issues that have increasingly attracted the attention of university teachers. According to Akyar and Tuncer (2022), instructional design, classroom management, assessment, and communication skills are part of teaching competencies that could facilitate effective teaching. The ability of university teachers to execute teaching roles adequately determines the success of higher education institutions and the achievement of the educational goals set forth by an institution.

Numerous other research findings established the relationship between teaching competencies and classroom performance to be significant. In one, Claessens et al. (2023), investigated the relationship between teaching competencies and student learning outcomes among teachers in colleges located in Taiwan. One such study further found that teaching competencies were positively associated with student learning outcomes. Similarly, Choi et al., (2014) conducted a study investigating the relationship between teaching performance and student evaluations of Korean university instructors. The direct relation between teaching competencies and classroom performance cannot be that simple, and some other factors are supposed to be working as mediators, among which include time management skills. Efficient time management skills are essential to be acquired by teachers in handling their workloads, meeting deadlines, and maintaining the quality of instruction (Oni et al., 2017). The scholars also argue that teachers who effectively manage time do not experience problems with productivity and, eventually, achieve positive outcomes for learners.

Time management is the process of organizing and planning how much time should be spent on different activities to effectively increase productivity and efficiency (Wolters & Brady, 2021). The time management skill teachers should possess is the balancing of many responsibilities simultaneously: starting from lesson planning to grading assignments and dealing with students while maintaining relationship respect. Teachers who have good time management skills will be more efficient in their work, hence improvement in class management, student engagement, and increased student achievement (Akyar & Tuncer, 2022).

On the other hand, time management skills have been posited to significantly correlate positively with classroom performance. For instance, Akyar and Tuncer (2022) researched the relationship that time management has with the effectiveness of teachers in Kenyan secondary schools. They reported that effective time management was positively related to teacher effectiveness, such as improved classroom management and higher student participation in activities, which are associated with increased student learning outcomes. The same has been tested for the relationship between time management skills and teacher job satisfaction in Chinese primary schools by Galindo-Domínguez & Bezanilla, (2021). It was found that those educators with practical time management skills were more satisfied in their work and, as a result, the teaching practices would improve, which in turn impacted high achievement in students. Fewer studies have paid attention to the relationship between teaching competencies and classroom performance (Gul et al., 2021; Gezgin et al., 2021; Choi et al., 2014; Heo et al., 2021) or the relationship of time management skills concerning teaching performance (Olivo, 2021; Ng et al., 2023). Although these studies have tested the relationship of teaching competencies to classroom performance and the relationship between time management skills and classroom performance, no study has been conducted that looked into the mediating effect of time management skills between teaching competencies and classroom performance. Therefore, given the above, the present study takes up this gap. Some studies were focused on the link between competencies in teaching and classroom performance itself (Choi et al., 2014). Based on the best knowledge, no study has been conducted on whether time management skills could mediate the relationship between teaching competencies and classroom performance. Thus, this study investigates the relationship between teaching competencies and classroom performance in university teachers with time management skills as the intervening variable.

Objectives of the Study

The main objectives of this article are:

- ▶ To examine the relationship between time management and teaching competencies of university teachers.
- ▶ To explore the relationship between time management and classroom performance of university teachers.
- ▶ To investigate the role of time management as a moderator in the relationship between teaching competencies and classroom performance.



Conceptual Framework

In this study, teaching competencies are seen as independent variables, classroom performance is seen as a dependent variable, and time management skill are seen as a moderator variable. This framework shows the direct effect that teaching competencies have on classroom performance and the indirect effect that teaching skills and time management have on classroom performance. Regression analysis was used to test the hypothesis.

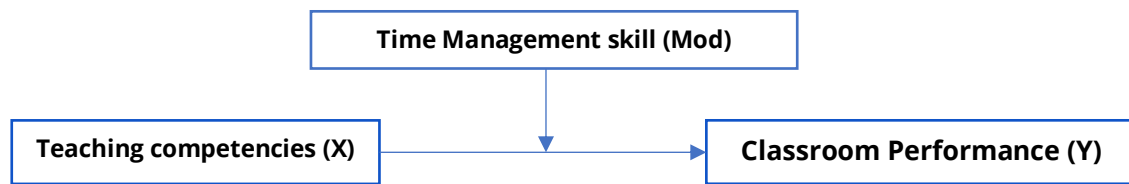
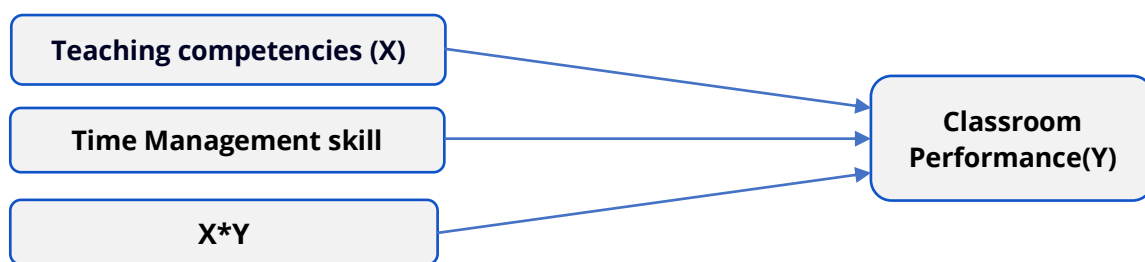


Figure 1

Hypothesized Model



H₁: Teaching competencies have a positive and significant relationship with the classroom performance of university teachers.

The effectiveness of the classroom teaching is also becoming dependent on the teaching skills, especially in the higher education where the faculty members are expected to develop critical thinking skills, student participation and academic achievement in addition to exhibiting knowledge in the subject matter. Darling-Hammond (2017) outlines pedagogical knowledge, instructional strategies, classroom management skills, and professional dispositions as the main elements of these competencies. It has also been demonstrated that the ability of university instructors to create interesting learning experiences facilitates student performance and satisfaction (Qadeer et al., 2024).

Empirical studies have always recorded a relationship between classroom performance and competencies of teachers. According to Lemmrich and Ehmke (2024), teachers who demonstrate competence in lesson planning, subject delivery, and formative assessment practices have higher chances to be proactive and achieve higher learning outcomes. To achieve the achievement of a performance, Cevikbas et al. (2024) argue that content knowledge should be combined with pedagogical approaches and adaptive solutions that consider the needs of learners.

The university level of instruction implies that one should have the skills to communicate, be innovative in pedagogy, and control the classroom situation (García-Morales et al., 2023). According to Wilson et al. (2021), students have more positive opinions towards teachers when they have higher sets of pedagogical competence.

The impact of the teaching competencies on performance is also supported by the results of Pham and Renshaw (2015), who found out that motivation, feedback, and learner-centered practices were significant predictors of academic performance and achievement of students.

The literature emphasizes the multidimensionality of the teaching competencies; teaching performance in the course of higher learning is greatly improved when the teachers are competent in planning, delivery and classroom management.

Melgarejo et al. (2025) ensure that the competencies are in line with the instructional objectives and needs of students. Within the South Asian and Pakistani settings, universities are still building approaches based on students and better classroom performance consequently relies on a strong teaching competency.



Galindo-Domínguez & Bezanilla (2021) show that university professors with powerful classroom management and teaching abilities are better, and that the instructional ability of the faculty members can be enhanced by the specific training.

H₂: Time management skill has a positive and significant relationship with the classroom performance of university teachers.

Time management is essential for everyone in a professional role. Time management improves productivity, minimizes distractions, and facilitates task prioritization (Nigussie, 2019; Razali et al., 2018; Khan et al., 2020). Several studies have examined academic performance and time management skills. Research specifically investigating how time management skills affect university teachers' classroom performance is limited.

A positive and significant impact of time management skills on university teachers' classroom performance is examined. Since time management skills are positively correlated with academic performance, individuals with effective time management strategies tend to achieve greater levels of success in their academic endeavors (Luo & Li, 2024).

Khan et al. (2020) found a positive correlation between time management and academic performance. Higher academic achievement is more likely to be achieved by students with good time management skills. Another study by Hamzah et al. (2014) showed that the correlation between the time management and the academic performance was positive and statistically significant.

A study was conducted at Dire Dawa University in Ethiopia to determine the effect of time management practices on academic performance. In educational settings where parental or instructional control is scarce like in the higher education, time management is an important aspect of the student academic progression. According to Razali et al. (2018), development of time-management skills is associated with improved academic performance.

H₃: Time management skill moderates the relationship between teaching competencies and classroom performance for university teachers.

The empirical research has revealed that there is a correlation between academic performance and time management competencies. The students who demonstrate proper time management will have a higher chance of achieving high academic performance (Nigussie, 2019; Khan et al., 2020; Razali et al., 2018). The prioritization of activities, multitasking, and self-directed learning are all useful in increasing the academic results.

Time management also determines performance in the professional world (Miertschin et al., 2015). Effective time management by employees leads to enhanced productivity, a lower degree of stress, and higher performance at work (Razali et al., 2018).

Effective classroom performance requires time management skills. Faculty can prepare lectures more effectively, provide timely feedback to students, and balance their teaching obligations by managing their time efficiently. This study suggests that time management skill might moderate the relationship between teaching competencies and classroom performance (Hamzah et al., 2014; Al-yami et al., 2021; Nigussie, 2019; Khan et al., 2020). Teachers with better time management skills are expected to achieve greater classroom performance.

Materials and Methods

This was a quantitative study based on the relationship among time management, teaching competencies, and classroom performance of university teachers. A cross-sectional survey design was used for data collection from a sample of university teachers within a particular region (Multan district). The intention is to explore the moderating effect of time management skills in the relationship between teaching competencies and classroom performance.

In the demographic information section, information was gathered about the teachers' age, gender, education, and experience. A section on time management skills aimed at measuring teachers' capability in this area. Questions were developed to measure how well teachers prioritize tasks, set realistic deadlines, and manage their time. Teaching competency assessed the knowledge, skills, and attitudes needed by teachers to deliver effective instruction. The



purpose of this section is to prepare lessons, manage classes, involve learners in instruction, and assess learners. In the classroom performance section, teachers were assessed on their overall performance. Indicators measured whether teachers were capable of delivering effective instruction and managing class interaction. With the help stratified sampling researchers select sample 218 sample was selected.

The questionnaire was administered online using any survey software. The participants were briefed about the study and its purpose and requested their informed consent before collecting any kind of information. The data collection process had taken around 20-30 minutes. inferential analyses of the collected data were done. The inferential statistics was involving correlation and regression analyses to test the relationship between the variables and research hypotheses. The effect of mediation on time management skills was tested by carrying out a mediation analysis using the PROCESS macro in SPSS. Mediation testing was taken place on whether time management competencies mediate the relationship between teaching competencies and classroom performance.

Results of Study

Results and Interpretation

This section presents the findings of the statistical analyses conducted to examine the relationship between teaching competencies, time management, and classroom performance, and to test the hypothesis that time management moderates this relationship. The results are presented in sequence, followed by their interpretation.

Descriptive Statistics and Data Screening

Missing values, outliers, and compliance with multivariate analysis assumptions were checked prior to analysis. The assumptions of normality, linearity, homoscedasticity, and multicollinearity were met. 218 full-time faculty members were included in the sample. Table 1 presents descriptive statistics, including means, standard deviations, and reliability coefficients (Cronbach's Alpha).

Table 1

Means, Standard Deviations, Reliabilities, and Intercorrelations for Study Variables (N = 218)

Variable	M	SD	α	1	2	3
1. Teaching Competencies	4.15	0.52	0.89	—		
2. Time Management	3.78	0.61	0.85	.72**	—	
3. Classroom Performance	4.02	0.67	0.79	.71**	.77**	—

*Note: * $p < .01$

A reliability coefficient of more than 0.70 indicates strong internal consistency for all multi-item scales. The correlation matrix shows a positive and significant correlation between all three main variables. In contrast, teaching competence showed a strong positive correlation with classroom performance ($r=0.71$, $p=0.001$). Similarly, time management was strongly correlated with classroom performance ($r^* = .77$, $p < .01$), providing initial support for H2.

Hypothesis Testing: Moderated Regression Analysis

The moderation hypothesis (H3) was tested with Model 1 of Hayes PROCESS (Hayes, 2022). The independent variable (X) was teaching competencies, the dependent variable (student evaluation score) was classroom performance, and the moderator was time management. As shown in Table 2, the regression results are summarized.

Table 2

Results of Moderated Regression Analysis for Classroom Performance

Predictor	b	SE	t	p
Constant	1.52	0.31	4.90	.001
Teaching Competencies (X)	0.38	0.08	4.75	.001
Time Management (M)	0.42	0.07	6.00	.001
Interaction (X * M)	0.11	0.04	2.75	.006

* $R^2 = .31$, $F(3, 214) = 32.05$, $p < .001$ *



A statistically significant regression model, $F(3, 214) = 32.05$, accounted for 31% of the variance in classroom performance ($R^2 = .31$). Classroom performance was significantly positively influenced by both teaching competencies ($b = 0.38, p .001$) and time management ($b = 0.42, p .001$). The results support hypotheses H1 and H2, indicating that better time management skills predict better classroom performance independently.

Time management and teaching competencies interacted statistically significantly ($B = 0.11, p = .006$). This indicates that the strength of the relationship between teaching competencies and classroom performance depends on the level of an instructor's time management, thus supporting the moderation hypothesis (H3).

Probing the Interaction

A simple slopes analysis was performed to interpret the significant interaction. Teaching competencies were examined at three levels of the moderator (time management): low (1 SD below the mean), average (at the mean), and high (1 SD above the mean). Figure 1 and Table 3 show the results.

Table 3

Conditional Effects of Teaching Competencies on Performance at Levels of Time Management

Level of Time Management	Effect	SE	t	p	95% CI
Low (-1 SD)	0.19	0.09	2.11	.036	(0.01, 0.37)
Average (Mean)	0.38	0.08	4.75	< .001	(0.22, 0.54)
High (+1 SD)	0.57	0.10	5.70	< .001	(.37, 0.77)

This graph shows three lines, with the "High Time Management" line being the steepest, indicating a strong relationship between competence and performance. It would have a moderate slope for "Average", and a flat line for "Low Time Management."

All levels of time management were significantly influenced by teaching competencies. This relationship varied considerably in strength. Teaching competencies were positively associated with performance in faculty with low time management skills ($B = 0.19, p = .036$). For faculty with average time management skills, the effect was stronger ($B = 0.38, p < .001$). The effect was strongest for faculty with high time management skills ($B = 0.57, p .001$).

Time management acts as a catalyst in this pattern. Classroom performance is amplified by teaching competencies. When two faculty members have identical teaching skills, the one with superior time management is predicted to perform significantly better in the classroom. However, even high innate teaching abilities cannot be fully realized in the classroom when poor time management is present. Hypothesis H3 is confirmed.

Figure 1

Moderating Effect of Time Management



Time management skills moderate the relationship between teaching competencies and classroom performance. Performance in the classroom is represented by the Y-axis. The three lines show how teaching competencies and

classroom performance change with time management skills. Time Management Skills (dashed line) are weaker. Time Management Skills (solid line) show a stronger correlation. The strongest relationship is between high time management skills.

Discussion and Conclusion

Teaching competencies and classroom performance are positively correlated with time management. Educators may underperform if they lack time management strategies to allocate class hours efficiently, structure learning tasks, and balance assessment with instruction. Conversely, effective time management ensures timely delivery of content, increased student participation, and decreased stress levels for both teachers and students.

Time management skills foster better classroom discipline, student the diagram shows that the slope of the line grows with the improvement of time-management skills which is why teaching competencies impact positively more strongly. The effectiveness of the competencies of teaching applied in classrooms is enhanced by time-management competence as the moderation analysis has shown. satisfaction, and performance (Essien, 2025). Moreover, self-regulated learning literature indicates that time planning and prioritization help transform competencies into measurable academic results (Fu et al., 2025). Without such skills, teaching competencies may remain latent, producing weaker classroom outcomes.

The results show that time management is a critical moderating value, which increases the nexus between instructional competencies and classroom efficacy. Even teachers with a high level of pedagogic knowledge might perform poorly when they do not have structured time-management plan on how to distribute instruction time, how to organize learning activity and how to balance between assessment and instructional presentation. On the other hand, proper time management increases the power of the teaching competencies by ensuring that the content is delivered on time, the student is more involved, and that stress levels are reduced among the teachers and the learners.

Empirical evidence indicates that elementary teacher with strong time management capabilities develop better classroom discipline, enhance student satisfaction and overall performance (Essien, 2025). Moreover, the research on self-regulated learning argues that planning and prioritization of time are intentional competence translations to measurable academic performance (Fu et al., 2025). Without such skills, teaching competencies may stay latent, and produce poor results in the classroom.

Importantly, time management also interacts with contextual factors such as workload, institutional policies, and digital learning environments. For instance, in technology-mediated classrooms, effective time allocation is essential to avoid distraction and maintain focus on learning goals (Patzak et al., 2025). University teachers' time management skills moderate the relationship between teaching competencies and classroom performance, which means time-management-competent teachers would perform better than their counterparts who lack this skill, given all other factors remaining the same. This study confirms a number of studies that establish the validity of teaching competencies in the classroom. Previous studies support the moderating role of time management skills (Akram & Zepeda, 2015).

Jiang and Attan (2024) identified that time management skills are strong predictors of teaching performance in college teachers in China. Another study was conducted by Stronge (2018) on time management skills and teaching effectiveness of university teachers in China. It indicated a positive relationship between the two. Likewise, in the research by Aeon et al. (2021) time management skills also emerged significant in enhancing teaching performance among university teachers in China.

Lin et al. (2025) found that time management skills significantly predicted teaching effectiveness among higher education teachers in India. A study by Cavanagh et al. (2019) suggested that time management may enhance teaching competencies and, therefore, student outcomes. According to the study, there was a need for managing time by the teachers to develop and provide quality instructions.

It was determined that there is a significant relationship between teaching competencies, classroom performance, and time management skills among university teachers and time management skills acts as a moderator in



relationship between teaching competencies and classroom performance. Therefore, time management skills at the workplace may enable teachers to exercise more effective teaching competencies and to perform better in the classroom.

Therefore, the present study confirms that in-service training of university teachers in teaching competencies and time management will definitely bring about improvement in their classroom performance. As such, it is enough to say that those teachers who have adequate time management skills are sure to perform better in a class than those who do not have them. All these have significant implications for teacher training and professional development programs, which are the responsibility of the university's administration at large. In particular, the results of these studies substantiate the results of the current research and support the importance of time management skills in enhancing teaching competencies and classroom performance among the university's teachers.

Limits of the Study

However, there are a couple of limitations to this study to be considered. To start with, the sample size was less comparatively and thus can limit the generalization of the findings. Secondly, the study had to rely on self-report measures on teaching competencies, classroom performance, and time management, which is inherently disposed to bias. For instance, future research can overcome this shortcoming by employing larger sample sizes or using objective tools to measure teaching competencies and classroom performance.

Recommendations

From the findings of this study, various recommendations can be made to help better the teaching competencies and classroom performance of university teachers. Firstly, there is a need for training and support in time management skills for university teachers. For example, workshops or courses where they could learn strategies to prioritize their tasks, their goals, and how to face their workload. Moreover, universities could offer teachers some kind of tool or resource, like an app to schedule, a time track system, or software to develop time management skills. Second, institutions can implement programs or initiatives to encourage teachers to seek professional development. This might include an opportunity to attend conferences, participate in workshops, or do specific research. Through this, the teacher will acquire some new skills and knowledge on how to develop his teaching competencies and classroom performance. Finally, universities should provide support and resources for teachers to alter workload and stress.



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