When Digital Competency Matters: Examining the Moderating Effect of Teaching Digital Competency on the Link Between Meaningful Work and Teaching Philosophy Among College Faculty

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Abstract

Aim: This study investigated the relationship between teaching philosophy, teacher digital competence, and meaningful work among 194 college professors. It identified the extent to which teaching philosophy and digital competence predict meaningful work and whether their interaction further influences this relationship.
Methodology: A quantitative research design was employed, utilizing statistical analysis to examine correlations and predictive relationships among teaching philosophy, teacher digital competence, and meaningful work. Data were collected through validated survey instruments and analyzed using regression models to assess the main and interaction effects.
Results: The findings reveal a strong correlation between teaching philosophy and meaningful work, suggesting that faculty members with a well-defined teaching philosophy are more likely to experience meaningfulness in their profession. Teacher digital competence was also identified as a significant predictor of meaningful work, indicating that higher digital proficiency contributes positively to faculty members' perceptions of their work's significance. The interaction between teaching philosophy and digital competence significantly impacts meaningful work; however, this effect is moderated in a way that ultimately reduces its strength. The interaction between these two factors suggests that digital skills do not replace traditional teaching values but complement them, making teaching more effective and meaningful in today's technology-driven education landscape.
Conclusion: This study underscores the crucial role of teaching philosophy and digital competence in shaping educators' perceptions of meaningful work. The findings suggest that professional development programs should integrate educational technology to align with faculty members' core teaching philosophies, ensuring that digital advancements enhance, rather than overshadow, pedagogical integrity. Future initiatives in faculty training should focus on harmonizing digital competence with educators' value systems to foster more fulfilling and impactful academic experiences.

Keywords: teaching philosophy, teacher digital competence, meaningful work, college faculty, moderation analysis.

INTRODUCTION

The higher education landscape is changing like never before, fueled by the rapid advancement of digital technology. This digital revolution has not only impacted the pedagogical processes, but it has altered the sense of the word faculty in the 21st century. With a growing acceptance of digital forms of education, it has become mandatory for university faculty to recalibrate their tried-and-tested philosophies of teaching and learning to accommodate the requirement for digital competence (Gudmundsdottir & Hatlevik, 2017). Educators are blown away by technology, often and are even more blown away by how to incorporate those dusty pedagogical books into their work, how to move more students through the class roster, all with barely their breath intact.

Teaching Philosophy, Digital Competence, and Meaningful Work

Central to this adaptive process is the construct of meaningful work, a multidimensional construct (Steger et al., 2012) that goes beyond job satisfaction to include a sense of purpose, meaning, and intrinsic motivation. The concept of meaningful work is well established as an important driver of faculty engagement, well-being, and commitment to the institution. The perception of meaningful work for a faculty member is so closely correlated with their teaching philosophy and digital competence. Recognizing the connection between these factors is critical to creating a positive, productive academic environment where teachers are supported, appreciated, and free to be at their best in the classroom. A teaching philosophy statement is a framework for narrating who the educators are and what they believe (Taff, 2023). It is an expression of their values, purposes, and ways of approaching teaching and learning, shaped by their disciplinary experiences. Research shows that teaching philosophy leads to better job satisfaction and more satisfaction regarding the purpose of the teaching profession (Korthagen, 2017). This has important implications for the ways in which educators can adapt their teaching philosophies for the new age of digital learning.

In contrast, digital competence is the ability to successfully use technology for the learning process (Redecker & Punie, 2017). These include a wide variety of skills, from choosing, assimilating, and using the digital tools to transform the teaching and learning experience. Educators can now utilize this digital competence to harness, modernize, and scale 21st-century education. Nonetheless, there exists significant variability between how much faculty members utilize technology in their pedagogical practices, often driven by their confidence and institutional support as well as the perceived applicability of digital tools in their teaching methodologies (Ergül & Taşar, 2022).

Challenges and Opportunities in the Digital Age

Despite the many opportunities for innovation that the integration of digital technology into higher education offers, however, it also poses specific challenges. Various obstacles, such as lack of training, an unwillingness to change, and a need for extra time to revamp course materials, prevent faculty from adjusting their teaching philosophies to digital environments (Wallace et al., 2022). On the other hand, institutions are constrained by limited technological infrastructure, their inability to provide professional development, and their failure to establish systems to assist practitioners in making the shift to digital pedagogies (Salmon, 2019). While this is great progress, there is a danger that we will be moving towards digital tools while losing sight of the, at the end of the day, pedagogical and humanistic foundations that underlie good teaching.

Research Questions and Hypothesis

This study investigated the relationship between teaching philosophy, digital competence, and meaningful work among college faculty.

Specifically, it aimed to address the following research questions:
1. How does teaching philosophy influence teachers' perceptions of meaningful work?
2. Does the teacher digital competence moderate the relationship between teaching philosophy and meaningful work?

Hypothesis

Here are the hypotheses from the two research questions:
Ha: There is a significant relationship between teaching philosophy and meaningful work.
Ha: The teacher digital competence significantly moderates the relationship between teaching philosophy and meaningful work.

METHODS

Research Design

This research set out to explore how Teaching Philosophy, Teacher Digital Competence, and Meaningful Work are connected — with special attention on whether a teacher's digital skills shape the impact of their teaching philosophy on how meaningful they find their work. To dig into this, the study used a quantitative approach, specifically moderation analysis. This method was selected because it makes it easier to understand the direct influence of each factor and how they interact, which was the best fit for answering the study's research questions.

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Population and Sampling

The study involved 194 college professors from different fields of discipline. The participants of the study were higher education professors from several private universities in Manila, Region IV-A, and Region IV-B, who are teaching in a wide range of disciplines such as Mathematics, Science, English, and Social Sciences.

Instruments

For measuring the key elements of this study, the researchers used well-established and validated tools from earlier studies:

- The Teacher Digital Competence Scale (TDiCOS) — adapted from Ergül and Taşar (2022), which measures how well educators use digital tools in their teaching.
- The Meaningful Work Scale — developed by Steger et al. (2012), which captures how much purpose and significance professors find in their work.
- The Philosophy of Adult Education Inventory — based on Conti's (2007) work, which looks at educators' personal beliefs and teaching styles.

A pilot test was conducted to ensure these tools were right for this study, showing a strong Cronbach's alpha of .94, confirming high reliability. On top of that, two subject-matter experts reviewed the adapted scales to ensure they matched the study's goals and content.

Data Collection

Given how easy and accessible it is to work on digital platforms, the data was gathered online through Microsoft Forms and Google Forms.

Data Analysis

Multiple regression analyses, including interaction terms, were run to test for moderation. The analysis focused on key statistics like R-squared values, standardized coefficients, and significance levels to clearly understand the relationships between the factors (Guskey & Link, 2018) where Teaching Philosophy is the independent variable, meaningful work is the dependent variable, and teacher digital competence is the moderator. When analyzing the data, the researchers used Statistical Package for Social Sciences (SPSS), a widely trusted software for quantitative research. The main goal was to see if Teacher Digital Competence strengthened or weakened the influence of Teaching Philosophy on Meaningful Work.

Ethical Considerations

The researchers applied ethical research protocols strictly to safeguard all participants and institutions involved in the research. All respondents were informed about the purpose of the study, that their participation was voluntary and that they could withdraw from the study at any stage without any consequences, and informed consent was collected from all participants. Data privacy was upheld at all times, with all responses anonymized to ensure that individual participants could not be identified. Moreover, all data collected were stored in a secure manner and were utilized exclusively for research purposes while adhering to ethical principles of confidentiality and data confidentiality. Throughout the process, the research followed the Data Privacy Act of 2012 to ensure confidentiality and ethical data handling were fully respected.

RESULTS and DISCUSSION

Table 1
Descriptive Statistics on the Three Variables

Variable	Mean	Std. Dev.	95 % Confidence Interval	
			Lower Bound	Upper Bound
Teaching Philosophy	4.85	1.15	4.69	5.01
Teacher Digital Competence	4.90	1.08	4.74	5.05
Meaningful Work	5.01	1.06	4.87	5.17

Table 1 breaks down the average scores, how much responses varied, and the range we'd expect if we surveyed a larger group — all for three main areas: Teaching Philosophy, Teacher Digital Competence, and Meaningful Work. Meaningful Work scored the highest (average = 5.01), showing that most participants felt their work had strong personal meaning. Teacher Digital Competence came in close behind (average = 4.90), while Teaching Philosophy had a slightly lower average (4.85). This suggests that while respondents generally found meaning in their work and felt confident in their digital teaching skills, they were a bit less in sync with their own teaching philosophy. The connection between teaching philosophy, digital competence, and meaningful work is reflected in the mean scores of 4.85, 4.90, and 5.01, indicating that faculty who are confident in their digital skills and have a their own teaching philosophy often experience a stronger sense of purpose in their profession (Steger et al., 2012; Korthagen, 2017). However, the differences in how educators score across these areas, as shown by the standard deviations, suggest that not all faculty members feel equally prepared for the shift to digital education, emphasizing the importance of institutional support in fostering both technological proficiency and meaningful teaching experiences (Ergül & Taşar, 2022; Wallace et al., 2022).

Looking at how the participant's answers varied, we see that Teaching Philosophy had the broadest range of opinions (SD = 1.15), meaning there was more diversity in how participants felt about their teaching beliefs. Responses around Teacher Digital Competence were a little more consistent (SD = 1.08), and Meaningful Work showed the most agreement (SD = 1.06), meaning more people shared a similar perspective on the significance of their work.

The 95% confidence interval indicates where the true average would likely land if this study was repeated with a larger group. For Meaningful Work, that range is between 4.87 and 5.17 — reinforcing how strongly participants resonated with it. Teacher Digital Competence would likely fall between 4.74 and 5.05, and Teaching Philosophy's range is a bit wider at 4.69 to 5.01, reflecting the broader range of viewpoints on that topic.

Table 2
Moderation Effect for Each Predictor on the Relationship between Teaching Philosophy and Teacher Digital Competence

Predictor	R	R^2	Adjusted R^2	Std. Error of the Estimate	F	Sig.
Model 1	$.834^a$	.696	.695	.587	444.710	$.000^a$
Model 2	$.865^b$	.748	.745	.536	286.221	$.000^b$
Model 3	$.873^c$	.762	.758	.523	204.448	$.000^c$

a. Predictor: (Constant), Teaching Philosophy
b. Predictor: (Constant), Teaching Philosophy, Teacher Digital Competence
c. Predictor: (Constant), Teaching Philosophy, Teacher Digital Competence, Interaction of Teaching Philosophy and Teacher Digital Competence
d. Dependent Variable: Meaningful Work

Table 2 presents the moderation effect of each predictor on the relationship between Teaching Philosophy and Teacher Digital Competence, with Meaningful Work as the dependent variable

In Model 1, Teaching Philosophy alone was examined as a predictor, yielding an R-value of .834, explaining 69.6% (R^2 = .696) of the variance in Meaningful Work. The model was statistically significant (F = 444.710, p < .001), indicating that a teacher's guiding beliefs and principles play a crucial role in shaping their perception of meaningful work.

Model 2 introduced Teacher Digital Competence as an additional predictor. The inclusion of this variable strengthened the model, increasing the R-value to .865 and explaining 74.8% (R^2 = .748) of the variance in Meaningful Work. The adjusted R^2 also increased, suggesting that teachers with a strong teaching philosophy and digital competence tend to experience a greater sense of meaning in their work.

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Lastly, Model 3 incorporated the interaction term between Teaching Philosophy and Teacher Digital Competence, improving the model with an R-value of .873 and an R² of .762. This means that 76.2% of the variance in Meaningful Work can be attributed to the combined effect of these factors. The significance level (p < .001) confirms that the interaction between teaching philosophy and digital competence plays a meaningful role in shaping educators' professional fulfillment. The slight increase in explanatory power suggests that the impact of digital competence on meaningful work may be stronger for teachers who already have a well-established teaching philosophy.

As the R values increase across the models (.696, .748, and .762), it becomes clear that a well-defined teaching philosophy and strong digital competence work together to enhance an educator's sense of meaningful work (Steger et al., 2012; Korthagen, 2017). When these two elements interact, faculty members are more likely to feel engaged and fulfilled in their roles, underscoring the importance of providing both pedagogical and technological support to help educators thrive in a digital learning environment (Ergül & Taşar, 2022; Wallace et al., 2022). The interaction between these two factors suggests that digital skills do not replace traditional teaching values but complement them, making teaching more effective and meaningful in today's technology-driven education landscape.

Table 3
Contribution for Each Predictor on the Relationship between Teaching Philosophy and Teacher Digital Competence

Predictor	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error			
Model 1 (Constant)	1.273	.183		6.971	.000
Teaching Philosophy	.773	.037	.834	21.088	.000
Model 2 (Constant)	.812	.182		4.456	.000
Teaching Philosophy	.488	.056	.527	8.648	.000
Teacher Digital Competence	.377	.060	.383	6.284	.000
Model 3 (Constant)	1.353	.241		5.617	.000
Teaching Philosophy	.424	.058	.458	7.293	.000
Teacher Digital Competence	.347	.059	.352	5.870	.000
Interaction of TP and TDC	-.111	.033	-.150	-3.326	.001

a. Predictor: (Constant), Teaching Philosophy (TP)
b. Predictor: (Constant), Teaching Philosophy, Teacher Digital Competence (TDC)
c. Predictor: (Constant), Teaching Philosophy, Teacher Digital Competence, Interaction of Teaching Philosophy and Teacher Digital Competence
d. Dependent Variable: Meaningful Work

Table 3 outlines the contribution of each predictor in explaining the relationship between Teaching Philosophy and Teacher Digital Competence, with Meaningful Work as the dependent variable. By examining the unstandardized and standardized coefficients, we can determine how much each predictor influences educators' sense of meaningful work.

Shown in Model 1, Teaching Philosophy alone was analyzed as a predictor. The results show that for every one-unit increase in Teaching Philosophy, there is a corresponding 0.773-unit increase in Meaningful Work (B = 0.773, p < .001). The standardized coefficient (β = .834) indicates a strong positive relationship, which means that teachers with strong philosophy in teaching and values about their profession are more likely to perceive their work as meaningful. When Teacher Digital Competence was introduced in Model 2, the contribution of Teaching Philosophy slightly decreased (B = 0.488, β = .527, t = 8.648, p < .001), indicating that while it remains an important factor, the inclusion of digital competence provides additional explanatory power. Teacher Digital Competence had a significant positive effect (B = 0.377, β = .383, t = 6.284, p < .001), highlighting that more

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digitally competent educators tend to find their work more meaningful. This suggests that integrating technology into teaching strengthens not only professional effectiveness but also the sense of purpose in the profession.

In Model 3, the interaction between Teaching Philosophy and Teacher Digital Competence was included to explore whether digital competence moderates the effect of teaching philosophy on meaningful work. Interestingly, while both Teaching Philosophy (B = 0.424, β = .458, t = 7.293, p < .001) and Teacher Digital Competence (B = 0.347, β = .352, t = 5.870, p < .001) remained significant, the interaction term had a negative coefficient (B = -0.111, β = -.150, t = -3.326, p = .001). This suggests that as teachers become more digitally competent, the strength of the relationship between Teaching Philosophy and Meaningful Work slightly weakens.

Model 1 shows that teaching philosophy alone plays a strong role in fostering meaningful work, but when digital competence is added in Model 2, both elements together create a more powerful foundation for an educator's sense of purpose (Steger et al., 2012; Korthagen, 2017). The negative interaction effect in Model 3 suggests that while digital skills enhance teaching philosophy, an overemphasis on technology without balancing pedagogical values may weaken its impact, emphasizing the need for faculty support that encourages thoughtful integration of digital tools (Ergül & Taşar, 2022; Wallace et al., 2022). While this might seem counterintuitive at first, it could indicate that teachers who rely heavily on digital skills may not necessarily feel that their philosophy alone drives their sense of meaningful work. Instead, their fulfillment could stem from other possibilities (e.g. pedagogical values and technological adaptability). This aligns with the idea that teaching in the digital age requires a balanced approach—where philosophical commitment remains important. Still, effectively using digital tools also plays a key role.

Table 4

Summary of Regression Models (Main Effects vs Moderation)

Predictor	R	R^2	Adjusted R^2	Std. Error of the Estimate	Change Statistics				
					R^2 Change	F Change	df1	df2	Sig. F Change
Model 1	.865[a]	.748	.745	.536	.748	286.221	2	193	.000
Model 2	.873[b]	.762	.758	.523	.014	11.061	1	192	.001

a. Predictor: (Constant), Teaching Philosophy, Teacher Digital Competence (TDC)
b. Predictor: (Constant), Teaching Philosophy, Teacher Digital Competence, Interaction of Teaching Philosophy and Teacher Digital Competence
c. Dependent Variable: Meaningful Work

Table 4 summarizes regression models that compare Teaching Philosophy main effects and moderation of Teacher Digital Competence to meaningful work. By looking at R, R², and statistical significance changes, we can better understand how these predictors contribute individually and collectively.

In Model 1, Teaching Philosophy and Teacher Digital Competence were included as predictors. The R-value of .865 suggests a strong correlation between these variables and Meaningful Work. Additionally, R² = .748 indicates that these two predictors alone can explain nearly 75% of the variance in Meaningful Work, signifying a substantial explanatory power. The F-statistic (F = 286.221, p < .001) confirms that this model is highly significant. Model 1 underscores the strong connection between teaching philosophy and digital competence in fostering a deep sense of purpose among educators, emphasizing the importance of both elements in shaping meaningful work (Steger et al., 2012; Korthagen, 2017).

Moreover, Model 2 shows that the interaction term between Teaching Philosophy and Teacher Digital Competence was introduced to determine if the relationship between these factors moderates their influence on Meaningful Work. While R² slightly increased from .748 to .762, indicating an additional 1.4% of the variance explained (R² change = .014), the F Change value (F = 11.061, p = .001) suggests that this moderation effect is statistically significant. This means that the relationship between Teaching Philosophy and Meaningful Work is not

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simply additive but influenced by a teacher's level of digital competence. The slight increase in Model 2 suggests that while digital competence strengthens this relationship, its influence is more nuanced, requiring a balanced approach to ensure technology enhances rather than disrupts core teaching values (Ergül & Taşar, 2022; Wallace et al., 2022).

The slight improvement in model fit suggests that while Teaching Philosophy and Digital Competence are strong independent predictors of Meaningful Work, their interaction plays a subtle yet meaningful role. One possible interpretation is that teachers who integrate digital tools effectively experience meaningful work differently than those who rely solely on traditional teaching philosophies. As digital competence grows, it could either enhance or slightly alter how teaching philosophy contributes to professional fulfillment. The challenges around the subtleties of teachers' digital competence are undeniable and growing — and certainly deserve attention and support in the ongoing change of digital higher education (Cook et al., 2023).

Conclusion

The study underscores the critical role of Teaching Philosophy and Teacher Digital Competence in shaping teachers' perceptions of meaningful work. The findings highlight that Teaching Philosophy and Digital Competence form a solid foundation for meaningful work, and their interaction adds further importance. Educators who adapt to digital advancements while staying grounded in their pedagogical beliefs may have a more dynamic and enriched sense of purpose in their profession. Future studies could explore whether additional factors, such as institutional support or student engagement, further influence this relationship.

While both factors independently contribute significantly to meaningful work, the interaction between them suggests that a teacher's digital skills can either strengthen or slightly alter how their teaching philosophy translates into professional fulfillment. The findings indicate that technology integration in teaching is not more of an additive factor but an important element that interacts dynamically with teaching philosophy.

Recommendations

Based on these findings, several practical recommendations can be made:
- Strengthening Professional Development in Digital Competence – Schools and educational institutions should provide ongoing training programs to ensure teachers can effectively integrate technology without compromising their core teaching philosophy.
- Balancing Traditional and Digital Teaching Approaches – While digital competence enhances meaningful work, institutions should promote a balanced approach where technology acts as support rather than overshadows foundational pedagogical principles.
- Future Research on Contextual Factors – Future studies should explore factors that may moderate or mediate the relationship, such as institutional policies, teacher workload, and student engagement, to better understand how digital competence and teaching philosophy contribute to meaningful work. The context of the professors can also be specified (e.g., mathematics or science professors only).

Limitations of the Study

The study provides essential findings, although researchers should address certain restrictions. The study sample of 194 college professors possibly affects its capacity to represent the wider population. Integrating teachers from diverse professional backgrounds would introduce diverse viewpoints during analysis. The complete reliance on online data collection methods eliminated participants who lacked internet access or digital competency knowledge, thus influencing their digital competence perceptions. This research delivers a strong base for understanding how teaching philosophy and digital competency support educator satisfaction despite certain constraints.

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