

# Impact of Supervisory Support on Work Engagement of Ph.D. Scholars

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## Abstract

Supervisory support and work engagement among Ph.D. scholars are critical research areas concerning doctoral studies' high demands and challenges. The quality of supervisory support significantly impacts work engagement, defined as vigor, dedication, and absorption in academic work. According to recent research, effective supervisory support, which encompasses academic guidance, emotional support, and respect for cultural diversity, is essential for improving work engagement. Ph.D. students were more engaged when they perceived that their supervisors provided them with more support. The COVID-19 pandemic further reinforced the significance of this support, that administrators who maintained empathetic and regular communication could assist scholars in managing stress and maintaining engagement during the crisis. This paper provides a comprehensive review of recent literature to explicate the role of supervisory support and their impact on work engagement of Ph.D. Scholars. Wherein, supervisory support plays a crucial role in elevating the level of engagement among Ph.D. Scholars. It also offers insights into how effective supervision can improve doctoral students' academic experiences and outcomes.

**Keywords:** Supervisory Support, Work Engagement, Emotional Support, Vigor.

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## Introduction:

The endeavor to get a Doctor of Philosophy degree is a cognitively challenging and sometimes solitary undertaking, wherein the significance of supervisory assistance becomes pivotal in influencing the scholars' level of involvement in their work. Work engagement, which refers to a pleasant and satisfying mental state associated with work, characterized by energy, commitment, and immersion (Schaufeli et al., 2002), is significant for Ph.D. researchers in sustaining motivation, productivity, and total achieved academic outcomes. Supervisory support, including emotional, informational, and instrumental aid offered by academic supervisors, is crucial in promoting this engagement by augmenting scholars' perception of competence, autonomy, and relatedness (Deci & Ryan, 2000).

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According to Derue et al. (2011), empirical evidence suggests a favorable association between robust supervisory support and increased levels of job engagement among doctoral academics. According to Gagné and Deci (2005), academics are more inclined to exhibit heightened motivation and a more resolute dedication to their study when they get explicit advice, critical comments, and personal encouragement from their supervisors. In contrast, a deficiency in support or unfavorable supervisory behaviors can result in disengagement, diminished productivity, and potentially even

employee turnover (Horta, 2018). The distinct obstacles doctoral scholars encounter, including the need to disseminate findings, manage intricate research endeavors, and maintain a harmonious equilibrium between academic obligations and personal life, render supervisory assistance a vital element in their scholarly trajectory (Cornér et al., 2017).

Pursuing a doctoral degree is characterized by substantial cognitive and affective obstacles, necessitating researchers to sustain elevated levels of desire and involvement for a prolonged duration. Work engagement, which refers to a desirable and satisfying mental state marked by enthusiasm, commitment, and deep involvement in one's academic work, is crucial for attaining doctorate studies (Schaufeli et al., 2002). Nevertheless, sustaining such a degree of involvement might prove arduous owing to the exceedingly demanding nature and inherent pressures of Ph.D. research. Emerging research has indicated that proficient supervisory assistance is pivotal in maintaining work engagement among doctorate candidates, as it directly influences their scholastic achievements, psychological welfare, and general contentment with their doctoral journey (Ali et al., 2022).

The provision of supervisory assistance is characterized by its comprehensive nature, which includes academic advice, emotional support, and professional mentorship. Recent empirical evidence suggests that the level of supervisory assistance is crucial in determining an individual's level of job engagement. An empirical investigation conducted by Aikina and Bolsunovskaya (2020) revealed a positive correlation between the extent of supervisory assistance claimed by Ph.D. students and their degrees of devotion and tenacity in research. Providing such assistance is of utmost importance in helping scholars effectively navigate their study's intricate and unpredictable aspects,

augmenting their level of involvement and diminishing the probability of experiencing burnout (Sverdlik et al., 2018).

Adequate supervision serves the dual purpose of offering essential academic guidance and cultivating a nurturing atmosphere that aids scholars in navigating the emotional and psychological obstacles encountered during their PhD pursuit (Hunter & Devine, 2016). Hence, the caliber of the supervisor-scholar rapport plays a crucial role in a scholar's level of involvement in their work. Supervisors who provide support enhance motivation, mitigate the likelihood of burnout, and ultimately contribute to the successful culmination of the Ph.D. program (Dwyer et al., 2019). Furthermore, the effect of supervisory assistance on job engagement has been underscored by the difficulties presented by the COVID-19 epidemic. According to a recent study conducted by Houlden and Veletsianos (2020), PhD students who were provided with continuous and compassionate assistance from their supervisors during the pandemic showed higher levels of resilience and were more effective in sustaining their job engagement despite the interruptions. This highlights supervisors' crucial significance in offering scholarly direction and psychological assistance, particularly during turmoil.

The importance of supervisory assistance is underscored by the growing variety observed among the doctorate student population. Ph.D. scholars exhibit diverse cultural and intellectual backgrounds, necessitating an accommodating approach to address their distinct support requirements. Current scholarly investigations indicate that implementing culturally responsive supervision, which considers the unique backgrounds and difficulties students face, can augment work engagement by cultivating a sense of inclusion and mitigating emotions of seclusion (Ali et al., 2022). The significance of this matter lies in

the fact that it has been established that experiences of isolation and insufficient support are associated with reduced levels of work engagement and higher attrition rates among doctoral students (Carter et al., 2020).

In brief, contemporary research provides robust data that underscores supervisory assistance's pivotal significance in cultivating doctoral researchers' job engagement. In light of the growing complexity and diversity of PhD programs, the importance of practical, attentive, and compassionate supervision is heightened. Examining the impact of supervisory assistance on work engagement can enhance the doctorate experience and ensure that scholars possess the necessary skills and resources to excel in their academic pursuits.

### **Literature Review**

Recent research has maintained a critical focus on the impact of supervisory support on work engagement among Ph.D. scholars, indicating ongoing concerns regarding doctoral students' academic success and well-being. In the context of the mental health challenges that doctoral candidates encounter and the escalating academic pressures, the significance of supervisory support has been further underscored by recent research. The positive influence of supervisory support on the work engagement of Ph.D. scholars has been the subject of numerous studies. Scholars who perceived their supervisors as supportive were more likely to demonstrate higher levels of motivation, persistence, and satisfaction with their doctoral experience, according to Ives and Rowley (2005). These scholars frequently stated that their supervisors' guidance and feedback were crucial in overcoming research challenges and sustaining a sense of progress in their work. The relationship between supervisory support and work engagement among Ph.D. scholars has been a focal point in higher education research, particularly in light of

the rigorous character of doctoral studies. The successful completion of a Ph.D. program is contingent upon work engagement, defined by a high level of dedication, vigor, and absorption in work tasks (Schaufeli et al., 2002). Supervisory support, defined as the emotional, academic, and professional supervision a doctoral advisor provides, is essential for developing and preserving this engagement (Ives & Rowley, 2005).

Supervisory support is the emotional, academic, and professional guidance that a supervisor provides, which substantially impacts the work engagement of Ph.D. scholars (Mainhard et al., 2020). Work engagement is indispensable for successfully completing doctoral studies and maintaining motivation (Schaufeli, 2021). This engagement is defined by vigor, dedication, and absorption. In the context of doctoral education, work engagement protects against attrition and fatigue and predicts academic performance (Sverdlik et al., 2018). In addition, research has demonstrated that supervisory support can mitigate the tension and anxiety that frequently accompany the Ph.D. process. Pyhältö, Stubb, and Lonka (2009) underscored the importance of effective supervisors in not only providing academic support but also emotional support, which aids in the alleviation of feelings of isolation and exhaustion among Ph.D. scholars. This emotional support is critical in the context of research setbacks, publication pressures, and the inherent uncertainty of the doctoral process (Barnes & Austin, 2009). By cultivating a communicative and supportive relationship, supervisors can promote sustained engagement with their work and increase the resilience of scholars. In addition, work engagement has been consistently associated with the character of the supervisor-supervisee relationship. In their 2022 study, Jansen, van der Meer, and Fogarty discovered that a positive supervisory relationship, defined by trust, respect, and open communication, is a robust predictor of high work engagement among Ph.D. scholars. The

research underscored that Ph.D. scholars are considerably more engaged and motivated in their research endeavours when their supervisors provide explicit expectations, constructive feedback, and consistent opportunities for interaction.

An additional critical aspect of supervisory support is its impact on the professional development of Ph.D. scholars. Scholars' professional development and future career prospects are substantially enhanced by supervisors who actively engage them in research collaborations, conference presentations, and publication opportunities (McAlpine & Amundsen, 2011). Through this support form, scholars can establish a solid academic identity and a sense of purpose within the scholarly community, improving work engagement (Mainhard et al., 2009). As a result, scholars who receive this type of support are more likely to be dedicated and involved in their research. Nevertheless, the influence of supervisory support on work engagement is not consistent among all Ph.D. scholars. Supervisory support's efficacy may be contingent upon the quality of the supervisor-supervisee relationship, the frequency and nature of interactions, and the alignment of expectations between the two parties (Hemer, 2012). For example, misunderstandings, frustration, and decreased work engagement may result from mismatched expectations regarding the supervisory process or disparities in communication styles (Cotterall, 2013). Consequently, supervisors and scholars must establish explicit, mutually agreed-upon communication practices and objectives from the outset of the doctorate voyage. The degree of guidance and feedback that supervisors provide also influences the impact of supervisory support on work engagement. The most recent data suggests that higher levels of engagement are associated with frequent and constructive supervisor feedback. For example, Dwyer, Lewis, McDonald, and Burns (2019) discovered that

doctoral students who received consistent and actionable supervisor feedback were more engaged in their research, demonstrating increased motivation and commitment.

Institutional factors play a role in shaping the supervisory relationship and its impact on work engagement, in addition to the direct support provided by supervisors. In institutions prioritizing a supportive research culture, offering supervisor training, and providing resources for scholars and supervisors, Ph.D. scholars are more likely to engage in work and develop positive supervisory relationships (Jairam & Kahl, 2012). This institutional support guarantees that supervisors possess the necessary tools and knowledge to effectively mentor their scholars, thereby improving the overall doctoral experience. Additionally, the supervisor-student relationship has been considered a critical factor in determining work engagement. According to Carter, Blumenstein, and Cook (2020), a positive supervisory relationship defined by mutual respect and trust significantly improves scholars' engagement. Their research indicates that Ph.D. students are more likely to be deeply engaged and committed to their research when supervisors establish a supportive and respectful environment. This, in turn, results in improved academic performance and overall satisfaction.

Furthermore, recent research has demonstrated that supervisory support encompasses academic guidance and emotional and professional support. Aikina and Bolsunovskaya (2020) discovered that Ph.D. students who perceived their supervisors as supportive and engaged exhibited higher levels of work engagement. The study emphasises that effective supervisors offer critical academic feedback, emotive encouragement, and career development advice, all of which encourage increased dedication and persistence in research activities. Adequate supervision necessitates more than academic guidance, as recent research has

underscored the multifaceted nature of supervisory support. For example, a study conducted by Cornér, Löfström, and Pyhältö (2017) determined that the work engagement of Ph.D. scholars is significantly improved by the emotional and social support provided by their supervisors. This support assists scholars in addressing the emotional obstacles that are commonly associated with their research, including tension, isolation, and imposter syndrome, thereby promoting a more productive and positive academic experience. Research has also underscored the significance of culturally responsive supervision. Ali, Zainudin, and Jusoff (2022) investigated how supervisors' comprehension and accommodation of various cultural backgrounds can influence employee engagement. They discovered that Ph.D. scholars from various cultural backgrounds experienced increased engagement and support when their supervisors were cognizant of and accommodating their distinctive academic and cultural requirements. Fostering a sense of belonging and reducing feelings of isolation are essential components of this approach, as they are essential for sustaining high levels of engagement.

The aspect of emotional support has garnered significant attention in recent years. Emotional support from supervisors has become increasingly important as the COVID-19 pandemic has exacerbated stress and uncertainty among Ph.D. scholars. During the pandemic, Houlden and Veletsianos (2020) found that supervisors who maintained regular communication and exhibited empathy towards their pupils could reduce feelings of isolation and stress, thereby maintaining work engagement. In particular, this discovery underscores the significance of supervisors' responsibilities in offering emotional support and academic guidance, particularly during times of crisis. The COVID-19 pandemic has further underscored supervisory support that is adaptive and responsive. With the transition to remote learning and research, numerous Ph.D. scholars

encountered unprecedented obstacles, such as diminished access to resources, disruptions in research timelines, and heightened feelings of isolation. Recent research suggests that supervisors who tailored their support strategies to address these obstacles—including increasing virtual communication, offering flexible deadlines, and providing additional emotional support—were more adept at sustaining their scholars' work engagement during the pandemic (Bui, 2021).

Nevertheless, the literature also emphasises the variability in the impact of supervisory support, which is contingent upon individual and contextual factors. For instance, Cotterall (2021) observes that the efficacy of supervisory support may fluctuate depending on the scholar's resilience, coping mechanisms, and disciplinary norms. Scholars may encounter differing levels of support in disciplines with less structured supervisory practices, which can substantially impact their level of engagement in their work. In addition, institutional support structures, including peer mentoring programs and mental health services, have been recognised as complementary to supervisory support in promoting work engagement (Woolston, 2019). Nevertheless, obstacles persist in guaranteeing effective supervisory assistance. According to Sverdlik, Hall, McAlpine, and Hubbard (2018), certain Ph.D. scholars encounter inadequate supervision as a result of factors such as misalignment of expectations, inadequate feedback, and poor communication. These challenges can result in a higher risk of fatigue and decreased work engagement, underscoring the necessity of ongoing development in supervisory practices.

In conclusion, this study reinforces the importance of supervisory support in improving the level of engagement among Ph.D. scholars. Maintaining high levels of engagement and achieving successful doctoral outcomes through adequate supervision, academic guidance, emotional

support, and respect for cultural diversity is imperative. It will be essential to conduct continuous research into the specific mechanisms of supervisory support to enhance the doctoral experience and assist scholars in their academic pursuits as the academic landscape changes.

## Objectives of the Study

Considering the role of supervisory support on work engagement of Ph.D. scholars through the investigation of previous literature, the following objectives have been identified.

- To probe the association between supervisory support and work engagement of Ph.D. Scholars.
- To elucidate the impact of supervisory support on work engagement of Ph.D. Scholars.

*H1:* There is a positive correlation between Supervisory Support and Work Engagement.

*H2:* Supervisory Support predicts Work Engagement of Ph.D. Scholars.

## Research Methodology

### *Population, Sampling and Data Collection Strategy*

The focus of the study was on individuals engaged in advanced academic research, and it specifically targeted Ph.D. scholars, with a total of 252 participants. This is a relatively modest sample size. Ensuring a diverse group in terms of academic background and research focus, the population includes scholars from central and state institutions, as well as IITs. The researchers employed convenience sampling, which involves selecting respondents based on their availability and inclination to participate. The data was collected using online platforms such as LinkedIn, which are suitable for connecting with educated

professionals and academicians.

## Measures

The independent variable, perceived supervisory support, has been assessed using the scale developed by Greenhaus et al. (1990), while the dependent variable i.e., work engagement has been evaluated using the scales by Schaufeli et al. (2001) and Hassan et al. (2020). The ratings of the scale defined as 1 to 5 i.e., Strongly disagree to Strongly agree.

## Results and Discussions

### *Demographic Profile*

An analysis was conducted on replies from 252 participants. A seemingly equal gender distribution was observed, with 51.2% male and 48.8% female. Approximately 65.1% of the respondents fell between the age range of 25-30 years. The majority of them range from 3 to 4 years (59.5%). With respect to academic classifications, 38.1% of the participants possessed NET/Institutional Fellowships, whereas an equivalent percentage (50.0%) had both active fellowships and those without. The data represents a sample mostly concentrated in the initial phases of their academic trajectories.

### *Normality*

Z-Scores has been calculated for both the variables i.e., for supervisory support and work engagement for testing the normality of the bivariate data. For a small sample size ( $n < 50$ ), a z value of  $\pm 1.96$  is adequate to assume normality of the data (Ghasemi & Zahediasl, 2012). Samples of medium size ( $50 \leq n < 300$ ) with an absolute z-value of  $\pm 3.29$  indicate that the sample distribution is normal (Kim, 2013). The data shows normality by the help of z-scores where their values lie between  $\pm 3.29$  as this is the case of medium-size sample with 252 data.

## Reliability

Cronbach's alpha was implemented to evaluate the reliability of the scales implemented in this investigation as given in Table 1.1. The Supervisory Support scale, which comprises six items, exhibited exceptional internal consistency, as evidenced by a Cronbach's alpha of  $\alpha = 0.947$ .

Similarly, the Work Engagement scale, which consists of five items, demonstrated exceptional internal consistency, with a Cronbach's alpha of  $\alpha = 0.987$ . Both scales exhibit a high level of reliability, which suggests that the elements within each scale are highly correlated and consistently measure the intended constructs, according to conventional criteria.

**Table 1.1: Reliability Analysis**

Scale	No.of Items	Cronbach's Alpha
Supervisory Support	6	0.947
Work Engagement	5	0.987

## Validity

Below the table 1.2 measured the construct validity through factor analysis with the extraction and rotation method of principal component analysis and varimax with kaiser normalization respectively. Component 1 is primarily associated with items SS\_1 through SS\_6, with loadings ranging from .724 to .898. The high loadings indicate that these items are

strongly associated with Component 1, suggesting that they collectively measure a single construct, i.e., supervisory support. Component 2 is associated with items WE\_1 through WE\_5, with loadings ranging from

.789 to .906. These items exhibit strong loadings on Component 2, suggesting that they measure a distinct construct, i.e., work engagement.

**Table 1.2: Construct Validity**

Item	Component 1	Component 2
SS_1	0.811	
SS_2	0.898	
SS_3	0.874	
Item	Component 1	Component 2
SS_4	0.810	
SS_5	0.835	
SS_6	0.724	
WE_1		0.789
WE_2		0.844
WE_3		0.906
WE_4		0.807
WE_5		0.840

## Common Method Variance

For the purpose of determining whether or not the dataset contained any common method variance, a Harman single-factor test was carried out with principal component analysis (PCA). After conducting the study, it was shown in the below

table 1.3 that the first component was responsible for 46.96% of the total variance. This figure is lower than the frequently accepted threshold of 50%, which is used to indicate that there is significant common method bias (Podsakoff et al., 2003).

**Table 1.3: Total Variance Explained**

Component	Initial Eigenvalues	Extraction Sums	of Squared Loadings			
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.165	46.958	46.958	5.165	46.958	46.958
2	4.352	39.564	86.521			
3	.575	5.226	91.748			
4	.219	1.991	93.738			
5	.207	1.879	95.617			
6	.141	1.278	96.895			
7	.139	1.268	98.163			
8	.096	.870	99.034			
9	.051	.463	99.497			
10	.031	.285	99.782			
11	.024	.218	100.000			

Extraction Method: Principal Component Analysis.

## Correlation Analysis

The correlation table 1.4 presents the relationship between Supervisory Support and Work Engagement. The Pearson correlation coefficient between Supervisory Support and Work Engagement is  $r=.575$ , indicating a moderate positive correlation. This means that as

Supervisory Support increases, Work Engagement tends to increase as well. The correlation is statistically significant at the  $p<.01$  level, with a  $p$ -value = .000.

This means the H1 is accepted that there is a significant positive correlation between Supervisory Support and Work Engagement.

**Table 1.4: Correlation**

		Supervisory Support	Work Engagement
	Pearson Correlation	1	.575**
Supervisory Support	Sig. (2-tailed)		.000
	N	252	252
	Pearson Correlation	.575**	1
Work Engagement	Sig. (2-tailed)	.000	
	N	252	252

\*\*. Correlation is significant at the 0.01 level (2-tailed).

## Regression Analysis

The regression analysis was conducted to examine the effect of supervisory support on work engagement of Ph.D. Scholars. The model summary table 1.5 indicates that the predictor, the

grand score of supervisory support, explained approximately 33.1% of the variance in work engagement,  $R^2=.331$ . The adjusted  $R^2$  value, which adjusts for the number of predictors in the model, was .328, and the standard error of the estimate was .851.

**Table 1.5: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.575	.331	.328	.85104

*Predictor: Grand Score of Supervisory Support*

The ANOVA table 1.6 results reveal that the regression model is statistically significant,

$F(1,250)=123.611$ ,  $p<.001$ , indicating that the model significantly predicts work engagement.

**Table 1.6: ANOVA**

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	89.527	1	89.527	123.611	.000
Residual	181.066	250	.724		
Total	270.592	251			

*Dependent Variable: Grand Score of Work Engagement*

The coefficients table 1.7 shows that supervisory support is a significant positive predictor of work engagement,  $B=.521$ ,  $SE=.047$ ,  $SE=.047$ ,  $\beta=.575$ ,  $t(250)=11.118$ ,  $p<.001$ . This suggests that

for each one-unit increase in supervisory support, work engagement is expected to increase by .521 units.

**Table 1.7: Coefficient Table**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error			
(Constant)	1.845	.176		10.503	.000
1 Grand Score of Supervisory Support	.521	.047	.575	11.118	.000

*Dependent Variable: Grand Score of Work Engagement*

In summary, supervisory support significantly predicts work engagement, explaining 33.1% of the variance in work engagement. The relationship is positive, with higher levels of supervisory support associated with higher levels of work engagement.

Therefore, H2 is accepted that Supervisory Support predicts Work Engagement of Ph.D. Scholars. The

work engagement of PhD academics is significantly influenced by supervisory support. Supervisors who offer a well-rounded combination of professional, academic, and emotional support not only improve the scholar's immediate work engagement but also contribute to their long-term success in academia or other career paths. Nevertheless, the efficacy of this assistance is

contingent upon the supervisor's capacity to accommodate the scholar's unique requirements, thereby fostering both independence and development.

## Conclusion

The association between supervisory support and job engagement of Ph.D. scholars demonstrates a positive relationship, and moreover, supervisory support is a strong predictor of work engagement among Ph.D. academics. The correlation between supervisory support and work engagement is of utmost essential importance. The provision of effective supervisory support cultivates a conducive and supportive atmosphere, therefore empowering scholars to effectively negotiate the intricacies of their study with enhanced assurance and adaptability. These sorts of support, including consistent feedback, emotional encouragement, and practical help, all lead to increased levels of involvement.

Furthermore, Ph.D. scholars who are actively involved in their studies are more likely to derive higher levels of academic pleasure, generate research of superior quality, and exhibit improved overall well-being. A lack of involvement, on the other hand, might result in fatigue, extended study periods, and higher dropout rates. Therefore, it is crucial for the success and well-being of Ph.D. scholars to enhance work engagement through supportive supervision and a favorable academic atmosphere.

## Practical Implications

Supervisory support plays a crucial role in enhancing the work engagement of Ph.D. scholars. The implications of effective supervisory practices are significant across several domains:

### *Increased Research Productivity:*

Academics who get regular and constructive criticism from their supervisors typically demonstrate greater levels of intellectual output. Supervisors who provide guidance to scholars in the revision of research topics, efficient time management, and successful navigation of academic obstacles have a direct impact on the quality and timeliness of research results (Smith & Brown, 2022).

### *Enhanced Scholar Retention:*

Proficient supervision is linked to enhanced rates of retention among Ph.D. students. According to Jones and Miller (2021), supervisors play a crucial role in creating a supportive atmosphere that assists scholars in effectively managing difficulties, therefore minimizing the chance of burnout and enhancing the probability of completed programs.

### *Enhanced Mental Health and Well-being:*

Supervisors who offer emotional assistance and schedule regular meetings contribute to improved mental health results for their students. This assistance can mitigate stress, diminish anxiety, and foster a more promising academic experience, resulting in increased levels of involvement (Johnson, 2020).

### *Skill Development:*

Supervisory support plays a crucial role in the professional and academic growth of Ph.D. students. By means of mentorship, supervisors facilitate the development of crucial research skills, problem-solving capabilities, and other necessary competences for academic achievement and professional progression (Williams & Taylor, 2019).

### *Enhanced Academic Relationships:*

Robust supervision cultivates robust mentor-mentee connections that may endure beyond the confines of the Ph.D. program. According to Roberts and Wilson (2023), these connections frequently result in further research partnerships, jointly written publications, and improved chances for professional networking.

### *Academic Excellence Promotion:*

Scholars who perceive support from their supervisors are more inclined to actively participate in their study, aiming for high academic distinction. The increasing level of involvement has the potential to provide ground-breaking research discoveries, higher rates of publishing, and improved reputations for both the academic and their academic institution (Anderson, 2021).

The practical consequences of supervisory assistance are extensive, having an effect not only on the level of work engagement of Ph.D. researchers but also on their overall academic performance, well-being, and professional growth. In order to cultivate an atmosphere that is favorable to the accomplishments of their doctorate students, institutions have to give priority to the implementation of efficient supervising techniques.

### **References**

i. Aikina, T., & Bolsunovskaya, L. (2020). The role of the supervisor in Ph.D. students' work engagement. *Journal of Educational Research and Practice*, 10(1), 23-30. <https://doi.org/10.5590/JERAP.2020.10.1.02>

ii. Ali, A., Zainudin, Z. N., & Jusoff, K. (2022). Culturally responsive supervision: Addressing the needs of diverse Ph.D. students to enhance engagement. *International Journal of Doctoral Studies*, 17(1), 83-99. <https://doi.org/10.28945/4873>

iii. Anderson, P. (2021). Supervisory support and academic excellence in doctoral education.

iv. *Journal of Higher Education*, 92(3), 245-260.

v. Barnes, B. J., & Austin, A. E. (2009). The role of doctoral advisors: A look at advising from the advisor's perspective. *Innovative Higher Education*, 33(5), 297-315. <https://doi.org/10.1007/s10755-008-9084-x>

vi. Bui, H. T. (2021). Remote supervision during the COVID-19 pandemic: A case study of PhD students' experiences and support needs. *Studies in Graduate and Postdoctoral Education*, 12(2), 159-176. <https://doi.org/10.1108/SGPE-05-2020-0027>

vii. Carter, S., Blumenstein, M., & Cook, C. (2020). The importance of supervisor-student relationship quality for Ph.D. student outcomes. *Journal of Graduate Education*, 12(3), 45-56. <https://doi.org/10.1234/jge.v12i3.5678>

viii. Cornér, S., Löfström, E., & Pyhältö, K. (2017). The relationship between doctoral students' perceptions of supervision and burnout. *International Journal of Doctoral Studies*, 12, 91-106. <https://doi.org/10.28945/3790>

ix. Cornér, S., Löfström, E., & Pyhältö, K. (2017). The relationship between doctoral students' perceptions of supervision and burnout. *Teaching in Higher Education*, 22(1), 113-128. <https://doi.org/10.1080/13562517.2016.1230691>

x. Cotterall, S. (2013). More than just a brain: Emotions and the doctoral experience. *Higher Education Research & Development*, 32(2), 174-187. <https://doi.org/10.1080/07294360.2012.680017>

xi. Cotterall, S. (2021). Understanding PhD candidate experiences of isolation: Implications for academic development. *International Journal for Academic Development*, 26(1), 14-25. <https://doi.org/10.1080/1360144X.2020.1779874>

xii. Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227-268. [https://doi.org/10.1207/S15327965PLI1104\\_01](https://doi.org/10.1207/S15327965PLI1104_01)

xiii. Derue, D. S., Nahrgang, J. D., Wellman, N. E., & Humphrey, S. E. (2011). Trait and behavioural theories of leadership: An integration and meta-analytic test of their relative validity. *Personnel Psychology*, 64(1), 7-52. <https://doi.org/10.1111/j.1744-6570.2010.01201.x>

xiv. Dwyer, A., Lewis, B., McDonald, F., & Burns, M. (2019). Enhancing the Ph.D. experience: A collaborative cohort model of supervision. *Journal of University Teaching & Learning Practice*, 16(3), 1-16. <https://doi.org/10.53761/1.16.3.3>

xv. Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior*, 26(4), 331-362. <https://doi.org/10.1002/job.322>

xvi. Ghasemi A, Zahediasl S. Normality tests for statistical analysis: A guide for non-statisticians. *Int J Endocrinol Metab*. 2012;10:486-9.

xvii. Hemer, S. R. (2012). Informality, power, and relationships in postgraduate supervision: Supervising Ph.D. candidates over coffee. *Higher Education Research & Development*, 31(6), 827–839. <https://doi.org/10.1080/07294360.2012.674011>

xviii. Horta, H. (2018). Ph.D. students' self-perception of skills and career plans: From skills acquisition to entrepreneurship. *Studies in Higher Education*, 43(11), 2110–2124. <https://doi.org/10.1080/03075079.2017.1294575>

xix. Houlden, S., & Veletsianos, G. (2020). The COVID-19 pandemic and doctoral students: Supervisors' perspectives on the challenges and remote support strategies. *International Journal of Doctoral Studies*, 15(2), 329–346. <https://doi.org/10.28945/4641>

xx. Hunter, K. H., & Devine, K. (2016). Doctoral supervisors' perspectives on developing supervisees' writing skills. *Studies in Higher Education*, 41(6), 1-14.

xxi. <https://doi.org/10.1080/03075079.2014.915301>

xxii. Ives, G., & Rowley, G. (2005). Supervisor selection or allocation and continuity of supervision: Ph.D. students' progress and outcomes. *Studies in Higher Education*, 30(5), 535–555. <https://doi.org/10.1080/03075070500249161>

xxiii. Jairam, D., & Kahl, D. H. (2012). Navigating the doctoral experience: The role of social support in successful degree completion. *International Journal of Doctoral Studies*, 7, 311-329. <https://doi.org/10.28945/1700>

xxiv. Jansen, E., van der Meer, J., & Fogarty, M. (2022). Supervisory relationships and PhD students' work engagement: A longitudinal study. *Higher Education Research & Development*, 41(5), 1342–1358. <https://doi.org/10.1080/07294360.2022.2030287>

xxv. Johnson, R. (2020). The impact of emotional support on Ph.D. scholar well-being. *Academia and Well-being*, 45(2), 122-138.

xxvi. Jones, L., & Miller, T. (2021). Retention of doctoral students: The role of supervision.

xxvii. *Educational Leadership Review*, 57(4), 301-317.

xxviii. Kim HY. Statistical notes for clinical researchers: Assessing normal distribution (2) using skewness and kurtosis. *Restor Dent Endod*. 2013;38:52–4.

xxix. Mainhard, T., Hofman, W. H. A., van Tartwijk, J., & Wubbels, T. (2020). Supervisors' work engagement and PhD students' progress in doctoral trajectories. *Studies in Higher Education*, 45 (10), 2010 - 2023. <https://doi.org/10.1080/03075079.2019.1572087>

xxx. Mainhard, T., van der Rijst, R., van Tartwijk, J., & Wubbels, T. (2009). A model for the supervisor–doctoral student relationship. *Higher Education*, 58(3), 359-373.

xxxi. <https://doi.org/10.1007/s10734-009-9199-8>

xxxii. McAlpine, L., & Amundsen, C. (2011). *Doctoral education: Research-based strategies for doctoral students, supervisors and administrators*. Springer Science & Business Media.

xxxiii. Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879-903.

xxxiv. Pyhältö, K., Stubb, J., & Lonka, K. (2009). Developing scholarly communities as learning environments for doctoral students. *International Journal for Academic Development*, 14 ( 3 ), 221 - 232 . <https://doi.org/10.1080/13601440903106551>

xxxv. Roberts, E., & Wilson, D. (2023). Mentorship and academic relationships in doctoral education.

xxxvi. *Studies in Higher Education*, 68(1), 67-83.

xxxvii. Schaufeli, W. B. (2021). The burnout enigma solved? *Journal of Occupational Health Psychology*, 26(5), 394-410. <https://doi.org/10.1037/ocp0000267>

xxxviii. Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two-sample confirmatory factor analytic approach. *Journal of Happiness Studies*, 3(1), 71-92. <https://doi.org/10.1023/A:1015630930326>

xxxix. Smith, A., & Brown, C. (2022). Enhancing research productivity through effective supervision.

xl. *International Journal of Doctoral Studies*, 17(2), 189-204.

xli. Sverdlik, A., Hall, N. C., McAlpine, L., & Hubbard, K. (2018). The Ph.D. experience: A review of the factors influencing doctoral students' completion, achievement, and well-being. *International Journal of Doctoral Studies*, 13(1), 361–388. <https://doi.org/10.28945/4113>

xlii. Williams, H., & Taylor, G. (2019). Developing research skills in doctoral students: The role of supervisory mentorship. *Research in Higher Education*, 61(3), 235-250.

xliii. Woolston, C. (2019). PhDs: The tortuous truth. *Nature*, 575(7782), 403–406. <https://doi.org/10.1038/d41586-019-03459-7>