The Impact of Mindfulness Journaling on Mindful Awareness, Motivation, and Aspirations of Doctoral Students

Stephanie L. Wasmanski

School of Education, Doctoral Department
College of Health and Education

Wilkes University
Email: stephanie.wasmanski@wilkes.edu

The Impact of Mindfulness Journaling on Mindful Awareness, Motivation, and Aspirations of Doctoral Students

Stephanie L. Wasmanski

Abstract

Doctoral students face many stressors as they complete their degree program which may contribute to student attrition. U.S. doctoral programs have approximately 43% attrition rates and the need for doctoral or professional degrees for employment is expected to rise within the next six years. This study examined the impact of mindfulness journaling practices on mindful awareness, motivation, and aspirations of doctoral students as a means of supporting doctoral student well-being throughout program completion. Mindfulness practices such as journaling have been shown to reduce stress and improve overall well-being. Doctoral students face increasing stressors as they persist through their doctoral program and may drop out as a result of these stressors. Implementing activities to help reduce stress in their academic program may influence persistence and degree completion. This quantitative, quasi-experimental study used a pre-test post-test design to examine the impact of mindfulness journaling practices on mindful awareness and intrinsic aspirations of doctoral students. Doctoral students from a small, private University in the Northeastern United States participated in this research. This study contributes to the body of knowledge on mindfulness practices, specifically journaling and doctoral student motivation through the lens of Self-Determination Theory. Mindfulness journaling was found to increase dispositional mindfulness among doctoral students enrolled in U.S. program. There is a growing societal need for individuals with doctoral and professional degrees to fill future employment openings as predicted by the U.S. Bureau of Labor Statistics. Supporting doctoral well-being and aspiration attainment may reduce the attrition rate of students enrolled in such programs.

Keywords: Reflective journaling, doctoral student motivation, mindful awareness, aspirations, Self-Determination Theory

Introduction

The U.S. Bureau of Labor Statistics predicts a 3.7% increase in employment change between 2019 and 2029 with a 4.7% increase for those occupations requiring a doctoral or professional degree (U.S. Bureau of Labor Statistics, 2020). While the number of doctoral degrees conferred continues to rise (U.S. Department of Education, 2019), attrition rates for U.S. doctoral programs has been reported at approximately 43%, according to a study conducted by the Council of Graduate Schools (as cited in Volkert et al., 2018).

Student persistence, or lack thereof, in doctoral programs is multifaceted and has been attributed to the support of faculty and cohort members, stress, and student motivation (Lake et al., 2018; Volkert et al., 2018). Doctoral students enter a terminal degree program for various reasons and with varying levels of motivation (Leshem, 2020; Sakurai et al., 2017) and develop their

professional identity throughout their doctoral journey (Leshem, 2020). The stress of developing this new identity as a scholar coupled with program and life stressors may impact a student's decision to leave their program. Research has shown that as students advance through different phases of their degree program, stress level tends to increase and both satisfaction with the program and well-being decrease as a likely result of increased ambiguity of expectations and isolated learning (Sverdlik & Hall, 2020) and a feeling of overwhelm as they contemplate the dissertation phase (Volkert et al., 2018).

Given the growing trend predicted in occupations requiring doctoral degrees (U.S. Bureau of Labor Statistics, 2020), and the increasing attrition rate among students enrolled in terminal degree programs (Council of Graduate Schools, as cited in Volkert et al., 2018), it is necessary to understand ways to support doctoral students through degree completion. Research has shown that, as students advance through their degree programs, stress levels tend to increase and their satisfaction with the program as well as their personal well-being tend to decrease (Sverdlik & Hall, 2020). This quantitative, quasi-experimental study employed a pre-test, post-test design to examine the impact of mindfulness journaling practices on mindful awareness, self-regulation, and intrinsic aspirations of doctoral students.

A review of the literature revealed no research specifically related to mindfulness journaling and the impact on doctoral student motivation, mindfulness, or their aspirations. This quantitative, quasi-experimental study used a pre-test post-test design to examine the impact of mindfulness journaling practices on mindful awareness, motivation, and aspirations of doctoral students. The following research question and hypotheses guided this inquiry: What is the impact of mindfulness journaling on mindful attention awareness, self-regulation, and intrinsic and extrinsic aspirations of doctoral students in a cohort-based program?

Based on the review of the existing literature, it was hypothesized that:

$H1_A$: A significant difference in mindfulness attention awareness exists between participants who consistently practice mindfulness journaling and those who do not.

$H1_0$: No difference in mindfulness attention awareness exists between participants who consistently practice mindfulness journaling and those who do not.

$H2_A$: A significant difference in relative autonomy index scores exists between participants who consistently practice mindfulness journaling and those who do not.

$H2_0$: No difference in relative autonomy index scores exists between participants who consistently practice mindfulness journaling and those who do not.

$H3_A$: There is a correlation between relative autonomy index score and participant aspirations scale scores.

$H3_0$: There is no correlation between relative autonomy index score and participant aspirations scale scores.

$H4_A$: A significant difference in intrinsic aspiration scale score exists between participants who consistently practice mindfulness journaling and those who do not.

$H4_0$: No difference in intrinsic aspiration scale score exists between participants who consistently practice mindfulness journaling and those who do not.

Theoretical Framework

Self-Determination Theory posits that human motivation is supported by the fulfillment of three basic psychological needs: autonomy, competence, and relatedness. The Organismic Integration Theory (OIT) is a sub theory within the Self-Determination Theory which details a continuum of motivation ranging from amotivation to intrinsic motivation. Within these categories of motivation exists the associated self-regulatory styles.

Amotivation is associated with non-regulation which includes those activities that lack intention or do not require cognitive input from an individual (Ryan & Deci, 2000). Extrinsic motivation encompasses four different levels of self-regulation which exists on a continuum of lesser to greater perceived locus of causality. External regulation is the least internalized regulatory style and includes those activities performed to satisfy an external demand or receive some type of reward or avoid punishment (Ryan & Deci, 2000).

Introjected regulation moves slightly along the continuum and include activities performed to reduce anxiety and guilt felt by the individual or to boost their own ego (Ryan & Deci, 2000). These two regulatory styles are considered the most controlled forms of extrinsic motivation. The remaining two regulatory styles are most autonomous and include identified and integrated regulation, respectively. Identified regulation includes those behaviors and actions in which the individual has identified the personal importance of such act and integrated regulation includes those activities and behaviors that are driven from the individual's sense of self (Deci & Ryan, 2000).

At the far end of the continuum exists intrinsic motivation and intrinsic regulation which encompass all activities and behaviors engaged in for pure enjoyment (Deci & Ryan, 2000). More autonomous extrinsic motivation has been associated with increased levels of learning quality, engagement, performance, and psychological wellness (Ryan & Deci, 2000; Ryan & Deci, 2017). Using Self-Determination Theory as a lens, this study examined the impact of mindfulness journaling practices on mindful awareness, motivation, and aspirations of doctoral students.

Graduate Student Profile

Students enter graduate programs for a variety of reasons and they are distinctly different than undergraduate students. As adult learners, graduate students learn differently than undergraduate students, have been found to be more self-motivated in their learning (Lake et al., 2018) and typically have family responsibilities in addition to their academic studies (Rockingson-Szapkiw, 2019).

Doctoral students are faced with various stressors that can be beneficial or detrimental to their program completion and mental health. Specifically, challenge stressors may enhance eustress and promote outcomes in learning, engagement, and well-being, whereas hindrance stressors tend to cause distress and may lead to lower engagement, withdrawal, and higher turnover (McCauley & Hinojosa, 2020). Factors that contribute to these stressors include the struggle to balance family and academic life (McCauley & Hinojosa, 2020; Rockingson-Szapkiw, 2019), support, time, and health issues, other environmental demands (McCauley & Hinojosa, 2020; Volkert et al., 2018), and program related stressors such as lack or inconsistency of advisement (Fiore et al., 2019).

In spite of the stressors and challenges doctoral students face, many students are successful and persist through program completion. Motivation is a key factor in doctoral student persistence (Volkert et al., 2018) as are relationships formed with faculty and peers (Lehan et al., 2021), cohort based models, and residency experiences (Fiore et al., 2019; Lake et al., 2018). Autonomous, or more intrinsic motivation, has been associated with academic success (Amida et al., 2021) and persistence (Fiore et al., 2019). Personality factors and leadership behaviors were found to be indicators of success (Lehan et al., 2021) with a theme among doctoral graduates that "persistence comes from within" (Fiore et al., 2019, p. 116), supporting the notion that doctoral students are self-motivated and intrinsic goals are drivers of success and program completion.

Doctoral Student Goals and Aspirations

Doctoral students have reported intrinsic motivation as a driving factor in attaining their goal of attaining a doctoral degree (Spaulding & Rockingson-Szapkiw, 2012) and are inspired to develop professionally rather than motivated by external factors such as better jobs or salaries (Corner et al, 2023). Self-Determination Theory recognizes aspirations, or life goals, within the realms of extrinsic and intrinsic factors with intrinsic aspirations including "meaningful relationships, personal growth, and community contributions" and extrinsic aspirations including "wealth, fame, and image" (Center for Self-Determination Theory, 2022, para. 1).

The attainment of intrinsic aspirations or goals has been found to be positively correlated with well-being (Ryan et al., 1996) and are generally aligned with the basic psychological needs of autonomy, competence, and relatedness (Kasser & Ryan, 2001). Extrinsic aspiration attainment has been shown to have the opposite effect in that they are positively correlated with ill-being (Ryan at al., 1996) and do not support the basic psychological needs of the individual (Kasser & Ryan, 2001). Understanding what supports or thwarts doctoral student aspirations may provide insight into strategies and practices to improve student motivation.

Mindfulness Practices

Existing literature on the topic of mindfulness interventions primarily utilizes the practice of mindfulness meditation (Hwang et al., 2018; Short et al., 2015) and breathwork (Barry et al., 2019). Mindfulness techniques, such as reflective journaling, have found a place in many higher education institutions and across many professional disciplines (Alt & Raichel, 2020; Bush, 2011; Khramtsova & Glasscock, 2010) and in teacher professional development (Dreyer, 2015). Specifically, mindfulness practices have been seen as self-care practice and shown to reduce

distress and depression and increase hope and self-efficacy among doctoral students (Barry et al., 2019) and may help students better focus on their work (Rogers, 2013).

Not only does mindfulness meditation provide physiological benefits such as stress reduction, it also provides cognitive benefits in the form of increased executive functioning or metacognition (Helber et al, 2012; Short et al., 2015). While intensive meditation training has been shown to increase mindfulness and improve resilience to stress (Hwang et al., 2018), the incorporation of just five to ten minutes of meditation several times a day or week can reduce stress and improve cognition, as well (Sessa, 2007 & Smith, 2014).

Mindfulness practices have been shown to improve mindfulness and resilience to stress for young adults (Hwang et al., 2018), an increase in self-regulation skills among graduate students (Short et al., 2015), and an increase in psychological well-being among undergraduate students (Khramtsova & Glasscock, 2010) and doctoral students (Barry et al., 2019). Mindfulness meditation, when implemented for just 5-10 minutes a day or a few times a week, has been shown to decrease stress and improve cognition (Sessa, 2007; Smith, 2014).

Mindfulness practices have been seen as self-care practice and shown to reduce distress and depression and increase hope and self-efficacy among doctoral students (Barry et al., 2019) and may help students better focus on their work (Rogers, 2013). Mindfulness techniques, such as reflective journaling, exist in higher education institutions and across many professional disciplines (Alt & Raichel, 2020; Bush, 2011; Khramtsova & Glasscock, 2010) including teaching (Cigala et al., 2019; Dreyer, 2015). Reflective journaling has been associated with increased metacognitive awareness (Alt & Raichel, 2020), well-being (Cigala et al., 2019) and allows individuals to reflect on their own abilities and practice (Dreyer, 2015).

Methodology

This quasi-experimental study employed a pre-test, post-test design. Upon review and approval from the site's IRB, prospective participants were contacted using a purposive sampling strategy. from a Doctor of Education program at a private university in the northeastern region of Pennsylvania.

Sampling Strategy

Currently enrolled students in one doctoral program were invited to participate in this study. No extra credit or compensation was offered for completion nor were students penalized if they chose not to participate. Those who chose to participate in the study were randomly assigned to a control or experimental group.

Instrumentation and Materials

A demographic questionnaire, the trait Mindful Attention Awareness Scale (MAAS), an adapted version of the Learning Self-Regulation Questionnaire (SRQ-L), and items from the Aspirations Index were distributed electronically to each group as a pre-test and post-test. Demographic questions included items on age, gender, number of courses taken, and student engagement in

mindfulness techniques outside of the classroom or program. The link to the Google Form survey was emailed to the participants and opened with a letter of informed consent. Participants were asked to acknowledge their understanding of the informed consent document and indicate their acceptance before moving on to the demographic questions.

The Mindful Attention Awareness Scale (MAAS)

The Mindful Attention Awareness Scale consisted of 15 items using a 6-point, Likert-type scale with higher scores indicating more mindfulness. The factorial structure and test-retest reliability has been confirmed for the MAAS with a reported internal consistency of .87 based on an adult sample (Brown & Ryan, 2003). The mean of the 15 items was calculated to determine the Mindful Awareness Score for each participant for the pre-test and post-test.

The Learning Self-Regulation Questionnaire (SRQ-L)

The adapted SRQ-L consisted of 12 items using a 7-point, Likert-type scale designed to identify the reason why participants are completing their doctoral studies using two subscales: autonomous regulation and controlled regulation. The instrument allows for two types of scoring: the calculation of a separate score for each subscale and the calculation of a Relative Autonomy Index (RAI). For the purpose of this study, the RAI was computed for each participant and used in the data analysis.

The Aspirations Index

The original Aspirations Index included 105 items scored on a 7-point Likert-type scale. The items are divided into seven categories: wealth, fame, image, personal growth, relationships, community contributions, and health. For the purpose of this study, the health-related questions were omitted from this scale leaving only those six categories considered to be an extrinsic aspiration factor (wealth, fame, and image) or an intrinsic aspiration factor (personal growth, relationships, and community contributions). Extrinsic aspiration scores and intrinsic aspiration scores were calculated for both groups from the pre-test and post-test data.

Data Collection Procedures

During the initial survey, participants were asked to create a unique alphanumeric identifier of which they were asked to keep confidential. While the researcher had access to this identifier, it was not shared by the researcher with any other individual and the information was safeguarded to ensure confidentiality. During the follow up survey, participants were asked to enter the unique identifier they selected to access the follow up questionnaire. Once the follow-up survey was closed, only those unique identifiers were used for data analysis.

Upon receipt of the initial survey results, participants were randomly assigned into a treatment or control group. Members of the treatment group were asked to participate in mindfulness journaling which was anticipated to take no more than 5-10 minutes per day (35-70 minutes per week). All participants were encouraged to not partake in any new or additional mindfulness activities beyond what they normally did on a day to day basis, or beyond what they were asked to do as part of this

research study. Members of the control group received no treatment. The research study was conducted over the course of one academic semester and, upon conclusion, both groups were asked to complete the follow up survey.

Results

Raw data were exported as a spreadsheet from the Google platform and imported in the Statistical Package for the Social Sciences (SPSS) Version 28. Data were cleaned and coded to ensure proper analysis in accordance with the guiding research question and hypotheses.

Research Question and Hypotheses

The research question that guided this study was: What is the impact of mindfulness journaling on mindful attention awareness, self-regulation, and intrinsic and extrinsic aspirations of doctoral students in a cohort-based program? It was hypothesized that:

$H1_A$: A significant difference in mindfulness attention awareness exists between participants who consistently practice mindfulness journaling and those who do not.

$H1_0$: No difference in mindfulness attention awareness exists between participants who consistently practice mindfulness journaling and those who do not.

$H2_A$: A significant difference in relative autonomy index scores exists between participants who consistently practice mindfulness journaling and those who do not.

$H2_0$: No difference in relative autonomy index scores exists between participants who consistently practice mindfulness journaling and those who do not.

$H3_A$: There is a correlation between relative autonomy index score and participant aspirations scale scores.

$H3_0$: There is no correlation between relative autonomy index score and participant aspirations scale scores.

$H4_A$: A significant difference in intrinsic aspiration scale score exists between participants who consistently practice mindfulness journaling and those who do not.

$H4_0$: No difference in intrinsic aspiration scale score exists between participants who consistently practice mindfulness journaling and those who do not.

Descriptive Statistics

There were 36 responses received in the initial survey with 18 participants evenly distributed between the treatment and control groups. Of those initial participants, 20 persisted through the study and completed the follow-up survey. Of those 20 participants, 11 were part of the control group and 9 were members of the treatment group. Seventy-five percent of the participants

identified as female and the remaining 25% identified as male. The students were at various stages of their program completion split about evenly between the first half of the program (n = 10) and the last half of the program (n = 8). Two participants did not disclose their stage of program completion.

Participants were asked to indicate the frequency of participation in various mindfulness practices on both the initial and follow-up surveys. Table 1 indicates the percentage of participants who engaged in various mindfulness practices at least 5 minute per week. Mindfulness journaling was the most frequent mindfulness activity practiced as indicated in both the pre-test and post-test data. There was an increase in all categories of mindfulness practices, with the exception of coloring, indicated on the post-test. The largest increase was in Mindfulness Journaling, which was expected given the nature of the study and the number of participants already practicing this technique.

Table 1. *Frequency of Mindfulness Practices*

	Pre-Test	Post-Test
Breathwork	45%	50%
Meditation	40%	45%
Journaling	50%	70%
Coloring	30%	25%
Positive Affirmations	35%	50%
Mindful Movement	30%	40%
Other	15%	20%

Measures of central tendency were computed for each of the pre- and post-test scores and the data were tested form normality. The control group showed an increase from pre- to post-test on all scales except for the Extrinsic Aspirations Score: Pre MAAS Score (M = 3.96, SD = 0.73), Post-MAAS Score (M = 4.19, SD = 0.57); Pre RAI (M = 1.96, SD = 0.89), Post RAI (M = 2.25, SD = 1.12); Pre Extrinsic Aspiration Score (M = 2.80, SD = 0.90), Post Extrinsic Aspiration Score (M = 2.60, SD = 0.78); Pre Intrinsic Aspiration Score (M = 5.76, SD = 0.83), Post Intrinsic Aspiration Score (M = 5.96, SD = 0.55). An increase in all mean scores except for the Intrinsic Aspiration Scale was noted for the treatment group: Pre MAAS Score (M = 3.27, SD = 0.68), Post-MAAS Score (M = 3.57, SD = 0.42); Pre RAI (M = 1.46, SD = 2.22), Post RAI (M = 1.67, SD = 2.06); Pre Extrinsic Aspiration Score (M = 3.03, SD = 1.07), Post Extrinsic Aspiration Score (M = 3.11, SD = 1.13); Pre Intrinsic Aspiration Score (M = 5.81, SD = 0.68), Post Intrinsic Aspiration Score (M = 5.77, SD = 0.72)

Tests of normality were conducted for each of the scores and a Kolmogorov-Smirnov test indicated non-normality for the treatment group for the Post RAI, Pre-Intrinsic Aspiration Score, and Post Intrinsic Aspiration Score. Even though the data were found to be normally distributed in the other scores, the researcher opted to conduct appropriate non-parametric tests due to the small sample size in the control and treatment groups.

Hypothesis Testing

An independent samples Mann-Whitney *U* test was conducted to test the first hypothesis that a significant difference in mindful attention awareness exists between participants who consistently practiced mindfulness journaling and those who did not. The results of the test were significant, $z = -2.29$, $p = .020$. The treatment group ($n = 9$) had a mean rank of 7.17 and the control group ($n = 11$) had a mean rank of 13.23. Given the test significance, the null hypothesis was rejected.

An independent samples Mann-Whitney U test was conducted to test the second hypothesis that a significant difference in relative autonomy index scores exists between participants who consistently practice mindfulness journaling and those who do not. The results of the test were not significant, $z = -0.61$, $p = .552$. The treatment group ($n = 9$) had a mean rank of 7.17 and the control group ($n = 11$) had a mean rank of 13.23. Given the lack of significance, the researcher was unable to reject the null hypothesis. There was no significant difference in Relative Autonomy Index Scores between groups.

Correlation coefficients were computed to test the third hypothesis that a correlation exists between relative autonomy scores and participant aspirations scale scores. A moderate negative correlation exists between post-test Relative Autonomy Index Score and Extrinsic Aspiration Score, $r(19) = -.59$, $p = .006$ and a moderate positive correlation exists between post-test Relative Autonomy Index Score and Intrinsic Aspiration Score, $r(19) = .45$, $p = .046$. Given the significance at the 95% confidence level, the research rejects the null hypothesis since there is a correlation between relative autonomy scores and participant aspirations scale scores.

The correlation matrix revealed additional noteworthy relationships that existed beyond the original hypotheses. It was found that mindful awareness was moderately positively correlated with intrinsic aspiration, $r(19) = .47$, $p = .036$. As previously mentioned, the SRQ-L allows for the scoring of the relative autonomy index as well as the calculation of two subscales: autonomous and controlled. A strong, positive correlation was found between controlled regulation and extrinsic aspirations, $r(19) = .76$, $p < .001$ and a moderate positive correlation was found between autonomous regulation and intrinsic aspirations, $r(19) = .59$, $p = .006$.

An independent samples Mann-Whitney U test was conducted to test the final hypothesis that a significant difference in intrinsic aspiration scale score exists between participants who consistently practice mindfulness journaling and those who do not. The results of the test were not significant, $z = -0.65$, $p = .552$. The treatment group had a mean rank of 9.56 and the control group had a mean rank of 11.27. Given the lack of statistical significance, the researcher was unable to reject the null hypothesis.

Discussion

It was found that a significant difference between groups existed for the mindful awareness variable. Students who consistently practiced mindfulness journaling had higher levels of dispositional mindfulness, as measured by the Mindful Attention Awareness Scale, than their peers who were not asked to engage in consistent mindfulness journaling practices. Journaling has been shown to increase metacognitive awareness (Alt & Raichel, 2020), well-being (Cigala et al., 2019),

and, as found in this study, dispositional mindfulness. Dispositional mindfulness, or trait mindfulness, is positively associated with psychological well-being (Tang & Tang, 2020). Doctoral students who consistently engage in mindfulness journaling increased their levels of trait mindfulness which is a component of general well-being.

Relative autonomy index scores were calculated for both groups and no significant difference was found when comparing doctoral students who engaged in mindfulness journaling and those who were not encouraged to journal. Interestingly, those students in the non-journaling group had higher mean ranks than those in the journaling group. Given the fact that all participants were currently enrolled in a doctoral program, it wasn't surprising to note the motivational autonomy of both groups.

While a relationship between motivational autonomy and journaling wasn't found, the findings of this study did reveal correlations between motivational autonomy and intrinsic and extrinsic aspirations of doctoral students. A moderate negative correlation exists between post-test Relative Autonomy Index Scores and Extrinsic Aspiration Scores and a moderate positive correlation exists between post-test Relative Autonomy Index Score and Intrinsic Aspiration Score, thus supporting the third hypothesis. There was not sufficient evidence to support the final hypothesis. The doctoral students who participated in this study did not differ significantly on the variable of intrinsic aspirations between the journaling and non-journal groups.

Additional analysis beyond the hypothesis testing revealed a moderately positive correlation between situational mindfulness and intrinsic aspirations. A strong, positive correlation was also found between controlled regulation and extrinsic aspirations and a moderate, positive correlation exists between autonomous regulation and intrinsic aspirations. Since the attainment of intrinsic aspirations is linked to well-being (Ryan et al., 1996) and the attainment of extrinsic aspirations don't support the needs of the individual (Kasser & Ryan, 2001), these results may indicate that doctoral students need autonomy supportive environments to allow for the continued pursuit of intrinsic aspirations.

Overall, the findings support the benefits of mindfulness journaling among doctoral students in that journaling may increase trait mindfulness and improve overall well-being. This is especially important for this population of students given the vast number of stressors doctoral students face as they try to balance the demands of family and academic life (McCauley & Hinojosa, 2020; Rockingson-Szapkiw, 2019), struggle to overcome health issues and other environmental demands (McCauley & Hinojosa, 2020; Volkert et al., 2018), and encounter other program related stressors (Fiore et al., 2019). Finding ways to improve the likelihood of intrinsic aspirations is critical. Professors and course developers should be aware of the needs of doctoral students, specifically the tendency for these adult learners to be more self-motivated in their learning (Lake et al., 2019).

Limitations

Perhaps the most notable limitation of this study was the small sample size in both the treatment and control group. Attrition of participants was expected and further limited the number of useful responses for data analysis. Another limitation was that inherent to the self-reporting nature of

survey research. The study was limited to one doctoral program in a specific region of the United States thereby limiting the generalizability of the results.

Implications and Conclusion

A review of the means from the non-journaling and journaling group revealed an increase in most scores from pre-test to post-test. There was an increase in all scores for the journaling group with the exception of the intrinsic aspirations scale. Additional research is recommended to further explore the relationship between journaling and aspirations.

Within the next six years, it's estimated that occupations requiring a doctoral or professional degree will increase by 4.7% (U.S. Bureau of Labor Statistics, 2020). While the number of conferred doctoral degrees is on the rise (U.S. Department of Education, 2019), attrition of doctoral students in U.S. programs is over 40% (Volkert et al., 2018). Colleges and Universities must find ways to support the needs of doctoral students through degree completion including their overall well-being. Mindfulness journaling was shown to increase the dispositional mindfulness of doctoral students who consistently engaged in journal practices.

Other mindfulness practices, such as meditation, reduce stress, improve metacognition (Helber et al., 2012; Short et al., 2015) and increase resilience to stress (Hwang et al., 2018). These benefits don't require intensive practice, but rather a few minutes per day a few days a week (Sessa, 2007; Smith 2014). Not only does mindfulness meditation provide physiological benefits such as stress reduction, but it also provides cognitive benefits in the form of increased executive functioning or metacognition (Helber et al, 2012; Short, et al., 2015) and increase self-regulation skills (Short et al., 2015).

While intensive meditation training has been shown to increase mindfulness and improve resilience to stress (Hwang et al., 2018), the incorporation of just five to ten minutes of meditation several times a day or week can reduce stress and improve cognition, as well (Sessa, 2007 & Smith, 2014). Mindfulness practices, including journaling, should be considered when creating and facilitating doctoral courses. Providing ample opportunities for reflective journaling in classes may increase metacognitive awareness (Alt & Raichel, 2020), well-being (Cigala et al., 2019), and dispositional mindfulness.

About the Author

Dr. Wasmanski is an assistant professor in the School of Education's doctoral department at Wilkes University. With over 20 years of professional training and teaching experience, Dr. Wasmanski has taught numerous courses within the fields of psychology, business & leadership, education, and educational research. Her primary research interests include motivation, engagement, and mindfulness as they relate to employee and student success.

References

Alt, D., & Raichel, N. (2020). Reflective journaling and metacognitive awareness: insights from

a longitudinal study in higher education. *Reflective Practice, 21*(2), 145-158. https://doi.org/10.1080/14623943.2020.1716708.

Alt D., Raichel N., and Naamati-Schneider L. (2022). Higher education students' reflective journal writing and lifelong learning skills: Insights from an exploratory sequential study. *Frontiers in Psychology, 12*. https://do.org/10.3389/fpsyg.2021.707168.

Amida, A., Algarni, S., & Stupnisky, R. (2021). Testing the relationships of motivation, time management and career aspirations on graduate students' academic success. *Journal of Applied Research in Higher Education, 13*(5), 1305-1222.

Barry, K. M., Woods, M., Martin, A., Stirling, C., & Warnecke, E. (2019). A randomized controlled trial of the effects of mindfulness practice on doctoral candidate psychological status. *Journal of American College Health, 67*(4), 299-307. https://doi.org/10.1080/07448481.2018.1515760.

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84*(4), 822-848. https://selfdeterminationtheory.org/SDT/documents/2003_BrownRyan.pdf.

Bush, M. (2011). Mindfulness in higher education. *Contemporary Buddhism 12*(1). https://doi.org/10.1080/14639947.2011.564838.

Cigala, A., Venturelli, E., & Bassetti, M. (2019). Reflective practice: A method to improve teachers' well-being. A longitudinal training in early childhood education and care centers. *Frontiers in Psychology, 10*. http://doi.org/10.3389/fpsyg.2019.02574.

Dreyer, L. M. (2015). Reflective journaling: A tool for teacher professional development. Africa Education Review, 12(2), 331-344. https://doi.org/10.1080/18146627.2015.1108011.

Hwang, W. J., Lee, T. Y., Lim, K., Bae, D., Kwak, S., Park, H., & Kwon, J. S. (2018). The effects of four days of intensive mindfulness meditation training (Templestay Program) on resilience to stress: A randomized controlled trial. *Psychology, Health & Medicine, 23*(5), 497-504. https://doi.org/10.1080/13548506.2017.1363400.

Khramtsova, I., & Glasscock, P. (2010). Outcomes of an integrated journaling and mindfulness program on a US university campus. *Revista de psihologie, 56*(3-4), 208–218.

Lake, E. D., Koper, J., Balayan, A., & Lynch, L. (2018). Cohorts and connections: Doctoral retention at a mid-atlantic comprehensive institution. *Journal of College Student Retention: Research, Theory & Practice, 20*(2), 197-214. https://doi.org/10.1177/1521025116656386.

Lehan, T. J., Hussey, H. D., & Hotz, T. (2021). Factors associated with online doctoral student persistence: A critical integrative review of the literature. *Current Issues in Education, 22*(2). http://cie.asu.edu/ojs/index.php/cieatasu/article/view/1961.

Leshem, S. (2020). Identity formations of doctoral students on the route to achieving their doctorate. *Issues in Educational Research, 30*(1), 169-186. http://www.iier.org.au/iier30/leshem.pdf.

McCauley, K. D., & Hinojosa, A. S. (2020). Applying the challenge-hindrance stressor framework to doctoral education. *Journal of Management Education, 44*(4), 490-507. https://doi-org.wilkes.idm.oclc.org/10.1177/1052562920924072.

Rigby, C. S., Schultz, P. P., & Ryan, R. M. (2014). Mindfulness, interest-taking, and self-regulation. In the Wiley Blackwell Handbook of Mindfulness (p. 216-235). https://doi.org/10.1002/9781118294895.ch12.

Rockinson-Szapkiw, A. (2019). Toward understanding factors salient to doctoral students' persistence: The development and preliminary validation of the doctoral academic-family

integration inventory. *International Journal of Doctoral Studies, 14*, 237-258. https://doi.org/10.28945/4248.

Rogers, H. B. (2013). Koru: Teaching mindfulness to emerging adults. *New Directions for Teaching and Learning, 134*, 73-81. https://doi.org/10.1002/tl.20056.

Ryan, R. M., & Deci, E. L. (2010). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology, 25*, 54-67. https://doi.org/10.1006/ceps.1999.1020.

Ryan, R. M., & Deci, E. L. (2017). *Self-determination theory: Basic psychological needs in motivation, development, and wellness.* The Guilford Press.

Ryan, R. M., Sheldon, K. M., Kasser, T., & Deci, E. L. (1996). *All goals are not created equal: An organismic perspective on the nature of goals and their regulation.* In P. M. Gollwitzer & J. A. Bargh (Eds.), *The psychology of action: Linking cognition and motivation to behavior* (p. 7–26). The Guilford Press.

Sakurai, Y., Vekkaila, J., & Pyhalto, K. (2017). More or less engaged in doctoral studies? Domestic and international students' satisfaction and motivation for doctoral studies in Finland. *Research in Comparative & International Education, 12*(2), 143-159. https://doi.org/10.1177/1745499917711543.

Schmuck, P., Kasser, T., & Ryan, R. M. (2000). Intrinsic and extrinsic goals: Their structure and relationship to well-being in German and U.S. college students. *Social Indicators Research, 50*(2), 225-241.

Spaulding, L. S., & Rockinson-Szapkiw, A. J. (2012). Hearing their voices: Factors doctoral candidates attribute to their persistence. International Journal of Doctoral Studies, 7(1), 199,-219.

Sverdlik, A. & Hall, N. C. (2020). Not just a phase: Exploring the role of program stage on well-being and motivation in doctoral students. *Journal of Adult and Continuing Education, 26*(1), 97-124. https://doi.org/10.1177/1477971419842887.

Tang, Y. Y., & Tang, R. (2020). The neuroscience of meditation: Understanding individual differences.

U.S. Department of Education, National Center for Education Statistics, Higher Education General Information Survey (HEGIS). (2019). "Degrees and Other Formal Awards Conferred" surveys, 1970-71 through 1985-86; Integrated Postsecondary Education Data System (IPEDS), "Completions Survey" (IPEDS-C:91-99); and IPEDS Fall 2000 through Fall 2018, Completions component. https://nces.ed.gov/programs/digest/d19/tables/dt19_324.10.asp.

U.S. Department of Labor Statistics. (2020). Employment projections: Occupational projections [Data set]. https://data.bls.gov/projections/occupationProj.

Volkert, D., Candela, L., & Bernacki, M. (2018). Student motivation, stressors, and intent to leave nursing doctoral study: A national study using path analysis. *Nurse Education Today, 61*, 210-215. https://doi.org/10.1016/j.nedt.2017.11.033.