The Importance of Job-Related Self-Insight, Not Self-Reflection, For Well-Being and Burnout in Student Teachers

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Abstract

The present study aims to explain the relationship between the need for self-reflection, job-related self-reflection, job-related self-insight, and well-being as well as burnout in student teachers. A cross-sectional study of 607 student teachers in Germany reveals that job-related self-insight, but not job-related self-reflection nor the need for self-reflection, significantly predicts levels of well-being and burnout. The study results imply that gaining insight into one's career choice and one's strengths and weaknesses concerning the teaching profession are important factors in predicting well-being and burnout. Student teachers with high levels of job-related insight may be more inclined to embrace their impending responsibilities as educators, feel satisfied with their career decision, recognize their individual professional skills and development opportunities, be aware of the challenges associated with the teaching profession, and have appropriate mechanisms for overcoming these challenges or know how to cultivate such mechanisms. In this way, job-related insight might serve as a resilience factor in maintaining long-term employability. Interventions should aim to enhance student teachers' job-related insight by having participants engage in guided self-reflection on topics relevant to their professional advancement, facilitating exploration of the challenges individuals face as they begin their teaching careers, particularly in the early stages.

Key Words: Key Words: Self-reflection, self-insight, burnout, well-being, student teachers

Introduction

Previous research has shown that self-reflection is positively related to well-being and negatively related to psychological stress (Harrington & Loffredo, 2010; Harrington, Loffredo, & Perz, 2016; Lyke, 2009; Ran, Liu, Yuan, Yu & Dong, 2023; Stein & Grant, 2014). Above that, self-reflection and self-insight – as an outcome of productive self-reflection – are considered key competencies of pedagogical professionalism today. The professional development of teachers requires the willingness to critically perceive oneself and to further develop one's own teaching personality through impulses, feedback, and constructive criticism, for example through collegial exchange (Harford & MacRuairc, 2008; Henry, 1999; Schutz, 2013; Sellars, 2012, 2017; Slade, Burnham, Catalana, & Waters, 2019).

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The aim of this study was to find out whether findings on the relationship between self-reflection, self-insight and indicators of well-being can also be applied to prospective teachers. The research question addressed in this study is to what extent the need for self-reflection, job-related self-reflection frequency and job-related insight are related to well-being and burnout indicators in student teachers. To date, as far as known, no studies have been conducted on student teachers examining the relationship between self-reflection and well-being. However, knowledge about this relationship can present an important added value to research in the field. If a relationship between self-reflection and well-being is found in student teachers, this could, among other things, underline the importance of self-reflection in the teaching profession and encourage the development of measures to promote self-reflection already during teacher training to strengthen personal resources and promote well-being in prospective teachers.

According to recent studies from various countries, the teaching profession is perceived as particularly stressful (Agyapong, Obuobi-Donkor, Burback, & Wei, 2022; Harmsen, Helms-Lorenz, Maulana, & van Veen, 2018; Jerrim & Sims, 2021). Thus, teachers are among the occupational groups with the highest sickness rates in relation to mental illnesses, such as burnout, which can already be seen in high burnout rates among student teachers (Chan, 2003; Fives, Hamman, & Olivarez, 2007; Meyer, Wing, Schenkel, & Meschede, 2021). One reason for long-term teacher stress lies in constantly high job demands, such as time pressure, discipline problems, and low student motivation (Skaalvik & Skaalvik, 2018). Studies have shown that student-teacher relationships demand emotional involvement from teachers and can influence the professional and personal self-esteem of teachers (Spilt, Koomen, & Thijs, 2011). The consequences may be diminished self-efficacy, decreased job satisfaction and decreased teacher well-being (Collie, Shapka, & Perry, 2012; Klassen et al., 2013; Skaalvik & Skaalvik, 2018). Teachers with health problems perform less well, which is reflected, for example, in poorer classroom performance and poorer students' performance, diminished occupational commitment and quitting intention (Fatima & Wolf, 2020; Klassen & Chiu, 2011; Klusmann, Kunter, Trautwein, Lüdtke, & Baumert, 2008; McInerney, Korpershoek, Wang, & Morin, 2018; Ronfeldt, Loeb, & Wyckoff, 2013). Absenteeism, increased motivation to leave the teaching profession and medical-psychological treatment can cause considerable costs, making it indispensable to promote teacher health and well-being. Correspondingly, the goal of this study is to emphasize the importance of promoting realistic self-reflection about one's role as a teacher, the working conditions and one's strengths and weaknesses already during teacher training to help prospective teachers deal with high work demands, and to prevent long-term losses in performance and health in later working life (Murphy, Masterson, Mannix-McNamara, Tally, & McLaughlin, 2020; Parpala & Postareff, 2021; Wosnitza et al., 2018).

Theoretical Framework and Literature Review

Subjective well-being can contribute to better job performance, especially in the form of increased work engagement (Bakker & Oerlemans, 2011; Skaalvik & Skaalvik, 2018). It is a central construct in positive psychology (e.g., Diener, 1984; Diener & Scollon, 2014) and is defined as "a person's cognitive and affective evaluations of his or her life" (Diener, Lucas, & Oishi, 2002, p. 63). A person with high subjective well-being is satisfied with his or her life, frequently experiences positive emotions such as happiness and joy, and rarely experiences negative emotions such as sadness or anger (Diener, Sandvik, Pavot, & Gallagher, 1991). Subjective well-being can have positive effects on personal resources, such as active coping, and on job resources, such as an increase in learning opportunities (Sonnentag, 2015). Furthermore, when people feel better, they tend to show higher task performance. Accordingly, subjective well-being could increase teachers' work engagement and provide a valuable resource in coping with work demands.

Job-related self-reflection and insight

One way to strengthen subjective well-being is to promote self-insight as a result of productive self-reflection, for example through reflective journaling (Dreyer, 2015; Körkkö, Kyrö-Ämmälä, & Turunen, 2016; Stein & Grant, 2014). Self-reflection can prove useful when future teachers face developmental tasks to mediate between biographically rooted subjective images of the teaching profession, one's own competencies to act, experienced needs to act in a subjectively sustainable way and to deal with one's own weaknesses and limitations in light of the teaching profession (Henry, 1999; Kunze & Herieks, 2002). Self-reflection in the teaching profession is a process that facilitates teaching, learning and understanding, and it plays a central role in teachers' professional development. When student teachers carry out systematic enquiry into themselves, they understand themselves, their practices and their students. By constantly looking into their own actions and experiences, they professionally grow in their own. (Mathew, Mathew, & Peechattu, 2017, p. 126).

The definitions of reflection and reflective capacity or competence in the scientific literature are diverse and there is no consensus on a common understanding of the construct (Aeppli & Lötscher, 2016). As an important pioneer in the field of reflection studies, Dewey (1933) defines reflection (1) as a state of doubt, hesitation, perplexity; a mental problem in which thought originates and (2) as an act of seeking, investigating and finding material that resolves the doubt and remedies the perplexity. Reflection, then, is a deliberate pondering that pursues a specific goal (Wyss, 2013). It is understood as a process of restructuring (Aeppli & Lötscher, 2016), which aims at a conscious, flexible and revisable mental examination of oneself (Grob & Maag Merki, 2001), so that an appropriate and sufficiently undistorted view of one's own abilities, possibilities and characteristics can be achieved in the sense of an identity capable

of development. Accordingly, self-reflection always includes cognitive criticism with regard to one's own person, perception, cognition and action (Grob & Maag Merki, 2001). It is thus a means of reacting to experiences in order to understand them, learn from them, and develop new insights and appreciations (Wade & Yarbrough, 1996). Accordingly, its primary goal is not to solve problems, but rather to trigger developmental processes (Postholm, 2008). Hatton and Smith (1995) elaborate more on the process of reflection, defining reflection as an active and purposeful cognitive process that involves sequences of interrelated ideas that take into account the individual's underlying beliefs and cognitions. Since the key to pedagogical professionalism is reflecting on one's own experiences, attitudes and values, the definition of Korthagen and Wubbels (1991) is used as a basis for this study. Self-reflection is defined as a mental process that aims at structuring or restructuring experiences, problems, knowledge, or insights.

It is assumed that self-reflection and self-insight are two independent constructs, because self-reflection can also take place without an insight following it (Grant, Franklin, & Langford, 2002). The distinction between reflection frequency and self-insight is essential because reflection frequency shows a confound with unproductive rumination (Grob & Maag Merki, 2001), which in turn shows correlations with depressiveness (Matthews & Wells, 2004; Papageorgiou & Wells, 2003). Individuals lose themselves in thought loops without reaching an insight or a result. The so-called result-oriented self-reflection (Greif, 2008), on the other hand, results in conclusions about concrete, future actions and can be mapped via the construct insight.

For a differentiated view of the effects of self-reflection on burnout and well-being and as recommended by Grant et al. (2002), this study distinguishes between the need for self-reflection, i.e. the extent to which a person feels the need to engage in the process of self-reflection, self-reflection frequency, i.e. the frequency with which a person engages in self-reflection, and self-insight, i.e. the clear and conscious understanding of one's own thoughts, feelings and behavior (Grant et al., 2002).These constructs were applied to the pedagogical professionalization of prospective teachers, so that this study examines job-related self-reflection frequency, i.e. the frequency with which student teachers reflect on their career choice motivation, prospective forming of positive student-teacher relationships, one's strengths and weaknesses in light of the teaching profession, and the demands of the teaching profession, as well as job-related insight, i.e. the clear and conscious understanding of one's career choice motivation, of the way in which student-teacher relationships are formed, and of one's strengths and weaknesses concerning teaching profession.

Relationships to indicators of well-being and burnout

Overall, there is little research concerning the link between self-reflection, self-insight, and well-being and burn-out. Lyke (2009), as well as Harrington et al. (2016) and Nilsson, Friedrichs and Kajonius (2022), were able to show that individuals who reached insight more frequently in their reflection processes were significantly more satisfied and happier with their lives than individuals who reached insight less frequently. Selwyn and Grant (2016) showed that through a mediation process, self-insight promotes self-regulation which in turn enhances solution-focused thinking, which then predicts well-being.

Harrington and Loffredo (2010) also found in their study that self-insight was a significant predictor of six dimensions of psychological well-being (i.e., self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth) as well as general life satisfaction. Rumination, on the other hand, was a significant negative predictor of three dimensions of psychological well-being (i.e., self-acceptance, autonomy, and environmental mastery).

Deeper knowledge about the relationship between job-related self-reflection and insight and well-being in student teachers can help to develop and apply appropriate measures early on (e.g., to promote reflective competence and, above all, job-related insight) to counteract psychological stress. Self-reflection and self-insight into one's own thoughts and feelings can be a fruitful way of dealing with high job demands in the teaching profession (Op den Kamp, Bakker, Tims, & Demerouti, 2018), acting as a vital job resource. To be more precise, compared to individuals with lower self-reflection and self-insight, student teachers with high levels of self-reflection and self-insight might feel the need for self-regulatory behavior sooner and with greater precision. Furthermore, self-reflection and self-insight can enhance the understanding of effective behavioral strategies, i.e., knowing how, when, and where to take certain actions when faced with high job demands (Op den Kamp et al., 2018).

Hypotheses

To investigate the research question, a focus was put on need for self-reflection in general and on job-related self-reflection frequency and job-related insight in particular, to gain a detailed view of the relationships between the various components of self-reflection, well-being, and burnout.

Based on the research question introduced above, two hypotheses were formulated:

H1: The need for self-reflection, job-related self-reflection frequency and job-related insight are positively related to well-being.

H2: The need for self-reflection, job-related self-reflection frequency and job-related insight are negatively related to personal burnout.
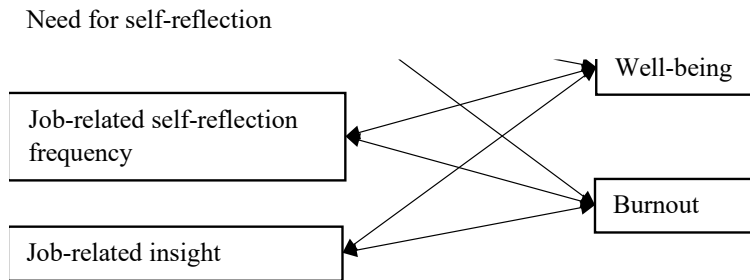
Figure 1 gives an overview of the research model.

Need for self-reflection

Job-related self-reflection frequency

Job-related insight

Well-being

Burnout

Figure 1. Overview of the research model

Methodology
Research design
To test the hypotheses, a paper-pencil survey was conducted over a period of 6 weeks between November 2022 and January 2023. Recruitment was carried out by asking University staff who teach courses in teaching degree programs to hand out the questionnaire to their students. The participants were asked to complete the questionnaire during the lecture to ensure they had enough time and to increase the response rate.

Sample
A total of $N = 660$ first semester student teachers from three different study programs at a German university participated in the study. Following complete case analysis, questionnaires with missing values on at least one scale were eliminated (Mirzaei, Carter, Patanwala, & Schneider, 2022). After data cleaning, the final sample consisted of $N = 607$ students.

The average participant was 21.6 years old ($SD = 4.52$). Among the participants, 73% were female and 26% were male. The majority studied teaching with the goal to become a high school teacher (43%), followed by the goal to become a vocational teacher (33%), again followed by the goal to become an elementary school, secondary school or junior high school teacher (24%). Table 1 shows the expressions of key demographic variables.

Table 1.

Mean Values and Frequencies of the Demographic Variables

Variable	%
Gender	
Female	73.2
Male	26.2
Other	0.6
Study program	
High school teaching	43.2
Vocational teaching	32.6
Elementary school, secondary school, and junior high school teaching	24.2

Measures

Measurement scales were chosen because (1) they assess the variables as a measurable representation of the constructs of interest, (2) because of their thorough validation, (3) because of their psychometric properties and (4) because of their widespread use in research in the field, which can be helpful if results are to be made comparable with each other.

Need for self-reflection

Need for self-reflection was measured using the subscale of the Self-Reflection and Insight Scale by Grant et al. (2002), which consists of six items, answered on a five-point Likert scale (1 = do not agree at all to 5 = agree fully). The item stem read, "Please indicate to what extent you agree with the following statements." An example item was: "It is important for me to understand what my feelings mean." Cronbach's Alpha was $\alpha = .85$.

Job-related self-reflection frequency and job-related insight

The Self-Reflection and Insight Scale by Grant et al. (2002) was adapted to assess job-related self-reflection and insight in relation to the teaching profession. To identify main themes of self-reflection reported in the literature on reflection in the teaching profession, studies by Zeichner and Liston (1987), Henry (1999), Pedro (2005), Sellars (2012) and Slade et al. (2019) were examined. After analyzing the main themes of self-reflection, items by Grant et al. (2002) were adapted to assess aspects of career choice motivation, building student-teacher relationships, one's strengths and weaknesses in relation to the teaching profession, and the demands of the teaching profession. An overview of all items can be found in Table 2.

Job-related self-reflection frequency was assessed using six items, answered on a five-point Likert scale (1 = never to 5 = always). The item stem was "Please indicate how often the following statements apply to you. Refer to yourself as a future teacher."

Cronbach's Alpha for the adapted version used in this study was α = .74.

Job-related insight was also assessed using six items that were answered on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). The item stem read, "Please indicate the extent to which you agree with the following statements. Refer to yourself as a future teacher." Cronbach's Alpha for the adapted version used in this study was α = .70.

Table 2.

Adapted scales for measuring job-related self-reflection frequency and job-related insight

Job-related self-reflection frequency	Job-related insight
1. I reflect on why I want to be a teacher.	1. I know why I want to be a teacher.
2. I'm thinking about the relationship I want to build with my students.	2. I have an idea of the relationship I want to build with my students.
3. I'm thinking think about where I still need to develop as a teacher.	3. I have an idea of where I still need to develop as a teacher.
4. I reflect on my strengths in relation to the teaching profession.	4. I have an idea of where my strengths lie in relation to the teaching profession.
5. I reflect on what job demands teachers are faced with.	5. I can imagine the job demands teachers are faced with.
6. I'm thinking about ways to handle difficult classroom situations.	6. I know ways to handle difficult classroom situations.

To test construct validity of the adapted scales two exploratory factor analyses were conducted. Since the aim was to identify a latent factor structure, common factor analysis was preferred to principal component analyses (Fabrigar, Wegener, MacCallum, & Strahan, 1999). With regard to factor retention, the minimum average partial correlation (MAP test; O'Connor, 2000; Velicer, 1976) was favored over the Kaiser criterion and the highly subjective scree test (Fabrigar & Wegener, 2012).

Job-related self-reflection frequency

The results of Bartlett's test for sphericity (Bartlett, 1954) showed that the correlation matrix was not random, $\chi2(15) = 670,90$, $p < .001$. The Kaiser-Meyer-Olkin measure of sampling adequacy (Kaiser, 1974) was .80, which is clearly above the minimum standard for conducting a factor analysis. Thus, the correlation matrix was suitable for factor analysis.

The MAP test resulted in one factor. For N = 600, factor loadings greater than .21 can be considered significant, since the significance of factor loadings depends on the

sample size (Stevens, 2009). The total variance explained by the factor was 43%. Table 3 shows the factor loadings.

Table 3.

Factor loadings of principal axis factor analysis for job-related self-reflection frequency

		Factor 1
1	I'm thinking about the relationship I want to build with my students.	**.659**
2	I reflect on what job demands teachers are faced with.	**.580**
3	I'm thinking about ways to handle difficult classroom situations.	**.572**
4	I reflect on why I want to be a teacher.	**.564**
5	I reflect on my strengths in relation to the teaching profession.	**.553**
6	I'm thinking think about where I still need to develop as a teacher.	**.486**

Note. N = 607.

Job-related insight

The results of Bartlett's test for sphericity (Bartlett, 1954) showed that the correlation matrix was not random, $\chi 2(15) = 587,30$, $p < .001$. The Kaiser-Meyer-Olkin measure of sampling adequacy (Kaiser, 1974) was .74, which is also above the minimum standard for conducting a factor analysis. Thus, the correlation matrix was suitable for factor analysis.

The MAP test resulted in one factor. The total variance explained by the factor was 40%. Table 4 shows the factor loadings.

Table 4.

Factor loadings of principal axis factor analysis for job-related insight

		Factor 1
1	I have an idea of where my strengths lie in relation to the teaching profession.	**.628**
2	I can imagine the job demands teachers are faced with.	**.611**
3	I have an idea of the relationship I want to build with my students.	**.589**
4	I know ways to handle difficult classroom situations.	**.505**
5	I know why I want to be a teacher.	**.446**
6	I have an idea of where I still need to develop as a teacher.	**.393**

Note. N = 607.

Well-being

Well-being was measured using the WHO-Five Well-Being Index (WHO, 1998). It consists of five items, answered on a five-point Likert scale (1 = never to 5 = always). The item stem was "Please indicate how often the following statements apply to you." An examples item was "How often do you feel calm and relaxed?". Cronbach's Alpha was $\alpha = .61$.

Burnout

The Personal Burnout subscale of the Copenhagen Burnout Inventory (Kristensen, Borritza, Villadsen, & Christensen, 2005) was used as a burnout indicator. The scale consists of six items, answered on a five-point Likert scale (1 = never to 5 = always). The item stem read, "Please indicate how often the following questions apply to you." An example item was: "How often do you think 'I can't do it anymore'?." Cronbach's Alpha was $\alpha = .84$.

Statistical analysis

To look at the overall relationships between the study variables, correlation analyses were conducted. Multiple linear regression was then used to test the hypotheses, i.e., if need for self-reflection, job-related reflection frequency and job-related insight significantly predicted well-being and personal burnout, respectively. The assumptions for multiple linear regression analyses were met for both regression analyses conducted in this study:

The histograms of standardized residuals indicated that the data contained approximately normally distributed errors, as did the normal P-P plots of standardized residuals. The scatterplots of standardized residuals showed that the data met the assumptions of homoscedasticity and linearity. Tests to see if the data met the assumption of collinearity indicated that multicollinearity was not a concern ($1.006 < VIF > 1.456$). The data met the assumption of independent errors. Durbin-Watson values were at 1.43 for well-being as a dependent variable and at 1.66 for burnout as a dependent variable. These values are acceptable for assuming independent errors (Field, 2009).

Findings

Need for self-reflection showed significant positive correlations with job-related self-reflection frequency ($r = .342, p < .001$) and job-related insight ($r = .151, p < .001$). Job-related self-reflection frequency showed significant positive correlations with job-related insight ($r = .482, p < .001$) and well-being ($r = .154, p < .001$). Job-related insight showed a significant positive correlation with well-being ($r = .260, p < .001$) and a significant negative correlation with burnout ($r = -.159, p < .001$). Burnout and well-being correlated negatively ($r = -.577, p < .001$).

Furthermore, age correlated positively with burnout ($r = .103, p = .011$) and sex

correlated positively with job-related self-reflection frequency ($r = .082$, $p = .042$) and burnout ($r = .238$, $p < .001$) and negatively with well-being ($r = -.085$, $p = .036$).

The correlations of all variables used in this study can be found in table 5.

Table 5.
Means, Standard Deviations, and Correlations Between the Study Measures

	M	SD	1	2	3	4	5	6
1. Age	21.61	4.25						
2. Sex			-.018					
3. Need for self-reflection	3.42	.78	.063	.063				
4. Job-related self-reflection frequency	3.43	.55	.072	.082*	.342***			
5. Job-related insight	3.69	.50	-.040	.02	.151***	.482***		
6. Well-being	2.73	.65	-.019	-.085*	.061	.154***	.260***	
7. Burnout	3.34	.47	.103*	.238***	.046	-.040	-.159***	-.577***

Note. $N = 607$. Sex 1 = male, 2 = female. * $p < .05$; ** $p < .01$; *** $p < .001$.

To test the two hypotheses, multiple linear regression analyses with burnout and well-being as dependent variables were conducted. Since age and sex showed partially significant correlations with well-being and burnout, I included them as control variables in the analyses.

For well-being as a dependent variable, the overall regression was statistically significant ($R^2 = .085$, $R^2_{Adjusted} = .077$, $F(5, 582) = 10.763$, $p = <.001$).

It was found that job-related insight significantly predicted well-being ($\beta = .256$, $p = <.001$). Need for self-reflection did not significantly predict well-being ($\beta = .016$, $p = .704$), no more than job-related self-reflection frequency ($\beta = .037$, $p = .444$). Therefore, hypothesis 1 can only partially be confirmed. The results are summarized in table 6.

Table 6.
Summary of Multiple Linear Regression Analysis for Variables Predicting Well-Being

Variable	B	SE B	β
Age	-.006	.005	-.045
Sex	-.098	.041	-.095*
Need for self-reflection	.010	.025	.016
Job-related self-reflection frequency	.031	.040	.037
Job-related insight	.238	.042	.256***

Note. N = 607. Sex 1 = male, 2 = female. *p < .05. **p < .01. *** p < .001.

For burnout as a dependent variable, the overall regression was statistically significant ($R^2 = .093$, $F(5, 583) = 13.104$, $p = <.001$).

It was found that job-related insight significantly predicted burnout ($\beta = -.182$, $p =<.001$). Need for self-reflection did not significantly predict burnout ($\beta=.051$, $p= .225$), no more than job-related self-reflection frequency ($\beta = .000$, $p =.997$). Therefore, hypothesis 2 can only partially be confirmed. The results are summarized in table 7.

Table 7.
Summary of Multiple Linear Regression Analysis for Variables Predicting Burnout

Variable	B	SE B	β
Age	.021	.007	.122**
Sex	.352	.057	.246***
Need for self-reflection	.042	.034	.051
Job-related self-reflection frequency	.000	.055	.000
Job-related insight	-.237	.059	-.182***

Note. N = 607. Sex 1 = male, 2 = female. *p < .05. **p < .01. *** p < .001.

Discussion

The goal of this study was to investigate whether the need for self-reflection, job-related self-reflection frequency and job-related insight were related to well-being and burnout in student teachers.

Overall, reliability values of all scales can be described as acceptable to very good (.61 ≤ α ≥ .85, e.g., Dekovic, Janssens, & Gerris, 1991; Everitt & Skrondal, 2010; Holden, Fekken, & Cotton, 1991). Especially for scales with fewer than 10 items (as used in this study), Cronbach's alpha tends to underestimate the internal consistency of scales (Clark & Watson, 1995). The EFA results produced a one-factor solution for both job-related self-reflection frequency and job-related insight, demonstrating satisfactory construct validity for both constructs.

The correlations between the variables used in this study confirm findings from previous studies. Individuals with a higher need for self-reflection showed higher scores on job-related self-reflection frequency as well as job-related insight. This seems to be very intuitive since behavior is caused or controlled by needs (e.g., Deci & Ryan, 2000). Studies examining the relationship between self-reflection frequency and self-insight have yielded inconsistent results in the past (e.g., Grant et al., 2002; Harrington & Loffredo, 2010; Harrington et al., 2016; Lyke, 2009), which is discussed further below. In this study, there was a positive relationship, indicating that the more often a person engages in self-reflection, the more likely he or she is to come to an insight. Whether or not self-reflection frequency actually promotes insight requires further studies that look more closely at the process that lies between reflection and insight.

Interestingly, age and sex both correlated positively with burnout and sex correlated negatively with well-being, indicating that older as well as female participants in this study showed higher levels of burnout than their younger or male counterparts. Furthermore, sex correlated slightly positively with job-related self-reflection frequency, suggesting that female study participants engage in job-related self-reflection somewhat more often than male participants do.

As for the hypotheses, the main finding of this study was that job-related insight predicts well-being and burnout better than the need for self-reflection or the frequency of job-related self-reflection. This finding is in line with previous research on self-reflection (e.g., Harrington et al., 2016; Lyke, 2009; Nilsson et al., 2022; Stein & Grant, 2014) and shows that gaining insight into the whys of one's career choice, the way one wants to approach students and knowing about one's strengths and weaknesses concerning the teaching profession is an important factor in predicting well-being and burnout.

As Lyke (2009) argues, understanding one's own motives, strengths and weaknesses is an emotional and cognitive experience that is associated with a feeling of well-being, as opposed to mere self-reflection, which does not necessarily lead to

higher levels of job-related insight, as it might have a stronger association with negative rumination (e.g., Lyubomirsky, Tucker, Caldwell, & Berg, 1999). Stein and Grant (2014) found that insight can increase positive core self-evaluations – referring to "a basic, fundamental appraisal of one's worthiness, effectiveness, and capability as a person" (Judge, Erez, Bono, & Thoresen, 2003, p. 304) – which in turn lead to higher levels of well-being. Apart from these findings, research on why self-insight shows a stronger relationship to indicators of well-being than self-reflection is still scarce. Although previous studies provide promising findings on this relationship, more research is needed to address the question of why self-reflection and self-insight show different relationships to well-being.

Nevertheless, the findings of this study show the importance of promoting job-related self-insight in student teachers. In line with Stein and Grant's (2014) findings, job-related insight might be associated with more positive core self-evaluations regarding one's future role as a teacher. This could entail self-esteem, occupational self-efficacy, and an internal locus of control (Stein & Grant, 2014), so that student teachers who experience high levels of insight might feel they can take action themselves, have skills at their fingertips to handle and successfully navigate the adversities they will inevitably face in the teaching profession. They may be more likely to feel comfortable about their future role as a teacher, are at peace with their career choice, know their own professional strengths and development opportunities, are aware of the challenges associated with the teaching profession and have appropriate coping skills for these, or know how to develop them. As Judge (2009) states, individuals with positive core self-evaluations "perform better on their jobs, are more successful in their careers, are more satisfied with their jobs and lives, report lower levels of stress and conflict, cope more effectively with setbacks, and better capitalize on advantages and opportunities" (p. 58). Following this line of argument, job-related insight may be able to serve as a resilience factor, which can be valuable on the path to the teaching profession (Murphy et al., 2020). Knowing about one's own future role as a teacher already during teacher training can have a benefit in preventing long-term losses in performance and health in later working life, potentially preventing psychopathological illness and exhaustion, and contributing to a long-term healthy ability to work (Murphy et al., 2020; Wosnitza et al., 2018).

Conclusion

The results of this study suggest that job-related self-insight, but not job-related self-reflection nor the need for self-reflection, significantly predicts levels of well-being and burnout in student teachers. Job-related insight could serve as a resilience factor in light of the high job demands in the teaching profession. Interventions should aim to improve the job-related insight of student teachers (e.g., Wosnitza et al., 2018).

One limitation of this study is its cross-sectional design, which does not allow

conclusions to be drawn about the direction of effect. It may well be that well-being and feelings of burnout themselves have an effect on job-related insight (e.g., Silvia & Abele, 2002), in a way that individuals with high levels of well-being and low levels of burnout are more likely to gain job-related insight, because they have the mental capacity to engage in self-reflection. Of course, other variables may be responsible for the relationship between insight and aspects of well-being, such as personality traits, crucial life events, or psychopathological factors such as depression. Experimental methods would be needed to test such relationships. For example, an intervention that promotes job-related insight during teacher training could be developed to test the effect on well-being and burnout using a classic randomized controlled trial (RCT) approach (e.g., Bredehöft & Walkenhorst, 2021). As Nilsson et al. (2022) suggest, this might be a way to shed light on the question of what mechanisms lead to self-insight.

Another limitation was the overrepresentation of female participants in this study and the sample was limited to first semester students only. Based on the finding that age and sex showed significant relationships to well-being and burnout, with female students scoring slightly lower on well-being and higher on burnout, as well as older students scoring higher on burnout, future studies should look for a more balanced proportion of male and female study participants and also examine students in higher semesters to map a possible development of job-related insight over the course of their studies. It would also be interesting for future studies to investigate to what extent the results regarding job-related insight can be extended to other professions. For this purpose, it would be necessary to develop an instrument that measures job-related insight independently from the job.

As for practical implications, the results of this study suggest that special support programs to increase reflective competence and enhance job-related insight already make sense during teacher training (e.g., Parpala & Postareff, 2021; Wosnitza et al., 2018). Creating seminar-style student groups that engage in guided reflections on matters related to their professional growth could be a plausible approach. This method would enable students to address the personal challenges of entering the teaching profession during the initial phases of their careers to help them gain job-related insight, which in turn could have positive effects on higher levels well-being and lower levels of burnout. Additionally, it would assist student teachers in pinpointing specific areas that require further development on an individual basis.

References

Aeppli, J., & Lötscher, H. (2016). EDAMA – ein Rahmenmodell für Reflexion. *Beiträge zur Lehrerinnen- und Lehrerbildung, 34*(1), 78-97. https://doi.org/10.25656/01:13921

Agyapong, B., Obuobi-Donkor, G., Burback, L., & Wei, Y. (2022). Stress, burnout, anxiety and depression among teachers: A scoping review. *International Journal of Environmental Research and Public Health, 19*(17), 10706. https://doi.org/10.3390/ijerph191710706

Bakker, A.B. and Oerlemans, W. (2011). Subjective well-being in organizations. In K.S. Cameron & G.M. Spreitzer (Eds.), *The Oxford handbook of positive organizational scholarship* (pp. 178-189). Oxford University Press. Bartlett, M. S. (1954). A note on the multiplying factors for various χ 2 approximations. Journal of the Royal Statistical Society. Series B (Methodological), 296-298.

Bredehöft, F. & Walkenhorst, U. (2021). Die Wirksamkeitsevaluation einer Reflexionsgruppe im Osnabrücker Portfolio-Projekt. In Y. Völschow & K. Kunze (Hrsg.), *Reflexion und Beratung in der Lehrerinnen- und Lehrerbildung: Beiträge zur Professionalisierung in der Aus- und Fortbildung von Lehrkräften: Beiträge zur Professionalisierung von Lehrkräften* (S. 217-234). Opladen: Barbara Budrich.

Chan, D. W. (2003). Hardiness and its role in the stress–burnout relationship among prospective Chinese teachers in Hong Kong. *Teaching and Teacher Education,* 19(4), 381-395. https://doi.org/10.1016/S0742-051X(03)00023-4

Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment, 7*(3), 309-319. https://doi.org/10.1037/1040-3590.7.3.309

Collie, R. J., Shapka, J. D., & Perry, N. E. (2012). School climate and social–emotional learning: Predicting teacher stress, job satisfaction, and teaching efficacy. *Journal of Educational Psychology, 104*(4), 1189-1204. https://doi.org/doi/10.1037/a0029356

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

Dekovic, M., Janssens, J. M. A. M., & Gerris, J. R. M. (1991). Factor structure and construct validity of the Block Child Rearing Practices Report (CRPR). *Psychological Assessment, 3,* 182-187. http://dx.doi.org/10.1037/1040-3590.3.2.182

Dewey, J. (1933). *How We Think: A Restatement of the Relation of Reflective Thinking to the Educative Process.* Boston: D.C. Heath & Co Publishers.

Diener, E. (1984). Subjective well-being. *Psychological Bulletin, 95*(3), 542. https://doi.org/10.1037/0033-2909.95.3.542

Diener, E., Lucas, R. E., & Oishi, S. (2002). Subjective well-being: The science of happiness and life satisfaction. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of Positive Psychology* (pp. 463–73). Oxford University Press.

Diener, E., Sandvik, E., Pavot, W., & Gallagher, D. (1991). Response artifacts in the measurement of subjective well-being. *Social Indicators Research, 24*, 35-56. https://doi.org/10.1007/BF00292649

Diener, E., and Scollon, C. N. (2014). The what, why, when, and how of teaching the science of subjective well-being. *Teaching of Psychology, 41*, 175-183. https://doi.org/10.1177/0098628314530346

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

Everitt, B. S., & Skrondal, A. (2010). *The Cambridge Dictionary of Statistics.* Cambridge University Press

Fabrigar, L. R., Wegener D. T., MacCallum R. C., Strahan E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods, 4*, 272-299. https://doi.org/10.1037/1082-989X.4.3.272

Fabrigar, L. R., & Wegener, D. T. (2012). *Exploratory factor analysis.* New York, NY: Oxford University Press.

Fatima, S. F., & Wolf, S. (2020). Cumulative risk and newly qualified teachers' professional well-being: Evidence from rural Ghana. *Research in Comparative and International Education, 15*(4), 414-436. https://doi.org/10.1177/1745499920926792

Field, A. (2009). *Discovering statistics using SPSS.* London and New York: Sage.

Fives, H., Hamman, D., & Olivarez, A. (2007). Does burnout begin with student-teaching? Analyzing efficacy, burnout, and support during the student-teaching semester. *Teaching and Teacher Education, 23*(6), 916-934. https://doi.org/10.1016/j.tate.2006.03.013

Grant, A. M., Franklin, J., & Langford, P. (2002). The self-reflection and insight scale: A new measure of private self-consciousness. *Social Behavior and Personality: An International Journal, 30*(8), 821-835. https://doi.org/10.2224/sbp.2002.30.8.821

Greif, S. (2008). *Coaching und ergebnisorientierte Selbstreflexion.* Göttingen: Hogrefe.

Grob, U., & Maag Merki, K. (2001). *Überfachliche Kompetenzen. Theoretische Grundlagen und empirische Erprobung eines Indikatorensystems.* Berlin: Peter Lang.Harford, J., & MacRuairc, G. (2008). Engaging student teachers in meaningful reflective practice. *Teaching and Teacher Education, 24*(7), 1884-1892. https://doi.org/10.1016/j.tate.2008.02.010

Harmsen, R., Helms-Lorenz, M., Maulana, R., & van Veen, K. (2018). The relationship between beginning teachers' stress causes, stress responses, teaching behaviour and attrition. *Teachers and Teaching, 24*(6), 626-643. https://doi.org/10.1080/13540602.2018.1465404

Harrington, R., & Loffredo, D. A. (2010). Insight, rumination, and self-reflection as predictors of well-being. *The Journal of Psychology, 145*(1), 39-57. https://doi.org/10.1080/00223980.2010.528072

Harrington, R., Loffredo, D. A., & Perz, C. A. (2016). Dispositional mindfulness facets and self-insight as predictors of subjective well-being: An exploratory analysis. *North American Journal of Psychology, 18*(3), 469-482.

Hatton, N., & Smith, D. (1995). Reflection in teacher education: Towards definition and implementation. *Teaching and Teacher Education, 11*(1), 33-49. https://doi.org/10.1016/0742-051X(94)00012-UHenry, C. (1999). The role of reflection in student teachers' perceptions of their professional development. Art Education,

52(2), 14-20. https://doi.org/10.1080/00043125.1997.11650891

Holden, R. R., Fekken, G. C., & Cotton, D. H. G. (1991). Assessing psychopathology using structured test-item response latencies. *Psychological Assessment, 3,* 111-118. http://dx.doi.org/10.1037/1040-3590.3.1.111

Jerrim, J., & Sims, S. (2021). When is high workload bad for teacher wellbeing? Accounting for the non-linear contribution of specific teaching tasks. *Teaching and Teacher Education, 105,* 103395. https://doi.org/10.1016/j.tate.2021.103395

Judge, T. A. (2009). Core self-evaluations and work success. *Current Directions in Psychological Science, 18(*1), 58-62. https://doi.org/10.1111/j.1467-8721.2009.01606.x

Judge, T. A., Erez, A., Bono, J. E., & Thoresen, C. J. (2003). *The core self-evaluations scale: Development of a measure. Personnel Psychology, 56*(2), 303-331. https://doi.org/10.1111/j.1744-6570.2003.tb00152.xKaiser, H. F. (1974). An index of factorial simplicity. Psychometrika, 39, 31-36.

Kunze, I., & Herieks, U. (2002). Entwicklungsaufgaben von Lehramtsstudierenden, Referendaren und Berufseinsteigern. Ein Beitrag zur Professionalisierungsforschung. *Zeitschrift für Erziehungswissenschaft, 5*(3), 401-416. https://doi.org/10.1007/s11618-002-0058-y

Klassen, R. M., & Chiu, M. M. (2011). The occupational commitment and intention to quit of practicing and pre-service teachers: Influence of self-efficacy, job stress, and teaching context. *Contemporary Educational Psychology, 36*(2), 114-129. https://doi.org/10.1016/j.cedpsych.2011.01.002

Klassen, R., Wilson, E., Siu, A. F., Hannok, W., Wong, M. W., Wongsri, N., ... & Jansem, A. (2013). Preservice teachers' work stress, self-efficacy, and occupational commitment in four countries. *European Journal of Psychology of Education, 28,* 1289-1309. https://doi.org/10.1007/s10212-012-0166-x

Klusmann, U., Kunter, M., Trautwein, U., Lüdtke, O., & Baumert, J. (2008). Teachers' occupational well-being and quality of instruction: the important role of self-regulatory patterns. *Journal of Educational Psychology, 100,* 702-715. https://doi.org/ 10.1037/0022-0663.100.3.702

Korthagen, F. A. J., & Wubbels, T. (1991, April). *Characteristics of Reflective Practitioners: Towards an Operationalization of the Concept of Reflection.* Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, USA.

Kristensen, T. S., Borritza, M., Villadsen, E., & Christensen, K. B. (2005). *The Copenhagen Burnout Inventory: A new tool for the assessment of burnout.* Work & Stress, 19(3), 192-207. https://doi.org/10.1080/02678370500297720

Körkkö, M., Kyrö-Ämmälä, O., & Turunen, T. (2016). Professional development through reflection in teacher education. *Teaching and Teacher Education, 55,* 198-206. https://doi.org/10.1016/j.tate.2016.01.014

Lyke, J. A. (2009). Insight, but not self-reflection, is related to subjective well-being. *Personality and Individual Differences, 46*(1), 66-70. https://doi.org/10.1016/j.paid.2008.09.010

Lyubomirsky, S., Tucker, K. L., Caldwell, N. D., & Berg, K. (1999). Why ruminators

are poor problem solvers: Clues from the phenomenology of dysphoric rumination. *Journal of Personality and Social Psychology, 77*(5), 1041-1060. https://doi.org/10.1037/0022-3514.77.5.1041

Mathew, P., Mathew, P., & Peechattu, P. J. (2017). Reflective practices: A means to teacher development. *Asia Pacific Journal of Contemporary Education and Communication Technology, 3*(1), 126-131.

Matthews, G., & Wells, A. (2004). Rumination, Depression, and Metacognition: The S-REF Model. In C. Papageorgiou, & A. Wells (Eds.), *Depressive Rumination. Nature, Theory and Treatment* (pp. 125-151). West Sussex: John Wiley & Sons. McInerney, D. M., Korpershoek, H., Wang, H., Morin, A. J. S. (2018). Teachers' occupational attributes and their psychological wellbeing, job satisfaction, occupational self-concept and quitting intentions. *Teaching and Teacher Education, 71,* 145-158. https://doi.org/10.1016/j.tate.2017.12.020

Meyer, M., Wing, L., Schenkel, A., Meschede, M. (2021). Krankheitsbedingte Fehlzeiten nach Branchen im Jahr 2020. In: B. Badura, A. Ducki, H. Schröder, & M. Meyer (Hrsg.), *Fehlzeiten-Report 2021* (S. 539-766). Springer. https://doi.org/10.1007/978-3-662-63722-7_28

Mirzaei, A., Carter, S. R., Patanwala, A. E., & Schneider, C. R. (2022). Missing data in surveys: Key concepts, approaches, and applications. *Research in Social and Administrative Pharmacy, 18*(2), 2308-2316. https://doi.org/10.1016/j.sapharm.2021.03.009

Murphy, T. R., Masterson, M., Mannix-McNamara, P., Tally, P., & McLaughlin, E. (2020). The being of a teacher: Teacher pedagogical well-being and teacher self-care. *Teachers and Teaching, 26*(7-8), 588-601. https://doi.org/10.1080/13540602.2021.1913403

Nilsson, A. H., Friedrichs, K., & Kajonius, P. (2022). Know Thyself! Predicting Subjective Well-Being from personality estimation discrepancy and self-insight. Current Psychology, 1-10. https://doi.org/10.1007/s12144-022-03396-1O'Connor, B. P. (2000). SPSS and SAS programs for determining the number of components using parallel analysis and Velicer's MAP test. *Behavior Research Methods, Instruments, & Computers, 32*(3), 396-402. https://doi.org/10.3758/BF03200807

Op den Kamp, E. M., Bakker, A. B., Tims, M., & Demerouti, E. (2018). Proactive vitality management and creative work performance: The role of self-insight and social support. *The Journal of Creative Behavior, 54*(2), 323-336. https://doi.org/10.1002/jocb.368

Papageorgiou, C., & Wells, A. (2003). An Empirical Test of a Clinical Meta-cognitive Model of Rumination and Depression. Cognitive Therapy and Research, 27(3), 261-273. https://doi.org/10.1023/A:1023962332399Parpala, A., & Postareff, L. (2021). Supporting high-quality teaching in higher education through the HowUTeach self-reflection tool. *Ammattikasvatuksen aikakauskirja, 23*(4), 61-67. https://doi.org/10.54329/akakk.113327

Pedro, J. Y. (2005). Reflection in teacher education: exploring pre-service teachers' meanings of reflective practice. *Reflective Practice, 6*(1), 49-66. https://doi.org/10.1080/1462394042000326860

Postholm, M. B. (2008). Teachers developing practice: Reflection as key activity. *Teaching and Teacher Education, 24*(7), 1717-1728. https://doi.org/10.1016/j.tate.2008.02.024Ran, J., Liu, H., Yuan, Y., Yu, X., & Dong, T. (2023). Linking Career Exploration, Self-Reflection, Career Calling, Career Adaptability and Subjective Well-Being: A Self-Regulation Theory Perspective. Psychology Research and Behavior Management, 16, 2805-2817, https://doi.org/10.2147/PRBM.S420666

Ronfeldt, M., Loeb, S., & Wyckoff, J. (2013). How teacher turnover harms student achievement. *American Education Research Journal, 50*(1), 4-36. https://doi.org/10.3102/0002831212463813

Schutz, S. (2013). Assessing and Evaluating Reflection. In C. Bulman & S. Schutz (Eds.), *Reflective Practice in Nursing (5th Ed.)* (pp. 201-224). West Sussex: John Wiley & Sons.

Sellars, M. (2012). Teachers and change: The role of reflective practice. *Procedia-Social and Behavioral Sciences, 55,* 461-469. https://doi.org/10.1016/j.sbspro.2012.09.525

Sellars, M. (2017). *Reflective practice for teachers.* Los Angeles: SAGE.

Selwyn, J., & Grant, A. M. (2019). Self-regulation and solution-focused thinking mediate the relationship between self-insight and subjective well-being within a goal-focused context: An exploratory study. *Cogent Psychology, 6*(1), 1-15. https://doi.org/10.1080/23311908.2019.1695413

Silvia, P. J., & Abele, A. E. (2002). Can positive affect induce self-focused attention? Methodological and measurement issues. *Cognition & Emotion, 16*(6), 845-853. https://doi.org/10.1080/02699930143000671

Skaalvik, E. M., & Skaalvik, S. (2018). Job demands and job resources as predictors of teacher motivation and well-being. *Social Psychology of Education, 21*(5), 1251-1275. https://doi.org/10.1007/s11218-018-9464-8 Slade, M. L., Burnham, T. J., Catalana, S. M., & Waters, T. (2019). The Impact of Reflective Practice on Teacher Candidates' Learning. International Journal for the Scholarship of Teaching and Learning, 13(2), 1-8. https://doi.org/10.20429/ijsotl.2019.130215

Sonnentag, S. (2015). Dynamics of well-being. *Annual Review of Organizational Psychology and Organizational Behavior, 2,* 261-293. https://doi.org/10.1146/annurev-orgpsych-032414-111347

Spilt, J. L., Koomen, H. M., & Thijs, J. T. (2011). Teacher wellbeing: The importance of teacher–student relationships. *Educational Psychology Review*, 23, 457-477. https://doi.org/10.1007/s10648-011-9170-y

Stein, D., & Grant, A. M. (2014). Disentangling the relationships among self-reflection, insight, and subjective well-being: The role of dysfunctional attitudes and core self-evaluations. *The Journal of Psychology, 148*(5), 505-522. https://doi.org/10.1080/00223980.2013.810128Stevens, J. P. (2009). Applied multivariate statistics for the social sciences. New York: Routledge. https://doi.org/10.4324/9780203843130

Velicer, W. F. (1976). Determining the number of components from the matrix of partial correlations. *Psychometrika, 41*(3), 321-327. https://doi.org/10.1007/BF02293557

Wade, R., Yarbrough, C., & Donald, B. (1996). Portfolios: A tool for reflective think-

ing in teacher education? *Teaching & Teacher Education, 12*(1), 63-79. https:// doi.org/10.1016/0742-051X(95)00022-C

WHO (1998). *Wellbeing Measures in Primary Health Care/The Depcare Project.* WHO Regional Office for Europe: Copenhagen.Wosnitza, M., Delzepich, R., Schwarze, J., O'Donnell, M., Faust, V., & Camilleri, V. (2018). Enhancing teacher resilience: From self-reflection to professional development. In M. Wosnitza, F. Peixoto, S. Beltman and C. F. Mansfield (Eds.), Resilience in Education (pp. 275-288). Cham: Springer. https://doi.org/10.1007/978-3-319-76690-4_16

Wyss, C. (2013). *Unterricht und Reflexion: Eine mehrperspektivische Untersuchung der Unterrichts- und Reflexionskompetenz von Lehrkräften.* Münster: Waxmann.

Zeichner, K., & Liston, D. (1987). Teaching student teachers to reflect. *Harvard Educational Review, 57*(1), 23-48. https://doi.org/10.17763/haer.57.1.j18v7162275t1w3w