

THE GOAL: REFLECTIVE PRACTITIONER – THE PATH: BUMPY! WHICH PERSONALITY TRAITS SHOULD BE CONSIDERED AND DISCUSSED?

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Abstract

Referring to Weinert's concept of competence (2003), reflection competence requires cognitive abilities and skills for the analysis of pedagogical practice as well as motivation and volition. In 2017/18, we surveyed 178 student teachers at the University of Bremen. Participants were asked to analyze pedagogical vignettes after self-assessing their reflection competence. Across all dimensions of reflection, a floor effect emerged—contrary to their self-assessments. To identify relevant explanatory variables, a follow-up study conducted in 2018 examined whether reflection competence depends on personality traits and cognitive capabilities. The guiding objective was to explore how cognitive abilities and personality traits, such as dominance and tolerance of ambiguity, influence reflective processes. In the follow-up study, 90 student teachers participated. Standardized instruments were used for empirical data collection: the Personality Research Form (PRF) to assess personality traits such as dominance, the Inventory for Measuring Ambiguity Tolerance (IMA) to assess tolerance of ambiguity in conflict situations, and the Cognitive Ability Test (LPS-2). Selected findings indicate that dominance corresponded to stanine 6.7. In particular, tolerance of ambiguity regarding conflicts was very low ($M = 2.74$, $SD = 1.99$). Across all measured abilities, the average intelligence quotient was $M = 96.5$ ($SD = 15.5$). Furthermore, the surveyed students exhibited a comparatively high degree of dominance while simultaneously displaying low tolerance of ambiguity in conflict situations. The findings raise several questions worthy of further discussion: To what extent is a profile characterized by high dominance combined with low tolerance of ambiguity conducive to effective professional practice in educational settings? To what extent do these findings challenge the assumptions associated with the concept of the reflective practitioner?

Keywords: *Professionalization of student teachers, reflective practitioner, intelligence, personality traits.*

1. Theoretical background

Reflection competence is a central construct in teacher education because teaching is not merely the application of predefined methods, but a professional activity that requires interpretation, judgment, and situated decision-making. Classroom situations are often complex, uncertain, and emotionally charged. Teachers must interpret students' behavior, evaluate their own actions, consider institutional expectations, and respond appropriately under conditions of incomplete information. In this sense, reflection competence can be understood as a key professional capacity that enables teachers to transform experience into learning and to develop pedagogical judgment over time. The concept of competence used in this study draws on Weinert's understanding of competence as a multidimensional construct. Competence does not refer only to declarative knowledge or isolated skills, but to the availability and use of cognitive abilities, motivational orientations, volitional capacities, and social readiness to solve problems responsibly and successfully (Weinert, 2003). Applied to reflection competence, it requires theoretical knowledge, cognitive ability to analyze pedagogical situations, motivation to engage with one's own practice critically, and volitional willingness to remain open to irritation, uncertainty, and possible mistakes. This understanding corresponds to Schön's model of the reflective practitioner. Schön (1983) argues that professional action often takes place in situations marked by uncertainty, uniqueness, and value conflict. Reflection therefore becomes necessary when routine knowledge is insufficient. Reflection-in-action refers to the practitioner's ability to think within the situation itself, while reflection-on-action describes the retrospective analysis of professional experience. Both forms require the ability to distance oneself from immediate interpretations and to examine alternative explanations. In teacher education, this is particularly relevant because pedagogical situations are rarely unambiguous. A student's disruptive behavior, for example, may be

interpreted as a disciplinary problem, a sign of emotional distress, a response to unclear instruction, or an expression of social conflict. Reflection competence requires that student teachers resist premature closure and instead consider multiple possible interpretations. For this reason, ambiguity tolerance is theoretically central to reflection competence. Ambiguity tolerance describes the tendency to perceive ambiguous, novel, complex, or contradictory situations either as manageable and potentially meaningful or as threatening and undesirable (Budner, 1962). A teacher with high ambiguity tolerance is more likely to remain engaged with such complexity, to consider alternative perspectives, and to postpone judgment until sufficient analysis has taken place. By contrast, low ambiguity tolerance may lead to simplification, defensive reactions, or rigid interpretations.

This is especially important in conflict situations. If student teachers show low tolerance of ambiguity in conflicts, they may have difficulty reflecting on their own role in the situation. Instead of asking how their own actions, expectations, or communication patterns may have contributed to the conflict, they may search for clear blame or quick resolution. Such a tendency is problematic because reflective competence requires the ability to endure discomfort and uncertainty long enough to analyze the situation critically.

Since reflective practice involves interpreting uncertain situations, dealing with conflicting perspectives, and questioning one's own assumptions, ambiguity tolerance can be regarded as a personal disposition that either facilitates or inhibits reflection. This assumption is also consistent with broader psychological research suggesting that intolerance of ambiguity is associated with discomfort in uncertain situations and a preference for clear, definite answers (Furnham & Marks, 2013).

Dominance is the second personality trait considered in the study because reflection competence is not only a matter of openness toward ambiguity but also of how individuals position themselves socially and communicatively. Dominance generally refers to assertiveness, social influence, and the tendency to take control in interpersonal situations (Jackson, 1984). In educational settings, dominance is not necessarily negative. Teachers need a certain degree of assertiveness to structure learning environments, maintain classroom order, and make decisions. From this perspective, dominance may support professional agency.

However, dominance may become problematic when it is combined with low ambiguity tolerance. Reflection requires the ability to suspend one's own first interpretation and to consider the possibility that one's judgment may be incomplete or mistaken. A highly dominant individual may be inclined to trust their own interpretation strongly, act decisively, and seek control over uncertain situations. If such dominance is accompanied by low tolerance of ambiguity, the individual may be less willing to engage with alternative perspectives, especially in conflicts. In this case, dominance may reduce reflective openness and increase the likelihood of premature certainty.

The theoretical relevance of dominance therefore lies in its ambivalent function. On the one hand, dominance can support leadership, confidence, and classroom management. On the other hand, it may hinder reflection if it leads to rigidity, defensiveness, or reduced receptivity to feedback. The combination of high dominance and low ambiguity tolerance is therefore particularly significant. Such a profile may produce a strong subjective sense of competence while simultaneously limiting the actual depth of reflection. Individuals with this profile may experience themselves as decisive and capable, but their reflective analyses may remain superficial if they avoid uncertainty or reject conflicting interpretations.

Cognitive abilities must also be considered within this framework. Reflection competence involves analyzing complex information, identifying relevant contextual factors, recognizing contradictions, and deriving justified conclusions. General cognitive ability may therefore support reflective analysis, particularly when pedagogical situations are cognitively complex. However, cognitive ability alone is unlikely to be sufficient. A person may possess adequate analytical capacity but still avoid genuine reflection if they are unwilling to tolerate uncertainty or question their own assumptions. This again supports Weinert's multidimensional concept of competence, according to which competence emerges from the interaction of cognitive, motivational, volitional, and personal dispositions (Weinert, 2003).

2. Methodology

The research design comprised two consecutive studies. The initial study, conducted in 2017/18, involved 178 student teachers. Participants first assessed their own reflection competence and subsequently analyzed pedagogical vignettes.

The results revealed a pronounced floor effect across all dimensions of reflection competence, indicating that participants performed at a low level despite comparatively high self-assessments. This discrepancy prompted a follow-up study in 2018 focusing on the relationship between reflection competence, cognitive abilities, and personality traits.

The second study included 90 student teachers. Standardized instruments were used for data collection. The Personality Research Form (PRF; Jackson, 1984) measured dominance, the Inventory for Measuring Ambiguity Tolerance (IMA; Reusch et al., 2015) assessed ambiguity tolerance, and the Cognitive Ability Test (LPS-2; Kreuzpointer, Lukesch, Horn, 2013) measured cognitive abilities.

Descriptive statistics and correlation analyses were conducted to examine relationships between variables. However, due to the presence of floor and ceiling effects, the variance in some measures was limited, restricting the scope of inferential statistical analysis.

3. Results

The findings of the follow-up study reveal a complex interplay between personality traits and cognitive abilities among student teachers. All analyses were conducted using standard descriptive and inferential statistical procedures in accordance with APA reporting guidelines (American Psychological Association [APA], 2020).

Descriptive Statistics

With regard to cognitive abilities, the average intelligence quotient of the sample was within the normal range, $M = 96.53$, $SD = 15.47$ ($N = 90$). This indicates that, on average, participants performed slightly below the population mean of 100, while the relatively high standard deviation suggests considerable variability in cognitive performance across individuals.

In terms of personality traits, dominance showed above-average levels, with a mean stanine score of $M = 6.74$, indicating elevated assertiveness and social influence within the sample. At the same time, 73% of the participants demonstrated above-average levels of general ambiguity tolerance relative to normative expectations. A more differentiated picture emerged when examining ambiguity tolerance in conflict situations. Here, participants showed markedly low levels, $M = 2.74$, $SD = 2.00$, indicating substantial difficulties in dealing with conflict-related ambiguity. This suggests that while participants may generally tolerate ambiguity, they struggle specifically in situations involving interpersonal or pedagogical conflict. The relatively large standard deviation further indicates heterogeneity in this ability across the sample.

Correlational Analysis

To examine the relationship between cognitive abilities and ambiguity tolerance in conflict situations, a Pearson product-moment correlation analysis was conducted. The results revealed a small but statistically significant positive association between intelligence and ambiguity tolerance in conflict situations, $r(88) = .22$, $p = .039$, the effect size is small (Cohen, 1988).

Subgroup Analysis

In addition to the overall sample, a distinct subgroup emerged characterized by high dominance (stanine scores of 8 to 9) combined with very low ambiguity tolerance in conflict situations. Within this subgroup, the average intelligence quotient was $M = 93$, with approximately half of the participants scoring ≤ 90 , including several individuals with IQ scores below 80.

This pattern suggests that high dominance may co-occur with lower cognitive performance and reduced tolerance for ambiguity in conflict contexts within specific segments of the sample. However, due to the exploratory nature of this subgroup identification, no inferential statistical comparisons were conducted.

Limitations of Statistical Inference

Due to the presence of pronounced floor and ceiling effects in key variables, particularly in measures of reflection competence, it was not possible to compute meaningful correlation analyses between reflection competence and the measured predictors. The restricted variance in these variables significantly limited statistical power and the interpretability of potential associations. Such distributional constraints suggest that the measurement instruments may not have been sufficiently sensitive to capture variability in reflective performance within the sample, or that reflection competence itself may be generally underdeveloped among participants.

Summary of Findings

Overall, the results indicate that participants combine average cognitive ability ($M = 96.53$, $SD = 15.47$) with elevated levels of dominance ($M = 6.74$), while simultaneously exhibiting low levels of ambiguity tolerance in conflict situations ($M = 2.74$, $SD = 2.00$). The small but significant correlation between intelligence and ambiguity tolerance ($r(88) = .22$, $p = .039$) suggests a limited role of cognitive ability in explaining individual differences in ambiguity tolerance.

4. Discussion

The present findings provide nuanced insights into the conditions and limitations of the development of reflection competence among student teachers and raise fundamental questions regarding established theoretical assumptions. In particular, the combination of high dominance and low tolerance of ambiguity in conflict situations emerges as a constellation that warrants critical examination from both a psychological and educational perspective.

First, the observed discrepancy between self-assessed and objectively measured reflection competence should not be interpreted as a random artifact, but rather as a systematic phenomenon linked to specific personality profiles. The data suggest that individuals with higher levels of dominance tend to evaluate their own reflective abilities more positively than is justified by their actual performance in vignette-based assessments. This pattern can be interpreted in light of the Dunning–Kruger effect, which posits that individuals with lower levels of competence in a given domain often lack the metacognitive capacity to accurately assess their own performance (Kruger & Dunning, 1999). High dominance may further amplify this effect, as it is associated with increased self-confidence and a reduced tendency toward self-criticism or external feedback integration (Jackson, 1984).

At the same time, the findings highlight the central role of ambiguity tolerance—particularly in conflict situations—for the quality of reflective processes. Reflection in educational contexts is inherently linked to the ability to cope with uncertainty, complexity, and competing interpretations (Schön, 1983). The markedly low levels of ambiguity tolerance observed in conflict-related contexts suggest that many student teachers experience difficulty engaging with the inherent complexity of pedagogical situations. Instead, they may exhibit a tendency toward premature closure, simplifying complex situations into singular interpretations. This is consistent with psychological research indicating that low ambiguity tolerance is associated with a preference for clear, definite solutions and with cognitive rigidity (Furnham & Marks, 2013).

The combination of high dominance and low ambiguity tolerance appears particularly problematic for reflective practice. While dominance may promote decisiveness and assertiveness, it can simultaneously foster a strong reliance on one's own interpretations. When coupled with low tolerance of ambiguity, this may lead to a cognitive-affective pattern characterized by rapid judgment, limited perspective-taking, and reduced openness to alternative explanations. Such a pattern stands in direct contrast to the requirements of reflective professional practice, which emphasize openness, critical self-examination, and the consideration of multiple perspectives (Hatton & Smith, 1995). Methodologically, the presence of floor and ceiling effects imposes important limitations on the interpretation of the data. The restricted variance in key variables prevented the calculation of meaningful correlations between reflection competence and the measured predictors. This may indicate limitations in the sensitivity of the instruments used or a mismatch between the assessment format and the actual competence level of the participants. The findings may also suggest that reflection competence within the sample is generally underdeveloped, resulting in a clustering of low performance scores.

5. Implications and conclusion

The findings have important implications for both the theoretical understanding of reflection competence and its practical development within teacher education. At a theoretical level, the results challenge simplified conceptions of reflection as a primarily cognitive skill and instead support a multidimensional perspective, as proposed by Weinert (2003). Reflection competence emerges not solely from cognitive abilities but from the interaction of cognitive, motivational, volitional, and personality-related factors. From an educational perspective, the results suggest that current approaches to fostering reflection competence in teacher education may be insufficient. Traditional strategies often emphasize the application of structured reflection models or written reflection tasks. While these approaches are valuable, they may not adequately address underlying personal dispositions that shape how individuals engage in reflective processes. The present findings indicate that even when opportunities for reflection are provided, students may not fully benefit from them if they exhibit low tolerance for ambiguity.

or a strong tendency toward dominance-driven certainty. Therefore, teacher education programs should adopt a more holistic approach to the development of reflection competence. This includes not only the teaching of reflective techniques but also the intentional cultivation of dispositions that support reflective thinking. In particular, fostering ambiguity tolerance should be a central objective. Learning environments should be designed in ways that expose students to complex, uncertain, and conflicting situations and encourage them to remain engaged with these challenges rather than seeking premature closure.

At the same time, the role of dominance should be addressed in a differentiated manner. While assertiveness and decisiveness are important for classroom management and professional agency, they should be balanced with openness to alternative perspectives and critical self-reflection. Furthermore, the findings suggest that metacognitive awareness should be explicitly fostered in teacher education. Helping students to recognize the limits of their own knowledge and to critically evaluate their own thinking processes may reduce the tendency toward overestimation and support more realistic self-assessments. This is particularly relevant in light of the Dunning–Kruger effect (Kruger & Dunning, 1999), which appears to be reflected in the present data.

In conclusion, the study demonstrates that reflection competence among student teachers is often overestimated and constrained by a complex interplay of cognitive abilities and personality traits. The combination of high dominance and low ambiguity tolerance, particularly in conflict situations, represents a significant barrier to deep and differentiated reflection. These findings call into question the implicit assumption that student teachers naturally develop into reflective practitioners and instead emphasize the need for systematic and targeted support. Future research should further investigate how these personality-related factors interact with instructional conditions and how they develop over time. Longitudinal studies and intervention-based designs would be particularly valuable in identifying effective strategies for enhancing reflection competence. Ultimately, a more comprehensive understanding of the cognitive and personal foundations of reflection can contribute to the design of teacher education programs that more effectively prepare future teachers for the complex realities of professional practice.

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