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Meta-resource determinants of teachers' personal and professional development as a system of interrelated structural and functional components: reflexive design and constructive coping

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Abstract

Context and relevance. In an era of rapid change across all spheres of social life, growing scholarly attention has been directed to studies exploring the phenomenon of «resourcefulness» and its manifestations in educational settings. The theoretical foundation of this research is the concept of resource-predictive determination of personal and professional development among educational subjects. Particular attention deserves the issue of resourcefulness in the quality training of teaching staff. Understanding that a system of interrelated resource components is a crucial predictor of professional success and productivity in teaching, and relating this understanding to the contemporary sociocultural context, determines the relevance of this research. **Objective.** This study examines the relationships between reflexive projecting and constructive coping, conceptualized as a system of psychological factors underlying the meta-resource determination of future teachers' personal and professional development. **Hypothesis.** Proactivity, as a component of the constructive coping resource complex, enables teachers to anticipate future challenges, account for uncertainty, and make independent decisions — capacities that are further supported by the reflexive projection resource. **Methods and materials.** The study involved 115 students majoring in Teacher Education and Educational Psychology ($M = 20,8$, $SD = 2,03$). A specifically designed assessment battery was used, comprising tests to evaluate the components of reflexive projection and to measure proactive behavior as part of constructive coping. **Results.** Reflexive projection indicators were positively correlated with constructive proactive behavior and showed no correlation with destructive proactivity. Statistical analysis revealed a significant relationship between the dependent variable (proactivity index) and the predictors (reflexive projection indicators). **Conclusions.** At a conscious procedural level, constructive proactivity and reflexive projection serve as interrelated components of resource complexes that underlie meta-resource determination in future teachers' personal and professional development. When intentionally cultivated, these resources may contribute to improved outcomes in teacher education.

Keywords: meta-resource determination, personal and professional development, reflexive projecting, constructive coping, proactive behavior, student teachers

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Метаресурсная детерминация личностно-профессионального развития педагогов как система взаимосвязанных структурно-функциональных компонентов: рефлексивное проектирование и конструктивное совладание

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Резюме

Контекст и актуальность. В эпоху интенсивного ускорения всех сфер жизни общества повышенное внимание уделяется научным работам, исследующим феномен «ресурсность» и его аспекты в образовательном пространстве. Особого отношения заслуживает проблема ресурсности в качественной подготовке педагогических кадров. Понимание того, что система взаимосвязанных ресурсных компонентов является важнейшим предиктором профессиональной успешности и продуктивности педагогической деятельности, и соотнесение данного понимания с современной социокультурной ситуацией определяют актуальность исследования. Теоретической основой исследования послужила концепция ресурсно-прогностической детерминации личностно-профессионального развития субъектов образования. **Цель.** Определить особенности взаимосвязей показателей ресурсных комплексов «рефлексивное проектирование» и «конструктивное совладание» как системы психологических факторов метаресурсной детерминации личностного и профессионального развития будущих педагогов. **Гипотеза.** Проактивность как компонент ресурсного комплекса «конструктивное совладание» обуславливает способность педагога предвидеть будущее, учитывать его неопределенность и принимать самостоятельные решения, что обеспечивается компонентами рефлексивно-проектировочного ресурса. **Методы и материалы.**

В исследовании приняли участие 115 студентов направлений подготовки «Педагогическое образование» и «Психолого-педагогическое образование» ($M = 20,8$, $SD = 2,03$). Применялась специально разработанная методическая программа, включающая батарею тестов оценки компонентов рефлексивного проектирования и диагностики проактивного поведения как компонента конструктивного совладания. **Результаты.** Показатели рефлексивно-проектировочного ресурса положительно коррелируют с показателями конструктивного проактивного поведения и не коррелируют с деструктивной проактивностью. Анализ статистических данных показал наличие значимой взаимосвязи между зависимой переменной (индексом проактивности) и предикторами (показателями рефлексивно-проектировочного ресурса). **Выводы.** Конструктивная проактивность и рефлексивное проектирование как система взаимосвязанных компонентов ресурсных комплексов на процессуально осознанном уровне обеспечивают метаресурсную детерминацию личностно-профессионального развития будущих педагогов и при целенаправленном формировании могут создать условия повышения эффективности опережающего педагогического образования.

Ключевые слова: метаресурсная детерминация, личностно-профессиональное развитие, рефлексивное проектирование, конструктивное совладание, проактивное поведение, студенты-педагоги

Дополнительные данные. Авторы не имеют возможности сделать доступным набор данных ввиду продолжающегося в настоящее время сбора данных в рамках научной темы государственного задания «Ресурсно-прогностическая детерминация личностного и профессионального развития учащихся и педагогов как субъектов непрерывного образования: психологические основы, технологии, факторы эффективности» (FNRE — 2024 — 0017).

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Introduction

The relevance of studying human psychological resources and the conditions for their formation and realization is driven by constant, ever-increasing changes occurring both in society as a whole and within the modern education system. The reform of education necessitates updating the content and methods of pedagogical activity and poses new professional and personal challenges for teachers, which require internal potentials (reserves, resources, meta-resources). Understanding the nature and mechanisms of forming a teacher's psychological resources allows not only to

optimize the educational process but also, fundamentally, to create conditions for a new practice of psychological training for future teaching professionals, thereby contributing to the development of highly qualified personnel ready to meet contemporary time-related challenges.

Currently, there are numerous approaches to understanding the phenomenon of “resourcefulness”, which creates difficulties not only in describing its “internal side” but also in defining its place within the conceptual field of science. This diversity of approaches generates both a wealth of interpretations and problems with opera-

tionalization, hindering the comparison of results and the construction of an integral theory. Despite the exponential growth in research volume, the scientific understanding of resourcefulness remains conceptually “blurred” and methodologically complex, requiring systematization.

An analysis of Russian and foreign studies on the resource-based approach across various fields of psychology (Mitina, Mitin, Vostokova, 2024) allowed us to identify a unique context associated with the study of psychological potentials:

— Reflexivity (Karpov, 2023; Prokhorov, Chernov, 2025; Semenov, 2023; Tyler, Boldi, Cherubini, 2022) and its role in self-regulation of personal development (Khanina, Zvezdina, Khachatryan, 2024; Kholodnaya, 2022; Li, 2025);

— Self-project and forecasting of one's own future (Zeer, Stepanova, 2023; Kuzmenkova, 2023; Samsonenko, 2020; Fasoli, Poli, 2024; Stingl, Gerdali, 2023);

— Adaptive strategies for overcoming difficulties (Dementy, Malenov, Malenova, 2020; Leontiev, 2025; Odintsova, Lubovskiy, Kuzmina, 2024; Behbahani, Lajoie, 2024; Mammadov, Wang, Lu, 2024) and proactive personality behavior (Mironenko, Sorokin, 2022; Sunko, Grishel, Lykova, 2024; Doğanülkü, Korkmaz, 2023);

— Emotional-value engagement (Pavlova, 2024; Martin et al., 2024; Bakker, Wingerden, 2024) and meaningful involvement in professional activity (Kashapov et al., 2025; Tolochev, 2025; Wang, Hofkens, Fredricks, 2024).

Our critical analysis of major theoretical approaches enabled us to structure the research field, outline methodological gaps, and develop the concept of resource-prognostic determination of teachers' personal and professional development (Mitina, 2024). For the first time, this concept identi-

fies and defines the psychological content of several notions:

— Reserves: accumulated professional competencies, individual style, and refined interaction models that serve as a stabilizing buffer supporting a teacher's professional viability;

— Resources: dynamic processes that act as catalysts, triggering the transformation of the professional system and the formation of its new qualities;

— Meta-resources: actualize and synchronize the work of all components at the highest level of the complex system of psychological resources, reconfiguring the system to achieve qualitatively new, previously unattainable outcomes.

Conceptual substantiation, experimental verification, and technological support for the results of theoretical-empirical research (Mitina, 2024; Mitina, Mitin, Vostokova, 2024) made it possible to present the meta-resource determination of teachers' personal and professional development as a system of interconnected structural-functional components:

— Reflexive projecting enables a teacher to analyze and correlate goals, values, and meanings with the processes and outcomes of their own actions. This lays the foundation for making one's life activity the subject of practical transformation and developmental forecasting (Mitina, Vostokova, 2025);

— Constructive coping is based on integral personality characteristics (orientation, competence, flexibility) and a high level of self-awareness, characterizes the teacher's personal maturity, supports their professional health, and performs a buffer function protecting against negative external influences (Mitina, Shchelina, 2021);

— Engagement-involvement Complex: deep emotional-value engagement of a teacher in their profession is reflected in the

comprehension and modification of their behavior and relationships with students. This internal state, in turn, triggers evoking as a system of actions aimed at actively involving students in learning activities, leading to a growth in their own engagement in the educational process (Mitina, Anisimova, Mitin, 2025).

The psychological content of each resource has been studied in separate investigations, proving the influence of psychological resources on the level of teachers' personal and professional development. It is shown that the main function of resourcefulness is related not to the development of isolated qualities, but to the level of organization of its structural-functional system.

The structuring factor of reflexive projecting is "conscious readiness for transformations". Constructive coping, as a resource, contributes to maintaining professional well-being and serves as a kind of protective barrier, shielding from adverse external influence. Constructive coping strategies include proactive, preventive, and reflexive overcoming of stressful situations (Mitina, Shchelina, 2021). In this context, proactivity acts not so much as a coping mechanism, but as a quality of personality. Both reflexive projecting and proactive behavior are interconnected with the conscious volitional actions of the individual. At the same time, dichotomous interrelations between resource components have not yet been experimentally studied, although they would allow not only to concretely explain the psychological mechanisms of meta-resourcefulness but also to enrich advanced teacher education programs.

The concept of resource-prognostic determination is the most comprehensive theoretical model capable of enriching both global scientific discourse and the informed

selection of diagnostic tools in fundamental and applied research.

Aim of the current study: To determine the specifics of interrelationships among indicators of resource complexes "reflexive projecting" and "constructive coping" (proactive behavior) as a system of psychological mechanisms of meta-resource determination of personal and professional development of future teachers.

Research objectives:

1. To identify the peculiarities of the formation of indicators of reflexive projecting and proactive behavior in students.
2. To analyze the interrelationships of the identified indicators.
3. To compare the levels of formation of reflectively-projective resource indicators and proactive behavior.
4. To determine the main predictors of student proactive behavior.

Materials and methods

Sample

The study analyzed data from 115 students enrolled in "Pedagogical Education" and "Psychological and Pedagogical Education" programs at the Arzamas Branch of Lobachevsky State University of Nizhny Novgorod. The participants' age ranged from 17 to 25 years ($M = 20,8$, $SD = 2,03$).

Procedure

The research was conducted in four stages: at the first stage, diagnostics were performed to assess the formation level of indicators for reflexive projecting and proactive behavior among students; at the second stage, interrelationships between the identified indicators were analyzed; at the third stage, levels of formation for reflectively-projective resource indicators and proactive behavior were compared; at the fourth stage, the main predictors of student proactive behavior were determined.

Statistical data processing was performed using descriptive statistics, correlation analysis, cluster analysis, and multiple regression analysis via IBM SPSS Statistics software (version 23) and Jamovi 2.3.28 with the snowCluster module.

Methods

A specifically developed methodological program for studying the following variables was applied in the research:

— Indicators of reflexive projecting as a resource: A.V. Karpov's Reflexivity Questionnaire; V.V. Stolin and S.R. Pantilev's Self-Attitude Inventory; T. Dembo–S.Ya. Rubinstein's Self-Esteem Assessment; J.B. Rotter's Level of Subjective Control adapted by E.F. Bazhin et al.; Personal Differential (the version

adapted at the V.M. Bekhterev Institute); E.Yu. Mandrikova's Self-Organization of Activity Inventory (SOAI);

— Features of proactive behavior using A.I. Yerzin's comprehensive "Proactive Behavior" methodology.

In accordance with the psychological structural-content model of the reflectively-projective resource, which was previously validated in our works (Mitina, Vostokova, 2025), selected scales from the aforementioned inventories were analyzed. These are the scales that statistically significantly determine its factor structure.

Results

Stage one of the study. The diagnostic results for indicators of reflexive projecting and proactive behavior in students are presented in Table 1.

Table 1
Expressiveness of indicators of reflexive projecting and proactive behavior (N = 115)

Parameters	M (SD)
Reflexive projecting	
The cognitive component	
1. Reflexivity	131,14 (12,24)
2. Self-interest	6,83 (0,98)
3. Self-understanding	3,39 (0,72)
The affective component	
4. Global self-attitude	19,57 (2,46)
5. Self-respect	10,4 (1,28)
6. Autosympathy	9,08 (1,92)
7. Self-acceptance	4,99 (0,77)
8. Self-management	4,72 (0,82)
9. Self-blame	3,84 (0,92)
10. Self-esteem	61,66 (7,4)
11. Level of ambition	75,60 (8,61)
12. Professional self-esteem	53,93 (6,92)
13. Level of professional ambition	73,63 (9,32)
The behavioral component	
Strength	10,17 (3,59)
Activity	10,23 (3,59)
General internality	21,62 (17,3)

Parameters	<i>M (SD)</i>
General self-organization	106,45 (21,92)
Planning	17,83 (4,93)
Purposefulness	28,51 (7,35)
Perseverance	20,66 (5,57)
Fixation	17,19 (4,05)
Self-organization	12,2 (3,03)
Focus on the present	10,05 (2,34)
Proactive behavior	
Proactivity Index	184,53 (27,79)
Mindfulness of actions	26,63 (4,86)
Forecasting of consequences	26,57 (3,66)
Internal locus of control	29,52 (4,36)
Spontaneity	23,64 (4,7)
Autonomy in decision-making	25,68 (5,32)
Metamotivation	28,40 (4,81)
Internal determination of behavior	24,10 (4,13)
Constructive proactivity	23,77 (4,61)
Destructive proactivity	16,60 (3,53)

According to the presented results, medium levels of formation for reflexive projecting components were identified in the majority of students. The communicative component is characterized by developed reflexivity and self-interest at the upper boundary of the average level, alongside pronounced self-understanding. The affective component is characterized by clearly expressed indicators of global self-attitude, self-respect, and self-leadership; less pronounced values of auto-sympathy and self-acceptance; non-expressed self-blame; medium (realistic) levels of formed general self-esteem, professional self-esteem, and levels of professional aspiration; and an optimal level of aspiration. The behavioral component of student reflexive projecting is determined by a medium level of general self-organization, planning, purposefulness, persistence, fixation, and orientation towards the present at the lower boundary of the high level, as well as medium positive values regarding the development of

volitional qualities, extraversion, and manifestations of externality within the domain of ambivalence.

Diagnostics of student proactive behavior revealed mean values for the proactivity index and all its factors. The highest scores were established on the “metamotivation” and “internal locus of control” scales (which confirms the diagnosed ambivalence of internality as an indicator of reflexive projecting). Destructive proactivity values are located at the upper limit of the lower threshold, while constructive proactivity is defined by medium indicators.

Stage two of the study. The interrelation between indicators of reflexive projecting and student proactive behavior was determined using a matrix of intercorrelations via Pearson’s linear correlation coefficient (see Appendix A). As a result of the analysis, statistically significant positive correlations between most indicators of reflexive projecting and proactive behavior were identified at a high level of significance ($p \leq 0,001$), with

the exception of the “destructive proactivity” scale. A negative correlation at a high level of significance ($p \leq 0,001$) was found between proactive behavior indicators and the “self-blame” indicator. Weaker correlations ($p \leq 0,05$) were identified between the “destructive proactivity” factor and such indicators of reflexive projecting as: “reflexivity” ($r = 0,222$), “general self-organization” ($r = 0,192$), “self-organization” ($r = 0,199$), “purposefulness” ($r = 0,188$), and “activity” ($r = 0,190$). Less pronounced correlations ($p \leq 0,05$) were observed between the indicators “forecasting consequences” and “self-acceptance” ($r = 0,223$), “forecasting consequences” and “orientation towards the present” ($r = 0,197$), and “spontaneity” and “orientation towards the present” ($r = 0,192$).

Stage three of the study. The results of cluster analysis performed by the k-means method allowed identifying three groups

of students corresponding to the levels of formation of reflexive projecting and proactive behavior indicators: high levels of reflectively-projective resource were diagnosed in students with high proactivity indicators, and vice versa (the figure presents standardized variables). The difference between the values of the three clusters is statistically significant, which is confirmed by the results of one-way analysis of variance (see Appendix B).

Thus, it was found that in our sample: students with a high (supra-situational) level of reflexive projecting development demonstrate the highest values of proactive behavior ($n = 17$; 14,8%); students with a medium level of reflexive projecting development exhibit multidirectional values of proactive behavior ($n = 72$; 62,6%); students with a low (intra-situational) level of reflexive projecting development show the lowest values of proactive behavior ($n = 26$;

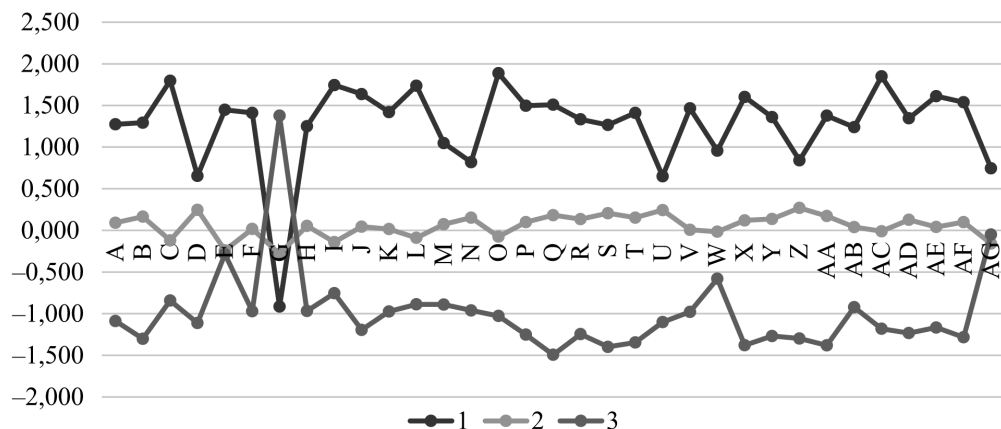


Fig. Plot of means across clusters of indicators of reflexive projecting and proactive behavior: 1 — cluster 1; 2 — cluster 2; 3 — cluster 3; A — global self-attitude; B — self-respect; C — autosympathy; D — self-interest; E — self-acceptance; F — self-management; G — self-blame; H — self-understanding; I — self-esteem; J — level of ambition; K — professional self-esteem; L — level of professional ambition; M — strength; N — activity; O — general internality; P — reflexivity; Q — general self-organization; R — planning; S — purposefulness; T — perseverance; U — fixation; V — self-organization; W — focus on the present; X — proactivity index; Y — mindfulness of actions; Z — forecasting of consequences; AA — internal locus of control; AB — spontaneity; AC — autonomy in decision-making; AD — metamotivation; AE — internal determination of behavior; AF — constructive proactivity; AG — destructive proactivity

22,6%). The smallest differences were identified between Cluster 2 (medium level) and Cluster 3 (low level) on the scales “self-acceptance”, “self-understanding”, and “destructive proactivity”.

Stage fourth of the study. The prediction of the influence of the reflectively-projective resource on student proactivity was studied using multiple regression analysis (step-wise method). Indicators of reflexive projecting served as independent variables, while the proactivity index served as the dependent variable. The obtained regression model is presented in Table 2.

As a result of the analysis, the following indicators emerged as predictors of proactivity: “general self-organization”, “self-respect”, “reflexivity”, and “level of aspiration”.

Thus, the analysis of statistical data demonstrated a significant relationship between the dependent variable (proactivity index) and the predictors (indicators of the reflectively-projective resource).

Discussion

Quantitative and qualitative analysis of the research results has proven the interrelation between proactivity and reflexive projecting as components of meta-resource determination, which confirms the hypothesis put forward in this work.

According to the obtained results, only a small portion of students (Group 1, $n = 17$; 14,8%) are capable of consciously

modeling, forecasting, and implementing an individual trajectory of professional development. They exhibit greater initiative, are able to critically evaluate their actions, choose behavioral strategies based on their own attitudes, views, beliefs, and values, guided by socially determined needs without relying on circumstances, and consciously select those behavior models that contribute to establishing permanent interpersonal interactions while stimulating creativity and intellectual development.

At the same time, a detailed analysis of the relationships between proactivity factors and indicators of reflexive projecting revealed that most students (Group 2, $n = 72$, 62,6%; Group 3, $n = 26$, 22,6%) demonstrate certain tendencies toward manipulative actions in the communication process as manifestations of destructive proactivity. This form of proactivity is, in turn, weakly correlated with the respondents' moderately developed abilities for analysis, planning, self-organization, activity management, and concentration on goals. It should be noted that students from these groups are similar in terms of formed self-acceptance; however, Group 3 demonstrates even less developed abilities for self-organization and anticipation, along with a predominantly external locus of control.

Multiple regression analysis proved that student proactivity depends on their capacity for reflection (the cognitive com-

Table 2

Regression model of the influence of reflexive projecting indicators on the proactive behavior of students (N = 115)

Dependent variable	R ²	Durbin-Watson	Predictors	β	p-level
Proactivity Index	0,803	1,904	General self-organization	0,409	0,000
			Self-respect	0,218	0,002
			Reflexivity	0,200	0,008
			Level of ambition	0,162	0,020

ponent of reflexive projecting), self-respect, and realistic aspiration levels (the affective component of reflexive projecting), as well as the level of self-organization development (the behavioral component of reflexive projecting). In other words, it depends on the ability to effectively and adequately manage one's potentials within a temporal context. This conclusion proves the direct interrelation and mutual influence of reflectively-projective resource components and constructive coping in the personal and professional development of future specialists. A proactive way of overcoming difficulties presupposes the ability to foresee the future, take into account its uncertainty and the diversity of possible scenarios for life events, which is ensured by the personality's reflexive and prognostic abilities.

Thus, at the procedurally conscious level, proactivity and reflexive projecting as resources ensure the teacher's self-determination in the process of their personal and professional development.

Conclusions

The results of the conducted research allowed us to draw the following main conclusions:

It is substantiated that meta-resource determination of future teachers' personal and professional development is ensured by a high level of organization and coherence within the structural-functional system of interconnected components: reflexive projecting and constructive proactivity.

A positive statistically significant correlation was revealed between indicators of reflexive projecting and constructive proactivity, alongside an absence of correlations (below the significance threshold) with destructive proactivity. This testifies to the interdependence of resource complexes.

It is shown that the predictors of constructive proactivity are indicators of re-

flexive projecting (general self-organization, self-respect, reflexivity, and level of aspiration).

It has been established that students with a high level of reflexive projecting demonstrate the highest indicators of proactive behavior ($n = 17$, 14,8%). Students with medium and low levels of reflexive projecting are characterized by multidirectional and low proactivity indicators.

The content of constructive and destructive prosocial behavior in relation to reflectively-projective characteristics has been specified. The identified differences determine the theoretical and technological substantiation for programs and methods aimed at forming and correcting reflexive projecting and constructive coping as resources for personal and professional teacher development.

Prospects for further research, considering the obtained data, are associated with creating a complex of psychological-pedagogical conditions (intrapsychological, inter-intrapsychological, and interpersonal) for actualizing developmental resources, and implementing convergent programs aimed at the purposeful and systematic formation of a complex integrative quality that determines the meta-resource conditioning of future teachers' personal and professional formation.

The research results make a significant contribution to psychological theory and educational practice; they allow expanding scientific understanding of the concept "meta-resource determination of personal and professional development," detailing and supplementing the psychological content and technological support for the professional training of student-teachers under the conditions of renewed education.

Limitations. Future research should consider expanding the sample size.

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Appendix

Appendix A. The matrix of intercorrelations of reflexive projecting and proactive behavior.

Appendix B. Cluster analysis results of reflexive projecting and proactive behavior.

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Вклад авторов

Митина Л.М. — идея исследования; определение его теоретико-методологических основ; обобщение и научное редактирование материалов исследования.

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