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PEDAGOGICAL DECISION-MAKING BASED ON THE ASSESSMENT OF STUDENTS' PERSONAL DEVELOPMENT AND PSYCHOLOGICAL WELL-BEING

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Abstract. This article examines pedagogical decision-making based on the assessment of students' personal development and psychological well-being in upper-secondary school education. The study was designed as a theoretical and methodological analysis supported by pilot empirical data from four public schools in Semey, Kazakhstan. The empirical base included 111 students from Grades 10 and 11. The study aimed to develop a structured framework that links diagnostic information on students' psychological, social, and personal development with targeted pedagogical responses. The proposed model connects diagnostic and monitoring data with pedagogical actions through five stages: data collection, data analysis, interpretation of risk areas, selection of pedagogical decisions, and repeated monitoring. The model incorporates indicators of psychological safety, psychological well-being, learning motivation, self-esteem, social adaptation, learning engagement, stress level, and relationships with teachers and peers. A decision-making matrix demonstrates how assessment results can be translated into individual and group support measures. The framework also emphasizes the integration of multiple indicators rather than the isolated interpretation of individual assessment results, thereby supporting more balanced pedagogical judgments. Repeated monitoring further enables educators to evaluate changes in students' condition and adjust support strategies when necessary. The proposed

framework shifts assessment from a descriptive function toward systematic, evidence-informed support and facilitates earlier identification of students requiring additional assistance. Its practical significance lies in its applicability for teachers, class teachers, school psychologists, and school administrators in planning differentiated support and strengthening the psychological safety of the school environment.

Keywords: pedagogical decision-making; personal development; psychological well-being; psychological safety; upper-secondary students; diagnostic assessment; data-based decision-making

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ОҚУШЫЛАРДЫҢ ТҰЛҒАЛЫҚ ДАМУЫ МЕН ПСИХОЛОГИЯЛЫҚ ӘЛ-АУҚАТЫН БАҒАЛАУ НЕГІЗІНДЕ ПЕДАГОГИКАЛЫҚ ШЕШІМ ҚАБЫЛДАУ

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Аннотация. Бұл мақалада жоғары сынып оқушыларының тұлғалық дамуы мен психологиялық әл-ауқатын бағалау негізінде педагогикалық шешім қабылдау мәселесі қарастырылады. Зерттеу Қазақстанның Семей қаласындағы төрт мемлекеттік мектептен алынған пилоттық эмпирикалық деректермен негізделген теориялық-әдіснамалық талдау ретінде жүргізілді. Эмпирикалық базаны 10-11 сыныптарда білім алатын 111 оқушы

құрады. Зерттеудің мақсаты оқушылардың психологиялық, әлеуметтік және тұлғалық дамуы туралы диагностикалық ақпаратты мақсатты педагогикалық әрекеттермен байланыстыратын құрылымдалған негіздеме әзірлеу болды. Ұсынылған модель диагностикалық және мониторингтік деректерді педагогикалық әрекеттермен бес кезең арқылы байланыстырады: деректерді жинау, деректерді талдау, тәуекел аймақтарын интерпретациялау, педагогикалық шешімдерді таңдау және қайталама мониторинг жүргізу. Модель психологиялық қауіпсіздік, психологиялық әл-ауқат, оқу мотивациясы, өзін-өзі бағалау, әлеуметтік бейімделу, оқу үдерісіне қатысу, стресс деңгейі, сондай-ақ мұғалімдермен және құрдастарымен қарым-қатынас көрсеткіштерін қамтиды. Шешім қабылдау матрицасы бағалау нәтижелерін жеке және топтық қолдау шараларына қалай трансформациялауға болатынын көрсетеді. Ұсынылған негіздемеде жекелеген бағалау нәтижелерін оқшау түрде түсіндіруден гөрі бірнеше көрсеткішті кешенді біріктіруге басымдық беріледі, бұл педагогикалық пайымдаулардың неғұрлым теңгерімді әрі негізделген болуына мүмкіндік береді. Қайталама мониторинг педагогтерге оқушылар жағдайындағы өзгерістерді бағалауға және қажет болған жағдайда қолдау стратегияларын түзетуге мүмкіндік береді. Ұсынылған негіздеме бағалаудың сипаттамалық функциясынан жүйелі, дәлелді деректерге негізделген қолдау тетігіне көшуге ықпал етіп, қосымша көмекке мұқтаж оқушыларды ерте анықтау мүмкіндігін арттырады. Зерттеудің практикалық маңыздылығы оның мұғалімдер, сынып жетекшілері, мектеп психологтары және мектеп әкімшілігі тарапынан сараланған қолдауды жоспарлау және мектеп ортасының психологиялық қауіпсіздігін нығайту мақсатында қолданылу мүмкіндігімен айқындалады.

Түйін сөздер: педагогикалық шешім қабылдау; тұлғалық даму; психологиялық әл-ауқат; психологиялық қауіпсіздік; жоғары сынып оқушылары; диагностикалық бағалау; деректерге негізделген шешім қабылдау

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ПРИНЯТИЕ ПЕДАГОГИЧЕСКИХ РЕШЕНИЙ НА ОСНОВЕ ОЦЕНКИ ЛИЧНОСТНОГО РАЗВИТИЯ И ПСИХОЛОГИЧЕСКОГО БЛАГОПОЛУЧИЯ УЧАЩИХСЯ

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Аннотация. В статье рассматривается проблема принятия педагогических решений на основе оценки личностного развития и психологического благополучия учащихся старших классов. Исследование выполнено в формате теоретико-методологического анализа, дополненного пилотными эмпирическими данными, полученными в четырёх государственных школах города Семей, Казахстан. Эмпирическую базу составили данные 111 учащихся 10–11-х классов. Цель исследования заключалась в разработке структурированной основы, связывающей диагностическую информацию о психологическом, социальном и личностном развитии учащихся с целенаправленными педагогическими мерами. Предложенная модель интегрирует диагностические и мониторинговые данные с педагогическими действиями через пять последовательных этапов: сбор данных, анализ данных, интерпретацию зон риска, выбор педагогических решений и повторный мониторинг. Модель включает показатели психологической безопасности, психологического благополучия, учебной мотивации, самооценки, социальной адаптации, учебной вовлечённости, уровня стресса, а также взаимоотношений с учителями и сверстниками. Матрица принятия решений демонстрирует, каким образом результаты оценки могут быть трансформированы в меры индивидуальной и групповой поддержки. Предлагаемая основа акцентирует внимание на необходимости комплексной интеграции нескольких показателей вместо изолированной интерпретации отдельных результатов оценки, что способствует принятию более сбалансированных и обоснованных педагогических решений. Повторный мониторинг позволяет педагогам оценивать динамику состояния учащихся и при необходимости корректировать стратегии поддержки. Предложенная основа способствует переходу от преимущественно описательной функции оценивания к системной, доказательно обоснованной поддержке и позволяет раньше выявлять учащихся, нуждающихся в дополнительной помощи. Практическая значимость исследования заключается в возможности применения данной основы учителями, классными руководителями, школьными психологами и администрацией школ для планирования дифференцированной поддержки и укрепления психологической безопасности образовательной среды.

Ключевые слова: педагогическое принятие решений; личностное развитие; психологическое благополучие; психологическая безопасность; учащиеся старших классов; диагностическая оценка; принятие решений на основе данных

Introduction. In contemporary school education, the quality of learning cannot be evaluated only through students' academic achievement. Increasing attention is

now given to students' personal development, psychological well-being, emotional safety, social adaptation, and engagement in classroom activities. Recent studies show that a psychologically safe school environment is associated with students' and teachers' well-being, active participation, and more supportive classroom interaction (Fleming et al., 2024).

However, schools often base pedagogical decisions on teachers' general observations, professional experience, or academic performance indicators alone. Such an approach may not be sufficient for identifying students' emotional, social, and personal difficulties at an early stage. Therefore, schools need diagnostic and monitoring data that reflect students' personal development and psychological well-being. Data-based decision-making helps teachers and school leaders interpret students' needs more accurately and choose appropriate pedagogical support measures (Visscher, 2021).

This is an acute issue among upper-secondary students who often feel academic pressure, exam pressure, and fear of public judgement. A pilot Kazakhstani study found that psychological safety in the classroom was positively correlated with classroom well-being among Grade 10-11 students, affirming the need to use well-being-related data in school-level pedagogical decision-making (Serikbayeva et al., 2026). Assessment results should not remain merely descriptive indicators; they should become tools for support-centred planning for individuals and groups.

However, there is still a need for a practical model that links assessment results on students' personal development and psychological well-being with concrete pedagogical actions. The aim of this article is to justify a model of pedagogical decision-making based on the assessment results of students' personal development and psychological well-being.

Literature Review. The literature related to students' personal development, psychological well-being, and pedagogical decision-making can be grouped into three main theoretical lines. The first line concerns students' personal development as an important educational outcome. Personal development in school education includes not only academic progress but also self-regulation, motivation, reflection, responsibility, communication skills, and social-emotional competencies. School-based social and emotional learning interventions have been shown to support students' positive development, attitudes, behavior, and long-term educational outcomes (Taylor et al., 2017). Self-regulated learning is also important because it explains how students set goals, monitor their progress, control their behavior, and reflect on learning outcomes (Panadero, 2017). In addition, transformative social and emotional learning connects personal development with identity, belonging, agency, and participation in the school community (Jagers et al., 2019). Recent reviews confirm that universal school-based social and emotional learning programs can contribute to students' social skills, attitudes, academic achievement, and emotional adjustment (Durlak et al., 2022).

The second theoretical line relates to psychological well-being and the school

environment. Evidence suggests a relationship between positive school climate and students' academic, behavioural, emotional, and social outcomes (Wang & Degol, 2016). In the context of psychological well-being, emotional safety, school life satisfaction, perceived support, stress reduction, and good relationships with teachers and peers constitute important indicators. Cross-cultural evidence from OECD countries shows that schools can indeed cultivate students' subjective well-being through the quality of the learning environment, student support, and school climate at the school level (Govorova et al., 2020). Evidence linking school climate to decreased academic burnout through psychological capital suggests the importance of supportive classroom and school environments as sources of emotional stability for students (Tang, 2024).

The third theoretical line relates to data-based pedagogical decision-making. In many school settings, it still happens that assessment results are used mainly for reporting academic performance. This is even more evident in upper-secondary school practice, where competing demands of academic pressure, emotional well-being needs, and personal development inevitably come into some kind of conflict. Mandinach and Schildkamp (2021) argue that data-based decision-making requires not only collecting data or other routine 'drudgery', but also making sense of it, interpreting it correctly, and relating it to educational action. Likewise, Hoogland et al. (2016) demonstrate the role of prerequisite factors in successful data-based decision-making at the classroom level for effective design, including 'valid data', teacher data literacy, collaboration, and 'the ability to translate the evidence into pedagogical steps'.

The relationship between personal development, psychological well-being, and data-based decision-making gathered from the body of literature surveyed above is clear, but these fields of research have not yet fully come together. Research on personal development is evident in the literature studying self-regulation and separately engaged social-emotional skills. Psychological well-being literature relates to evidence-based work on measuring safety, stress, school climate, emotional comfort, to name a few. Data-based decision-making investigations, while successful, often focus on advantages for either school improvement or academically objective achievement. In this publication, however, we point to a reference model that links assessment results on students' personal development and psychological well-being with educational settings and concrete pedagogical steps. Subject teachers, class teachers or homeroom teachers, school psychologists, and school administrators can learn to transform diagnostic and monitoring data into individualized and group-directed support that is appropriate.

Materials and methods. As mentioned above, this study is basically a theoretical and methodological investigation supported by some empirical basis. The empirical basis was taken from a pilot study in four public schools in Semey, Kazakhstan. Students from Grades 10 and 11 were selected in a purposive way because upper-secondary students usually experience stronger exam pressure,

stronger examination-related stress, and stronger socio-emotional strain. The basic purpose of the empirical data was to connect our proposed model of pedagogical decision-making with an actual school context and avoid limiting the article to a purely theoretical discourse. In this article, the pilot empirical data were used mainly to frame and validate our proposed pedagogical decision-making model. We do not aim to test the statistical effectiveness of a completed intervention and, instead, use our empirical basis to help us frame what we think will be the main areas that must be considered in transforming assessment results into pedagogical decision-making: psychological safety, well-being, motivation, engagement and learning, stress, self-esteem, social adaptation, and relationships with teachers and peers.

The thematic areas of our research methods included theoretical analysis of the literature, analysis of diagnostic and monitoring data, student questionnaires, pedagogical observation, teacher interviews, systematization of indicators, and modelling of pedagogical decisions. Theoretical analysis was used to frame the most important concepts related to development, psychological well-being, and data-based decision-making within the existing literature. Diagnostic and monitoring data (School Diagnostic Report forms) were used to describe the condition of students and help us determine what kinds of pedagogical supplemental support actions they may need. The student questionnaire supplied general information about their perceptions related to psychological safety and classroom well-being, while the teacher interviews and pedagogical observation helped us discuss students' responses in terms of classroom interaction, peer communication, and assessment actions and procedures. Our piloted questionnaire comprises several diagnostic areas: psychological safety, classroom well-being, learning motivation, learning engagement, stress level, self-esteem, social adaptation, relationships, teacher relationships, and peer relationships. Our questionnaire data were mainly interpreted at the descriptive level, and we also tried to discuss the data from the pedagogical observation and teacher interviews so that we would be less prone to one-sided interpretations of students' responses based on the questionnaire per se. Table 1 presents the empirical basis of our study.

Table 1 — Empirical base of the study

School	Grade 10	Grade 11	Total number of students
Multidisciplinary Gymnasium №5	14	15	29
Secondary School №42	12	13	25
Secondary School №40	15	17	32
Secondary School №44	12	13	25
Total	53	58	111

The sample allows the study to consider the characteristics of students' personal development and psychological well-being in urban public schools. Special attention was given to Grades 10 and 11 because this stage of schooling

is associated with increased academic demands, preparation for final assessment, and a higher probability of emotional and social risks. Therefore, the selected empirical base is appropriate for examining how diagnostic and monitoring results can be transformed into pedagogical decisions.

Results. The main result of the study is the development of a pedagogical decision-making model based on the assessment results of students' personal development and psychological well-being. The model is designed to help teachers, class teachers, school psychologists, and school administrators move from diagnostic and monitoring data to specific forms of pedagogical support.

The proposed model is based on several assessment indicators: psychological safety, psychological well-being, learning motivation, self-esteem, social adaptation, learning engagement, stress level, and relationships with teachers and peers. These indicators make it possible to identify not only students' academic difficulties but also their emotional, social, and personal needs. Therefore, the assessment results are interpreted as a basis for selecting appropriate pedagogical actions.

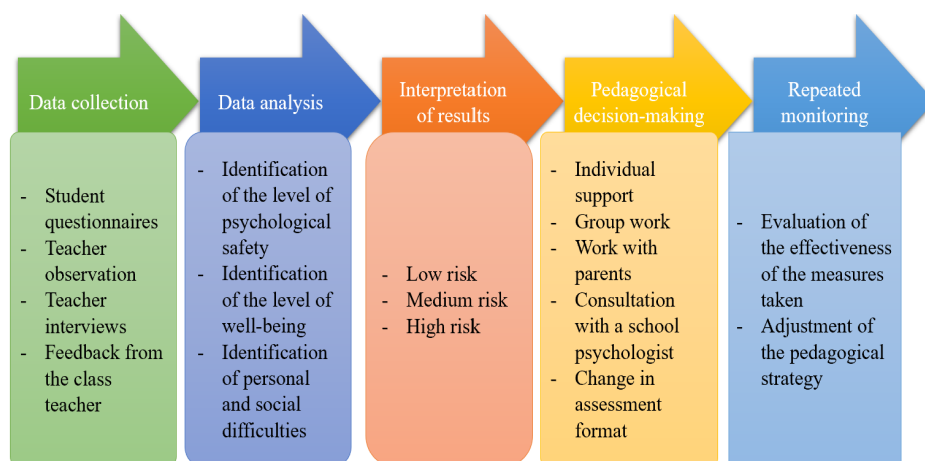


Figure 1— Model of pedagogical decision-making based on assessment results.

The model moves from the assessment of students' condition to strategies for the selection of concrete pedagogical actions. Its logic stems from the idea that diagnostic data ought not to be merely descriptive statistics; the collected data ought to be used to select forms of support, enhance school-classroom interaction, inform and adapt strategies to facilitate teaching and learning, and strengthen the psychological safety of the school environment.

At the first stage, data are collected through questionnaires, observation, interviews, and feedback from class teachers. At the second stage, the data are analyzed to identify students' strengths, difficulties, and possible risk areas. At the third stage, the results are interpreted according to the level of pedagogical risk.

At the fourth stage, teachers and school specialists select the most appropriate pedagogical response. At the fifth stage, repeated monitoring is conducted to evaluate whether the selected measures have improved students' personal development and psychological well-being.

Table 2 — Matrix linking assessment results with pedagogical decisions

Assessment result	Possible reason	Pedagogical decision	Expected result
Low level of psychological safety	Fear of mistakes, public evaluation, fear of ridicule	Use of supportive feedback, rejection of humiliating public comparison, normalization of mistakes as part of learning	Increased confidence and readiness to answer during lessons
Low psychological well-being	Stress, overload, lack of support	Individual conversation, consultation with a school psychologist, reduction of emotional pressure	Improvement of the student's emotional condition
Low learning motivation	Lack of interest, difficulties with learning material	Individual tasks, practice-oriented assignments, setting achievable goals	Increased interest in learning
Weak social adaptation	Isolation, communication difficulties, conflict situations	Pair and group work, class activities, development of a culture of mutual respect	Improved interaction with peers
Low learning engagement	Passivity, fear of answering, lack of feedback	Active learning methods, low-pressure questioning, encouragement of participation	Increased classroom activity
Low self-esteem	Fear of failure, repeated negative feedback, lack of successful learning experience	Reflective tasks, individual feedback, creation of success situations	Increased confidence and willingness to participate in learning activities
Weak self-regulation	Difficulties in planning, low responsibility, lack of learning strategies	Goal-setting tasks, learning diaries, step-by-step guidance	Improved responsibility and independent learning behavior
High stress level	Examination pressure, overload, fear of failure, time pressure	Flexible questioning strategies, supportive feedback, stress-reduction activities, consultation with a school psychologist	Reduced emotional tension and improved readiness for learning
Difficult relationships with teachers or peers	Lack of trust, conflict situations, negative communication experience	Restorative dialogue, class-level communication rules, teacher-student feedback sessions, group activities	Improved trust, communication, and classroom climate

The matrix specifies how different assessment results can be transformed into pedagogical decisions. For example, a low level of psychological safety may require changes in feedback and assessment practices, while low learning motivation may require individual tasks and more practice-oriented learning

activities. In this way, the model provides a practical mechanism for connecting assessment, interpretation, decision-making, and repeated monitoring.

This model may be applied at the individual level for identifying students who need support, personal contact, psychological consultation, and reassignment of specific learning tasks. It may also be used at the group level as a guide to improving classroom climate and the organisation of group activities, as well as a basis for preventive measures planned to reduce stress and increase engagement.

Discussion. The model we propose has practical implications for school education because it translates assessment of students' personal development and psychological well-being into specific types of pedagogical usage and action. Assessment results should not only serve to describe a given student's current condition. The conclusions received should be followed up by individual support measures, group work, improved interaction in class, and improved psychological safety.

Psychological safety is important because it influences students' willingness to engage in classroom discussions, raise their voice, and risk being wrong, laughed at, or judged. Perceived school climate is closely related to adolescents' mental health and well-being, and the emotional and social characteristics of school can, indeed, affect learning behaviour (Aldridge & McChesney, 2018). In that sense, educators should not simply neglect assessment results associated with low scores in psychological safety. Should the model reveal a low level of psychological safety, it is not enough for educators to regard this as a psychological problem only. It is rather a pedagogical problem that may come with a message of change for feedback, communication, assessment format, and the actual type of interaction taking place in the classroom.

Second, greater focus must also be placed on upper-secondary students, for this age and stage of education involve greater independence from home, stronger academic pressure, and intense examination-related stress. Test anxiety can affect emotional state, academic functioning, and psychological adjustment (von der Embse et al., 2018). To interpret assessment results in Grades 10-11 thus requires special attention to the learning context that leads up to final assessments, public assessments, workload, and time constraints. If pupils indicate higher stress or reduced well-being, the pedagogical decision may be to meet them individually, vary the style of questioning, provide encouraging comments, or work with the school psychologist.

Third, the use of questionnaire results, notes from classroom observation, and other feedback may be folded into regular practices. For example, if low motivation is indicated by several students, then practice-like tasks, clearer short-term goals, matching tasks, and formative feedback may be used. If weak social adaptation is indicated, more pair work, group projects, or mutual respect activities may be introduced. Thus, the final diagnostic and monitoring results should be translatable into pedagogical action and not left merely as isolated qualifying indicators.

Fourth, the model may be useful for school administration, which may use aggregate school data in planning educational work and psychological support for students, as defined by the teachers in the model. It may also support the planning of teachers' professional development and the preventive use of data at the school level. This, of course, is contingent on the data literacy of teachers and leaders. Data literacy generally includes the knowledge and skills needed for the responsible use of educational data for instructional and organizational decisions. Mandinach and Gummer (2016) define data literacy as follows: "Data literacy is attainment of the ability to responsibly access and use data for the purposes of creating and implementing instruction, training, development, and management within organizational initiatives" (p. 367). It is directly connected with classroom practice through the materials and guidance that good teachers want and require, and through the translation of assessment results. Without this, assessment results may be reported without careful interpretation and without clear teacher guidelines.

At the same time, the model has a number of limitations. First, it requires continuous monitoring, because an assessment made of a student only once may not fully show how their personal development state and psychological well-being change comparatively in the blue, green, and red three-dimensional space. Teachers therefore need further methodological preparation to make use of and value diagnostic information. The model is also dependent, to a certain extent, on the quality of the assessment instruments, questionnaires, observation forms, interviews, and, above all, the materials used for interpretation and for relating results to pedagogical action. Prescribing the same pedagogical actions in all classes and schools, and always in the same way, would be unwise. The same assessment result may have different causes in different settings; for example, one student may be told to be quieter and more controlled in one class, while the same behaviour may have a different meaning in another setting.

In the final analysis, the model permits a more positive and systematic focus on parents, students, and teachers by targeting repeated signs and patterns that are symptomatic and pedagogically meaningful. In this way, the model supports the regular interpretation of developmental constructs and their translation into concrete educational actions.

Conclusions. Assessment of students' personal development and psychological well-being is one of the important conditions for making sound pedagogical decisions in modern school education. The article showed that diagnostic and monitoring data must not be restricted to describing students' present condition. These data should be transformed into practical guidelines for making sound pedagogical decisions, planning individualized and group support, as well as improving the educational environment.

The suggested model enables the teacher or school specialist to progress from vague impressions to more systematic and evidence-informed support through a chain of data collection from students' classes, data analysis, interpretation of

results, pedagogical decision-making, and monitoring. It suggests that students' psychological safety, psychological well-being, motivation, self-esteem, capacity for social adaptation, learning engagement, stress level, and relationships with teachers and peers should all be taken together and considered in relation to one another when deciding on measures.

The practical value of the article lies in the fact that the suggested tables, model, and decision-making matrix may be applied by teachers and class teachers, school psychologists, and school administrators in defining students' individual and group needs, choosing suitable forms of support, adjusting pedagogical and assessment practices, and improving the psychological safety of the school. In terms of future research, the suggested model should be tested in public schools and supplemented by empirical materials on changes in students' personal development and psychological well-being as a result of the implementation of appropriate pedagogical decisions. Further studies may compare the effectiveness of such support measures across grades, school types, and classroom-specific conditions.

References

Aldridge J.M., McChesney K. (2018) The relationships between school climate and adolescent mental health and wellbeing: A systematic literature review. *International Journal of Educational Research*. — No. 88. — P. 121-145. DOI: 10.1016/j.ijer.2018.01.012. (in Eng.).

Durlak J.A., Mahoney J.L., Boyle A.E. (2022) What we know, and what we need to find out about universal, school-based social and emotional learning programs for children and adolescents: A review of meta-analyses and directions for future research. *Psychological Bulletin*. — No. 148(11-12). — P. 765-782. DOI: 10.1037/bul0000383. (in Eng.).

Fleming C.M., Calvert H.G., Turner L. (2024) Psychological safety among K-12 educators: Patterns over time, and associations with staff well-being and organizational context. *Psychology in the Schools*. — No. 61(6). — P. 2315-2337. DOI: 10.1002/pits.23165. (in Eng.).

Govorova E., Benítez I., Muñiz J. (2020) How schools affect student well-being: A cross-cultural approach in 35 OECD countries. *Frontiers in Psychology*. — No. 11. — P. 431. DOI: 10.3389/fpsyg.2020.00431. (in Eng.).

Hoogland I., Schildkamp K., van der Kleij F.M., Heitink M.C., Kippers W.B., Veldkamp B.P., Dijkstra A.M. (2016) Prerequisites for data-based decision making in the classroom: Research evidence and practical illustrations. *Teaching and Teacher Education*. — No. 60. — P. 377-386. DOI: 10.1016/j.tate.2016.07.012. (in Eng.).

Jagers R.J., Rivas-Drake D., Williams B. (2019) Transformative social and emotional learning (SEL): Toward SEL in service of educational equity and excellence. *Educational Psychologist*. — No. 54(3). — P. 162-184. DOI: 10.1080/00461520.2019.1623032. (in Eng.).

Mandinach E.B., Gummer E.S. (2016) What does it mean for teachers to be data literate: Laying out the skills, knowledge, and dispositions. *Teaching and Teacher Education*. — No. 60. — P. 366-376. DOI: 10.1016/j.tate.2016.07.011. (in Eng.).

Mandinach E.B., Schildkamp K. (2021) Misconceptions about data-based decision making in education: An exploration of the literature. *Studies in Educational Evaluation*. — No. .69. — P. 100842. DOI: 10.1016/j.stueduc.2020.100842. (in Eng.).

Panadero E. (2017) A review of self-regulated learning: Six models and four directions for research. *Frontiers in Psychology*. — No. 8. — P. 422. DOI: 10.3389/fpsyg.2017.00422. (in Eng.).

Serikbayeva N., Sarzhanova G., Belenko O., Oryngaliyeva S., Orynbeikova A., Rakhimgaliyeva P. (2026) Psychological safety and well-being in Kazakh upper-secondary classrooms: A

mixed-methods pilot study. *Frontiers in Education*. — No. 11. — P. 1742756. DOI: 10.3389/feduc.2026.1742756. (in Eng.).

Tang X. (2024) The impact of school climate on academic burnout of Chinese students: The mediating effect of psychological capital. *Frontiers in Education*. — No. 9. — P. 1346347. DOI: 10.3389/feduc.2024.1346347. (in Eng.).

Taylor R.D., Oberle E., Durlak J.A., Weissberg R.P. (2017) Promoting positive youth development through school-based social and emotional learning interventions: A meta-analysis of follow-up effects. *Child Development*. — No. 88(4). — P. 1156-1171. DOI: 10.1111/cdev.12864. (in Eng.).

Visscher A.J. (2021) On the value of data-based decision making in education: The evidence from six intervention studies. *Studies in Educational Evaluation*. — No. 69. — P. 100899. DOI: 10.1016/j.stueduc.2020.100899. (in Eng.).

Von der Embse N., Jester J., Roy D., Post J. (2018) Test anxiety effects, predictors, and correlates: A 30-year meta-analytic review. *Journal of Affective Disorders*. — No. 227. — P. 483-493. DOI: 10.1016/j.jad.2017.11.048. (in Eng.).

Wang M.-T., Degol J.L. (2016) School climate: A review of the construct, measurement, and impact on student outcomes. *Educational Psychology Review*. — No. 28(2). — P. 315-352. DOI: 10.1007/s10648-015-9319-1. (in Eng.).

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