Психологическая наука и образование
2022. Т. 27. № 4. С. 68—76
DOI: https://doi.org/10.17759/pse.2022270407
ISSN: 1814-2052
ISSN: 2311-7273 (online)

Psychological Science and Education
2022. Vol. 27, no. 4, pp. 68—76
DOI: https://doi.org/10.17759/pse.2022270407
ISSN: 1814-2052
ISSN: 2311-7273 (online)

An Individual-Intellectual Model of Students' Academic Achievement (Based on Humanitarian Specializations)

Leonid Ya. Dorfman
Perm State Institute of Culture, Perm, Russia
ORCID: https://orcid.org/0000-0001-8494-5674, e-mail: dorfman07@yandex.ru
Alexey Yu. Kalugin
Perm State Humanitarian Pedagogical University, Perm, Russia
ORCID: https://orcid.org/0000-0002-3633-2926, e-mail: kaluginau@yandex.ru

Any educational institution implementing the Federal State Educational Standards (FSES) is faced with the task of forming the necessary competencies in students. The level of competence formation is reflected, among other things, in academic achievement. Despite the interest in this topic among scientists, the indirect effects of multilevel individual traits on students' academic achievements have not yet considered through intelligence and creativity in detail. In this study, individual-intellectual models tested students' academic achievement. The sample consisted of 415 students of Perm city universities aged 17 to 22 years, 293 female and 122 male. Structural equation modeling was in use for shared and partial groups. The main obtained results were as follows. In the shared models, none of psychometric intelligence and psychometric creativity variables served mediators between the individual traits and academic achievement. In the partial models, fluid intelligence and fluency also did not operate as mediators. Three partial models were fit the data in respect with the mediation structure. Crystallized intelligence, originality, and flexibility acted as separate mediators. The mediator models entered the individual traits: excitation (nervous system), activity (temperament), open-mindedness, belonged self (personality). Mediator effects were observed under different Compositions and combinations of individual traits. Thus, a number of individual-intellectual integrations received empirical support for students' academic achievement.

Keywords: traits of individuality, psychometric intelligence, psychometric creativity, academic achievement, mediation model.

Funding. The reported study was funded by the Russian Foundation for Basic Research (RFBR), project number 19-29-07046.

For citation: Dorfman L.Ya., Kalugin A.Yu. An Individual-Intellectual Model of Students' Academic Achievement (Based on Humanitarian Specializations). *Psikhologicheskaya nauka i obrazovanie = Psychological Science and Education*, 2022. Vol. 27, no. 4, pp. 68—76. DOI: https://doi.org/10.17759/pse.2022270407 (In Russ.).

Индивидуально-интеллектуальная модель академических достижений студентов (на материале гуманитарных специальностей)

Дорфман Л.Я.
ФГБОУ ВО «Пермский государственный институт культуры» (ФГБОУ ВО ПГИК), г. Пермь, Российская Федерация
ORCID: https://orcid.org/0000-0001-8494-5674, e-mail: dorfman07@yandex.ru

Калугин А.Ю.
ФГБОУ ВО «Пермский государственный гуманитарно-педагогический университет» (ФГБОУ ВО ПГГПУ), г. Пермь, Российская Федерация
ORCID: https://orcid.org/0000-0002-3633-2926, e-mail: kaluginau@yandex.ru

В статье обращается внимание на тот факт, что перед любым образовательным учреждением, реализующим ФГОС, стоит задача формирования необходимых компетенций у обучающихся. Уровень сформированности компетенций находит отражение в том числе в академической успеваемости. Авторы отмечают, что, несмотря на интерес к данной теме среди ученых, до сих пор не были детально рассмотрены опосредованные эффекты разноуровневых свойств индивидуальности на академические достижения студентов через интеллект и креативность. В представленном исследовании строились индивидуально-интеллектуальные модели академической успеваемости студентов, полученные на выборке 415 студентов высших учебных заведений г. Перми, из них 293 девушки и 122 юноши в возрасте от 17 до 22 лет. Применялось структурное моделирование. Тестировались 2 группы моделей: общие и частные. Отмечается, что в группе общих моделей ни один из вариантов переменных психометрического интеллекта и психометрической креативности, взятых совместно, не выполнял роль медиаторов между свойствами индивидуальности и академической успеваемостью. В группе частных моделей флюидный интеллект и беглость тоже не выполняли роль медиаторов. Пригодными и медиаторными были 3 частные модели с участием кристаллизованного интеллекта, оригинальности, гибкости как медиаторов, взятых раздельно. В медиаторные модели вошли свойства индивидуальности: возбуждение (нервная система), активность (темперамент), открытость опыту, вторящее Я, доброжелательность (личность). Медиаторные эффекты наблюдались при разном составе и сочетании свойств индивидуальности. Таким образом, в ряде случаев индивидуально-интеллектуальные интеграции применительно к академической успеваемости получили эмпирическую поддержку.

Ключевые слова: свойства индивидуальности, психометрический интеллект, психометрическая креативность, академическая успеваемость, медиаторная модель.

Финансирование. Исследование выполнено при финансовой поддержке Российского фонда фундаментальных исследований (РФФИ) в рамках научного проекта № 19-29-07046.

Для цитаты: *Дорфман Л.Я., Калугин А.Ю.* Индивидуально-интеллектуальная модель академических достижений студентов (на материале гуманитарных специальностей) // Психологическая наука и образование. 2022. Том 27. № 4. С. 68—76. DOI: https://doi.org/10.17759/pse.2022270407

Introduction

The problem of nurturing academic achievement among students is multidimensional; many factors are involved. Academic achievement comes in different types: grade point average; the results of subject Olympiads; the results of the Unified State Exam; initial, intermediate, and final assessments (in the form of seminars, tests, exams), etc. Nevertheless, various internal and external factors can be predictors of students' academic achievement. Internal factors include motivation toward achievement and academic motivation [15], intelligence level [10; 17], critical, reflective, and creative thinking [13], academic self-efficacy [20], personality traits [17; 20], hope and optimism [18], psychological maturity [17], etc. External factors include socioeconomic status and type of school [21], upbringing [16], parental involvement [22], etc.

Individual traits, psychometric intelligence, and psychometric creativity as joint predictors of students' academic achievement remain important, but problematic and insufficiently studied. These constructs are heterogeneous, have different theoretical backgrounds, and there are conceptual barriers between them. In order to include them in a joint study, it is necessary to find out the conditions under which they can fit into a common theoretical background [4]. One of the prerequisites for posing this problem is likely cross-theoretical integration [Ibid.].

The theoretical basis of this empirical study is an integration of the theories of V.S. Merlin [8] and D.V. Ushakov [12] (see details [5]). The mechanism of mediation is the locus of integration between the two theories. Psychometric intelligence and psychometric creativity act as mediating links between students' individual traits and academic achievement. Although there are studies devoted to some aspects of the relationship between the indicators mentioned [7; 10; 17; 20], these studies affect only some aspects of individuality. The cumulative effect of multilevel traits has not actually been tested.

Some studies use complex mediator models to uncover the factors supporting academic achievement [14]. Nevertheless, the mediative function that both psychometric intelligence and creativity have between students' individual multilevel traits and academic achievement remains largely beyond researchers' attention.

The aim of the study was to build and examine an individual-intellectual model of the academic achievement of university students who were engaged in humanitarian work.

The following empirical hypotheses were tested:

1. Psychometric intelligence and psychometric (verbal) creativity selectively mediate between students' individual multilevel traits and their academic achievement.

2. Individual multilevel traits are included in varieties of mediator models selectively.

3. Psychometric intelligence and psychometric (verbal) creativity provide not one, but several ways to jointly activate the mediators between the students' individual multilevel traits and their academic achievement.

Method

Participants

The study involved 415 students from higher educational institutions in Perm, including 293 females and 122 males aged 17 to 22 years (M = 18.6, SD = 1.0).

Measures

We studied the nervous system, temperament, and personality as multilevel traits of integral individuality [8]. A Russian adaptation of the Pavlovian Temperament Survey by J. Strelau was used to measure the nervous system [3]. A Russian adaptation of the Formal Characteristics of Behav-

iour — Temperament Inventory by J. Strelau was used to measure temperament [11]. A Russian adaptation of the Big Five Inventory-2 by C.J. Soto and O.P. John was used to measure personality traits [19]. The Four-Factor Self Questionnaire by L.Ya. Dorfman [6] was used to measure the self-concept.

A Russian adaptation of Guilford's Alternate Uses was used to assess psychometric (verbal) creativity [1]. Raven's Progressive Matrices [9] was used to measure fluid intelligence. The Universal Intellectual Test by N. A. Baturin and N. A. Kurgansky [2] was used to measure crystallized intelligence.

The average of students' annual grades in all disciplines was computed to determine academic achievement. A five-point grading scale (exams) was used.

Data analysis

Individual multilevel traits were included in models as exogenous variables, psychometric intelligence and psychometric (verbal) creativity as mediator variables, and academic achievement as an endogenous variable. In addition, the covariances of the exogenous variables was entered into the models.

All individual traits initially were included in the model and then, one by one, those that least related to the mediator were excluded from the model. In the final model, there were only significant paths between variables.

The models for shared and partial groups differed. Shared models included 3 feasible candidate mediators: a) crystallized and fluid intelligence together (M_1); b) fluency, flexibility, and originality of creativity jointly (M_2); and c) intelligence (crystallized and fluid) and verbal creativity (fluency, flexibility, originality) jointly (M_3). The partial models included crystallized (M_4) and fluid (M_5) intelligence, fluency (M_6), flexibility (M_7), and originality (M_8) creativity separately as candidates for mediators.

Model fit indices were the chi-square statistic (χ^2), the chi-square to df ratio (χ^2/df), the Comparative Fit Index (CFI), and the Root Mean Square Error of Approximation (RMSEA). Additionally, the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC) were used.

Structural equation modeling data was tested in IBM SPSS AMOS v.22.

Results

When testing the shared models, M1 and M3 were low fit indices according to the ratio of chi-square statistics to degrees of freedom (χ^2/df > 2). Hence, these models are not mediator models. The M_2 model fit perfectly (RMSEA < 0.05, CFI > 0.95). The path coefficients from exogenous variables to candidate mediator variables were significant, but non-significant from the former to the endogenous variable. This means that this model cannot be as a mediator model either.

When the partial models were tested, models M_4 and M_5 were perfect fit indices (RMSEA < 0.05, CFI > 0.95). In these models, the path coefficients from exogenous variables to fluid intelligence and fluency were significant, but non-significant from the former to the endogenous variable. So, fluid intelligence and fluency did not serve as mediators in these models.

The M_6, M_7, and M_8 models were perfectly fit as Table 1 shows.

In these models, the path coefficients from exogenous variables to crystallized intelligence, originality, and flexibility were significant, and also significant from the former to the endogenous variable. Hence, crystallized intelligence, originality, and flexibility served as mediators in these models (Fig. 1—3).

Discussion

The models distinguished between the shared and partial groups. In the shared models, psychometric intelligence and psy-

Table 1

Partial model fit indices M_6, M_7, M_8

Partial models	Model fit indices							
	χ^2	df	p	χ^2 / df	CFI	RMSEA	AIC	BIC
M_6. Crystallized intelligence as a mediator	1.99	6	0.92	0.33	1.00	0.001	32.0	92.4
M_7. Originality as a mediator	0.60	1	0.44	0.60	1.00	0.001	10.6	30.7
M_8. Flexibility as a mediator	2.30	2	0.32	1.15	0.99	0.02	18.3	50.5

Note: χ^2 — chi-square statistic value; df — degrees of freedom; p — significance level; χ^2 / df — relative chi-square; CFI — Comparative Fit Index; RMSEA — Root Mean Square Error of Approximation; AIC — Akaike Information Criterion; BIC — Bayesian Information Criterion.

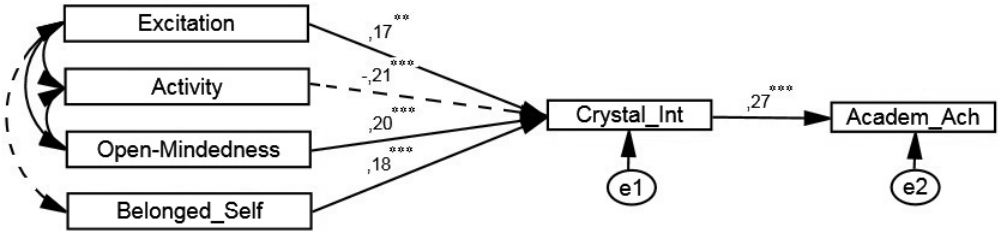

Fig. 1. The M_6 model with crystallized intelligence as a mediator:
Crystal_Int — crystallized intelligence; Academ_Ach — academic achievement (grade point average); solid lines with arrows — paths with significant positive coefficients; dashed lines with arrows — paths with significant negative coefficients; solid arcs with arrows — significant positive correlations between personality traits; dashed arcs with arrows — significant negative correlations between personality traits; * — p<0.05, ** — p<0.01, *** — p<0.001.

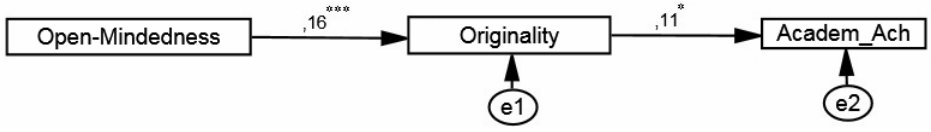

Fig. 2. Model M_7 with originality as a mediator: see Note to Fig. 1.

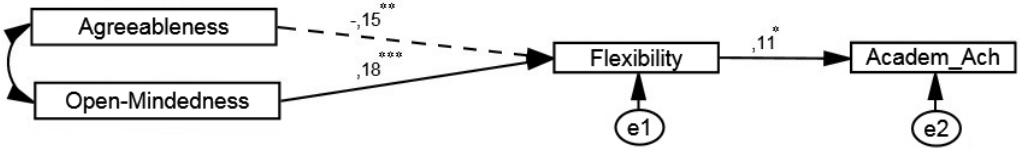

Fig. 3. Model M_8 with flexibility as a mediator: see Note to Fig. 1.

chometric (verbal) creativity variables taken together did not mediate the individual traits or academic achievement. In the partial models, fluid intelligence and fluency did not act as mediators either. The partial models involving crystallized intelligence, originality, and flexibility taken separately were suitable and mediational. The mediator effects var-

ied in the composition and combination of individual traits.

In some cases, the partial models supported the claim of individual-intellectual integrations. Several of the students' individual traits, psychometric intelligence, and psychometric (verbal) creativity served as predictors of academic achievement. The data support the hypothesis that psychometric intelligence and psychometric (verbal) creativity selectively serve as mediators between individual traits and academic achievement.

Such individual multilevel traits as excitation (nervous system), activity (temperament), belonged self, open-mindedness, and agreeableness (personality) represented the exogenous variables. Other individual traits were not included in mediator models as exogenous variables at a significant level. Crystallized intelligence, originality, and flexibility served mediators in the models, but fluid intelligence and fluency were not significant mediators. Thus, one can assume that some personality traits, varieties of psychometric intelligence, and indicators of psychometric (verbal) creativity yield integrations that are specific and rely on variables, their composition and structure.

The finding above supports the hypothesis that mediation models selectively differ in individual multilevel traits, psychometric intelligence, and psychometric (verbal) creativity. They exhibit not one, but several methods of mediation. Therefore, the basis for their integration can be dynamic.

Conclusion

The mediation models included individual traits in their various combinations. The model with crystallized intellect as a mediator included multilevel individual traits: excitation (nervous system), activity (temperament), open-mindedness, and belonged self (personality); the model with originality as a mediator included open-mindedness (personality); the model with flexibility as a mediator included agreeableness and open-mindedness (personality). This may mean that the properties of individuality can be included in different mediation models by changing their compositions and structures. Within the mediator models, individuality reveals the ability, to varying degrees, to replace some traits with others. This means that generally,individual traits present a dynamic structure when they enter mediator models.

The results have practical importance. They have made it possible to identify among the properties of individuality, psychometric intelligence, and psychometric (verbal) creativity the factors that make the most significant contributions to the students' academic achievement.

Limitations and perspectives of the study

Psychometric creativity was studied in only one aspect — verbal creativity, so we cannot extend the results to other types of creativity.

The study involved predominantly girls, which is consistent with the sex ratio in the humanities but does not allow the results to be extrapolated to the wider population. In this regard, gender alignment and the study of gender specificity, may become a promising area of research.

In the future, it is necessary to consider individual-intellectual integrations not only among representatives of the humanities but also to study those in technical, natural science, military, and other areas of training.

References

1. Averina I.S., Shcheblanova E.I. Verbal'nyy test tvorcheskogo myshleniya «Neobychnoe ispol'zovanie» [Verbal Test of Creative Thinking "Unusual Use"]. Moscow: Sobor, 1996. 60 p. (In Russ.).

2. Baturin N.A., Kurganskiy N.A. Kratkoe rukovodstvo po Universal'nomu intellektual'nomu testu (UIT SPCh) [A Quick Guide to the Universal Intelligent Test]. Saint Petersburg, 1995. 19 p. (In Russ.).

3. Danilova N.P., Shmelev A.G. Test-oprosnik Strelyau [Strelau's survey]. *Praktikum po psikhodiagnostike [Psychodiagnostic workshop. Psychological methods]*. Moscow: MGU Publ., 1988, pp. 4—10. (In Russ.).
4. Dorfman L.Ya., Kalugin A.Yu. Individual'no-intellektual'nyye integratsii cheloveka [Individual-intellectual integration of a person]. Moscow: Institute of psychology of RAS, 2021. 279 p. (In Russ.).
5. Dorfman L.Ya., Kalugin A.Yu. Sootnoshenie resursov, potentsialov i akademicheskikh dostizheniy studentov. Soobshchenie 2. Ot differentsiatsii k integratsii resursov i potentsialov akademicheskikh dostizheniy studentov [Resources, potentials and academic achievements of students. Part 2. From differentiation to integration of resources, potentials and academic achievements of students]. *Obrazovanie i nauka [The Education and Science Journal]*, 2020. Vol. 22, no. 5, pp. 90—110. DOI:10.17853/1994-5639-2020-5-90-110 (In Russ.).
6. Dorfman L.Ya., Kalugin A.Yu. Chetyrekhfaktornyy oprosnik Ya: ego kontseptual'nyy i psikhometricheskiy analiz [The four-factor self questionnaire: its theoretical and psychometric properties]. *Sibirskiy psikhologicheskiy zhurnal [Siberian Journal of Psychology]*, 2020, no. 75, pp. 53—74. DOI:10.17223/17267080/75/4 (In Russ.).
7. Koval'chuk I.A., Sochivko D.V. Spetsificheskie sistemoobrazuyushchie svoystva intellektual'no-lichnostnogo potentsiala sotrudnikov FSIN Rossii na nachal'nom etape sluzhebnoy deyatel'nosti [Specific system-forming properties of intellectual-personal potential of employees of the Federal Penitentiary Service of Russia at the initial stage of official activity]. *Psikhologo-pedagogicheskie issledovaniya = Psychological-Educational Studies*, 2020. Vol. 12, no. 2, pp. 127—143. DOI:10.17759/psyedu.2020120208 (In Russ.).
8. Merlin V.S. Ocherk integral'nogo issledovaniya individual'nosti [Essay on the Integral study of individuality]. Moscow: Pedagogika, 1986. 256 p. (In Russ.).
9. Raven Dzh.K., Kurt Dzh.Kh., Raven Dzh. Rukovodstvo k progressivnym matritsam Ravena i slovarnym shkalam. Razd. 1. Obshchaya chast' rukovodstva [Manual for Raven's progressive matrices and vocabulary scales. Section 1. General overview]. Moscow: Kogito-Tsentr, 1997. 82 p. (In Russ.).
10. Rzhanova I.E., Alekseeva O.S., Burdukova Yu.A. Uspeshnost' v obuchenii: vzaimosvyaz' flyuidnogo intellekta i rabochey pamyati [Successful learning: relationship between fluid intelligence and working memory]. *Psikhologicheskaya nauka i obrazovanie = Psychological Science and Education*, 2020. Vol. 25, no. 1, pp. 63—74. DOI:10.17759/pse.2020250106 (In Russ.).
11. Strelyau Ya., Mitina O., Zavadskiy B., Babaeva Yu., Menchuk T. Metodika diagnostiki temperamenta (formal'no-dinamicheskikh kharakteristik povedeniya) [Method for diagnosing temperament (formal and dynamic characteristics of behavior)]. Moscow: Smysl, 2009. 104 p. (In Russ.).
12. Ushakov D.V. Psikhologiya intellekta i odarennosti [Psychology of intelligence and giftedness]. Moscow: Institut psikhologii RAN, 2011. 464 p. (In Russ.).
13. Akpur U. Critical, reflective, creative thinking and their reflections on academic achievement. *Thinking Skills and Creativity*, 2020. Vol. 37, pp. 100683. DOI:10.1016/j.tsc.2020.100683
14. Alhadabi A., Karpinski A.C. Grit, self-efficacy, achievement orientation goals, and academic performance in University students. *International Journal of Adolescence and Youth*, 2020. Vol. 25(1), pp. 519—535. DOI:10.1080/02673843.2019.1679202
15. Anderman E.M. Achievement motivation theory: Balancing precision and utility. *Contemporary Educational Psychology*, 2020. Vol. 61, pp. 101864. DOI:10.1016/j.cedpsych.2020.101864
16. Howard J.M., Nicholson B.C., Chesnut S.R. Relationships between positive parenting, overparenting, grit, and academic success. *Journal of College Student Development*, 2019. Vol. 60(2), pp. 189—202. DOI:10.1353/csd.2019.0018
17. Morales-Vives F., Camps E., Dueñas J.M. Predicting academic achievement in adolescents: The role of maturity, intelligence and personality. *Psicothema*, 2020. Vol. 32(1), pp. 84—91. DOI:10.7334/psicothema2019.262
18. Rand K.L., Shanahan M.L., Fischer I.C., Fortney S.K. Hope and optimism as predictors of academic performance and subjective well-being in college students. *Learning and Individual differences*, 2020. Vol. 81, pp. 101906. DOI:10.1016/j.lindif.2020.101906
19. Shchebetenko S., Kalugin A.Y., Mishkevich A.M., Soto C.J., John O.P. Measurement Invariance and Sex and Age Differences of the Big Five Inventory—2: Evidence From the Russian Version. *Assessment*, 2020. Vol. 27(3), pp. 472—486. DOI:10.1177/1073191119860901
20. Stajković A., Bandura A., Locke E., Lee D., Sergent K. Test of three conceptual models of influence of the big five personality traits and self-efficacy on academic performance: A meta-analytic path-analysis. *Personality and Individual Differences*, 2018. Vol. 120, pp. 238—245. DOI:10.1016/j.paid.2017.08.014
21. Suna H.E., Tanberkan H., Gür B., Perc M., Özer M. Socioeconomic status and school type as predictors of academic achievement. *Journal of Economy Culture and Society*, 2020, no. 61, pp. 41—64. DOI:10.26650/JECS2020-0034
22. Veas A., Castejón J.L., Miñano P., Gilar-Corbí R. Relationship between parent involvement and academic achievement through metacognitive strategies: A multiple multilevel mediation analysis. *British journal of educational psychology*, 2019. Vol. 89(2), pp. 393—411. DOI:10.1111/bjep.12245

Литература

1. *Аверина И.С., Щебланова Е.И.* Вербальный тест творческого мышления «Необычное использование». М.: Соборъ, 1996. 60 с.
2. *Батурин Н.А., Курганский Н.А.* Краткое руководство по Универсальному интеллектуальному тесту (УИТ СПЧ): Челябинск — Санкт-Петербург. СПб., 1995. 19 с.
3. *Данилова Н.П., Шмелев А.Г.* Тест-опросник Стреляу // Практикум по психодиагностике. М.: Изд-во МГУ, 1988. С. 4—10.
4. *Дорфман Л.Я., Калугин А.Ю.* Индивидуально-интеллектуальные интеграции человека. М.: Изд-во «Институт психологии РАН», 2021. 279 с. DOI:10.38098/mng_21_0438
5. *Дорфман Л.Я., Калугин А.Ю.* Соотношение ресурсов, потенциалов и академических достижений студентов. Сообщение 2. От дифференциации к интеграции ресурсов и потенциалов академических достижений студентов // Образование и наука. 2020. Том 22. № 5. С. 90—110. DOI:10.17853/1994-5639-2020-5-90-110
6. *Дорфман Л.Я., Калугин А.Ю.* Четырехфакторный опросник Я: его концептуальный и психометрический анализ // Сибирский психологический журнал. 2020. № 75. С. 53—74. DOI:10.17223/17267080/75/4
7. *Ковальчук И.А., Сочивко Д.В.* Специфические системообразующие свойства интеллектуально-личностного потенциала сотрудников ФСИН России на начальном этапе служебной деятельности // Психолого-педагогические исследования. 2020. Том 12. № 2. С. 127—143. DOI:10.17759/psyedu.2020120208
8. *Мерлин В.С.* Очерк интегрального исследования индивидуальности. М.: Педагогика, 1986. 256 с.
9. *Равен Дж.К., Курт Дж.Х., Равен Дж.* Руководство к прогрессивным матрицам Равена и словарным шкалам. Разд. 1. Общая часть руководства. М.: Когито-Центр, 1997. 82 с.
10. *Ржанова И.Е., Алексеева О.С., Бурдукова Ю.А.* Успешность в обучении: взаимосвязь флюидного интеллекта и рабочей памяти // Психологическая наука и образование. 2020. Том 25. № 1. С. 63—74. DOI:10.17759/pse.2020250106
11. *Стреляу Я., Митина О., Завадский Б., Бабаева Ю., Менчук Т.* Методика диагностики темперамента (формально-динамических характеристик поведения). М.: Смысл, 2009. 104 с.
12. *Ушаков Д.В.* Психология интеллекта и одаренности. М.: Институт психологии РАН, 2011. 464 с.
13. *Akpur U.* Critical, reflective, creative thinking and their reflections on academic achievement // Thinking Skills and Creativity. 2020. Vol. 37. P. 100683. DOI:10.1016/j.tsc.2020.100683
14. *Alhadabi A., Karpinski A.C.* Grit, self-efficacy, achievement orientation goals, and academic performance in University students // International Journal of Adolescence and Youth. 2020. Vol. 25(1). P. 519—535. DOI:10.1080/02673843.2019.1679202
15. *Anderman E.M.* Achievement motivation theory: Balancing precision and utility // Contemporary Educational Psychology. 2020. Vol. 61. P. 101864. DOI:10.1016/j.cedpsych.2020.101864
16. *Howard J.M., Nicholson B.C., Chesnut S.R.* Relationships between positive parenting, overparenting, grit, and academic success // Journal of College Student Development. 2019. Vol. 60(2). P. 189—202. DOI:10.1353/csd.2019.0018
17. *Morales-Vives F., Camps E., Dueñas J.M.* Predicting academic achievement in adolescents: The role of maturity, intelligence and personality // Psicothema. 2020. Vol. 32(1). P. 84—91. DOI:10.7334/psicothema2019.262
18. *Rand K.L., Shanahan M.L., Fischer I.C., Fortney S.K.* Hope and optimism as predictors of academic performance and subjective well-being in college students // Learning and Individual differences. 2020. Vol. 81. P. 101906. DOI:10.1016/j.lindif.2020.101906
19. *Shchebetenko S., Kalugin A.Y., Mishkevich A.M., Soto C.J., John O.P.* Measurement Invariance and Sex and Age Differences of the Big Five Inventory—2: Evidence From the Russian Version // Assessment. 2020. Vol. 27(3). P. 472—486. DOI:10.1177/1073191119860901
20. *Stajković A., Bandura A., Locke E., Lee D., Sergent K.* Test of three conceptual models of influence of the big five personality traits and self-efficacy on academic performance: A meta-analytic path-analysis // Personality and Individual Differences. 2018. Vol. 120. P. 238—245. DOI:10.1016/j.paid.2017.08.014
21. *Suna H.E., Tanberkan H., Gür B., Perc M., Özer M.* Socioeconomic status and school type as predictors of academic achievement // Journal of Economy Culture and Society. 2020. № 61. P. 41—64. DOI:10.26650/JECS2020-0034
22. *Veas A., Castejón J.L., Miñano P., Gilar-Corbí R.* Relationship between parent involvement and academic achievement through metacognitive strategies: A multiple multilevel mediation analysis // British journal of educational psychology. 2019. Vol. 89(2). P. 393—411. DOI:10.1111/bjep.12245

Information about the authors

Leonid Ya. Dorfman, Doctor of Psychology, Professor, Head of the Department of Humanities, Perm State Institute of Culture, Perm, Russia, ORCID: https://orcid.org/0000-0001-8494-5674, e-mail: dorfman07@yandex.ru

Alexey Yu. Kalugin, PhD in Psychology, Associate Professor, Head of the Department of Practical Psychology, Perm State Humanitarian Pedagogical University, Perm, Russia, ORCID: https://orcid.org/0000-0002-3633-2926, e-mail: kaluginau@yandex.ru

Информация об авторах

Дорфман Леонид Яковлевич, доктор психологических наук, профессор, заведующий кафедрой гуманитарных дисциплин, ФГБОУ ВО «Пермский государственный институт культуры» (ФГБОУ ВО ПГИК), г. Пермь, Российская Федерация, ORCID: https://orcid.org/0000-0001-8494-5674, e-mail: dorfman07@yandex.ru

Калугин Алексей Юрьевич, кандидат психологических наук, доцент, заведующий кафедрой практической психологии, ФГБОУ ВО «Пермский государственный гуманитарно-педагогический университет» (ФГБОУ ВО ПГГПУ), г. Пермь, Российская Федерация, ORCID: https://orcid.org/0000-0002-3633-2926, e-mail: kaluginau@yandex.ru

Получена 02.02.2021
Принята в печать 30.06.2022

Received 02.02.2021
Accepted 30.06.2022