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FACTORS INCREASING SELF-PERCEIVED EFFICACY OF MENTOR TEACHERS: GENERAL AND PERSONAL EFFICACY

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Abstract. *This study aims to analyse selected variables which influence the self-perceived efficacy in mentor teachers with regard to mentoring student teachers on placement. The Mentor Efficacy Scale (Riggs, 2000) was used as the measuring instrument. Some items were removed, while others were modified for the purpose of specifically researching mentor teachers. Subsequently, exploratory factor analysis was performed (principal component analysis, promax rotation). Based on the result, the final version of the instrument explored two dimensions (general and personal efficacy). Cronbach's alpha confirmed the optimal internal consistency of both the dimensions and the instrument itself. The research group consisted of 128 respondents cooperating with the Faculty of Arts at Pavol Jozef Šafárik University in Košice. The majority of them comprised respondents with 26 – 30 and 31 and more years of teaching practice, 6 – 10 and 11 – 15 years of mentoring practice. A statistically significant difference was identified in the general efficacy of mentor teachers in terms of the completion of training focused on the development of mentoring skills. Another statistically significant difference was identified in the personal efficacy of mentor teachers in terms of the specific type of practice they are mentoring. Other independent variables such as gender, school type, length of the teaching practice, length of the mentoring practice, teaching qualifications, and position of an official mentor for entry-level colleagues, did not make a statistically significant difference in the perceived general and personal efficacy in mentor teachers. Our findings*

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probably indicate that further education focused on mentoring boosts mentor teachers' cooperating with Pavol Jozef Šafárik University in Košice trust in the benefits of mentoring. Their engagement in the student training boosts their conviction that the students of teaching should receive career development support.

Keywords: *mentor teachers; mentoring; self-perceived efficacy; school; student of teaching.*

1. INTRODUCTION

Entry into school practice is a fairly complicated process for teachers at the beginning of their careers, and it is influenced by numerous factors. On the one hand, ongoing cooperation and communication between the university and the schools offering teaching practice opportunities need to be maintained; on the other hand, the staff capacity of these schools can be limited. Students confronted with a new environment and its specificities, including pupils and their learning, need advice and feedback from an experienced teacher (who also believes in the effect of mentoring and mentoring competencies) to facilitate their professional development. This teacher actively assumes the role of a mentor (Garcia & Badia, 2023; Merket, 2022).

As for the different definitions of mentoring formulated in Slovakia and abroad, Spilková and Zavadilová's definition (2021, p. 7), modified and supplemented by Píšová et al. (2011), was selected for the purpose of this study: "It is an intentional and long-term process of providing continuous individual support to a teacher or a student of teaching by a more experienced colleague to facilitate their professional learning and foster self-regulation. Mentoring provided to the teaching students is focused on their career and professional development." In 2014, Heeralal explored students' opinions of teaching on the quality of their mentor teachers. Students believe that a good mentor is an informed, honest, and respectful person who does not exclusively focus on keeping them in check.

On the other hand, Maphalala's study (2013) indicates that mentors believe that their task is to facilitate students' socialisation and help them develop competencies related to various aspects of the school, including lesson planning and delivery as well as classroom management. Carter and Francis (2001) have also documented the importance of mentoring for new teachers during their first year on the job. The advantages of mentoring have also been confirmed by Hoxha (2016), who points out that its efficiency is determined by the subtle relationship between the participants involved in the professional growth process. Besides helping teachers with limited practical experience, mentoring is also helpful for their more experienced colleagues as it allows them to gain specialised experience (Yazici & Tekerci, 2017).

Based on the instructions for mentoring programmes created by the Hawaiian Office for Personnel Services, Koki (1997) described mentors as follows:

• they have a range of interpersonal skills that allow them to deal with a variety of professional situations,

• they can use a repertoire of teaching methods, alternative modalities of learning, and styles of teaching,

• they can use coaching processes that foster self-direction and responsibility of the beginning teachers,

• they have effective communication skills that accommodate the entry-level teachers' emotional, social, and cognitive needs,

• they understand the stages of teacher development in the context of adult learning.

Malderez (2023) adds that mentoring creates a foundation for the mentee's (e.g. student teacher's) learning through systematic informed reflective practice and contributes to their wellbeing and retention in the profession.

A study by Renbarger and Davis (2019) demonstrated a positive relationship between novice (new) teachers' job satisfaction, self-efficacy, and mentor presence through multiple regression.

The professionalism of teaching staff (including mentor teachers) draws on professional knowledge and skills and the ability to put them into practice. Korthagen (2004) adds the ethical dimensions of teaching perceived as a mission and the professional identity, which includes the component of perceived professional efficacy (Marschall, 2022).

Spilková and Zavadilová (2021) analysed the data collected by semi-structured interviews and created a network of themes describing the conditions for quality mentoring. Besides the ability to provide feedback and openness (revealing their pedagogical strengths and weaknesses to the student of teaching), these conditions include the mentor's self-confidence. A self-confident (self-assured and self-efficacious) individual is interested in the tasks they are supposed to complete and feels competent. This person perceives problems as inspiring challenges and recovers from failures quickly (Bandura, 1977, 1997). High expected self-efficacy fosters optimistic attitudes and relates to the aspiration level in setting more challenging goals. It is also related to causal attribution, i.e., what the person attributes their success or failure to. It is also related to self-fulfilling predictions or, in other words, the belief that something specific will happen. Individuals with higher self-efficacy formulate more positive predictions ("Everything will be fine. It looks quite difficult, but I can do it.") and use constructive problem-solving approaches; they opt for supercompensation and an alternative goal instead of resignation, apathy, and regression (Švamberk Šauerová, 2018).

Using structural equation modelling, Lejonberg et al. (2018) showed that mentors' self-efficacy is moderately related to clear mentoring (communicating feedback and recommendations) and reflection-based mentoring. Samaraweera et al. (2018) pointed out that the self-efficacy of mentors in teacher preparation should not be underestimated as it is involved in reducing the risk of burnout syndrome.

Therefore, this study intends to identify the factors which influence the level of self-perceived efficacy of mentor teachers (in relation to mentoring student teachers on placement).

2. METHODS

Teachers' self-perceived efficacy cannot be described by a single universal characteristic because it is determined by the situation, task type, and conditions for the individual (Mareš, 2020). When Bates et al. (2011) researched self-efficacy in mathematics teachers and their teaching efficacy, they selected a specialised measuring instrument.

Handtke and Bögeholz (2020) also designed their own instrument for the purpose of their research focused on science teachers' self-efficacy. Although we had access to a validated research instrument designed to measure perceived self-efficacy in teachers (Gavora, 2010), we opted for a scale questionnaire to identify the level of self-perceived efficacy, specifically in mentor teachers (Riggs, 2000).

The author of this instrument explains Bandura's theory as follows: It is assumed that individuals with higher expectations and higher self-efficacy act more decisively in practice. On the other hand, lower expectations combined with higher self-efficacy may lead the individual to intensify their effort for a while but ultimately become frustrated. A person with lower expectations and lower self-efficacy would give up if results did not show quickly enough. Based on this theory and the claims of other experts (Gibson & Dembo, 1984), Gavora (2011) distinguishes the concepts of personal teaching efficacy (the teacher trusts their ability to influence the pupil's learning and behaviour) and general teaching efficacy (the teacher assigns more importance to teaching than other factors influencing the pupil's performance such as their individual skills, family environment, etc.). Therefore, we decided to use the terms personal and general mentor's efficacy as well.

Despite being aware of the theoretical background of this instrument, we did not perform the confirmatory factor analysis in the first step for several reasons. Firstly, we were unable to retrieve a single study that would employ exploratory factor analysis to investigate the structure of this instrument (although it may exist). Although the items in this instrument fit into the dimensions in terms of their content, this argument is not sufficient to support or falsify the potential model initially outlined by the exploratory factor analysis. (Face validity is a subjective method of grouping items into dimensions.) Secondly, not all instrument items were used; 16 items applicable to the activities performed by mentor teachers were selected (and some of them were slightly modified). Thirdly, the questionnaire designed for teachers from other countries has not been backtranslated to double-check that all statements correspond with the cultural and psychological distinctions of the researched population, i.e., Slovak teachers. Before proceeding to the final data collection, a pilot study involving mentor teachers (N=6) was conducted; however, no changes in terms of content or stylistics were proposed by the respondents. The respondents answered using a 5-point Likert scale (1 – strongly disagree, 2 – disagree, 3 – I do not know/I both agree and disagree, 4 – agree, 5 – strongly agree).

To assess the factor structure of the instrument, exploratory factor analysis applying the principal components method with oblique promax rotation showed that the initial correlation between factor scores was moderately strong (r=0.481). The KMO test for sampling adequacy (0.844) and Bartlett's test of sphericity ($p < 0.001$) indicated that factor analysis was an appropriate method to process the data obtained. The Kaiser criterion (eigenvalue greater than 1) was used to determine the number of factors, i.e. 3. However, there were items with different content in the factors, which made it difficult to interpret the overall result of the factor analysis and name the emergent factors. The scree plot analysis showed 2 factors. To retain an item, the factor saturation had to be higher than 0.40, while this saturation value could not appear in two factors simultaneously. One item with a communality value lower than 0.30 was removed (Lack of student management during the teaching practice can be compensated by good mentoring). The pooled variance of the

variables was 48.40% before the last rotation. In both dimensions, the Cronbach's Alpha showed a value greater than 0.80 (0.814, 0.827). For the whole research instrument, the Cronbach's Alpha was 0.867, which is considered a very good result that confirms the internal consistency (reliability) of individual dimensions as well as the whole instrument.

Table 1. Dimensions of mentor's efficacy (rotated factor loading matrix)

Items pertaining to individual factors	**Factors**		
	α	**I**	**II**
(I) General efficacy	0.814		
Every student of teaching can take gradual steps to become a professional if a mentor teacher provides them with effective mentoring.		**0.855**	-0.158
Mentor teachers are generally responsible for the professional development of the students of teaching as future teachers.		**0.785**	-0.125
The success of a student of teaching can be determined by proper mentoring provided by mentor teachers.		**0.759**	-0.014
If a student of teaching does better than usual in terms of lesson planning during their teaching practice, it is because their mentor teacher influenced them more than usual.		**0.701**	0.072
The teaching efficiency of students who are completing their teaching practice is directly related to the mentoring skills of their mentor teachers.		**0.652**	-0.043
Students' understanding of the school policy can be developed through good mentoring provided by mentor teachers.		**0.499**	0.175
Effective mentoring provided by mentor teachers can help the students of teaching develop professionally.		**0.489**	0.164
(II) Personal efficacy	0.827		
When I talk to students of teaching, I can easily formulate the convictions on which I build my teaching procedures.		-0.257	**0.802**
If students of teaching encounter any problems during their teaching practice or have some doubts, I can help them understand what is going on and resolve the situation.		-0.059	**0.783**
I can use my knowledge of the teaching profession and teacher development to guide and support students of teaching during their teaching practice.		-0.073	**0.757**
I can facilitate the students of teaching understand their obligations as future teachers.		-0.001	**0.738**
When I observe or lead the students of teaching during their teaching practice, I am efficacious (I can deal with this task on my own).		0.223	**0.534**
I can use assessment while observing student teachers during their teaching practice as a tool for their professional development.		0.099	**0.530**
I know how to use assessment to help the students of teaching reflect to facilitate their growth and professional development.		0.265	**0.524**
I constantly find new ways to become a better mentor for the students of teaching.		0.336	**0.447**
Rotated sums of squared loads (total)		*4.54*	*4.45*

Based on the theory and research presented, the following research questions were formulated:

RQ 1: Is there a statistically significant difference in mentors' general efficacy from the viewpoint of selected factors (independent variables)?

RQ 2: Is there a statistically significant difference in mentors' personal efficacy from the viewpoint of selected factors (independent variables)?

Among the independent variables, we consider it necessary to clarify the nature of education focused on the development of mentoring skills completed during the last 5 years (as this is a factor that can specifically condition an increase in the perception of the efficacy of mentor teachers in terms of forming the identity of the mentoring role).

As part of their continuous education, teachers have the opportunity to undergo innovative training to develop specific professional competencies related to specialised activities in selected career positions (e.g., classroom teacher, school coordinator in education and training, educational counsellor, etc.). One of these positions is also that of a mentor teacher in primary and secondary schools. Although the Law on Pedagogical and Professional Staff (No. 138/2019) does not explicitly address this, mentor pedagogical staff members have a competency profile describing their professional knowledge and abilities in assisting students in teacher training during their pedagogical practice in the form of a professional standard (Professional standard of mentor teachers, 2017). The training offerings correspond to this profile, and mentor teachers develop their professional competencies in student mentoring, the mentoring process, and professional development. These training programs (innovative or updating) are provided by the National Institute of Education and Youth, Regional Teacher Support Centers, and nonprofit organisations (e.g., the LEAF Academy). After completing this training, mentor teachers should be able to identify their strengths as mentors, identify areas for the professional development of teaching staff, use mentoring tools to build trust with staff, and work with emotions in the mentoring process in their school practice.

2.1. Research sample characteristics

Convenience sampling was used to create the research file. This research was performed on the mentor teachers cooperating with Pavol Jozef Šafárik University in Košice in 2022/2023 (December to February). A total of 149 respondents participated in the research. After removing duplicates and the respondents who provided distorted answers (exclusively extreme alternatives), the final research file was reduced to 128 teachers. The detailed description of the sample can be found in Table 2.

Table 2. Distribution of the research sample according to the independent variables

Research sample characteristics	**N**	**%**
gender		
women	109	85.16
men	19	14.84
school type		
primary school	45	35.16
high school (vocational high school, sports high school)	19	14.84
grammar school (4-year grammar school, 5-year bilingual grammar school, 8-year grammar school)	60	46.88

unspecified (joint schools, etc.)	4	3.13
length of teaching practice		
short (6 – 10, 11 – 15 years)	28	21.88
medium (16 – 20, 21 – 25 years)	46	35.94
long (26 – 30, >31 years)	54	42.19
length of mentor teacher practice		
short (0 – 2, 3 – 5 years)	31	24.22
medium (6 – 10, 11 – 15 years)	65	50.78
long (>16)	32	25.00
teaching qualifications		
university education (teaching programme)	112	87.50
university education (non-teaching programme + additional pedagogical education)	16	12.50
official mentor for the entry-level teachers		
yes	26	20.31
no	102	79.69
type of practice for students of teaching mentored		
teaching observation of pedagogical and psychological teaching practice (MPPa), continuous teaching practice (MPPb) (or their combination)	31	24.22
at least one of the following types of practice: final continuous teaching practice I (MPPc), final continuous teaching practice II (MPPd) or their combination	74	57.81
all types of practice	23	17.97
education focused on the development of mentoring skills completed during the last 5 years		
yes	24	18.75
no	103	80.47
other (not stated)	1	0.78

2.2. Data analysis

The statistically significant differences between the variables were identified by parametric (Student's t test, ANOVA) as well as non-parametric tests (Mann-Whitney U test, Kruskal-Wallis test, Dunn-Bonferroni post hoc test, Wilcoxon signed-rank test) because the normality of the distribution of variables was confirmed only for some subsets, which was verified by Kolmogorov-Smirnov and Shapiro-Wilk tests ($p < 0.05$). The level of significance was 0.05. As for descriptive statistics, arithmetic mean (AM) and median (Me) were applied. Statistical data analysis was performed using IMB SPSS 27.0.1.0.

3. RESULTS

The first research question was about which of the factors – independent variables (described in Table 2) have an impact on the general efficacy of mentor teachers (beliefs of mentor teachers about the effectiveness of mentoring in relation to student teachers).

Table 3 shows that a statistically significant difference was identified in the general efficacy of mentor teachers from the viewpoint of completion training focused on the development of mentoring skills (Mann-Whitney U test=755.000, p=0.003). The respondents who have completed this type of education scored higher than those who have not (AM=3.97, Me=4.00, AM=3.63, Me=3.57).

The second research question was about which of the factors – independent variables (described in Table 2) have an impact on the personal efficacy of mentor

teachers (beliefs of mentor teachers about their mentoring abilities in relation to student teachers).

Table 3 shows that a statistically significant difference was identified in the personal efficacy of mentor teachers from the viewpoint of the specific type of practice they are mentoring (Kruskal-Wallis test=12.511, p=0.002). Pairwise comparisons showed a statistically significant difference in personal efficacy between the teachers who mentor all types of practice (Dunn-Bonferroni post hoc test=-3.536, p=0.001, AM=4.45, Me=4.50, AM=4.05, Me=4.00), their counterparts who only mentor the first two types of practice, and those who mentor at least one of the final continuous practice types or their combination (Dunn-Bonferroni post hoc test=-2.404, p=0.049, AM=4.45, Me=4.50, AM=4.22, Me=4.13).

Table 3. The presence of statistically significant differences in the perceived general and personal efficacy of mentor teachers

Variables	**Dependent variables**			
Independent variables	*General efficacy*		*Personal efficacy*	
gender	**Mann-Whitney U test**	**p-value**	**Mann-Whitney U test**	**p-value**
	978.000	0.699	766.500	0.070
school type	**ANOVA (F)**	**p-value**	**Kruskal-Wallis test**	**p-value**
	0.538	0.585	0.413	0.814
length of teaching practice	**ANOVA (F)**	**p-value**	**Kruskal-Wallis test**	**p-value**
	2.436	0.092	0.181	0.914
length of mentor teacher practice	**ANOVA (F)**	**p-value**	**Kruskal-Wallis test**	**p-value**
	0.015	0.985	2.734	0.255
teaching qualifications	**Student's t-test**	**p-value**	**Mann-Whitney U test**	**p-value**
	0.194	0.847	670.000	0.101
official mentor for the entry-level teachers as well as a mentor teacher for the students of teaching	**Mann-Whitney U test**	**p-value**	**Mann-Whitney U test**	**p-value**
	1232.500	0.578	1154.500	0.307
type of practice	**ANOVA (F)**	**p-value**	**Kruskal-Wallis test**	**p-value**
	0.580	0.562	12.511	0.002**
education focused on the development of mentoring skills	**Mann-Whitney U test**	**p-value**	**Mann-Whitney U test**	**p-value**
	755.000	0.003**	1005.500	0.153

4. DISCUSSION

The research results show that perceived self-efficacy of mentor teachers is improved mainly by the factors related to indirect experience (this refers to the general efficacy of mentor teachers) and engagement (this refers to the personal efficacy of mentor teachers).

Naturally, there are various opportunities to gain indirect experience (for teachers, these include, e.g., open lessons or lesson recordings). The professional example seen in terms of professional education (innovative, updating) also plays an important role. Findings from the research of Li et al. (2022) support the importance of motivating teachers to engage in CPD (continuing professional development) activities in order to increase their self-efficacy. This is also indicated by the research results of Duraku et al. (2022). Riggs' research of 2000 showed that mentor teachers who completed a year-long intensive programme focused on improving the support provided to entry-level teachers scored significantly higher in the dimension of personal efficacy (the mentor's trust in their ability to mentor the entry-level teachers) in comparison to their colleagues who did not complete such training. The presented research indicates a similar difference; however, in this case, it was found in the dimension of general efficacy (the respondents who completed mentoring training are more convinced that mentoring is beneficial for the professional development of the students of teaching). It can be related to the fact that mentoring training is difficult and time-consuming but, at the same time, specifically targets the development of specific mentoring skills (besides theory, practical application of the competencies is important). Ali and Adel (2020) point out that one of the ways to curb teacher fluctuation and reduce the teaching load for novice teachers is to design contextual mentoring programmes and implement them at schools.

Interestingly, no statistically significant difference was identified in the general efficacy of mentor teachers from the viewpoint of the role of the official mentor for entry-level teachers (as opposed to mentoring students). The teachers who hold this position should complete training focused on the knowledge and activities related to mentoring. The official mentors for entry-level teachers have considerably more space to address the educational needs of their mentees. Our findings indicate that entry-level teachers may often receive merely formal guidance (instructions and checking without professional reflection). A large group of the official mentors for entry-level teachers in our research file (N=20) have not completed any training focused on developing their mentoring skills during the last five years. Aspfors and Fransson (2015) created a meta-synthesis focused on the importance of systematic, long-term, and research-oriented education for mentors, which would foster their self-understanding and the understanding of mentoring.

Our research showed that it was beneficial for the mentor if they supervised multiple types of practice. The final continuous practice seems important. Complex practice is beneficial not only for the professional adaptation and formation of the beginning teachers but also for the mentor teachers. Through the analysis of their teaching and reflection on it, the student explores and develops their potential (e.g., identify their teaching style and inclination to specific methods of working with pupils, discover preferred approaches to the pupils' motivation and activation, etc.). However, this can only be achieved with detailed preparation for mentoring (identification of the problem, formulation of questions, tailored

recommendations, determination of the professional learning goals) and parallel preparation for teaching. The preconceptions held by both students and their mentors require confrontation. A study by Gale et al. (2021) underlines that enactive mastery experiences were the most common sources of self-efficacy identified by teachers (meaning direct interaction with educational reality). Supporting statements can also be found in the study by Wilson et al. (2020).

The active participant has to plan their steps in advance and consider what is necessary for them to succeed, in this case, in mentoring. If these requirements are met, it is more likely that the mentor can succeed. In Bandura's opinion (1977), this is the crucial factor in the formation of the self-perceived efficacy (Gavora, 2011).

Although we were unable to retrieve any comparative study focused on mentors' efficacy in relation to other factors, these factors must not be marginalised in further research (length of teaching practice, gender, teaching qualifications). The research focused on the perceived self-efficacy of teachers suggests that these factors are behind the differences. Gavora's quantitative-descriptive study of 2011 points out the statistically significant difference in the personal efficacy of teachers from the viewpoint of the length of their teaching practice (in favour of teachers with more than five years of practice), which is in line with Soodak and Podell's research of 1996. The length of the teaching practice (measured in years) was also emphasised by Cruz and Arias (2007). In the study by Gavora (2011), as mentioned earlier, a statistically significant difference in teachers' personal efficacy was also identified from the viewpoint of gender. Novocký and Rovňanová (2021) researched primary school teachers and identified a statistically significant difference in the perceived self-efficacy of class management from the viewpoint of the teachers' teaching qualifications. However, these authors used an instrument with different dimensions.

5. CONCLUSIONS

In connection with the discussed answers to the research questions, it is shown that it is necessary for mentor teachers to undergo continuous training aimed at developing their abilities to professionally assist student teachers in the process of forming pedagogical experience and professional identity. If mentor teachers participate in such oriented education, they basically show their interest in learning how to increase their capacity, respectively the potential of mentoring to help student teachers saturate their teaching needs. We consider it appropriate to offer mentor teachers opportunities for training in the field of mentoring in relation to their current requirements. In this case, the Faculty of Arts at Pavol Jozef Šafárik University in Košice can also develop a suitable activity when it would organise a series of workshops at which educators from the ranks of academics covering pedagogical practice would carry out simulated activities with them focused on the development of specific mentoring skills, while student teachers in the position of beginning teacher would also participate in the workshops.

A larger sample should be used to verify whether there is a statistically significant difference between the personal and general efficacy of mentor teachers, as was the case in our research (Wilcoxon signed-rank test (Z)=-8.671, p=0.000, AM=4.22, Me=4.13, AM=3.70, Me=3.71). Respondents scored higher in the perceived personal efficacy. It may signal mentors' doubts about the support provided to the entry-level teachers, which may

exhaust them in the long run. This is also one of the ways (e.g. trainings, workshops) to enter into the creation of the self-image of mentor teachers, which also affects their perception of the mentoring efficacy. In addition, there is an opportunity to indirectly motivate mentor teachers to engage in complex pedagogical practice (in which only one of its types would not prevail), so that they can more precisely plan steps to successfully adapt student teachers to real school practice. Mentoring, to be honest, is based on the relationship between an experienced teacher and a student teacher, becoming a benefit for both actors reflecting the weaker and stronger aspects of pedagogical practice. The mentor teacher also receives feedback, which becomes a stimulus for professional learning and, thus, also for a change in perceived personal efficacy. These proposals can also inspire other university faculties in Slovakia developing cooperation with mentor teachers, with whom students carry out pedagogical practice.

The validity of our findings should be verified on a larger sample of mentor teachers. Our study was seriously limited by convenience sampling; therefore, it is not possible to reliably generalise the findings to the whole target population (i.e., the mentors cooperating with our faculty). Subsequently, a more detailed study should focus on the question of how indirect and direct experience increases the perceived efficacy of mentor teachers. A combination of quantitative and qualitative research would be useful. Alternatively, a new instrument designed specifically for mentor teachers can be created to address specific phenomena and processes related to their work (e.g. involving students of teaching in the operation of school as an educational institution, provision of methodological and didactic materials, etc.).

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Conflict of interest

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