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RESEARCH ARTICLE

Psychological Distress of High School Graduates During Social Distancing in Croatia

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Ćurković, N., Bugarin, J., & Lukacin, L. (2022). Psychological distress of high school graduates during social distancing in Croatia. *European Journal of Mental Health, 17*(2), 20–30. https://doi.org/10.5708/EJMH.17.2022.2.4 Introduction: The COVID-19 pandemic has influenced the whole world, thus also affecting the high school graduates in Croatia.

Aims: The purpose of the study was to examine the psychological distress high school graduates experienced during the COVID-19 social distancing measures, more precisely to investigate gender and school type differences and to examine the relationship between psychological distress and selfregulated learning.

Methods: In this cross-sectional study, an online questionnaire was administered to 13,037 high school graduates across Croatia.

Results: The results show that girls exhibit higher levels of psychological distress compared to the boys, while the art school graduates show the highest distress, followed by gymnasium (i.e., secondary grammar school, prep school) graduates, and lastly vocational school graduates. Furthermore, a moderate negative correlation was found between self-efficacy and psychological distress, and significant, but small correlations were found between regulation of effort, management of work, time and environment, self-handicapping as well as elaboration and psychological distress. These results show that higher levels of self-regulation are connected to lower levels of psychological distress.

Conclusions: These findings demonstrate that a need exists for greater accessibility of mental health care for adolescents.

Keywords: high school graduates, psychological distress, COVID-19, self-regulated learning, State Matura exams

Introduction

According to the World Health Organization (WHO, 2020), "adolescence is a crucial period for developing and maintaining social and emotional habits important for mental well-being" ("Adolescent mental health" section). It is common knowledge that most mental health problems diagnosed in adulthood begin in early adolescence, and if not treated, continue through life (Knopf et al., 2008). Knopf et al., in their paper, present studies indicating that nearly 25% of youth exhibit symptoms of emotional distress, and about one in ten has moderate to severe symptomatology, most commonly depression, anxiety disorders, and attention-deficit/hyperactivity disorders as well as substance use disorders. These findings are in accordance with WHO's assertion that 10–20% of adolescents globally experience mental health conditions (WHO, 2020). Moreover, research suggests that adolescent

girls are more likely to experience psychological symptoms and distress than boys, and are more likely to express emotional disturbance inwardly, in the form of depression or anxiety symptoms (Pomerantz et al., 2002; Wilson et al., 2005), whereas boys tend to express disturbance more outwardly, through open behavior (Ostrov et al., 1989). While the majority of adolescents experience stressful life events that can exert a negative impact on their mental health, as well as various daily stressors, such as difficulties in relationships with family, friends or romantic relationships (Low et al., 2012), the most common stressors in adolescents' lives are related to school (De Anda et al., 2000). More commonly, this type of stress is referred to as academic stress, and one of the prominent sources of academic stress for students is school tests and examinations (Kouzma & Kennedy, 2004; Kyriacou & Butcher, 1993; Putwain, 2009).

State Matura Exams

In Croatia, like in many other countries, standardized exams are carried out at the end of secondary education. Those exams are called the State Matura exams. The State Matura exams (like SAT exams), among other purposes, serve as a part of the administration process for higher education, in a way that they are a crucial part of the application for the majority of Croatian universities (Ćurković, 2019). The State Matura exams have an obligatory and an optional part. The obligatory section consists of three exams: 1) Croatian language (or another native language for foreign students), 2) mathematics and 3) foreign language (Ćurković, 2019). The optional part of the State Matura exams includes other school subjects that students choose for themselves based on their interests and requirements by the faculties they are looking to enroll in (Ćurković, 2019). All of the State Matura exams consist of multiple-choice questions and short open-ended questions, while some also have (short) essays - primarily languages (Ćurković, 2019). State Matura exams also represent the end of secondary education for students that attend gymnasium schools; more precisely, after successfully passing Matura exams, gymnasium students gain a certificate which represents the end of their high school education. In Croatia, schools are divided into gymnasiums, vocational, and art schools. Vocational and art schools prepare students for a selected field of profession, while gymnasiums prepare students for continuing education on a higher level. Banks and Smyth (2015) claim that high school graduates consider State Matura-like exams to be very important and influential in their later life. The authors also point out that these types of exams cause students additional stress added to the one they are already feeling because of their school obligations. Moreover, as State Matura exams are one of the determinants for university enrollment, they are considered high-stakes tests, which are typically related to higher stress levels (Heissel et al., 2021).

COVID-19 and Adolescent Mental Health

Besides the stress graduates experience because of the State Matura, at the beginning of the year 2020, they also had to endure difficulties caused by the COVID-19 pandemic. Qiu et al. (2020) found that almost 35% of the participants from China experienced psychological distress during the pandemic. Guessoum et al. (2020) concluded that the pandemic and social distancing have multiple effects on peoples' lives, including adolescents. Some research emphasizes that children and adolescents are under an extra amount of stress in times of social distancing (Clemens et al., 2020), as social relationships constitute a crucial part of their healthy development. Since the mental health of adolescents stands at risk, depressive and anxiety disorders, as well as PTSD, should be expected as the most common consequences (Kar, 2019; Marques de Miranda et al., 2020). Zhou et al. (2020) conducted a survey on adolescents in China and found high rates of both symptoms of depression (43%) and anxiety (37%) during the COVID-19 pandemic. Moreover, Jones et al. (2021) concluded in their research reviews that adolescents experience higher rates of anxiety, depression, and stress due to the pandemic. Similar potential pandemic consequences are highlighted in Croatian psychiatric research (Ćurković et al., 2020). Apart from the listed stressors, students also had to adjust to remote learning. More precisely, at the beginning of the COVID-19 pandemic, Croatia was under a lockdown, which included closing schools and other educational institutions. As a result, students attended online classes and were urged to stay at home and practice social distancing. According to Lazarus and Folkman's transactional theory of stress, cognitive appraisal of the event (stressor) is the key part of emotional response (Biggs et al., 2017). If the event is ascribed as stressful and coping strategies are inadequate, negative emotions and psychological distress might occur. Considering all the described difficulties, it is logical to assume that high school graduates in 2020 were under a considerable amount of stress that could have had a negative impact on their mental health. On that account, Zhang et al. (2020) underline the need for mental health care during the pandemic as well as during the social distancing measures. Based on demonstrated research, it can be hypothesized that social distancing and the COVID-19 pandemic were an additional source of stress for high school graduates of the year 2020, aside from the usually raised levels of depressive and anxious symptoms that affect graduates as the school year is approaching its end (Smith et al., 2002).

Self-Regulated Learning

According to the definition by Goetz et al. (2013), "Self-regulated learning is a form of acquiring knowledge and skills in which the learners are independent and self-motivated. Learners independently choose their own goals and learning strategies that will lead to achieving those goals" (p. 126). In a traditional school environment, students have a structure defined by class schedule and teachers' control over the learning process in the classroom, which facilitates an external regulation of learning. Accordingly, when external regulation is reduced, such as during distance learning, student self-regulated learning and the multiple factors it consists of, various theories and models are trying to explore and explain the nature of the concept. For that reason, this paper will present only a few of the variables connected to self-regulated learning, as well as focusing on academic self-efficacy, motivational strategies, and elaboration as learning strategy.

Self-efficacy refers to a person's belief that he or she can accomplish a particular task (Lončarić, 2014). Moreover, academic self-efficacy is associated with many important outcomes, such as better academic success (Britner & Pajares, 2001; Choudhary et al., 2020), stress levels, depression, decision-making and motivation (Bandura, 2002; 2006). On the other hand, motivational strategies are activities that a student conducts to maintain or increase the effort for performing academic tasks. Two of the three strategies in this study relate to effort regulation and management of time and environment, and lead to favorable academic outcomes. The third motivational strategy is self-handicapping, and Berglas (1985, as cited in Lončarić, 2014) describes it as creating obstacles to success in order to maintain a sense of self-worth and positive self-scheme by attributing eventual failure to those obstacles. It is most often expressed by a reduced effort that leads to reduced achievement. Elaboration is the last part of self-regulated learning that falls within the scope of this research and belongs to the in-depth learning strategy. Deep learning is generally considered as desirable, and is positively associated with academic success (Lončarić, 2014).

According to Pekrun (2013), students' emotions are an important part of self-regulated learning since they are closely related to motivation for learning. Furthermore, the same author states that many negative emotions are associated with avoidance motivation and, as a result, more superficial learning strategies. While the relationship between mental health and self-regulated learning has not been extensively researched, a study of medical students by Van Nguyen et al. (2015) found significant negative associations between depression and aspects of self-regulated learning, including all of the subscales used in this paper, except self-handicapping.

Considering all of the extraordinary circumstances occurring in the year 2020, a survey for high school graduates was conducted. The goal of the survey was to gain better insight into the high school graduates' opinions about the State Matura exams, into the attributes of self-regulated learning during remote education, and the determinants of mental health. This article will present some of the collected data, mainly focusing on the mental health of high school graduates in the year 2020. The goal of this study was to take a closer look into the psychological distress of high school graduates during the social distancing measures put in place because of the COVID-19 pandemic.

This goal was further divided into two research problems:

- 1. to examine the differences in psychological distress levels between the genders and school types *H1a: girls will show higher levels of psychological distress than boys*
- H1b: gymnasium students will show higher levels of psychological distress than vocational students
 to examine the relationships between self-regulated learning and psychological distress

H2: higher psychological distress will be connected to lower self-regulated learning.

Methods

The survey was conducted during the school year of 2019/2020. The participants were graduate students of four-year and five-year high schools. The survey was administered in April of 2020, during the social distancing measures and remote learning. The survey was conducted online. It was ensured that only the graduating class of

2020 was able to access the surveys, while the students who were retaking the State Matura exams were not able to see the questionnaire. Before filling out the survey, high school graduates had to verify that they were of age and consent to participate in the research. The survey was completely anonymous.

Sample

The sample consisted of 16,620 graduates who participated in the online survey. The analyses took into account only the answers of the graduates who answered all 10 items of the YP-CORE. Hence, the overall YP-CORE scores were calculated for 13,037 participants, of which 63.2% were female. The higher response rate of female participants is consistent with previous research and gender differences in survey participation (Smith, 2008). All of the participants were of age (18 years old). About 50% of the graduates were attending gymnasiums, 48% were attending vocational schools, while 2% were attending art schools. Gymnasiums take four years to complete and they are a type of general secondary education that acts as a transition between primary school and higher education. Vocational schools take between three and five years to complete and are meant to teach students a certain craft with which they take on a profession. Art schools, like gymnasiums, take four years to complete and they are focused on various art forms.

Instruments

The YP-CORE (*Clinical Outcomes in Routine Evaluation – Outcome Measure for Young Person*) was used as a measure of psychological distress. It consists of 10 items that are designed to measure distress in adolescents. The YP-CORE is a shortened and adjusted version of CORE-OM (*Clinical Outcomes in Routine Evaluation – Outcome Measure*), which is constructed to measure psychological distress in adults (Twigg et al., 2009). The 10 items cover four domains: *risk of self-harm* (one item), *subjective well-being* (one item), *symptoms* (four items) and *problems and functioning* (four items) (Twigg et al., 2009). The Croatian version of the question-naire was administered with the instruction to answer the questions with regard to feelings and behaviors in the past seven days. The participants answered each question by using a 4-point scale ranging from 0 (*Never*) to 4 (*Almost all of the time*). The overall scores were computed as a sum of the scores on each of the 10 items with the items 3, 5 and 10 reversely scored as the authors, Twiggs et al. (2009), suggested. Reliability of the YP-CORE between .72 and .88 during the validation. Thus, the calculated reliability of the YP-CORE in this research is both expected and satisfactory.

Lončarić (2014) develops and lists scales for measuring various aspects of self-regulated learning – *Self-regulated learning component scale* (SRLC). SRLC consists of eight scales and 51 subscales. Since SRLC is a long and an all-inclusive instrument, which is just too detailed and lengthy for students to fill out in its entirety, for the purposes of this research, five subscales were taken from it. Students responded to all particles on a 5-point scale (from 1 = not applicable to me at all to 5 = fully applicable to me). The result of each subscale is obtained by summing all the items in the subscale and a higher result indicates a higher level of the measured construct.

As a measure of self-efficacy, *Self-efficacy in the learning process* was used, which is a subscale in the *Academic Self-Efficiency Scale*. An example of an item from the scale is "I solve homework easily and regularly." The subscale shows satisfactory reliability ($\alpha = .79$).

The motivational component of self-regulated learning was examined using three subscales of the *Motivational Strategies Scale*.

Effort Regulation and Work, Time and Environment Management are strategies to encourage the learning process. Effort Regulation consists of five items such as "While solving a difficult task, I say to myself: 'I can do it' and keep trying." Our research shows the subscale reliability of $\alpha = .84$. Work, Time and Environment Management is a subscale of six items, and an example of an item is "I like to always use the same place to study.", with a reliability of $\alpha = .83$. The Self-Handicapping subscale serves as an indicator of a strategy that is intended towards self-esteem protection and consists of five items such as: "I let everyone know that I am not even trying to study at all." The subscale has a satisfactory reliability ($\alpha = .85$).

The Elaboration subscale from the *Learning Strategies Scale* was used as a measure of deep cognitive processing. It consists of four items such as "As I read the material of a subject, I try to relate it to the information that I already know;" with a reliability of $\alpha = .92$.

	N	М	SD	Range	α
YP-CORE	13037	18.07	8.19	0 - 40	.89
Self-efficacy in the learning process	13146	12.00	3.43	4 - 20	.79
Effort Regulation	13132	15.06	4.89	5 - 25	.84
Work, Time and Environment Management	13084	23.13	5.06	6 - 30	.83
Self-Handicapping	13072	12.55	4.56	5 - 25	.85
Elaboration	13120	14.70	3.66	4 - 20	.92

Table 1. The Descriptive Statistics for the Overall Scores on the YP-CORE and Self-Regulated Learning

Note. N - sample size, *M* - mean value, *SD* - standard deviation.

Table 2. Means, Standard Deviations, and Two-W	y Anova Statistics for Yp-Core	e Between Gender and School Type
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School type	Boys		Girls		ANOVA			
	М	SD	М	SD	Effect	F	df	η2
Gymnasium	16.01	8.38	19.99	7.61	Gender	97.41**	1	.007
Vocational	14.87	8.18	18.96	7.78	School type	44.33**	2	.007
Art	19.12	7.43	22.18	7.76	Gender x School type	0.45	2	.000

Note. ***p* < .01.

Results

Descriptive Statistics

Overall scores for the YP-CORE and self-regulated learning are specified in Table 1.

The high school graduates' overall scores on the YP-CORE cover the entire possible range – from 0 to 40. The mean is 18.07 with the standard deviation of 8.19. A higher score on the scale represents a higher level of psychological distress.

Two-Way ANOVA was performed to determine differences in YP-CORE scores between genders and school types (Table 2). Both simple main effect analyses show significant simple main effects of gender and school type. Girls (M = 19.62, SD = 7.72) had significantly higher scores on the YP-CORE than did the boys (M = 15.41, SD = 8.28), meaning that girls exhibited a higher level of psychological distress. The *post hoc* analysis was conducted using the Tukey test. The analysis showed that there were significant differences in the level of psychological distress between each pair of the school types. The graduates that attend art schools (M = 19.37, SD = 7.95) achieve the highest scores on the YP-CORE, followed by the graduates that attend gymnasiums (M = 17.12, SD = 7.87), while the graduates from the vocational schools (M = 14.81, SD = 7.92) achieve the lowest scores. In both cases, partial squared eta amounts to .007 which falls into the range of small effect sizes (Olejnik & Algina, 2003). Both gender and school type can individually explain 7% of the variance in scores on YP-CORE.

The graphical representation of the overall scores depending on the gender and the type of school is in Figure 1.

Psychological distress and self-regulated learning

Pearson correlation coefficients were calculated between subscales of self-regulated learning and YP-CORE. The correlation matrix is shown in Table 3. The subscales of self-regulated learning show high to moderate correlations with each other, while with the YP-CORE they show low to moderate correlations. Higher scores on one of the self-regulated learning subscales are related to higher scores on other self-regulating scales (besides self-handicapping where higher scores mean worse self-regulation of learning.) Higher scores on YP-CORE are linked to worse self-regulation of learning. Psychological distress shows the highest correlation with self-efficacy in the learning process (r = -.36, p < .01).

In addition to Pearson correlations, a multiple regression analysis was conducted with the YP-CORE as the dependent variable and the subscales of self-regulated learning as the independent variables. The results of this



Figure 1. The Overall Results on the YP-CORE of the High School Graduates Depending on the Gender and the School Type They Attend

Table 3.	Pearson	Correlation	Coefficients Betwe	een YP-CORE	and Self-Requ	ulated Learning	Subscales

1.	2.	3.	4.	5.
-				
36*	-			
12*	.54*	-		
03*	.38*	.53*	-	
.08*	31*	50*	42*	-
05*	.25*	.37*	.32*	18*
	1. - 36* 12* 03* .08* 05*	1. 2. - - 36* - 12* .54* 03* .38* .08* 31* 05* .25*	1. 2. 3. - 36* - 12* .54* - 03* .38* .53* .08* 31* 50* 05* .25* .37*	1. 2. 3. 4. - <

Note. **p* < .01.

Table 4. Results of Multiple Regression Analysis in Which YP-CORE is Set as Dependent Variable While Self-Regulated Learning Subscales Are Set as Independent Variables

Variable	В	SE (B)	β		
Constant	23.83	.55			
Self-efficacy in learning process	-1.02	.02	43*		
Effort Regulation	.10	.02	.06*		
Work, Time and Environment Management	.18	.02	.11*		
Self-Handicapping	.05	.02	.03*		
Elaboration	.01	.02	.00		
R ²	15				
F	422.96*				

Note. **p* < .01.

analysis are shown in Table 4. These results show that self-efficacy has the biggest individual contribution to explaining the variance of the results on YP-CORE while other subscales exhibit very low or even insignificant individual contribution. It should be noted, however, that this analysis was conducted only to examine the individual relative importance in shared variance between psychological distress and self-regulated learning, and not to imply that self-regulated learning causes less psychological distress.

Discussion

The aim of this study was to take a closer look into the psychological distress of high school graduates during the social distancing measures. The first research problem was to determine the differences in psychological distress between the genders. Girls showed higher levels of psychological distress than boys did. Prior findings in the field are generally consistent with this conclusion. It has been demonstrated that women score slightly higher on the CORE-OM than men (Connell et al., 2007); moreover, girls of both elementary and high school age score higher on the YP-CORE than boys (Mikic et al., 2012; Twigg et al., 2016). Furthermore, research shows that girls are more likely to have symptoms of anxiety and depression than boys (Chen et al., 2020; Zhou et al., 2020). Jokić-Begić et al. (2014) state that the gender differences in the non-clinical population are the result of women's tendency to express their problems more openly. This may explain some of the differences found in this study. Another explanation of the gender differences could derive from different ways girls and boys perceive academic stressors. It has been found that girls experience higher levels of stress due to academic stressors, such as exams (West & Sweeting, 2003; Schraml et al., 2011). Hence, it can be assumed that girls experience more stress because of the State Matura exams compared to boys.

Furthermore, there were significant differences in the level of psychological distress experienced by the graduates, depending on the school type they attended. The participants attending art schools demonstrated the highest levels of psychological distress, followed by the participants from gymnasiums, while the participants from vocational schools showed the lowest levels of psychological distress. Although the design of this research does not provide insight into the causes of differences between schools, it could be assumed they are related to the importance students attribute to the State Matura exams. For gymnasium students, the State Matura exams play the role of final exams; i.e., they serve as a certificate of high school completion (Zakon o odgoju i obrazovanju u osnovnoj i srednjoj školi [Law on Upbringing and Education in Primary and Secondary School], 2020). The State Matura exams also serve as a criterion for college enrollment (Ćurković, 2019). Vocational school students finish high school based on a graduation project rather than the results of the State Matura exams, but they still need to take the State Mature if they wish to enroll in a college (Ćurković, 2019; Law on Upbringing and Education in Primary and Secondary School, 2020). It can be assumed, however, that college enrollment is of greater importance for gymnasium students since they do not have a degree or a vocation after finishing high school, while vocational school students acquire a profession by graduating. Consequently, it is logical to expect that gymnasium students will be more stressed by the State Matura exams, considering that college remains necessary for them in order to enter a profession. The highest levels of psychological distress were found in art school graduates. The high levels of distress can be attributed to the small enrollment quotas for the art academies that could lead to an increased concern on the part of art school graduates about continuing their education. Moreover, it is possible that there are differences in personality traits between the school types that can contribute to different levels of experienced distress. Vedel (2016) concludes in her systematic review that art and humanities students consistently show higher scores on neuroticism in comparison with other students. If art school students in our sample are also more neurotic than students of other school types, they may be more prone to stress and hence have higher scores on the measure of psychological distress.

Lastly, relationships between self-regulated learning and psychological distress were assessed. All of the selfregulated learning measures that indicate higher self-regulation are in a negative low to moderate correlation with psychological distress, and the Self-Handicapping subscale that indicates lower self-regulation has a low positive correlation with distress. Among the measures of self-regulated learning, self-efficacy exhibits the highest correlation with psychological distress. Furthermore, it shows the strongest contribution to explaining the psychological distress of students, while other subscales indicate very low or even insignificant individual contributions. This means that graduates who experience more psychological distress demonstrate a poorer self-regulation of learning. Similar results have been confirmed in other studies too (e.g., Hu & Yeo, 2020; Kurtović & Živčić Bećirević, 2012). Such a result is also consistent with Bandura's theory of self-efficacy (1994), where individuals with lower levels of self-efficacy are more likely to interpret stress as a debilitating condition, and the negative effect is associated with an inhibitory system (Gray, 1990), which makes a person less likely to invest effort into changing and improving their situation. Findings like these emphasize the need for greater care regarding the mental health of adolescents. Self-regulation of learning remains also of great importance, especially in times of remote learning when students are mostly left to their own devices and external regulation is reduced. To help students in these stressful and less structured times, it would be of use to employ those programs that promote self-regulated learning strategies.

Strengths and Limitations

Nevertheless, when drawing conclusions, it is necessary to take into account this study's limitations. The first limitation of this study is the fact that we cannot be certain which factors contributed to the psychological distress of high school graduates. Even though it can be assumed that the COVID-19 pandemic and the State Matura exams were the two biggest stressors for high school graduates in 2020, the conducted survey did not assess the causes of psychological stressors.

Another limitation of this study involves the use of self-reports while measuring constructs of interest. Since this was a national research conducted at the time of lockdown, high school graduates were still uncertain whether State Matura exams would be held in the year 2020 or not (due to the COVID-19 pandemic). Furthermore, due to the possibility of State Matura exams not being held, graduates may have thought that if they represented their stress at a higher level than it really is, the State Matura exams would be canceled. That being said, possible faking is one of the limitations of this study.

On the other hand, the study generated a great turnout. The large number of students who took the survey stands as a guarantee that the drawn conclusions have a great generalizability potential.

Conclusion, Implications and Future Directions

This study aimed to obtain an insight into the psychological distress that the high school graduates of 2020 experienced during the COVID social distancing measures. The research was conducted promptly after the start of the pandemic and on a large sample (N = 13,037). The results indicate that girls, in accordance with previous research, exhibit a higher level of psychological distress compared to the boys. Art school graduates showed the highest levels of psychological distress, followed by gymnasium graduates, while vocational school graduates manifested the lowest levels of psychological distress. Higher psychological distress is linked to poorer self-regulation of the learning process. These findings demonstrate that a need exists for greater accessibility of mental health care for adolescents.

This study's results point out the importance of taking care of adolescent mental health, especially in times of crisis.

Future research should examine the long-term impact of increased psychological distress on high school graduates' mental health, and the results could be linked to other relevant constructs and measures, such as neuroticism and State Matura exam results. Lastly, the latest research (for example Pačić-Turk et al., 2020) suggests that psychological resilience should be included as a variable in the research, since it could play an important role in mediating the relationship between stressors caused by the COVID-19 pandemic and psychological consequences.

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Author contributions

Natalija ĆURKOVIĆ: conceptualization, design, methodology, funding acquisition, investigation, project administration, supervision, writing review and editing.

Jelena BUGARIN: methodology, investigation, data management, formal analysis, interpretation, writing original draft.

Lorelaj LUKACIN: investigation, project administration, data management, interpretation, writing original draft, writing review and editing.

All authors gave their final approval of the version to be published and agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Declaration of interest statement

The authors have no conflicts of interest to disclose.

Ethical statement

This manuscript is the authors' original work.

The study was reviewed and approved by the Governing board of the National Centre for External Evaluation of Education (session No. 019, December 2020).

All participants took part in the research voluntarily and anonymously, and provided their written informed consent to participate in this study.

Data are stored in coded materials and databases without personal data, and the authors have policies in place to manage and keep data secure.

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