

REIMAGINING THE BULGARIAN STATE MATURITY EXAM: LESSONS FROM THE U.S. COLLEGE ADMISSION TEST (ACT)

Kaloyan KOLEV

Yale University, USA

Abstract. The Bulgarian State Maturity Exam is the mandatory secondary school exit exam in Bulgaria. It plays a significant role for both students and their schools, forming a large percentage of students' GPA. It is also used for university applications both in Bulgaria and abroad, and the only public statistic for ranking schools nationally. This paper surveys the format and logistics of the exam and proposes three independent modifications adapted from the most popular college admissions test in the U.S., the ACT. The first proposal aims to expand the focus of the mandatory Bulgarian exam to measure reading, writing, mathematics and science. The second looks in depth at the essay question of the Bulgarian state exam and the negative effects it has on school curriculum, as well as potential solutions. The third proposal examines the possibility of introducing multiple test dates and retesting, analyzing their contribution to greater student performance.

Keywords: Bulgarian state exam, washback effect, assessment, standardized testing

Introduction

Nearly 53,000 high school seniors sat down at 8 A.M. on May 20 to take the Bulgarian state matriculation exam in 2019. Passing it would ensure a successful graduation, and results would influence both university admissions and high school rankings. The examination consists of a series of tests over consecutive days, the first one of which is mandatory for all: a four-hour Bulgarian Language and Literature test for which students had effectively started preparing in their classes two years prior. I was one of the seniors taking the test on that day, and I was lucky enough to have my results matter only slightly, as I knew as I was going to university in the U.S. For me, the infamously outdated format of the exam was only a mild annoyance, but for tens of thousands of other students' success on the test was key for their graduation and university admission both in Bulgaria and the European Union.

The series of state maturity exams are commonly referred to as *maturi* (singular *matura*). They are standardized tests that are based exclusively on the content covered during the compulsory education curriculum in all Bulgarian schools.¹⁾ The exams are administered in two sessions, May-June and August-September, with the latter being a make-up solely for those who failed their first time (2111 students attended the latter session in 2019, according to newspaper *Sega*). The two mandatory exams are Bulgarian and a second subject chosen from a list of thirteen options, including Geography, Math, Philosophy, History, Physics, Chemistry, Biology, English, Russian, German, Spanish and French. Beyond that, students are free to sign up for additional subjects, usually to fulfil requirements for specific university programs.

It seems that the *matura* results make the news every year by hitting new historic lows. This is reflected in the distribution of grades in 2018 versus 2019, as shown in Fig. 1 below. The average result on the Bulgarian *matura* in 2019 was just 50/100 (roughly equivalent to a low C in the U.S. system), as reported by the newspaper *Sega*.¹⁴⁾ While this may be influenced by a variety of factors,

in my conversations with high school seniors it appeared that taking the matura itself was a frustrating experience, even for those who performed well

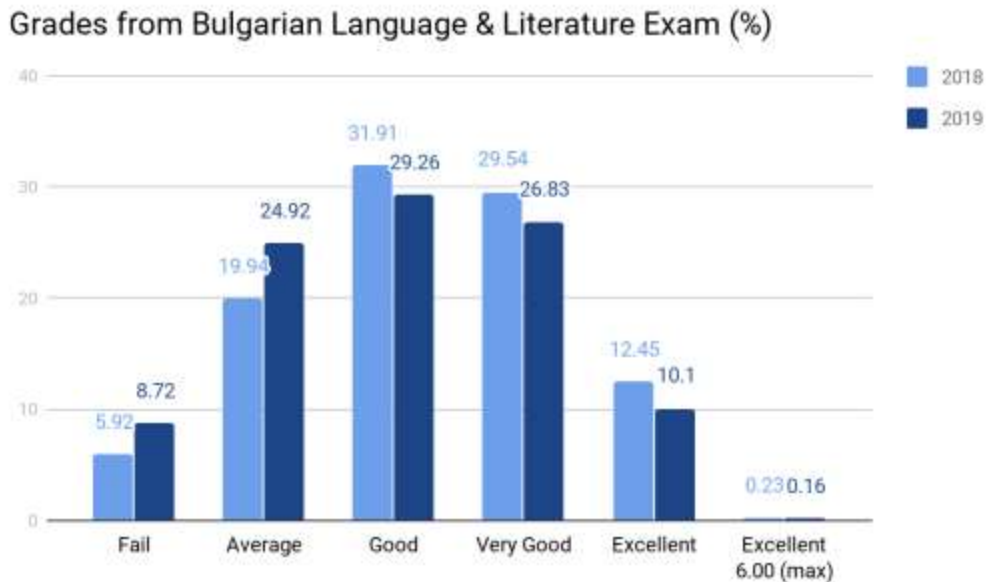


Figure 1. Grades from Bulgarian Language and Literature exam (%)

The aim of this paper is to examine the structure and logistics of the mandatory matura and identify three practical ways of modifying it within the existing educational framework. For reference, this paper will turn to the most popular college admissions test in the U.S., the ACT. The ACT is a standardized exam designed to evaluate college readiness by testing students in a broad range of areas. While the ACT and its alternative, the SAT, are quite similar, this paper focuses on the ACT because of its recent rise in popularity, as well as its well-designed Science and Writing sections. The test was taken by 1.8 million 2019 graduates from the U.S. - 52 percent of the graduating class.²⁾ While the primary goal of the exam is to overcome the differences in funding, grading, and curricula that exists between various states, a number of their key features would also

be effective in the Bulgarian system, where the problem of fragmentation doesn't exist to the same extent.

The first modification that I will discuss is consolidating the two mandatory maturi into a single exam that tests different subject areas. The ACT is divided into four sections: English, mathematics, reading, and science reasoning, a mix that provides a balance and well-roundedness that is much needed in the current state of the Bulgarian education system. The second modification I propose is a redesign of Question 41 of the Bulgarian Language and Literature test, which asks students to write an interpretive essay examining a specific work of Bulgarian literature. The poem, short story or novel that the essay focuses on is randomly selected from the Literature syllabi of their junior and senior years, which negatively influences classes. The essay on the ACT, on the other hand, presents students with an unfamiliar idea and explores broader social themes, making it much harder to explicitly prepare for. The third modification I discuss is a logistical one: the addition of multiple testing days. The May-June session is the only chance most students get to take the test, which makes it a significant source of test anxiety and impairs student performance. Having the whole country take the test on a single date is also a resource-intensive logistical task, both for schools and the Ministry of Education. By allowing students to retake the matura, the Ministry would make the test more accommodating and accessible.

Proposal # 1: holistic examination in Bulgarian, Mathematics and Science

The focus of the maturi has always been relatively narrow, even with the introduction of the second subject mandatory exam in 2012. Before that, the only required test was Bulgarian Language and Literature.³⁾ It consists of 41 open and multiple choice questions that cover Bulgarian grammar, spelling, reading comprehension, as well as knowledge of prominent works of Bulgarian literature studied in class. Bulgarian is the primary spoken and written language

in the country, so proficiency in it is a top priority of the Ministry of Education, especially considering the shrinking population of the nation and the dominance of English in today's globalized society. As described by researcher Tatyana Angelova (2019), the main purpose of the matura in its current state is the evaluation of knowledge about the basic parts of speech and the rules that they follow, as well as the skills required for communication using the language, like narration, description, and expressing an opinion. Angelova (2017) contrasts this with the goals of the international examinations PISA (Programme for International Student Assessment) and PIRLS (Progress in International Reading Literacy Study), the goal of which is the measurement of *functional literacy*. As defined by UNESCO, *functional literacy* is the literacy required for the effective function and development of a group or a community. The distinction between functional literacy and the shallow language testing of the matura becomes clear when looking at the Bulgarian performance on the PISA 2018 examination, where the country's score of 420 points was 67 points lower than the world average.⁴⁾ As Angelova (2017) suggests, the matura needs to update its evaluations to keep up with the contemporary educational context, as language proficiency today is about much more than memorizing rules.

Perhaps the greatest issue with the mandatory Bulgarian matura is the negative washback that it produces on Bulgarian classes in school. As defined by Tatyana Angelova (2017), washback effect is the impact of testing on learning and curriculum design. The researcher points out numerous instances of negative washback caused by the matura, like the mismatch between the weight of particular questions on the test and their importance in real life communication. For example, one of the questions that focuses on grammar is worth 10 points, even though it tests a limited set of arbitrary grammatical rules, like punctuation and conjugation. A question that asks students to summarize an unfamiliar text, on the other hand, is worth only 4 points, even though it tests essential reading and comprehension skills. Since the matura is so closely tied to the material taught in Bulgarian classes, there is also a broad negative washback on teaching

practices and student attitudes toward the subject. Teachers feel pressure to prepare students exclusively for the exam, since success on it is so important for their GPA and school rankings. In my experience taking both Bulgarian and English literature classes, the former were devoid of the passion and curiosity that defined the latter, not because of the quality of the teachers or the material itself, but because of their significantly different goals. While my Bulgarian classes taught me to do well on the matura, my English classes taught me to enjoy reading and think critically.

The specialized combination of Bulgarian and a second subject also matches the Bulgarian and European higher education systems, where students are locked into an area of study from the moment they apply. Part of the intention of having a mandatory second subject test is to allow students to use the results as a part of university application in a relevant subject (ex. Mathematics for computer science, Biology and Chemistry for a medical degree). That being said, the choice of English as a second matura, while not a specific major requirement, was the most popular in 2019, with 35% of test takers preferring it out of the 13 options.⁵⁾ This is perhaps a result of the increased exposure to English among Bulgarian youth through media and the Internet.

While students are tested primarily on their language skills, the modern economy demands a greater number of STEM graduates, as evidenced by a request from the Bulgarian Industrial Capital Association to the Ministry of Education in 2019. The Association proposed the addition of a mandatory matura in Mathematics, aimed at increasing the technical proficiency of graduates.⁶⁾ The Ministry's response was that, while they are not planning on adding extra exams, they would seek other ways to promote student engagement in Mathematics, like competitions.

A holistic mandatory examination in the style of the ACT could be a potential solution to the aforementioned problems. The ACT begins with a 45-minute English section, which tests two broad skill areas - language rules and

rhetorical skills. While the Bulgarian matura focuses on similar areas, the primary difference comes from the structure of the questions. Instead of having a different example for each question (as is the case on the matura), the ACT frames its problems within the context of five passages. This makes the test closer to real-life reading and editing, asking about specific cases that build upon a broader text.⁷⁾ The second section of the ACT is Math, which is similar to the Mathematics matura with its multiple choice questions. Implementing it in the Bulgarian context would be simply a matter of integrating parts of the Mathematics matura into the mandatory exam. The third section of the ACT is Reading, which corresponds to questions 23-34 on the Bulgarian matura. The main difference here is the depth of the material covered on the ACT. The ACT asks 40 questions on 4 texts (in the genres of prose fiction, social science, humanities and natural science), while the matura has eleven questions on two texts (usually non-fiction). Implementing a section similar to the ACT Reading that evaluates comprehension skills would lead to a positive washback effect and improve the otherwise below average reading performance of Bulgarian students, as evidenced by their PISA scores (Angelova, 2017). The last ACT section focuses on scientific interpretation skills. Instead of testing students on their pre-existing science knowledge or memorized facts, it involves reading data and charts, and applying the scientific method.⁷⁾ This aspect of high school education is missing both from the Bulgarian matura and science maturi, like Physics, Biology or Chemistry. As the Ministry of Education aims to increase STEM competency in students, adding a mandatory Science examination could be an incentive to improve student performance in the area.⁴⁾

By expanding the scope of the mandatory matura, the Ministry of Education can provide a broader, more effective examination that challenges students with a variety of academic interests.

Proposal # 2: the essay component

Question 41 of the Bulgarian Language and Literature test, which asks students to write an interpretive essay examining a specific work of Bulgarian literature, is notoriously the most challenging part of the matura. In 2019, students had two hours to write up to 4 pages discussing the themes of “Reality and fiction” in Elin Pelin’s short story *Kosachi*.⁸⁾ Written in 1903, *Kosachi* is one of the 91 works of Bulgarian literature that juniors and seniors study in class as a part of their mandatory curriculum. In the case of *Kosachi*, students were provided with a one-page excerpt from the story (they are expected to have read the rest). In her analysis of this year’s results, journalist Zornitsa Lateva⁹⁾ reports that creating an original text proves to be the greatest challenge to seniors. 15% of the test takers submitted a blank paper, while 6% simply copied the original text word for word instead of writing about it. There are three key contributors to this problem: the literature curriculum is outdated, the way it’s taught to the test inhibits teaching, and the prompt inadvertently promotes cramming over critical thinking.

The Literature curriculum, although comprised of national “classics,” is simultaneously way too large in volume and not diverse enough in its themes and representation. The 91 works on the matura syllabus include poetry, short stories and novels from prominent Bulgarian authors from the 1860s to the 1950s. There are no texts from the last 70 years, and I’ve found it hard to relate to the revolutionary sentiments of pre-liberation Bulgarians. There is only one woman on the syllabus, the poet Elisaveta Bagriana. This all contributes to the significant indifference that a lot of students feel toward their Literature classes - the teaching is dry and abstract, and its only purpose becomes success on the matura.

The essay section on the exam is also the main root of the previously mentioned washback effect on classes. Since the quality of Literature education is evaluated on a national level by the matura, teachers prioritize exam preparation over reading for enjoyment or critical thinking. Instead of teaching us to

analyze the texts on our own and write in our personal style, most of my Literature teachers focused on “feeding” us pre-existing interpretations. These were usually written by expert philologists in a highly convoluted and inaccessible style. Due to the sheer number of works we had to cover over the school year, we often moved through the material too quickly, sometimes spending only 20 minutes on a piece. While teachers appreciate original thinking in class, the system is set up in a way that actively discourages it. Students are often warned to stick to writing only widely accepted ideas on the actual exam, since graders might otherwise dismiss their arguments completely.

Finally, in its attempt to be fair, the writing component inadvertently promotes mindless cramming. Basing the matura on a work of literature that is part of the curriculum is good in theory, as it creates an equal opportunity for all students, avoiding the biases that may influence social-based prompts such as the ones on the ACT. However, it also makes preparing for the exam much easier, which brings its own set of problems. The most common strategy for the writing component among high achieving students I talked to is pure memorization. They memorize complete essays they write at home (or read on the internet) and then reproduce them on the exam. While memorizing 91 essays is highly impractical, memorizing a general one for each author brings the number down to 15 - easily achievable for a student who really wants a good score. In the end, the exam encourages cramming more than thinking. Having the essay prompt be a topic that is close to the class curriculum, but distinct enough to stimulate original thinking, would be an achievable compromise between the matura and the ACT.

Instead of making writing explicitly based on Literature class, a redesigned matura essay should test the argumentative skills of students on a prompt that is unfamiliar, but relevant to their lives. The ACT Writing test does something similar by evaluating a student’s ability to present an original viewpoint on a social issue.⁷⁾ It provides test takers with a short prompt and gives them 40 minutes to write their essay. While a longer time limit (like the 2 hour one on

the matura) would generally allow for a more nuanced and well-written text, the ACT Writing section in its current state is a good indicator of writing and reasoning skills without being susceptible to the explicit memorization that plagues the matura. As the topics on the ACT essay are grounded in real problems, they are more relevant to students' experience than literature analysis, which, although undeniably valuable, can be harder to understand. The ACT Writing section is optional (and costs extra), while the one on the matura is mandatory, at least in theory. In practice, the overall scoring of the Bulgarian exam is structured in a way that allows students to pass even if they leave their essays blank (Angelova, 2017). While students who do this would probably not get into top universities, it is enough for them to graduate. Tatyana Angelova (2017) suggests that this grading anomaly contributes to a negative washback effect, and diminishes the key purpose of the essay - indicating the level of language comprehension. A successful redesign of the matura essay should move the exam's focus away from rote learning and promote critical thinking.

Proposal # 3: multiple test dates

Having everyone take the matura on a single day of the year makes for a stressful experience for all parties involved. Seniors experience test anxiety due to the high stakes, which in turn affects their performance (McDonald, 2001). Classes are disrupted and students from lower grades stay at home, since almost all schools become test centers to accommodate for the large volume of test-takers. Teachers are scattered throughout their districts to serve as proctors; in 2019, 10500 proctors were needed for the Bulgarian matura, a nearly 1:5 teachers to student ratio.¹⁰⁾ The Ministry of Education also experiences frequent logistical issues due to the scale of the examination, ranging from test errors to misinformed center coordinators and failing online systems. All of these problems can be mitigated by offering multiple test dates over the course of several months, and allowing students to retake the matura as many times as they want. This approach would be similar to the ACT, which offers up to seven test dates

a year.¹¹⁾ Having multiple dates would reduce the number of students taking the test at once while simultaneously offer them more opportunities to perform to their best ability.

A significant benefit of having the test spread over multiple dates for students is the flexibility it gives them to plan their preparation and balance it with school and life. It allows students who are ahead to take the test sooner and get an early start on their university applications, while also allowing for extra preparation time for those who need it. Multiple test dates would also dramatically change the general preparation timeline, leading to decrease in the wash-back effect on classes. In my last month of school, teachers focused exclusively on matura preparation, assigning us sample tests for homework and revisiting old topics instead of teaching us the new material they wanted to. If the matura had been an ongoing examination over the whole year, our classes would have been less influenced by its timeline.

The matura is also one of the few university examinations in Bulgaria that is only offered on a single date (though the matura is widely accepted, competitive universities also have their internal exams). The entrance exam for the Bachelor's Program in Mathematics in Sofia University, for example, is offered both in March and in June.¹²⁾ It tests only the mandatory curriculum, and its structure is based on the Mathematics matura.

An analysis of student performance on the ACT highlights that students generally increase their scores upon retesting.¹³⁾ But while higher scores overall may look good on newspaper headlines, would retaking the test affect the validity of the scores? This is a concern, especially for a system like the SAT Score Choice, which allows students to send only their highest grades on each section to colleges. While retaking may boost scores, an analysis of college performance shows that the ACT and the SAT's predictive power remains the same even with Score Choice (Roszkowski & Spreat, 2016). The effect of the date itself on student performance is negligible, according to ACT researchers Camara & Allen.¹³⁾ Student scores in late April were generally higher by about 0.40 score

points than those in February, which is not a significant increase.¹³⁾ By introducing retesting and a system similar to Score Choice, the Ministry of Education will make the matura more accessible and less stressful for students without compromising its statistical validity.

When it comes to organizing a test, there are a number of logistical questions that must be addressed. First is the question of testing fees. The matura, unlike the ACT or the SAT, is administered at no charge to all students. Adding a testing fee could incentivize students to take the test less times (or prepare better), as well as stimulate schools to become test centers. However, it would also perpetuate educational inequity, which the matura, as a standardized test, seeks to minimize. That's why the matura should be offered free of charge for all students on all testing dates. Students should be able to retake the test as many times as they want, limited naturally by their school graduation and university admission timeline. The number of testing dates in particular depends on the supply and demand of schools and the Ministry, and could be determined by gradually increasing the options from year to year. A similar strategy could be used for the number of testing centers.

The final point to consider when implementing multiple test dates is the effect earlier examination will have on the matura syllabus. Being able to take the exam in the September of your senior year means that the matura should not be based so heavily on the curriculum of the final year of education. One option is to focus the exam on material studied in previous years, or further detach it from the class syllabus. Having multiple test sections like the ones outlined above would contribute to that, as a more holistic examination would focus on testing skills rather than specific knowledge.

Conclusion

Standardized tests are a powerful tool for policymakers and statisticians, but their real audience is the students who are taking them. Tests should not be seen as a nuisance or a punishment, they should be a rewarding challenge that

inspires students to show their best work. A poorly designed exam only leads to anxiety and frustration, and never to useful results.

The maturi in their current state are far from ideal, and perhaps they never will be. However, simply reporting falling scores each year does nothing for education. Action needs to be taken not only in reworking the curriculum, but also the way it is measured. Expanding the focus of the mandatory matura would positively impact both classes and student skill sets, emphasising the well-roundedness that is required for success in today's economic climate. By shifting the focus of the essay away from Bulgarian literature, the test will further engage students and promote critical thinking instead of rote memorization. Finally, offering multiple test dates and opportunities for retesting would positively affect student performance and create equitable testing conditions.

Bulgaria's education system is in desperate need of a change. Brain drain is one of the main contributors to the current demographic crisis in the country, which has the world's fastest shrinking population.¹⁵⁾ Reversing that trend starts with good schools and passionate students, backed by a system ready to support them.

NOTES

1. https://eacea.ec.europa.eu/national-policies/eurydice/content/assessment-general-upper-secondary-education-8_en
2. <https://www.act.org/content/act/en/students-and-parents/more-choices-for-the-act-sept-2020.html>
3. <http://www.zamatura.eu/matura/кратка-история-на-матурите/>
4. re-bg.org/результатипisa2018/
5. btvnovinite.bg/bulgaria/zrelostnicite-se-javjavat-na-vtora-zadalzhitelna-matura.html
6. <https://dariknews.bg/novini/bylgariia/mon-ne-predvizhda-zadylzhitelna-matura-po-matematika-2157281>
7. <https://blog.prepscholar.com/act-sections>

8. Ministry of Education and Science. *Bulgarian State Maturity Exam*, 21st May 2019.
9. <https://www.mediapool.bg/rezultatite-ot-maturata-po-balgarski-ezik-udariha-novo-istorichesko-dano-news294534.html>
10. https://www.dnevnik.bg/detski_dnevnik/2019/05/21/3908439_na_matura_po_balgarski_ezik_i_literatura_dnes_shte_se/
11. <https://www.act.org/content/act/en/students-and-parents/more-choices-for-the-act-sept-2020.html>
12. <https://www.fmi.uni-sofia.bg/en/exams>
13. <https://eric.ed.gov/?id=ED58360>
14. <https://www.segabg.com/node/94902>
15. <https://qz.com/1187819/country-ranking-worlds-fastest-shrinking-countries-are-in-eastern-europe/>

REFERENCES

- Angelova, T. (2017). Predominance and conforming in teaching Bulgarian language or for so called Washback effect. *Predominance & Conforming*, 2, 339–346.
- Angelova, T. (2019). Assessment of the results of teaching Bulgarian language: what to assess, how to assess, and why to assess - new answers to familiar questions. *Bulg. Language & Literature*, 61(2), 182–197.
- McDonald, A.S. (2001). The prevalence and effects of test anxiety in school children. *Educ. Psych.*, 21(1), 89–101.
- Roszkowski, M.J. & Spreat, S. (2016). Retaking the SAT may boost scores but this doesn't hurt validity. *J. Nat. College Testing Assoc.* 2(1), 1-16.

✉ .Mr. Kaboyan Kolev
Student, Yale University
United States of America
E-Mail: kaloyan.kolev@yale.edu

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