

CONTRIBUTION OF INNOVATIVE EXAMINATION FORMATS TO INCREASED CHEATING IN UNIVERSITY EXAMINATIONS

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Abstract

The Covid-19 pandemic poses challenges to universities worldwide. Resulting from the need to comply with distance requirements and hygiene rules, universities implemented more and more distance learning and online examination formats. This was intended to reduce the risk of infection for students and staff.

In these pandemic times, replacing on-site examinations by alternative testing types and adjusting examination procedures have become necessary to allow students to continue their studies and to avoid infections among examinees and university staff. Beside the advantages innovative examination types offer, several disadvantages exist, such as their increased susceptibility to cheat. With this paper, the authors analyze if and why innovative examination types have supported and increased examinees' motivation to cheat.

As higher education institutions moved online in the COVID-19 pandemic, several universities are reporting significant increases in academic misconduct. The paper informs about that increase of dishonest practice in university examinations worldwide in the last years. By the means of literature review and from their longstanding experience, the authors analyze possibilities for cheating in traditional and new test formats. They discuss reasons why candidates use cheating to improve their examination results.

Conclusion is that innovative examination types are susceptible to cheat and universities, in the interest of all honest examinees, have to ensure an equal treatment of all candidates even under the pandemic conditions. That means they have to undertake any efforts to prevent academic misconduct. In doing that, however, they shall respect students' fundamental rights and the data protection law. It will be a challenge to develop technical solutions that comply with candidates' rights and the examination law. Without any doubt, this problem will accompany universities in the next years if they will continue to use online examinations.

Keywords: university examinations, academic misconduct, COVID-19 pandemic

1. INTRODUCTION

The COVID-19 pandemic imposed a challenge to universities all over the world. Beside adjustments in teaching, examination procedures needed fundamental revision as well. In order to avoid infection of students and staff, universities implemented or increased the share of digital examination formats. The aim was to comply with hygienic and distance requirements but, on the other side, to allow students to take part in examinations while the pandemic. Due to the fast implementation of largely unapproved examination types, there were huge concerns if the motivation of students to cheat will increase. The critics have proved to be right. Two years after the beginning of the pandemic, the majority of German universities report an increase in academic misconduct in digital examination types (Rottlaender 2021) (Knörich 2020) (Pardey 2021). But, also in other countries, many universities are reporting increases, sometimes dramatic ones, in cheating in university examinations (Desai 2021) (Newton 2020) (NOORD360 2020).

However, there are other educators who argue that it is unclear if and how much cheating actually increased because online examinations probably allow to detecting it more. An increase in reports of academic misconduct does not mean that there is more cheating occurring (Dey 2021).

Finally, cheating is done in an atmosphere of secrecy. That is why reliable statics are not available. However, universities are obliged to avoid any cheating, whether in on-site examinations or while online testing.

The main problem is that higher education institutions are caught between compliance with existing examination law and data protection objectives while using innovative digital examinations. German constitutional law and examination law require that universities have to ensure an equal treatment of all examination candidates even under the pandemic conditions. This obliges examination authorities to undertake any efforts to prevent academic misconduct. On the other side, they must respect data protection interests of students that could be affected by proctored online examinations.

2. BASIC PRINCIPLES OF GERMAN EXAMINATION LAW

The EU Charter of Fundamental Rights in Article 15 guarantees all people in Europe the right to engage in work and to pursue a freely chosen or accepted occupation (European Union 2016). Additionally, the German Constitution in Article 12(1) ensures the right, freely to choose an occupation or profession (occupational freedom) (Federal Republic of Germany 2020). University examinations affect students' occupational freedom (Quapp and Holschemacher 2021) because academic programs, in which examination attempts are limited, may impede failing examinees to get access to the desired profession. Therefore, it is essential to organize academic testing on the basis and in compliance with legal regulations. German examination law can be found in the University Acts of the German Federal States and in the universities' examination rules and regulations. In Germany, each university enacts study and examination regulations in accordance with Federal States' University Law. Basing on these regulations, examination boards organize and conduct academic tests and examinations.

The most important task for examination boards is to ensure equal treatment of examinees in universities examination procedures. That requirement results from the constitutional guaranteed principle of equal opportunities for all humans in Article 3(1) of the German Constitution. (Federal Republic of Germany 2020). Similar regulations can be found in the German Federal States' constitutions, see Article 18(1) of the Constitution of the Federal State of Saxony (Federal State of Saxony 2013). The constitutions shall bind the legislature, the executive and the judiciary as directly applicable law (Federal Republic of Germany 2020). The limitation of the occupational freedom, by the obligation to successfully pass academic examinations and to graduate in a study course, requires to offer all examinees equal chances and opportunities to meet the performance requirements. Therefore, universities shall ensure equal examination conditions for all examinees by enacting consistent regulations specifying for example examination form and procedure.

For digital examinations, universities must collect and process data of examinees. In Germany, universities have to comply with the European General Data Protection Regulation (European Parliament and the Council 2016) and the data protection law of the German Federal States. Higher education institutions are allowed to collect and process data that are necessary for fulfilling their tasks. If universities are not able to verify the need to collect and to process the respective data, data owners must legitimate the process. This consent can be revoked at any time. Data protection law imposes problems to universities to proctor closed book examinations in students' homes via video conference systems.

3. UNIVERSITY EXAMINATION TYPES

3.1. Traditional examination types

Until the beginning of the COVID-19 pandemic, universities mostly used traditional examination types, such as on-site closed book test, take home/open book exams, on-site oral examinations, lab exercises or practical exams. The pandemic required compliance with distance and hygienic rules. To ensure that compliance, universities adjusted their examination procedures. One part of the adjustment was the

replacement of on-site testing by examinations that allow distance between examinee and examination staff, such as take-home exams. Furthermore, innovative testing types were implemented.

3.2. Innovative examination types

To fulfil pandemic requirements, universities replaced traditional exams, in which personal attendance was mandatory, by innovative testing types. Not only in Germany, the beginning of the pandemic in March 2020 was the starting point for an extensive usage of computer-aided or computer-based examinations at all universities. In order to reduce face-to-face contact between staff and examinees, universities in Germany currently examine knowledge and skills of students only partially with classic examination types. Classic take-home examinations such as project/seminar papers, degree theses, and other homework further can be used because they do not require presence in university rooms. Test requiring personal attendance and proctoring of examinees, typically have been replaced by distance test formats, such as (non-exhaustive list):

- Online written exam (proctored)
- Online written exam (non-proctored)
- Digital written homework
- Digital project or seminar paper
- Oral or practical examination via video conference
- Computer-aided tests.

Innovative exam types often are characterized by the fact that they are allowed to be taken outside of the university campus. Nevertheless, proctored written online exams cause legal problems if they allow university staff to monitor students via video in their homes during the test. At the moment, in Germany, there is a legal discussion about the violation of German constitutional law and data protection regulations by online proctoring of students during online examinations.

4. ACADEMIC MISCONDUCT WHILE UNIVERSITY EXAMINATIONS

4.1. Cheating while traditional examination types

The problem of academic misconduct is as old as science itself. A part of students has always used outside resources, also in traditional exam types, such as personal notes or not allowed literature. Others collaborated with examinees beside or took an unallowed look at the other examinees' tests. Furthermore, particularly in the last years, unallowed use of technical facilities such as a mobile phones or smart watches increased. While on-site testing, universities tried to reduce academic misconduct by proctoring.

Take home exams have always been susceptible to cheating although they mostly are open book tests and students are allowed to use literature. Because of the missing proctoring, students try to collaborate even if it is permitted. However, universities mostly have difficulties to prove evidence for cheating in take home exams.

4.2. Cheating while innovative examination types

Since universities replaced many of the on-site examinations by innovative testing types, they are reporting increases, sometimes dramatic ones, in academic misconduct. Higher education institutions around the world reported about soaring of academic misconduct during the pandemic years, such as

- Miami University: from 480 cases of academic misconduct within the academic year 2018-2019 to 700 reported cases in 2019-2020 (Whitehead 2021),
- Ohio State University, reported incidents of cheating were up more than 50% over the year before (Dey 2021),

- University of Georgia: cases were more than doubled; from 228 in the fall of 2019 to more than 600 in 2020 (Dey 2021),
- Virginia Commonwealth University: increase within the academic year 2020-2021 to 1,077 — more than three times the previous year's number (Dey 2021)
- Universities in Canada: universities reports increase in cheating from about 40 percent to over 200 percent (Desai 2021).

From these universities, cheating by a group of students in selected examinations was reported:

- Berlin School of Economics and Law (Warnecke 2021),
- Berliner Hochschule für Technik (Warnecke 2021),
- European University Viadrina (Demmer 2021)
- HTW Berlin, University of Applied Sciences (Warnecke 2021),
- North Carolina State University (Newton 2020),
- Purdue University (Newton 2020),
- Technical University of Berlin (Warnecke 2021),
- Technical University of Darmstadt (Glas 2022),
- University of Applied Sciences Neu-Ulm (Frankfurter Allgemeine Zeitung 2020),
- University of Cologne (Rottlaender 2021),
- University of Groningen (NOORD360 2020).

Of course, as reported in the previous section, some of the students have always used outside resources in exams. But it seems to be easier to do so remotely and the changed examination situation spurred cheating to take on new and different forms (Dey 2021).

While a study, over 1.600 students were interviewed anonymously about cheating. The results showed that 31.7% of the students admitted to cheat in on-site exams but 61.7% confessed cheating while online tests (Janke et al. 2021).

In innovative examination forms, the most common type of cheating has been unauthorized collaboration (Dey 2021). Unproctored exams enable students unfettered access to mobile phones and other technology in order to work together on assignments that are supposed to be done independently.

4.3. Reasons for cheating

Reasons for cheating in innovative examination types are various (Dey 2021). After analyzing literature and answers from students and lecturers, the authors identified four main motives:

1. More opportunities
2. New means
3. Students' overload
4. Unclear rules

4.3.1. More Opportunities

While the COVID-19 pandemic, universities replaced on-site examinations by take home exams or online tests. Nevertheless, it was often observed that, instead of changing the examination type, universities continued to offer the same closed book examination, but with the difference that students need to take exams at home, unproctored or with low level proctoring. Of course, that enables and motivates students to use unallowed sources or to work together.

Some students do not have the intention to complete lacking knowledge by cheating but use the chance to double-checked their answers in unproctored exams (Whitehead 2021). Thus, it can be considered that cheating in innovative non-proctored exams is mainly a result of ease of access, such as the proverb says: “An open door may tempt a saint”.

4.3.2. New Means

Access to digital resources in unproctored closed book exams further enable students to use other cheating means than available in on-site testing. Collaboration with other examinees, for example by using messaging subscription services, is much easier than in proctored on-site examinations.

4.3.3. Students' Overload

While the COVID-19 pandemic, universities and students faced the challenge to continue the teaching and learning process without major restrictions. Mostly, only online teaching was possible, lab work was stopped and face-to-face interaction was reduced at the minimum. Some of the examinees argue that cheating was usually the result of being overworked and having to prioritize certain classes and assignments over others (Whitehead 2021). They were in a situation where they think their only option is to cheat (Whitehead 2021).

This argument cannot succeed. When universities shut down or restricted in-person access, all students were affected more or less. By academic misconduct, few students obtain unfair advantage compared with these students who comply with the examination regulations but also had all limitations while the pandemic. Furthermore, overload of students due to other obligations, such as job or family, shall not be accepted as a reason for academic misconduct.

4.3.4. Unclear rules

In literature, it was argued that students were confused about what was permitted and what was not during an exam. Thus, in some cases, cheating does not fall in the category of academic misconduct but is the product of unclear rules (Dey 2021). This argument is dangerous for both sides. At the end, if rules are unclear, universities may have difficulties to prove students' cheating. On the other side, examinees should not rely on the argument of lacking or unclear information. In worst case, candidates fail due to academic misconduct and lose the chance to finish their studies.

5. RECOMMENDATIONS TO PREVENT CHEATING IN INNOVATIVE EXAMINATION TYPES

The examination process imposes obligations and confer rights to both, universities and examinees. Universities have the obligation to inform examinees about rules and regulations regarding the respective examination. In Germany, information about the examination procedure is laid down in examination regulations for all study programs. Vice versa, students have the obligation to ask for information about what is allowed and what is considered as academic misconduct. The ideal way are instructions directly before starting the exam by the examiner. That gives student the chance discuss whether intended actions or working processes are permitted or not.

5.1. Proctored examinations

An obligation to sign an honour code by the examinees occasionally has been suggested to prevent cheating in examinations. However, the benefit seems to be limited. Examinees could undersign and, nevertheless, cheat. The consequences, exclusion from the examination and penalty mark 5, will be the same as without a signed honour code.

Using proctoring-software may help to prevent cheating. However, in Germany, using proctoring software is problematic because of the restrictive data protection law. For other countries, proctoring solutions can help to stop cheating but will not stop it finally. Depending on the provider, proctoring software for example controls sound and images of the examinees via webcam. Furthermore, the software is able to prevent the examinee's access to online resources, such as world wide web, while the examination. Currently, whenever the pandemic situation permits, universities should try to plan

proctored examinations as on-site tests. Exams in university rooms may avoid problems in the conflict between examination law and data protection interests.

5.2. Non-proctored/open-book examinations

More problematic seems to prevent academic misconduct in non-proctored testing. Some students interpret “open-book” as “open-resources”.

Many higher education institutions moved ahead with online testing in the same examination type without supervision to save money. That is the main reason for the increased cheating. A better idea is to switch to so called “intelligent testing”. They do not contain any questions which answers can be found in web search portals. Instead of simply asking questions and testing memorized knowledge, examiners provide individual cases examples (NOORD360 2020) or calculation tasks that have to be solved by the students. These tasks show if students are able to apply their knowledge and to use their skills for problem solution. In programs where it is possible, examiners should ask open questions which do not require providing exact results but examinees’ argumentations.

Other examiner uses the same examination types as before the pandemic, for example closed book test, but shorten the examination time. That does not allow long searching in web-based searching portals or intensive collaboration between examinees. In this examination types, students may download the examination task at a fixed starting time and need to upload the results after a defined time period, such as two hours. Other universities combine reduced examination time for testing memorized knowledge with case solving and/or calculations tasks. Sometimes, open-book and closed-book tests are mixed. Another solution can be testing with multiple choice questions, but each candidate receives the question in a randomized order. That impedes collaboration between examinees.

Last but not least it can be concluded that all these innovative solutions are not really suitable to reduce cheating significantly in innovative examination times. If, after overcoming the pandemic, universities intend to continue testing with digital examination types, only open-book take home exams should be used (Schmermund 2020). A continuous evaluation if the selected examination type is appropriate for testing the specific knowledge and skill of the course is of highest importance.

6. CONCLUSIONS

Conclusion is that innovative examination types are susceptible to cheat and universities, in the interest of all honest examinees, have to ensure an equal treatment of all candidates even under the pandemic conditions. That means, examination authorities have to undertake any efforts to prevent academic misconduct. In doing that, however, they shall respect students’ fundamental rights and data protection interests. The challenge will be to develop technical solutions for proctored digital examination types that comply with candidates’ rights and the examination law. Without any doubt, this problem will accompany universities in the next years if they will continue to use innovative and/or digital examination types.

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