CUTTING THE VICIOUS CIRCLE: ADDRESSING THE INCONSISTENCY IN TEACHERS' APPROACHES TO ACADEMIC INTEGRITY BREACHES

Jana Dannhoferová[1]✉
Tomáš Foltýnek[2]
Dita Dlabolová[3]
Teddi Fishman[4]

[1]Mendel University in Brno, Czech Republic

[2]Mendel University in Brno, Faculty of Business and Economics + Masaryk University, Faculty of Informatics, Czech Republic

[3]Mendel University in Brno, Faculty of Business and Economics + European Network for Academic Integrity, Czech Republic

[4]Faculty of Arts and Humanities, American Public University, Charles Town, West Virginia, United States of America

✉ jana.dannhoferova@gmail.com

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ABSTRACT

A dysfunctional educational system has been identified as one of the causes of academic dishonesty in the Eastern Europe. This paper describes a case study based on data collected at one Czech university (*N* = 660) and presents measures that have been taken at the institution after it. The case study combines quantitative self-reported data and qualitative data from students and teachers with hard data from the disciplinary committee. We analyse cases and types of breaches, identify characteristics of students that incline them toward cheating and investigate some of the reasons why. Our research confirms that the inconsistent approach of teachers is a contributing factor to students' propensity to violate academic integrity rules and identifies reasons for such behaviour. Teachers play a key role in prevention, it is their duty to report cases of suspected misconduct, but they need tools to improve the culture of academic integrity. This paper describes in detail the measures which have been at the given faculty as a solution to the identified problem, the authors believe that the presented measures might serve as an inspiration for policymakers on how to tackle the inconsistency of teachers' approaches to student misconduct.

KEYWORDS

Academic dishonesty, the Eastern Europe, cheating, inconsistent approach of teachers, recommendations for improvements

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Highlights

- *Teachers are inconsistent and rarely report breaches of academic integrity, only 4.5% of teachers act according to the faculty.*
- *With almost half of the teachers, students do not risk anything more than a verbal warning when they use a crib.*
- *Students admit cheating significantly more than what is reported. At the given faculty, there were only five such cases reported in the last three years.*
- *80% of teachers and 95% of students would welcome an academic integrity officer at the faculty.*

INTRODUCTION

For decades, higher education researchers have been interested in understanding students who violate academic integrity rules – how frequently breaches of academic integrity occur (Kiewra, Honz and Kauffman, 2010; Kremmer, Brimble and Stevenson-Clarke, 2007; Newton, 2018; Curtis and Vardanega, 2016), why they occur (McCabe, 2005; Hosny and Fatima, 2014; Curtis and Clare, 2017) and how such breaches might be prevented (Jowanna, 2012; Kolb, Longest and Singer, 2015; Draper, Ibezim and Newton, 2017; Foltýnek and Králíková, 2018). In his recent ethnographic study, Pabian (2015) identifies Czechia's dysfunctional higher education system as a primary cause of student behaviours which could be classified as cheating, but he sees it as a natural and rational response to the educational setting, in which, according to Pabian, its chronic underfunding has resulted in a decline in overall quality. Furthermore, Pabian argues that the underfunding has resulted in a decrease in morale and concern, which further contributes to the problem. Because accreditation agencies focus primarily on the number and

quality of publications, higher education institutions (HEIs) respond by allocating their scarce resources to research rather than teaching. Instructors minimize their efforts devoted to teaching and rely heavily on "frontal instruction" in which education is limited to memorizing encyclopaedic knowledge which is then typically tested via multiple-choice tests. Not surprisingly, students do not see any point in memorizing and do not want to invest their time to do it. Add to this, the collectivistic nature of the Eastern European culture (Mahmud, Bretag and Foltýnek, 2018), and it is no surprise that students copy from each other during examinations (Pabian, 2015), and share test questions together with ready to use crib notes (Stöckelová and Virtová, 2015) to minimize their efforts.

Although we know that this is not true at all courses and at all institutions, we believe that Pabian is largely correct. Walker and Townley (2012) have also observed that HEIs have limited resources to address cheating and that many educators and administrators are reluctant to prioritize academic integrity, believing that effort devoted to cheating detection would divert resources that would otherwise be used to support honest students. 'Decisions about how to deal with cheating can also be decisions about which students will take up most of the time and resources of educators.' (Walker and Townley, 2012: 42). The issue of resource allocation is also addressed with regard to the European context. Weber-Wulff (2014: 15) points out that '[attempts to detect academic ghost-writing] will, unfortunately, increase the time and effort that will have to be invested in reading, grading, and giving feedback'.

THE OBJECTIVE OF THE STUDY

Pabian (2015) identifies the contributing cause of student cheating but did not provide any recommendations for improvements. Our paper goes beyond the identification of the problems and proposes a solution for them - to cut the vicious circle. Teachers play a key role in the prevention of academic misconduct (Gottardello and Karabag, 2020; Chugh et al., 2021). They define educational content, which influences students' motivation, and they set conditions at the examinations. Thus, we chose teachers as the stakeholders best able to cut the vicious circle and we are solving the identified problems through recommendations to them.

In order to formulate the recommendations, we had to gain a more in-depth understanding of the conditions under which students are more likely to cheat and the reasons most likely to lead to such behaviour. It was also necessary to identify how teachers approach students' cheating. Hence, in the first part of the paper, we share the results of this research - a case study of an economic faculty at one Czech university. The case study provides more detailed insight into cheating at written examinations and teachers' reaction to it by examining a unique combination of three datasets collected at this faculty. We combine quantitative self-reported data from students and teachers with hard data from the disciplinary committee that show how many students were found to have violated academic regulations. The second part of the paper describes in detail the measures implemented to cut the vicious circle.

LITERATURE REVIEW

Student assessment

In Czechia, Slovakia, and also in other countries in the Central and Eastern Europe, the written examination is a common method of student assessment (Foltýnek, Rybička and Demoliou, 2013; Glendinning et al., 2013; Glendinning et al., 2017). By written examinations, we mean an event, in which students gather in the classroom for a given period of time and complete a test (including computer-supported written tests, paper-and-pen tests, and examinations with written and oral components). For the faculty, who responded to our survey, approximately 85% of the assessments in compulsory courses in bachelor and master studies are in the form of written examinations (Dlabolová, 2017). For that reason, this paper focuses on cheating in written examinations.

In general, there are two approaches to assess student learning: summative and formative (Brown, Bull and Pendlebury, 2013). Summative assessment gathers information (measures learning outcomes), whereas formative assessment (evaluation) uses this information for personal development (Astin, 2012). Both types of assessment are important. Formative assessment helps in the learning process, the summative assessment allows HEIs to verify that students achieved expected learning outcomes (Astin, 2012). Besides prompting to learn and evaluation of learning outcomes, assessments may also help to motivate learners, help teachers evaluate their teaching methods and have other indicative and regulative functions (Brown, Bull and Pendlebury, 2013; Cox, Imrie and Miller, 2014).

Many researchers agree that formative assessment empowers students as self-regulated learners and, thus, enhances the student learning process (Nicol and Macfarlane-Dick, 2006). Despite that, summative assessment seems to be prevalent in many institutions, especially in the Central European HEIs (Foltýnek, Rybička and Demoliou, 2013; Glendinning et al., 2013). Together with an emphasis on memorizing encyclopaedic knowledge converts exam cheating to a rational choice of students (Pabian, 2015).

The most common types of cheating

There have been many studies on students who breach academic integrity standards, focusing on cheating in general (McCabe, 2005; Nadelson, 2007; Trost, 2009; Miller, Shoptaugh and Wooldridge, 2011; Beasley, 2014; Bretag et al., 2014; Hensley, Kirkpatrick and Burgoon, 2013; Bultas et al., 2017; Fass-Holmes, 2017; Glendinning et al., 2017; Yaniv, Siniver and Tobol, 2017), and on specific modes of cheating including cheating in written assignments (Glendinning et al., 2013; Foltýnek and Rybička, 2013; Gow, 2013; Moore, 2013), contract cheating (Clarke and Lancaster, 2006; Foltýnek and Králíková 2018), and cheating in written examinations (Vonkova, Bendl and Papajoanu, 2017; Pabian, 2015). Bultas et al. (2017) identified sharing the exam questions with other students and copying from other students' tests during an examination as the most common dishonest behaviours. Miller, Shoptaugh and Wooldridge (2011) found that copying from other students was the second most common (23.8% of students admitted they did it at least once) and that the most common form of dishonesty being paraphrasing without

proper referencing (31.3%). Focusing exclusively on business students, McCabe (1997) mentions the following forms of cheating as the most common: "copying few sentences without footnoting" and "working on assignment with others when the instructor wanted individual work" (both 54%). Regarding exam cheating, McCabe (1997) found that "helped others cheat on the exam" is the most common answer (39%), followed by copying from others (without or with their knowledge – 32% and 27% respectively), using a cheat sheet is the least frequent here (19%).

Yardley et al. (2009) found that "copying from another student's assignment" and "allowing others to copy from your assignment" to be the most common types of cheating. Multiple studies, however, found that exam cheating was more widespread. Fass-Holmes (2017) reported that more than half of reported violations of academic integrity within his dataset were exam cheating; The same finding is confirmed by Hensley, Kirkpatrick and Burgoon (2013), who reported that 51.7% of respondents have cheated in an examination.

In studies focused specifically on using cheat sheets during examinations, Bultas et al. (2017) found that 95.7% of the questioned nursing students and 80.9% other students claimed that they never used any form of a cheat sheet. Similar results are from Miller, Shoptaugh and Wooldridge (2011) showing only 4.3% admitted using a cheat sheet on the examination at least once during their studies. Similar findings are significantly older results by McCabe (1997) – from 5% to 10% of students from most study fields at HEIs with honour codes (namely engineering, natural sciences, social sciences and other) self-reported ever using a cheat sheet, in sharp contrast are the results from students of business, where it was self-reported by 19% of students. Many of the above-mentioned numbers and results cannot be compared on a 1:1 basis due to differences in the research setting, methodologies, and specific questions.

Factors influencing cheating in written examinations

There are many research studies investigating the influence of different factors on cheating. Hensley, Kirkpatrick and Burgoon (2013) investigated self-reported data on cheating in relation to gender, course enrolment, and grades among undergraduate students from one US university. A higher level of academic dishonesty was found in the group of students with the lowest grades. The results showed that men confessed more test cheating than women. More cheating men were discovered also by Fass-Holmes (2017). Nevertheless, he based his study on data from reported (any) violations of academic integrity. On the other hand, multiple studies have found no statistically significant relationship between gender and cheating – in self-reported data of students (Ludlum et al., 2017; Miller, Shoptaugh and Wooldridge, 2011), or in self-reported data by alumni (Yardley et al., 2009), or from behaviour within an experiment simulating a written exam (Yaniv, Siniver and Tobol, 2017).

Studies observing the field of study as a factor related to cheating repeatedly show that students of business (and related fields) outnumber other study directions, both in reported incidents of cheating (Fass-Holmes, 2017) and in self-reported cheating (e.g. McCabe, 2005; McCabe and Trevino, 1995; McCabe, Butterfield and Trevino, 2006; Ludlum et al., 2017).

Teachers' attitudes toward student cheating

Findings of Gynnild and Gottschalk (2008) show that 40% of the academic staff responding admitted they had taken no steps regarding a suspected incident of cheating due to insufficient proof. In accordance with these findings, Ramzan, Asif and Adeeb (2018) confirm that only 24% of students believe that their teachers are reporting plagiarism cases to the disciplinary committee, whereas 32% think that their teachers are tolerant of plagiarism and do not report the cases.

Foltýnek, Rybička, and Demoliou (2013) compared students' and teachers' attitude to plagiarism. They found differences in sources of information, in reasons leading to plagiarism and in the main students' difficulties regarding academic writing. Both agreed on easiness to cut and paste from the Internet as a primary reason. After that, teachers accused students of laziness, lack of skills and not perceiving plagiarism as wrong, but students reported time pressure and inability to cope with the workload. Teachers were also found harsher in the judgment of different plagiarism scenarios.

Peytcheva-Forsyth, Aleksieva and Yovkova (2018) examined the impact of technology on various assessment methods. Their results showed a significant gap between the prevalence of plagiarism and ghost-writing reported by students and teachers. Teachers suspect students to commit these offences much more frequently. Bjelobaba (2018) tried to enhance the knowledge about academic integrity among students and teachers at the University of Gothenburg in Sweden. The survey was later used to develop new approaches to work with the academic staff in their skill development, e.g., an e-course, workshops, seminars, as well as modules on academic integrity in different courses and courses in the supervision of students.

A study by Swansea University researchers (Ransome and Newton, 2018) has found that university staff shows a varied understanding of student academic integrity. One of the consequences is that teachers do not report violations of academic integrity (Bjelobaba, 2018) even though all cases of suspected academic dishonesty must be reported immediately to the disciplinary committee. According to the Academic Integrity Office of Baylor University (2019), 'Reporting cases of academic integrity violations is important since it could be possible that the student has demonstrated similar behaviour in other classes. If the violations are not reported, then that pattern of behaviour may continue'.

Solutions to students' cheating

Many previously mentioned papers focus only on investigating the problem of student cheating but miss the "so what" part. The aim of our paper is to describe the problem and to propose a solution. There are various approaches to improve academic integrity practices and designing academic integrity policies. According to Bretag et al. (2011: 7), '[a] policy needs to provide an upfront, consistent message, reiterated throughout the entire policy, which indicates a systemic and sustained commitment to the values of academic integrity and the practices that ensure it'. Wright, Jones and Adams (2018) developed (based on their data research and

current and relevant literature) the following recommendations which could have the most merit or potential for improving academic integrity: interrogate the dominant paradigm of success, redefine the grading system, define and communicate academic integrity definitions and policies, faculty training, start early, teach writing and promote moral development.

MATERIALS AND METHODS

Two questionnaires (one for teachers and one for students) were used for collecting self-reported data at an economic faculty at one Czech university in January 2017, using a structured anonymous questionnaire survey (containing mainly multiple-choice questions).

Questionnaire for teachers

The questionnaire for teachers aimed to confirm our observation of everyday faculty life that teachers are inconsistent in handling students' misconduct. The questionnaire contained the most common scenarios, which came out of our long-term experience and the most common assessment methods used at the faculty. Teachers were asked to either choose one of the pre-defined options or write down their own response. The questionnaire contained four sections: written examinations, citation ethics, student projects and demographic information. In the end, teachers were offered to write down their own comments. The questionnaire was piloted by five members of the faculty. After that, all teachers at the faculty were requested by an e-mail to fill in the questionnaire. The anonymity was ensured. Out of 150 teachers (including full-time, part-time employees and PhD students), 88 responded, which gives the response rate of 58.7 %. Regarding the number of respondents, descriptive statistics were used to evaluate the results. Teachers had an opportunity to add a comment to each question and an overall comment for the entire questionnaire. All comments helped us to understand the teachers' motivations and attitude.

Questionnaire for students

The preliminary analysis of teachers' data showed inconsistencies in the teachers' approach. It was obvious that common recommendations for teachers would be needed. We also wanted to know the attitudes, opinions, and demands of the students. We created a questionnaire for students using the same scenarios, its main purpose was to find out the opinions of the students about appropriate outcomes for various forms of cheating.

The questionnaire was piloted by ten individuals before it was released. All students of the faculty were asked by an e-mail to fill in the questionnaire. In addition, the link to the form was shared via the official faculty Facebook group. No further promotional activities were carried out. Participation was voluntary and all respondents were assured about the anonymity of the survey. Out of approximately 3,000 students, 660 participated in the survey.

The student questionnaire was divided into six sections, the first three were based on the same sections of the teacher's questionnaire (using the same scenarios but asking from students' point of view). Section four contained questions focused on students' own experience with cheating. This section contained the most important questions for this study: "Have you ever prepared an unallowed aid for the written exam? (yes / no)", and "If yes, have you used it? (yes/no)". Section five contained questions focused on appropriate outcomes of breaches. Section six contained demographic questions.

Students had an opportunity to provide additional comments at the end of the questionnaire; 94 respondents provided quite extensive comments containing a lot of information. Hence, we also decided to perform an analysis of these (qualitative) data. Two independent teachers and researchers (with different experience and cultural background) in the field of academic integrity went through the text comments looking for some common patterns in them. They independently identified four groups of comments sharing characteristics and which comments belong to each of them (with few comments belonging to more groups at the same time, and few not relevant to any of them).

Hypotheses

In order to identify the characteristics of the most often cheating students, we used statistical analysis for data from the student's questionnaire. The questions "Have you ever prepared an unallowed aid?" and "If yes, have you used it?" were used to identify the cheating students. In the Results section, we merge both questions as "I have prepared and used an unallowed aid". We wanted to examine significant differences between students' cheating and individual factors like age, gender, degree of study and study program. The idea behind this identification was that it might help us to better target our recommendation for the teachers.

We aimed to test the following null hypotheses:

- H1: There is no dependence between the study program and students' cheating.
- H2: There is no dependence between gender and students' cheating.
- H3: There is no dependence between the degree of study and students' cheating.
- H4: There is no dependence between age and students' cheating.

The χ-square test and p-value were used to test statistical significance. The answers of some students had to be excluded from the analysis because they did not specify the study program, gender, type of study or age. That is the reason why the number of answers for each hypothesis differs. Some students did not provide age, or they mentioned an unreasonable one-digit age.

Data from the Disciplinary Committee

Given the above-mentioned datasets, we know what percentage of students admit using crib notes at examinations. We also know what percentage of teachers report these cases to the disciplinary committee. We wanted to verify these self-reported data by the data about the real cases of academic misconduct, hence we used data from the Disciplinary Committee of the faculty.

According to the Czech Higher Education Act (Act No. 111/1998 Coll., 2018), the Disciplinary Committee is a body dealing with academic integrity breaches of students. The

disciplinary procedure is initiated by the Dean of the faculty based on the motion which can be proposed by anyone. If a student is found guilty, the Czech law allows only four possible outcomes: no sanction, warning, conditional expulsion from studies and immediate expulsion from studies. In order to formulate the recommendations, we needed to understand which categories of students violate academic integrity most often. Thus, we were interested not only in overall numbers but also in the demographic structure of students facing disciplinary procedures. The third dataset (N = 19) contains an anonymized list of all disciplinary cases handled in the three-year period before January 2017, i.e., calendar years 2014, 2015 and 2016. For each case, we got basic demographic data of the student (gender, age, field of study), description of the breach, and outcome. This anonymous dataset was obtained from the study department of the faculty, which is responsible for handling the disciplinary cases, organization of hearing and keeping all students' records.

RESULTS

We start this section by presenting the results from the teacher survey to show the inconsistency in ways how they handle students' breaches of academic integrity. Then we present a call for an academic integrity advisor, which is shared by both students and teachers. We follow by sharing the quantitative self-reported data from the student survey complemented by hard data from the disciplinary committee. We finish with qualitative data about what students are calling for.

Evidence of teachers' inconsistency

The data from the survey confirmed that teachers solve breaches very differently. Only a small percentage has initiated disciplinary procedures against serious breaches of academic integrity, which is well visible in the gap between students self-reporting cheating and the number of cases from the disciplinary committee.

In the questionnaire, we asked teachers what they would do in several model situations during a written exam. In all of them, the inconsistency of teachers is visible. We describe in detail the question dealing with using an unallowed aid: "During a written exam, you catch a student using a crib note, which contains information relevant for a given course, but none of them is useful for the particular exam. What will you do?". There were answers from all 88 respondents, the results are displayed in Table 1.

Answer	%	*N*
I expel the student from the exam, and I record "F".	39.77%	35
I ask the student to hide the crib.	34.09%	30
I expel the student from the exam without any record.	9.09%	8
I take the crib. (answer proposed by multiple respondents)	5.68%	5
I expel the student from the exam, record "F" and inform the disciplinary committee.	4.55%	4
I pretend not to see it.	2.27%	2
I mark the exam as there was no crib, but I will inform the disciplinary committee.	1.14%	1
It depends on the particular situation. (answer proposed by one respondent)	1.14%	1
Other (different answers proposed by the respondents)	2.27%	2

Table 1: Answers to the question "During a written exam, you catch a student using a crib note, which contains information relevant for a given course but none of them is useful for the particular exam. What will you do?"

Almost 40% of teachers (N = 35) answered "I expel the student from the exam, and record "F". The same number of teachers would ask the student to hide the crib note or take the crib note by themselves (merging the second and fourth row in the table as they lead to the same result). As the crib note is a "pre-prepared cheating behaviour", then only 4.5% of teachers (N = 4) answered, "I expel the student from the exam, record "F" and inform the disciplinary committee." act correctly.

The teachers (N = 8; 9%) who answered, "I expel the student from the exam without any record." actually act against university regulations, also the option "I mark the exam as there was no crib note, but I will inform the disciplinary committee." chosen by one teacher is not supported by any university regulation. Two teachers (2.3%) would simply pretend not to see it. One of the "Other" answers was: "I would be interested in who is the author of the crib note. If it was perfectly prepared and the author was the student, I would let him finish the exam. If he wasn't the author, I would just exclude him from the exam term." This is quite an original approach, nevertheless, it does not comply with university regulations either. From a different point of view on the answers, we can sum up all answers where there are no consequences for the student when a crib is discovered by a teacher: with 37 out of 88 teachers, students do not risk anything more than verbal warning when they use a crib note.

The teachers' self-reported data confirmed our suspicion that teachers were inconsistent in addressing academic integrity issues. This observation was further confirmed by the hard data from the disciplinary committee and by some research (De Maio, Dixon and Yeo, 2019; Harper et al., 2018; De Maio, 2015). The reasons for such teachers' behaviour are well described in the five-factor model that includes these factors: Emotionality of teachers, Denial by students, Fear of students' revenge, Guilt and time-consuming Difficulty (Keith-Speigel et al., 1998).

Demand for Academic Integrity Advisor

Analysing the teachers' questionnaire, on the question "I would welcome (at the department or faculty level) someone I could turn to in such situations" 19.5% (N = 17)

answered "No", 52.9% (N = 46) answered "Yes, someone who would provide me with some advice", and 27.6% (N = 24) answered "Yes, someone to who I would hand over the case". From the overall comments, two participants mean that handling of integrity breaches cannot be unified, and such a solution would just mean additional bureaucracy, one of them directly stated: "Trying to capture every situation and set up a process defining every situation, and everyone will not do any good." However, the percentage of positive answers sends a clear message that teachers want someone to solve the academic issues for them, or at least provide advice.

A similar question was posed to students: "I would welcome (at the department or faculty level) someone I could approach if I did not agree with the outcome for my breaches.", 95% (N = 625) of students answered "Yes". They referred to this question in the overall comments, e.g., "Certainly, it would be good if there were some 'mediators' between students and teachers who would solve, for example, students' complaints about teachers. Students are at a considerable disadvantage compared to teachers and if they do not like something, they do not really know who to turn to…" Given that almost all students agreed with this statement, we did not perform any additional statistical analysis.

Answers to the question "I think the procedures in these situations should be consistent at the level of:" are in Table 2. It is well visible that roughly two-thirds of teachers and two-thirds of students would welcome unified rules (at least) on the level of faculty. Students referred to this question in the overall comments (classified as into the group "fairness"), e.g., "Certainly it would be good if there were universal recommendations on how to proceed." There is also notable agreement in teachers' and students' responses; The correlation coefficient of their answers is 0.89.

	Teachers	Students
Teacher	8.04% (N = 7)	8.52% (N = 56)
Course	26.43% (N = 23)	18.87% (N = 124)
Department	4.60% (N = 4)	5.48% (N = 36)
Faculty	29.89% (N = 26)	30.14% (N = 198)
University	17.24% (N = 15)	22.98% (N = 151)
Czech Republic	2.30% (N = 2)	8.98% (N = 59)
European Union	8.05% (N = 7)	2.13% (N = 14)
Whole world	3.45% (N = 3)	2.89% (N = 19)

Table 2: Comparison of teachers' and students' answers on the question "I think the procedures in these situations should be consistent at the level of:"

Self-reported students' behaviour

Overall, 660 students' responses were included in the analysis. Out of them, 68% were bachelor students and 32% master students. Considering gender, there were 43% of men and 57% of women. There were students from all study programs provided at the faculty (52% of Economics and management, 25% of Public policy and administration, 14% of System engineering and informatics and 9% of Engineering informatics). All percentage values correspond with the actual distribution of students by degree, age, and study program at the faculty.

Out of the 660 students, 340 (52%) reported having ever prepared an unallowed aid. In most cases (264, i.e., 78%) it was a small piece of paper with notes. Roughly half of those who prepared them (specifically 190, i.e., 56%) reported having used them. This section presents the relationship between the basic demographic data (study program, gender, degree of study and age) and student intent to cheat.

Dependences / Values	Chi-Square Statistic	p-value	N-value
Study program versus using an unallowed aid	6.94	0.07	650
Gender versus using an unallowed aid	16.50	< 0.001	653
Degree of study versus using an unallowed aid	18.01	< 0.001	655
Age versus using an unallowed aid	38.68	< 0.001	614

Table 3: Results of the statistical tests for null hypotheses

H1: *There is no dependence between the study program and students' cheating.* Although there was a higher degree of students' cheating in the study program of Engineering Informatics, based on the obtained p-value we cannot reject the null hypothesis H1 (p = 0.07, N = 650).

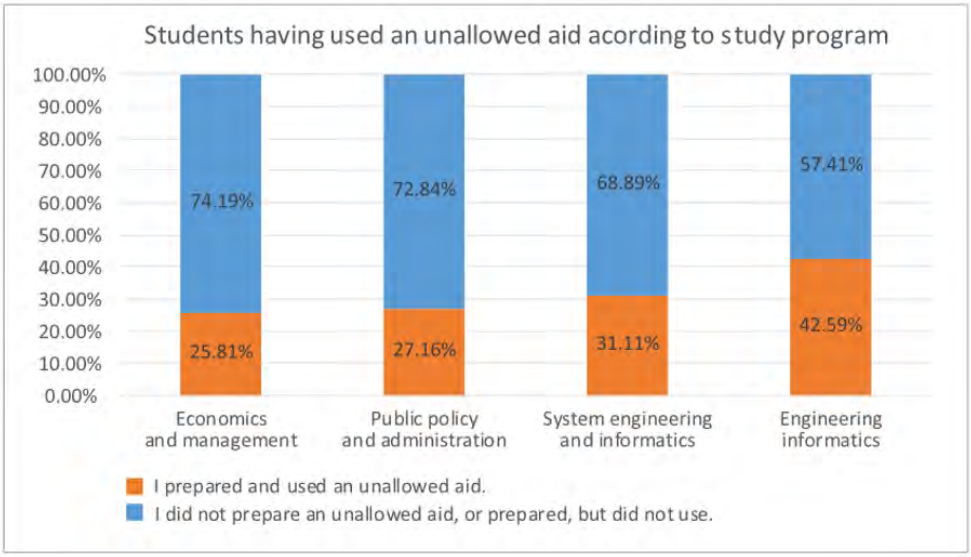

Figure 1: The influence of the study program on the students' cheating

H2: *There is no dependence between gender and students' cheating.* Based on the calculated *p*-value ($p < .001$, $N = 653$), the null hypothesis H2 was clearly rejected. We can declare that there is a dependence between gender and students' intent to cheat. A more detailed analysis of the data shows that men are more likely to prepare and use unallowed aids in written tests than women.

	Men	Women
I prepared and used an unallowed aid.	36.88%	22.37%
I did not prepare an unallowed aid, or prepared, but did not use it.	63.12%	77.63%

Table 4: The influence of gender on the students' cheating

H3: *There is no dependence between the degree of studies and students' cheating.* The calculated *p*-value ($p < .001$, $N = 655$) allows us to reject the null hypothesis H3. We can say that there is a dependence between the type of study and students' cheating. A more detailed analysis of the data shows that master students report preparing and using unallowed aids for written tests more often than bachelor students - see Table 5. Higher percentages of positive responses from older students could be expected because they simply had more opportunities for doing it, as shown in the examination of H4.

	Bachelor's degree	Master's degree
I prepared and used an unallowed aid.	23.95%	40.20%
I did not prepare an unallowed aid, or prepared, but did not use it.	76.05%	59.80%

Table 5: The influence of the degree of study on the students' cheating

H4: *There is no dependence between age and students' cheating.* Based on the calculated *p*-value ($p < .001$, $N = 614$), the null hypothesis H4 was therefore rejected. We can, therefore, say that there is a dependence between age and students' cheating.

A more detailed analysis of the data shows that with increasing age students more often report having used unallowed aid for the written examination. As the chart shows, the percentage of such students grows from 5.26% to 47.06%. Tymula et al. (2012) have found that younger students are biologically predisposed to be more tolerant of unknown outcomes and less bothered by stated risks than their older peers. However, our research confirmed that master students report intent to cheat more often than bachelor ones. This increase can be explained by the longer time of study and the longer stay in the community of students. Our opinion is supported by Carrell, Malmstrom and West (2008) who measured how peer cheating influences individual cheating behaviour. According to their results, students in communities where cheating is tolerated easily succumb to pressure over time and cheat more. It is harder for them not to cheat for fear of losing social status. When examining the development of this trend, there is an interesting increase of 19.5 percent points between the age group of 18–19 and 20. Another significant increase of 19.5 percent points is between the age group of 23 and 24. Based on this, we assume that the unallowed aid is prepared most often by students aged 20 and 24 years.

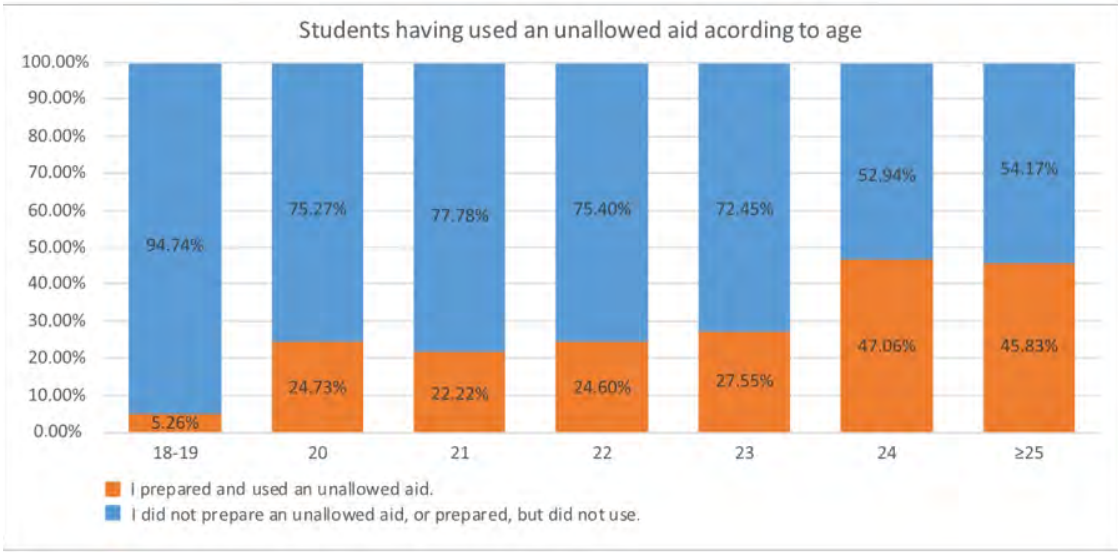

Figure 2: The influence of age on the students' cheating

The students' self-reported data indicate that cheating does not depend on the study program. It depends on age and consequently the level of study (McCabe and Trevino, 1997), but this can be explained by the nature of the survey items. As we asked whether students ever prepared an unallowed aid, it is obvious that these numbers are increasing in relation to age. Even though students from economic study programs self-report their cheating behaviour to the same extent as their computer science peers, their cases are much less reported to the disciplinary committee.

Confirmation of self-reported results: Data from Disciplinary Committee

In the given time period, i.e., between 2014 and 2016, the hearings of 19 students were conducted:

- 5 cases of cheating in written examinations,
- 3 cases of unallowed copying and/or dissemination of test items,
- 9 cases of plagiarism in assignments,
- 2 cases of plagiarism in master thesis.

All of the students were found guilty of having committed a violation of study regulations and in each case, a sanction was applied. Out of the 19 students, 8 were warned, 10 were conditionally expelled and 1 was expelled immediately for serious plagiarism in his master thesis. The relationship between the type of breach and outcome is summarized in Table 6. As we can see, the severity of the outcome corresponds to the severity of the breach.

Type of breach	Warning	Conditional expulsion	Immediate expulsion	Total
Exam cheating	5	0	0	5
Copying/dissemination of test items	2	1	0	3
Plagiarism in assignment	1	8	0	9
Plagiarism in thesis	0	1	1	2
Total	8	10	1	19

Table 6: Types of breaches and their outcomes

Out of the 19 cases, 11 (58%) were men and 8 (42%) were women. These statistics are consistent with the findings from the anonymous questionnaire, which indicated that men tend to cheat more often than women. The relationship between gender and type of breach is summarized in Table 7.

Type of breach	Male	Female	Total
Exam cheating	2	3	5
Copying/dissemination of test items	1	2	3
Plagiarism in assignment	7	2	9
Plagiarism in thesis	1	1	2
Total	11	8	19

Table 7: Types of breaches and their gender distribution

As we can see, in terms of exam cheating, the proportion of male/female is almost equal (taking a very small sample into consideration), but male students are more often engaged in more severe breaches, namely plagiarism in the assignment. Out of the 19 students, 14 were bachelor students and only 5 of them were master students. This also corresponds to the number of students in different age groups, which are summarized in Table 8.

Age group	19	20	21	22	23	24	≥25
Number of students	1	4	6	2	1	3	2

Table 8: Number of cases according to the age groups

We can see a prevalence of the age group of 21 over the other age groups. Students at the age of 21 are most likely in their final year of bachelor studies. The distribution between bachelor and master students contrasts with findings from students' self-reports.

Study program	Number of students	Observed percentage	Expected percentage
Economics and management	9	47.37 %	48.37 %
Public policy and administration	1	5.26 %	23.91 %
Systems engineering and informatics	4	21.05 %	15.22 %
Engineering informatics	5	26.32 %	12.5 %

Table 9: Number of cases according to the study program

Table 9 shows the distribution of cases handled by the disciplinary committee by the study program (Observed percentage). Expected percentages (the percentage of students who presumably cheated) were calculated based on the number of cheating respondents from a given study program. Students of Public policy and administration are under-reported, whereas students from both computer science study programs are reported more often. This again confirms that teachers are inconsistent and underlines the need for unified faculty-wide recommendations.

Reasons that lead students to cheat

We investigated the reasons leading students to the preparation of an unallowed aid. There were three predefined choices (I did not study at all / I studied, but I was not sure by my knowledge / I was learning by preparation of the cheat sheet / Other). Almost half of the students (47%), who answered this question, were not sure of their knowledge. About one third (32%) answered they learned by preparation of unallowed aid. The rest of the answers were Other, mostly criticizing the form of lecturing or the form of the exam. Some students explained that the cheat sheet was used for the most complicated formulas only and they did not see any point in memorizing them. The same opinion appeared in the overall comments on the questionnaire: Multiple students stated that examining irrelevant information is a valid excuse for using a cheat sheet, e.g.: "Personally, I used an aid only in an extreme case, such as exhausted or absurd claims for the exam/subject. That is the only admissible exception."

What are the students calling for?

During the analysis of the qualitative data (text comments), students were divided into four groups according to what they wrote as their main demand:

- Group "fairness": students calling for unified and fair treatment of academic breaches from all teachers ($N = 14$).
- Group "strictness": students calling for enforcement - teachers should pay more attention during the examinations (or in other discussed situations) and for imposing stiffer penalties ($N = 12$).
- Group "quality": students calling for better teaching and relevant examinations. They are angry that the information they are being tested upon is sometimes outdated, sometimes not relevant to their field or comparable with what is considered cutting edge in other places, and that the testing methods do not reflect what they have learned or are not at all manageable ($N = 16$).
- Group "gratitude": students giving positive feedback on the survey in general. They appreciate that the faculty is interested in their opinion and dealing with the issue ($N = 8$).

There were four answers which were classified to belong to more than one group. The rest of the answers contained other comments which were not classified in any of the group – students commenting on some of the questions, describing their experience, etc. The urge of students for a change – for more quality and more fair teaching was well noticeable.

DISCUSSION

It is always important to start from clear and transparent policies and procedures that are easy to follow (Bretag et al., 2011). Our findings showed that the faculty particularly needs (1) to raise awareness of the academic integrity issues and proper procedures for their handling; (2) to provide teachers with resources they might need to correctly handle the academic integrity breaches. To raise awareness of the academic integrity issues, the faculty has established a position of an Academic integrity coordinator. Moreover, teachers were provided with a manual on handling student breaches as well as with forms and other links making reporting of student misconduct easier.

Manual for Teachers

When preparing the manual for teachers, we have used information from both students' and teachers' questionnaires. We addressed these problems acknowledging that we have no chance to influence the overall educational setting, which Pabian's (2015) identified as an incentive to student cheating. As the student self-reported cheating behaviour is not dependent on the study program, we could design the manual independently from the study program. However, the manual should be implemented more rigorously in cases such as that of the teacher of economic study programs, who under-report

students' cheating. In accordance with Bjelobaba (2018), we would like to remind teachers that it is their duty to report cases of suspected misconduct, but also to give them the tools to improve the culture of academic integrity in their classes and the university at large.

The manual is based on the solid data provided by students and teachers questionnaires. It starts with a distinction between minor offence (coming mostly from lack of knowledge) and major offence (deliberate cheating) (Tennant, Rowell and Duggan, 2007). Offences coming from lack of knowledge are in the competence of teachers and should be handled within a course. Cases of deliberate cheating should be reported to the disciplinary committee. The manual provides detailed advice on the prevention of academic dishonesty as well as procedures for handling cases of misconduct (Glendinning et al., 2013). They address the following topics: 1) Written examinations; 2) Written assignments; 3) Projects; and 4) Final theses.

The recommendations for examinations contain preventative measures including vigilance by more than one person, clear explanation to students what is allowed and what is not and a predefined seating plan. Then, they suggest procedures for handling unallowed aids and unallowed communication between students. The recommendations on written assignments contain preventative measures, e.g., necessity of ongoing consultations, using text-matching software, new topics each year and the necessity to present essays (Curtis and Vardanega, 2016). Then, the manual describes procedures for handling unintentional and deliberate plagiarism, incorrect citations, and suspicion of contract cheating. Similar recommendations on prevention apply also to student projects. Suggested procedures deal with collusion and contract cheating. Special attention is devoted to bachelor and master theses. The recommendations on the theses combine those from assignments and projects and provide advice on how to identify plagiarism, how to distinguish minor and major offence and how to handle them. The manual was approved by the faculty management. As such, it is not legally binding, but it complements and further explains the legally binding regulations.

Academic Integrity Coordinator

Many institutions in the UK, USA or Australia benefit from Academic Integrity Officers (AIO), who handle cases reported by teachers. Research shows that teachers should not be left to manage discipline by themselves. It is more effective if the staff is supported by school management (Sullivan et al., 2014). According to the Academic Integrity Office of Baylor University (2019), teachers play a critical role in creating a climate of honesty, trust, fairness, respect, and responsibility. Most teachers say that disciplining students is one of the toughest parts of their job (Sullivan, 2017). Both students' and teachers' data indicate that this concept would be welcomed by our faculty as well. In our sample, 95% of students and 80% of teachers were calling for establishing a dedicated person who would either deal with the cases or at least provide advice. Based on this finding, the position of Academic Integrity Coordinator (AIC) was established. He is responsible for:

- Raising awareness of academic integrity issues;
- Providing advice to the teachers;
- Regular revision of the recommendations for teachers;
- Organization of training events for students and teachers;
- Information on the academic integrity web page.

Students can approach him if they think that their teachers are violating academic integrity rules or do not agree with the teacher's decision.

Website on Academic Integrity

To communicate academic integrity issues, a special section was established on the faculty web pages. All relevant documents (regulations, Code of Ethics, the Recommendation document) are available from one place as well as a template for reporting cases to the disciplinary committee and contact information of the academic integrity coordinator. Moreover, the most important findings from teachers' and students' surveys are communicated as an infographic. Even though students were not our primary target group, all materials are available for them as well. Students can learn how the processes work; they can read anonymized reports from the Disciplinary Committee meetings and see how teachers are expected to handle the breaches.

Limitations

Regarding the limitations of our research, one of them is the self-reported data of teachers and students. Although all the questionnaires were anonymous, people may under-report undesirable behaviours even when they cannot be identified. The anonymity of the questionnaire survey carries another risk. The Google Form tool does not have unique links, so in practice, this means that anyone can fill in this questionnaire more than once. However, we do not expect people would do it to the extent which would affect the overall results. There is also quite probable bias caused by the self-selection of the students. It is possible that mainly students, who are concerned by the situation and who are calling for changes, filled in the questionnaire and used the opportunity to write the comment. The question "Have you ever prepared/used an unallowed aid for the written exam?" could also have been misunderstood by students. For the future, it can be replaced by the question "Have you ever prepared/used an unallowed aid for a written exam at this university?", or even limit the time frame e.g., to the last 6 months.

CONCLUSION

We acknowledge Pabian's (2015) paradigm of the dysfunctional education system in Czechia. In such a system, cheating behaviours are a natural and rational response of students and not reporting these cases are a rational response of teachers. No matter what the external causes are, there is no doubt that this educational setting cannot work, and students are unlikely to achieve desired educational outcomes. The aim of this paper was not only to better understand how a flawed system encourages students to cheat but mainly to propose appropriate recommendations for what the teachers and policymakers at the university level can do to mitigate the harm, even in less-than-ideal circumstances.

In this case study, we showed that teachers are largely inconsistent in the way they handle academic integrity

breaches committed by students. Both students and teachers do not like this inconsistency - two-thirds of respondents call for unification of procedures and penalties at least on the faculty level. Both students and teachers also call for a person who can advise them about the issues related to academic integrity. From the questionnaire results (N = 660), we also found out that the male students self-report cheating behaviours more often than their female counterparts. Despite the fact that self-reported cheating does not vary across study programmes, computer science students are more often being sent to the disciplinary committee, which confirms inconsistency in teachers' approaches.

Based on the data obtained from the anonymous questionnaires and the disciplinary committee, and with regards to the scientific literature, we proposed the measures aiming to address the teachers' inconsistency and help to build a culture of academic integrity at our faculty. We believe that the position of academic integrity coordinator and clearly specified recommendations in the form of a manual for teachers can help improve the situation. If teachers follow the manual, they should be more consistent in addressing academic integrity violations, which should send a positive message to students. In 2021, we plan to conduct a follow-up survey in order to find out the impact of these new recommendations and approaches.

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