Evaluating the Psychometric Properties of a Questionnaire on Reasons Influencing Students to Plagiarize and Comparing the Perception of Teachers and Students

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Abstract

Plagiarism in undergraduate programs has been an increasing concern for teachers and administrators, since its propagation in recent years, due to the COVID-19 pandemic and rapid evolution of generative artificial intelligence. It is by better understanding the reasons inciting students to plagiarize that actors in universities can implement the required support mechanisms. As part of an international partnership on plagiarism prevention, we engaged in a mixed-methods research design based on a pragmatic epistemological posture to prevent plagiarism and promote academic integrity. In this article, we focus on our initial data collection involving questionnaires administered to 1357 teachers and 4661 students across 31 universities in North America and Europe. The respondents identified their perceptions of reasons why students plagiarize by selecting among a list of 23 items. Then, we conducted exploratory and confirmatory factorial analyses to evaluate the psychometric properties of the questionnaires, and we propose a model allowing for the comparison of perceptions between teachers and students. The validation results demonstrate that the content of the instrument is closely aligned with the research problem. The items were designed based on the theoretical framework and literature related to task components, subjective norms, and personal characteristics, ensuring content validity. When comparing results in both groups, teachers are significantly more likely than students to perceive subjective norms as an incentive to plagiarize, whereas for students it is the components of the task that prevails. Finally, we suggest a variety of initiatives that universities could consider to prevent plagiarism and further scientific exploration of contextual or individual factors, such as the impact of cultural or motivational variables.

Keywords: plagiarism, undergraduate students, university teachers, factorial analysis, questionnaire

1. Introduction

1.1 Problem Statement

Academic integrity is a growing concern, especially with the rise of information technology (Fishman, 2016; Playfoot et al., 2024). According to Mahmud and Ali (2023), it is mostly approached in a negative way, emphasizing acts such as plagiarism, rather than promoting positive practices including originality and proper citation. This focus on plagiarism relegates the educational dimension of integrity to the background in favour of detection and sanction, creating "a false, simplistic, and ultimately unhelpful dichotomy of good and bad behaviour" (Fishman, 2016, p. 16). Many authors have defined the concept of plagiarism in various ways, but in general it refers to copying or using another person's work without acknowledging the original source (Rumanovská et al. 2024; Sozon et al., 2024). For Bretag (2016), it also includes the appropriation of "concepts, theories, rhetorical strategies, or interpretations, as well as word-for-word copying" (p. 12).

Plagiarism characterizes the behaviour of a person, whether it is deliberate or not, that can extend beyond the individual, i.e., to the academic community inside of which other individuals may be affected (Camara et al., 2016; Fishman, 2016; Yavich & Davidovitch, 2024). Despite the fact that plagiarism is not always intentional (Fatemi & Saito, 2020), identifying the characteristics of people who commit acts of plagiarism is fundamental from both a preventative and punitive perspective. In that respect, Camara et al. (2016) specify that:

Having knowledge of (direct understanding) rather than knowledge about (indirect understanding) plagiarism reduces opportunities for academic misconduct to occur intentionally. In addition, assessing the intent and motivation to plagiarize can signify one's propensity to participate in academic misconduct (p. 44).

According to Drisko (2022) and Elander et al. (2010) plagiarism can be avoided by using detection software, enforcing honour or integrity codes based on ethical values, and providing training to improve students' writing skills. Depending on the cultural environments, these strategies have all proven to be relatively effective in reducing plagiarism (Fishman, 2016; Zimba & Gasparayan, 2021). Furthermore, Gottardello and Karabag (2022) and Sutton et al. (2012) mention that understanding how students perceive plagiarism enables university professors and other stakeholders to better support their commitment to ethical writing practices. Al-Hashmi et al. (2023) have shown that students have different perceptions from teachers regarding the causes of plagiarism. However, in the absence of comparable measurement tools, it is unclear whether it is the perceptions of the causes of plagiarism that differ between teachers and students, or whether it is the importance or frequency attributed to certain causes that is the distinction. Although plagiarism mainly affects students (Sozon et al., 2024), Al-Hashmi et al. (2023) point out that this problem may stem in part from the laxity of teachers in reporting plagiarism, failing to emphasize the seriousness of the issue or to invest time in training students in academic integrity. Teachers may not fully adhere to institutional policies, particularly because reporting plagiarism is often time-consuming and burdensome (Amigud & Pell, 2022). By gaining a better understanding of teachers' and students' perceptions of the reasons inciting students to plagiarize, institutions can better tailor their interventions toward students and prepare teachers to engage in the prevention of plagiarism (Gottardello & Karabag, 2022).

In this regard, we formulated the following question: What are the differences between students' and teachers' perceptions of the reasons leading students to plagiarize? This article first presents theoretical models illustrating the reasons for which students plagiarize to propose a list of reasons that can serve as a basis for comparison between teachers and students. Then, we evaluate the psychometric properties of a questionnaire on the reasons influencing students to plagiarize based on quantitative data allowing the comparison of perceptions between teachers and students. Finally, we discuss the differences and similarities in the perceptions of teachers and students with regard to the reasons that incite students to plagiarize.

1.2 Theoretical Background

According to Bacha and Bahous (2010) and Skendaj (2024), writing is not an easy task for university students, thus it is valuable to understand teachers' and students' views on the strategies used to complete their work, especially in a context where plagiarism is a major concern. In this regard, students' perceptions of plagiarism can provide insight into what influences misconduct, while teachers' perceptions can inform stakeholders about avenues to prevent or control student misconduct (Al-Hashmi et al., 2023; Hard et al., 2006). Furthermore, if students' perceptions of plagiarism differ from those of teachers, their understanding of the reprehensible nature of plagiarism will not help them to identify the boundaries for what constitutes ethical writing (Al-Hashmi et al., 2023; Kwong et al., 2010).

There is little research comparing perceptions of academic integrity between teachers and students, and the results generally show different perceptions between these two groups regarding the incentives to plagiarize (Al-Hashmi et al., 2023). Furthermore, the small sample sizes of most studies and the qualitative methodologies used limit the possibilities of generalization. In addition, the metrological characteristics of instruments, often in the form of questionnaires, are not always known; and when they are, the analyses usually focus on students' perceptions and rarely on teachers' perceptions.

In terms of theorization in the scientific literature, several authors have examined the categorization of reasons, factors, or causes that lead students to plagiarize during their university studies, as presented in Table 1. Many of these research projects attempt to explain and predict the intentional nature of plagiarism or academic fraud, even though it is well known and documented that a large proportion of plagiarism cases are attributable to unintentional situations (Fatemi & Saito, 2020).

First, during the research conducted by Farahian et al. (2020) a questionnaire was administered to 291 teachers and semi-structured interviews took place with six of the respondents from Iranian institutions. A factor analysis of the questionnaire resulted in the identification of 10 factors grouped into three areas of underlying reasons for plagiarism: personal characteristics, organizational factors, and external factors. In this study, the authors concluded that plagiarism is an issue that concerns not only students but also teachers.

Regarding the research by Fatima et al. (2018), they administered a questionnaire to 250 students from five public universities in China. The results of this study were grouped according to internal and external factors that influence plagiarism, as well as control variables. The authors confirmed, among other things, that there is no significant relationship between academic skills and plagiarism, although plagiarism appears to decrease as students progress from undergraduate to graduate studies.

Furthermore, Amiri and Razmjoo (2016) used the concept of 'impact strength' to categorize minor and major factors that may contribute to plagiarism in study programs where students use a language other than their native language, while Malik et al. (2021) identified a total of 20 causes of plagiarism, without categorizing them through a factorial analysis, in a university that offers all of its study programs through virtual modalities.

Farooq and Sultana (2022) also developed a tool to measure attitudes toward plagiarism, building on the work of Mavrinac et al. (2010). The results of their analysis reveal three categories of causes related to the prediction of plagiarism behaviour, namely: 1) positive attitudes toward plagiarism, 2) negative attitudes toward plagiarism, and 3) subjective norms or social pressure to commit or not acts of plagiarism.

It should be noted that of the six studies, only the first presents findings from teachers' perspective, while the other five involve students only, and none of them compare the two groups. Moreover, the regional contexts of these studies are mainly focused on Asia and Europe.

Table 1. General and specific reasons that lead students to plagiarize

Source	General Reasons (Categories)	Specific Reasons (Items)
Farahian et al. (2020)	1. Personal Characteristics	Creativity; Self-efficacy; Motivation
	2. Organizational Factors	Educational; Supervision and control; Institutional regulations
	3. External Factors	Socioeconomic status; Culture; Social environment; Technology
Fatima et al. (2018)	1. Control Variables	Gender; Academic level; Discipline; Study modality; Admission status; Scholarship; Motivation; Time spent on the web
	2. Internal Factors	Academic skills; Pressure; Pride
	3. External Factors	ICT and the Web; Controlling plagiarism; Teaching factors
Amiri & Razmjoo (2016)	1. Minor factors	Curriculum demands; Parental issues; Personal characteristics
	2. Major factors	Individual; Academical; Cultural; Technological
Malik et al. (2021)	1. Awareness	Lack of awareness; Lack of confidence; Lack of interest; Lack of knowledge about citation; Lack of understanding; Language issues
	2. Support	Fear of failure; Poor time management; Stress and competition; Student teacher relationship; Untrained teachers; Workload
	3. Prevention	Because of a trend; For good grades; Laziness; No strict penalties; Poor education system; Shortcut and easy way; Unethical support of professional; Unhealthy academic environment
Mavrinac et al. (2010) and Farooq & Sultana (2022)	1. Positive attitude toward plagiarism	Not citing source; Inappropriate reuse of material; Unpunishable self-plagiarism; Type of punishment; Plagiarism of foreign text; Awareness of what plagiarism is
	2. Negative attitude toward plagiarism	Scientific community must be free of plagiarist; Plagiarism is bad and must be discussed to realize the seriousness of it
	3. Subjective norms toward plagiarism	Lying about plagiarism; Everyone else is plagiarize; Plagiarizing because have not been caught; Plagiarism is not a big deal; Copy a sentence or two is ok even from my previous papers; Plagiarism is necessary or justified if I currently have more important obligations or tasks to do

1.3 Toward a General Model of Factors that Incite Students to Plagiarize

The models described in Table 1 present common and specific characteristics that serve as a basis for developing a theoretical model in this study. In this sense, the scientific literature on previous categorizations identifies three main dimensions of reasons inciting students to plagiarize, namely:

(1) Subjective norms and misconduct conducive to plagiarism (beliefs, culture, institutional policies or regulations, etc.)

(2) Characteristics of tasks in the classroom (type of teaching and subject matter, quantity and difficulty of assignments, time to complete tasks, etc.)

(3) Weaknesses in the student's individual characteristics (motivation, behaviours, personal effectiveness, etc.)

First, subjective norms and behaviours conducive to plagiarism have been widely documented as reasons, causes or factors influencing some students to plagiarize, particularly when they believe they will not get caught (Park, 2003; Playfoot et al., 2024; Stone et al., 2009) or when they believe that the teacher does not care or does not monitor plagiarism (Foltýnek et al., 2014), as well as when they are unaware of the sanctions or consequences and consider them to be negligible or not overly strict (Gullifer & Tyson, 2014; Playfoot et al., 2024). In addition, favourable beliefs or attitudes toward plagiarism are characteristics exhibited by some students that undermine academic integrity, such as when they do not perceive plagiarism as wrong (Murdock & Stephens, 2007). Individual weaknesses can also be observed when students lack motivation, do not care about learning (Krou, 2019) or plagiarize out of laziness (Alimorad, 2018; Dick et al., 2008; Eriksson & Sullivan, 2008), such as when consider it easy to copy and paste from the Internet (Karim et al., 2009). University policies and regulations regarding plagiarism are not always taught to students, which can cause confusion and a lack of adjustment to academic integrity practices (Al-Hashmi et al., 2023; Gullifer & Tyson, 2014). Thus, subjective norms imply cheating behaviours or academic dishonesty that are part of a token 'plagiarism culture' conflicting with the values promoted in academic institutions.

Secondly, the characteristics or components of the task, such as the way the subject matter is taught, can act as an incentive for plagiarism. As such, Mbutho and Hutchings (2020) identified various aspects of a task or an assignment that can influence students to plagiarize, including when tasks or assignments are too difficult, poorly understood, or too vague and exceed students' skills. In some of those instances, students are no longer able to manage the workload and end up running out of time (Mbutho & Hutchings, 2020). This lack of time represents pressure to submit work prior to the established deadlines (Mbutho & Hutchings, 2020). Teaching practices, especially the way in which tasks or assignments are demanded of students, create situations that can be conducive to the emergence of plagiarism.

Third, several causes related to individual deficiencies among students make them more likely to commit acts of plagiarism. For example, a greater propensity to plagiarize is observed when students are unable to express another person's ideas in their own words (Tan & Carnegie, 2020), when students do not understand how to cite or reference sources of information (Blicblau et al., 2016; Gravett & Kinchin, 2021; Yesmin & Ahmed, 2023), when students do not perceive the difference between teamwork and collusion (McGowan, 2016), when students' skills in reading comprehension are lacking (Pecorari, 2023), and when students consider their language skills to be poor or their writing to be substandard (Mbutho & Hutchings, 2020). These studies highlight causes of plagiarism mainly related to gaps or deficiencies in academic writing skills.

Overall, studies suggesting that teachers' perceptions differ from those of students do not always specify the nature of these differences. Although there may be differences in the frequency of certain responses to questions about plagiarism, the differences are not always nuanced using common instruments and theoretical models for teachers and students. Taking these gaps into account, the objectives of our study were twofold. First, based on the proposed model, our study sought to develop and verify the metrological characteristics of a questionnaire, intended for teachers and students, on the reasons inciting students to plagiarize. Second, we compared the teachers' perceptions with those of students according to the categories of reasons identified.

2. Methodology

This study is part of an international Partnership on university plagiarism prevention (PUPP) involving more than 60 scholars across North America and Europe, interested in developing new knowledge on the skills taught and learned during undergraduate programs to promote academic integrity. This seven-year (2021-2028) mixed-method study includes three data collection phases: (1) questionnaires; (2) individual and group interviews; and (3) recorded writing tasks. In this article, we only focus on the first data collection, that is also the only quantitative phase.

2.1 Participants

A total of 1357 teachers and 4661 students came from 31 universities, including 14 Canadian, 7 American, and 10 European institutions. The sample of teaching staff consisted of 1357 respondents from the same universities and academic disciplines as the students. The teachers ranged in age from 21 to 93, with an average age of 47. Among them, 56.2% were women (n = 762), 39.0% were men (n = 529), and 4.8% (n = 66) identified to another gender or refused to answer this question. The number of years of teaching was 15.2 years, on average, including 23% of teachers who had only been employed in their position for 1-5 years.

The other group of respondents, who were mainly undergraduate students, represented more than 13 academic disciplines. The average age of students was 25.3 years (standard deviation of 7.7), with more than 85% aged

between 20 and 29. Women made up 62.1% of the overall sample (n = 2897), while 33.8% were men (n = 1577), and 4.1% (n = 190) identified to another gender or declined to answer this question. The number of years studying at university was 3.11 years, on average, including 25% of students in their first academic year.

2.2 Development of Questionnaires

Two questionnaires, one for teachers and one for students, were designed and validated during the 2021-2022 academic year. The instruments were developed in Canada's two official languages (English and French) and distributed between the months of February and October 2023. Each questionnaire, which took between 15 and 20 minutes to complete, was divided into five sections: sociodemographic information, informational skills, writing skills, referencing skills, and general knowledge about plagiarism. For the purposes of this article, we only considered the last question in both questionnaires: "What leads students to plagiarism?" that was designed as a multiple choice between 23 items on the reasons leading students to plagiarize. The development of these items was completed in three stages: (1) formulating items; (2) selecting items; and (3) verifying metrological characteristics. This last stage will be discussed in the results section.

In the first stage, a group of academic integrity experts, also doing research with the PUPP, formed a committee to develop a quantitative data collection instrument (questionnaire). During their meetings, they formulated items on the reasons inciting students to plagiarize, based on their extensive teaching and research experience. The items were formulated as statements through brainstorming sessions without the censorship of ideas.

In the second stage, the statements were scrutinized to streamline the items by identifying redundancies, ambiguity, or information that was not related to the scientific literature on plagiarism or the professional experience of the majority of experts. The final version of the question comprised a total of 23 items, including 11 items on subjective norms, 6 items on task components, and 6 items on personal characteristics. A dichotomous (yes or no) measurement scale was chosen because of its simplicity and speed of response for an online questionnaire. Since the question was asked at the end of the questionnaires, the time factor was considered important to support interest in responding to all items. In addition, response biases related to central tendencies or hesitation between multiple choices were minimized. Finally, the items were designed to ask respondents about their general perceptions of the reasons that lead students to plagiarize rather than about their own practices in relation to plagiarism, to minimize bias caused by the social desirability effect.

3. Results

In this section, we start by presenting findings from the analyses of metrological characteristics of the questionnaires, then we compare the perceptions between the groups of teachers and students. These results were obtained with the use of software such as Microsoft Excel, IBM SPSS Statistics (IBM Corp., 2022), and JASP (JASP Team, 2024) to analyze data.

First, the teacher questionnaire (n = 1357) and the student questionnaire (n = 4661) were subjected to exploratory factor analysis (EFA) and confirmatory factor analysis (CFA), as well as internal consistency analyses to verify their metrological characteristics in relation to the three categories of the proposed model.

A Mardia multivariate normality test was used to verify the multivariate normal distribution of the data to determine the method for estimating the EFA and CFA. High values of skewness and kurtosis indicated that the data were not symmetrically distributed and extremely leptokurtic for both samples (students/teachers: skewness = 49.5/51.8; kurtosis = 782.2/750.7; df: 2300*; $p < .001$*). Since these values suggested that estimation methods requiring data normality should not be used, the EFA for both samples were conducted using a minimum rank factorial analysis (MRFA) with oblique cluster rotation. This method aims to minimize the rank of the residual correlation matrix, allowing for a better estimation of common variances, a reduction in sampling error bias, and a more robust solution than traditional methods when normality assumptions are violated (Lorenzo-Seva & Ferrando, 2012). In addition, in the presence of dichotomous variables, MRFA was coupled with a tetrachoric correlation matrix (Lorenzo-Seva & Ferrando, 2012).

Tables 2 and 3 illustrate the EFA for the samples of teachers and students. For teachers, the three factors showed a cumulative variance of 54.7%, while for students, the three factors showed a cumulative variance of 59.0%.

Table 2. Factor Loadings from the Teachers' Questionnaire

Items	F1	F2	F3
Task Components			
Students feel the task is completely beyond their ability	.91		
Students think their own words are not good enough	.80		
Students run out of time	.74		
Assignment tasks are too difficult or not understood	.73		
Unclear criteria and expectations for assignments	.72		
Students feel external pressure to succeed	.70		
Students are unable to cope with the workload	.66		
Students have always written like that	.65		
Plagiarism is not seen as wrong	.52		
Students believe their language skills are too weak	.46		.44
Subjective Norms			
Students have other priorities		.81	
Students are lazy		.75	
Students do not want to learn anything, just pass the assignment		.74	
Students think they will not get caught		.71	
Students think the lecturer will not care		.65	
Teachers are not able to control student plagiarism		.59	
Students do not believe their assignments are asking for something new		.55	
Personal Weaknesses			
Students cannot express another person's ideas in their own words			.78
Students' reading comprehension skills are weak			.66
Students do not understand how to cite and reference			.54
Students find it easy to copy and paste from the Internet			.44
Students are not aware of penalties or consequences			.44
Students do not see the difference between group work and collusion			.42

Note. Oblique cluster rotation method. This table presents only factor loadings greater than 0.40. Factor name. F1 = Task Components (Var. is 43.7% (λ_1 = 10.46); F2 = Subjective Norms (Var. is 6.8% (λ_2 = 1.96); F3 = Personal Weaknesses (Var. is 4.2% (λ_3 = 1.37). The italicized items do not align with the theoretical factor.

The EFA allowed for a better understanding of the underlying structure of the data for both samples before testing the proposed model, namely determining the number of factors and how the items group together without imposing a priori structure and verifying the consistency of the items and factors. In both samples, eigenvalues greater than 1.00 indicated a three-factor structure, as suggested by the proposed model. The Kaiser-Meyer-Olkin (KMO) tests indicated values between 0.73 and 0.96 (average 0.86) for the teacher sample and values between 0.88 and 0.97 (average 0.94) for the student sample, suggesting suitability for factor analysis, from very good to excellent for both groups. In addition, a Bartlett sphericity test indicated a chi-square value of 22 368.9 (df: 253; $p < .001$) for the teacher sample and a chi-square value of 78 712.3 (df: 253; $p < .001$) for the student sample, confirming that the items are correlated and that an EFA was justified.

Concerning sample bias, the analysis of factor loadings obtained from the two EFA models reveals a generally low sampling error, indicating precise estimation of the factor loadings. For teacher EFA, the standard errors (SE) of each item range from 0.016 to 0.036, while for the student, SE range from 0.046 to 0.075. These values, all below 0.08, reflect good estimation stability, suggesting an adequate sample size and a well-specified model. Moreover, all estimated loadings are statistically significant (z-values > 21.97, $p < .001$), and the 95% confidence intervals never include zero, confirming the robustness of the relationships between indicators and factors. Overall, the results suggest that sampling error is well controlled in both models, strengthening the confidence in the interpretation of the extracted factor structures.

Regarding the consistency of items and factors for the teacher sample, all items had fairly strong factor loadings (all above .40). For the same group, five items did not fit into the correct factor and one item loaded on two factors. For the student sample, three items did not fit into the correct factor. Thus, items that did not fit into the theoretical factors were analyzed using different statistics to verify whether they could be retained in a CFA. To this end, the uniqueness values for the items ranged from 0.31 to 0.52 for teachers and from 0.38 to 0.56 for students, which is reasonable in terms of explained variance. Similarly, the KMO index was quite high (between 0.83 and 0.93 for teachers and between 0.93 and 0.97 for students). Finally, as the fit indices of the CFA maintained excellent fit quality despite the reassignment of these items to the theoretical factors, all items were retained.

Although the order of the factors in the two questionnaires is not identical, it appears that the first two factors for both samples correspond to the same two dimensions of plagiarism incentives. The factor of personal weaknesses accounts for a smaller percentage of the variance explained in both groups.

The teacher and student questionnaires were then both subjected to CFA. The items were divided into three domains according to the proposed model. The first domain concerns subjective norms and behaviours conducive to plagiarism, such as positive attitudes toward plagiarism, cultural aspects, and other behaviours, beliefs, or attitudes that are unethical in an academic context (11 items). The second domain focuses on the characteristics or components of academic tasks, such as difficulty, demands, and management of academic tasks or assignments (6 items). The third domain focuses on deficiencies in students' personal characteristics, such as their language skills, academic writing skills, or referencing skills (6 items). Given the dichotomization of the items and the failure to meet the assumption of data multivariate normality, a diagonally weighted least squares estimation method was used. For the teacher questionnaire, the fit of the proposed model to the chi-square test indicated a chi-square of 22 349.4 (df: 253), and the fit of the factor model indicated a chi-square of 874.3 (df: 227, $p < .001$), while for the student questionnaire, the fit of the factorial model to the chi-square test indicates a chi-square value of 83 756.8 (df: 253) and the fit of the factorial model indicates a chi-square value of 2152.7 (df: 227, $p < .001$).

Table 3. Factor Loadings from the Students' Questionnaire

Items	F1	F2	F3
Subjective Norms			
Students think they will not get caught	.95		
Students are lazy	.94		
Students think the lecturer will not care	.82		
Students do not want to learn anything, just pass the assignment	.79		
Teachers are not able to control student plagiarism	.71		
Students find it easy to copy and paste from the Internet	.70		
Students have other priorities	.62		
Plagiarism is not seen as wrong	.53		
Students are not aware of penalties or consequences	.42		
Task Components			
Assignment tasks are too difficult or not understood		.93	
Students are unable to cope with the workload		.83	
Unclear criteria and expectations for assignments		.79	
Students feel the task is completely beyond their ability		.79	
Students run out of time		.76	
Students feel external pressure to succeed		.57	
Students think their own words are not good enough		.50	
Personal Weaknesses			
Students cannot express another person's ideas in their own words			.78
Students do not understand how to cite and reference			.76
Students do not see the difference between group work and collusion			.66
Students' reading comprehension skills are weak			.63
Students believe their language skills are too weak			.62
Students have always written like that			.54
Students do not believe their assignments are asking for something new			.53

Note. Oblique cluster rotation method. This table presents only factor loadings greater than 0.40. Factor name. F1 = Subjective Norms (Var. is 46.7% (λ_1 = 11.11); F2 = Task Components (Var. is 6.8% (λ_2 = 1.91); F3 = Personal Weaknesses (Var. is 5.5% (λ_3 = 1.64). The italicized items do not align with the theoretical factor.

Subsequently, various measures were used to verify the quality of the fit of the items according to the proposed model, as illustrated in Table 4. In general, the results confirm an excellent factorial structure among the samples of teachers and students.

Table 4. Fit Indices from the Confirmatory Factor Analysis

Model	Khi^2	df	*p* value	CFI	TLI	RNI	RMSEA	SRMR	GFI
Teachers	874.3	227	.001	0.971	0.967	0.971	0.046	0.052	0.988
Students	2152.7	227	.001	0.977	0.974	0.977	0.043	0.045	0.994

Note. Khi^2: chi-square statistics; df: degrees of freedom; CFI: Comparative Fit Index; TLI: Tucker-Lewis Index; RNI: Relative Noncentrality Index; RMSEA: Root Mean Square Error of Approximation; SRMR: Standardized Root Mean Square Residual; GFI: Goodness of Fit Index.

Then, the internal consistency of the factors in each sample indicated satisfactory to very satisfactory values. For teachers, Cronbach's alpha coefficients ranged from 0.70 to 0.81 for individual factors and 0.89 for grouped factors.

For students, Cronbach's alpha coefficients ranged from 0.75 to 0.85 for individual factors and 0.90 for grouped factors. Table 5 shows the internal consistency of the factors for each sample.

Table 5. Internal Consistency of the Three Factors Across the Two Samples

Sample	Cronbach's Alpha Coefficient			
	Subjective Norms	Task Components	Personal Weaknesses	Total
Teachers	0.81	0.76	0.70	0.89
Students	0.85	0.81	0.75	0.90

Moreover, inter-factor correlations are presented in Table 6. The results indicated correlations ranging from 0.49 to 0.61 for teachers and correlations ranging from 0.52 to 0.63 for students.

Table 6. Inter-Factor Correlations from the EFA for Teachers and Students

	Subjective Norms		Task Components		Personal Weaknesses	
	Teachers	Students	Teachers	Students	Teachers	Students
Subjective Norms	-	-	0.61	0.63	0.52	0.59
Task Components	0.61	0.63	-	-	0.49	0.52
Personal Weaknesses	0.52	0.59	0.49	0.52	-	-

Finally, Figure 1 presents the hierarchical model of the questionnaire on the reasons that incite students to plagiarize, as obtained from teachers' and students' confirmatory factorial analysis.

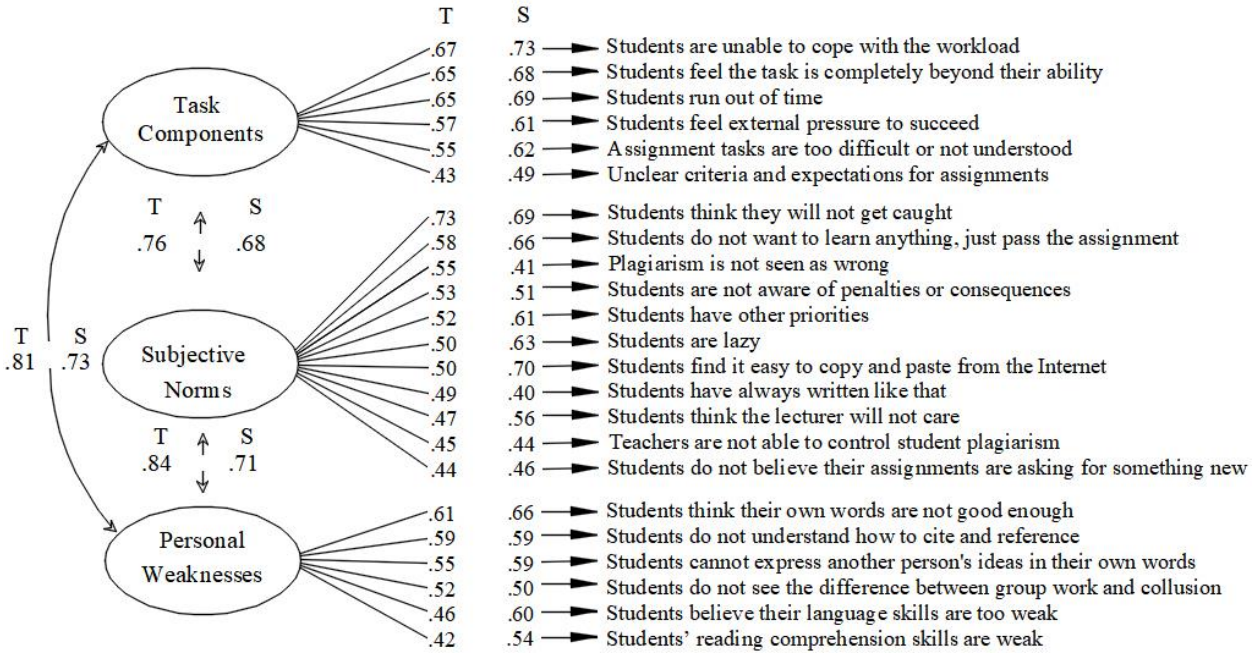

Figure 1. Confirmatory Factorial Analysis Model Plot for Teachers (T) and Students (S)

When comparing the results of teachers with those of students, fairly similar profiles emerge. In both exploratory and confirmatory factor analyses, the factor loadings are roughly the same in magnitude and there is little difference between the values for each item for teachers and students. The EFA revealed a differentiated hierarchy of factors between the two groups.

For the student group, the subjective norms factor was extracted first, explaining 46.7% of the variance, followed by task components (6.8%) and personal weaknesses (5.5%). In contrast, in the teacher group, the task component factor emerged as the first factor, explaining 43.7% of the variance, ahead of subjective norms (6.8%) and personal weakness (4.2%). This ranking suggests differences in the empirical structure of the responses between the two groups. However, analysis of the components of the task component factor in the teacher group shows that it includes not only the six items theoretically associated with it, but also four items from other factors, raising the possibility of an overestimation of its importance in EFA due to conceptual overlap or non-specific covariation.

Confirmatory factor analysis (CFA) nevertheless confirms the validity of the three-factor theoretical model in each group. The fit indices are excellent in both cases (group A: CFI = 0.977, RMSEA = 0.043, SRMR = 0.045; group B: CFI = 0.971, RMSEA = 0.046, SRMR = 0.052). The factor loadings of the items are comparable between the groups: the task component items show moderate to high loadings (between 0.49 and 0.73 in the student group; between 0.43 and 0.67 in the teacher group), as do those of subjective norms (between 0.40 and 0.70 in the student group; between 0.44 and 0.73 in the teacher group), and those of personal weakness (between 0.50 and 0.66 in the student group; between 0.42 and 0.61 in the teacher group). These results are consistent with Cronbach's alpha coefficients, which indicate satisfactory to high reliability for all factors.

The structure of inter-factor correlations differs between groups: correlations are higher in the student group, which may suggest some overlap between dimensions, while in the teacher group, correlations are slightly lower, suggesting a more marked differentiation between factors. This relative independence between dimensions in the teacher group could explain why the task component factor, although comparable in terms of reliability and factor loadings, appears first in the EFA: its items form a more autonomous set, capturing a larger share of the initial common variance.

Ultimately, the differences observed between groups in the order of factor extraction reflect less a variation in the psychological structure of respondents than a complex interaction between inter-item redundancy or conceptual clarity as perceived by participants. These results illustrate the importance of combining exploratory and confirmatory approaches in order to nuance the interpretation of factor structures and avoid hasty conclusions based solely on explained variance or the order of factor extraction.

Finally, when comparing the response rates for each item, teachers differed from students in 18 out of 23 items. Table 7 shows the percentages of respondents who indicated that they perceived the item as a factor that encourages plagiarism. The results indicate that, proportionally, students are significantly more likely than teachers to perceive the components of the task as an incentive to plagiarize (5 out of 6 items). On the other hand, the results indicate that, proportionally, teachers are significantly more likely than students to perceive subjective norms as an incentive to plagiarize (8 out of 11 items). Finally, with regard to personal characteristics, there are few differences between teachers and students, with results being rather mixed or insignificant.

Table 7. Comparison between teachers and students regarding the percentage of answers to each item

Items	Teachers	Students	Khi^2	df	p
Task components					
Students are unable to cope with the workload	37.0%	39.6%	3.0	1	.05
Students feel the task is completely beyond their ability	25.8%	32.1%	19.5	1	.001
Students run out of time	38.6%	42.7%	7.0	1	.01
Students feel external pressure to succeed	24.2%	26.1%	2.0	1	n.s.
Assignment tasks are too difficult or not understood	26.2%	38.9%	74.2	1	.001
Unclear criteria and expectations for assignments	18.6%	29.3%	60.3	1	.001
Subjective Norms					
Students think they will not get caught	58.5%	43.5%	95.3	1	.001
Students do not want to learn anything, just pass the assignment	35.2%	28.1%	25.2	1	.001
Plagiarism is not seen as wrong	31.9%	11.8%	310.1	1	.001
Students are not aware of penalties or consequences	31.0%	22.6%	39.7	1	.001
Students have other priorities	30.5%	25.6%	13.2	1	.001
Students are lazy	26.3%	35.7%	41.2	1	.001
Students find it easy to copy and paste from the Internet	27.9%	34.2%	19.0	1	.001
Students have always written like that	20.5%	12.4%	56.3	1	.001
Students think the lecturer will not care	28.7%	26.0%	2.4	1	n.s.
Teachers are not able to control student plagiarism	25.8%	13.1%	127.1	1	.001
Students do not believe their assignments are asking for something new	19.4%	15.0%	15.0	1	.001
Personal Weaknesses					
Students think their own words are not good enough	29.8%	30.4%	0.2	1	n.s.
Students do not understand how to cite and reference	37.1%	36.0%	0.5	1	n.s.
Students cannot express another person's ideas in their own words	26.2%	28.3%	3.9	1	.03
Students do not see the difference between group work and collusion	25.1%	16.8%	47.2	1	.001
Students believe their language skills are too weak	13.8%	19.8%	25.3	1	.001
Students' reading comprehension skills are weak	15.7%	14.7%	0.9	1	n.s.

4. Discussion

The purpose of this article was to verify the metrological characteristics of a questionnaire for teachers and students, and then to compare teachers' and students' perceptions of the reasons leading students to plagiarize. To do this, we analyzed data from a questionnaire that was administered to 1357 university teachers and 4661 undergraduate students in 31 universities (North America and Europe). In this section, we critically discuss the development and evaluation of our proposed model, how it contributes to reducing gaps in the scientific literature, and how gaining a better understanding of the teachers' and students' perceptions of the reasons leading to plagiarism can facilitate the promotion of academic integrity.

First, exploratory and confirmatory factor analyses validated the factor structure in three theoretical dimensions: task components, subjective norms, and personal characteristics. These results are consistent with most of the models identified, which present a three-factor structure from their plagiarism questionnaires (Farahian et al., 2020; Farooq & Sultana, 2022; Fatima et al., 2018). The three factors in these studies do not all group together items of the same nature, but links can be made with our proposed model.

In this respect, according to our data analysis, the dimension of task components is comprised of the main factors inciting students to plagiarize. This includes items that combine elements related to teaching or learning strategies. Our results are consistent with those of Mbutho and Hutchings (2020), who indicate that plagiarism can occur when assessment criteria are unclear and the workload is too heavy to manage. These findings mean that students often plagiarize due to lack of time. Our results are also similar to those of Farahian et al. (2020), who propose organizational factors referring to external pressure to succeed or lack of time, which also relate to task components. Lack of time is also found in the studies conducted by Farooq and Sultana (2022). For Malik et al. (2021), the support factor includes elements similar to the results of the present study, such as difficulty managing time and heavy workloads. The item stating that students plagiarize when they consider the task to be beyond their abilities was added to our model and is strongly related to the other items in this dimension. This item is consistent with the position of Fatima et al. (2018), who suggest that personal skill deficiencies are not significant reasons for plagiarism, but it is rather the interaction of student characteristics with the environment. Thus, a student will continue to plagiarize not because they have skill gaps, but because of their work practices or teachers' assessment strategies that encourage or maintain academic misconduct.

As for the second dimension of subjective norms, it is comprised of items manifesting as circumstances that trivialize plagiarism or justify academic dishonesty. These items, such as plagiarizing because you are certain you will not get caught, because plagiarism is not wrong, or because the teacher does not care, are also found in the model developed by Farooq and Sultana (2022). For Farahian et al. (2020), the external factor includes some items common to our subjective norms dimension, including those related to the culture of plagiarism and the ease to plagiarism by using technology. Malik et al. (2021) identified the prevention factor, which includes several items common to the subjective norms in this study, such as laziness, ignorance, lack of teacher training, and the belief that assignments require originality. Our study adds two items to the dimension, one of which suggests that students plagiarize because they have other priorities, and the other reason is because they do not want to learn, but only to obtain a passing grade. The items in this dimension encourage institutions to raise student awareness toward plagiarism and to implement punitive measures and sanctions to discourage plagiarism (Malik et al., 2021).

The last dimension of personal weaknesses includes items focused on gaps or deficits in the knowledge or skills needed to produce written assignments with integrity. Our results are consistent with those of Malik et al. (2021) when they specify the awareness factor relating to items such as lack of confidence, lack of interest, lack of knowledge about referencing, or lack of understanding of academic writing requirements. Our findings are also consistent with those of Farahian et al. (2020), who suggest that lack of confidence or personal effectiveness in academic writing are reasons that lead to plagiarism. Our study adds an item on students' difficulty in distinguishing between teamwork and collusion. In that respect, McGowan (2016) and Sozon et al. (2024) note that many students reported plagiarizing because of collusion. However, the authors point out that the concept of collusion is often difficult to define when it comes to academic integrity, especially in team assignments.

It is worth noting that there are some items included in existing models that were not part of our proposed model, such as those related to external pressure, either from peers or parents, which can influence students to plagiarize. Similarly, the perception of the risks of plagiarism in relation to the magnitude of the consequences, the pride associated with integrity, and the whole issue of self-plagiarism are topics that could be explored in future research.

In this second part of the discussion, we address the comparison of the teachers' perceptions with those of students. At the factorial analysis level, the results confirm that the three theoretical domains are central factors in teachers' and students' perceptions of the reasons for plagiarism, despite a different prioritization of the items. This study demonstrates that the same theoretical grid can give rise to different empirical structures depending on the characteristics of the groups, not only regarding factor prioritization, but also in terms of internal consistency, item grouping, and perceived conceptual differentiation. This comparative approach thus provides a better understanding of the stability and transferability of factor models across different groups. One distinction may be that teachers perceive plagiarism more as an issue related to the nature of academic tasks and the clarity of instructions, while students seem to be more influenced by social and cultural factors, reflecting a possible tolerance or trivialization of plagiarism in their environment (Fish & Hura, 2013; McIntire et al., 2024). These differences could stem from a distinction in perception of responsibility toward plagiarism: teachers tend to see the problem as a consequence of academic requirements and students' lack of preparation, while students perceive plagiarism as a practice influenced by beliefs or behaviours that are conducive to plagiarism.

The results obtained also show that teachers and students have both similar and different perceptions and are consistent with those of Shin et al. (2025) and Yazici et al. (2011). For the two groups, there is a main commonality

in the dominating reasons leading to plagiarism, including the students believing they will not get caught and lacking the time required to complete tasks. Even though the prioritization of reasons varies from one group to the other, the order in which domains are considered remains the same, with subjective norms coming first, task components in second, and personal characteristics in last. These results are consistent with those of Arce Espinoza and Monge Najera (2015), who suggest that the perceptions of teachers and students are relatively similar, but that priorities are assigned according to the groups. Their findings indicate that the five main causes perceived by teachers were: the belief that work is not checked, ignorance, workload, indifference, and procrastination, while for students, the order of causes was procrastination, the desire to get better grades, workload, Internet accessibility, and indifference.

This article was meant to enhance the understanding of the reasons why students plagiarize, and not to provide solutions to academic integrity breaches. However, we still adhere to the current shift in perspective that is steering away from a policing approach (detection and sanction) to focus on an educative approach (plagiarism prevention and promotion of academic integrity) (Eaton, 2021). To that end, when taking into account the difference in perceptions of teachers and students, it allows for the implementation of targeted initiatives to raise awareness on plagiarism and prevent academic misconduct. Since students are more influenced by subjective norms, it would be relevant to integrate developmental activities focused on the ethical and academic consequences of plagiarism, emphasizing the role of institutional culture. Promoting a culture of academic integrity through classroom discussions, interactive training, and peer support could be effective strategies for changing these subjective norms. This could reduce the likelihood that individuals who plagiarize in academia are more likely to take risks in the workplace and engage in unethical behaviours, especially if they have not been caught (Guerrero-Dib et al., 2020). As for teachers, providing clarifications on the requirements and criteria for assessing academic work could help reduce perceived situations that are conducive to plagiarism. By teachers adapting their assignment instructions and increasing academic support, it would be possible to reduce the use of plagiarism out of perceived necessity (Holden et al., 2021; Owens & White, 2013). For example, a variety of assessment methods, such as project-based assessment, portfolios, or oral presentations, can be effective alternatives to reduce instances of plagiarism, particularly with the help of generative artificial intelligence. These evaluation methods could, in particular, reduce the impact of technology when it should not be used in assignments to maximize learning. Moreover, our results suggest that institutional anti-plagiarism policies should be tailored to the specific perceptions of each group (Rumanovská et al., 2024). For example, sanctions against plagiarism, while effective in deterring certain behaviours, are not sufficient on their own. A combined approach of prevention, support, and incentives to encourage originality and ethics in academic work may be more effective. The use of technological tools to facilitate the detection of plagiarism could also be a lever, since their deterrent nature has been established in previous studies (Badge et al., 2007; Zimba & Gasparyan, 2021).

Furthermore, the importance of personal characteristics suggests that teachers and students may be less likely to attribute plagiarism to individual shortcomings (such as writing skills or knowledge of referencing norms). These results do not align with those of Al-Hashmi et al. (2023), who indicate that teachers and students attribute the main causes of plagiarism to deficiencies in academic writing skills, particularly referencing skills. This could be explained in part by the fact that educational interventions focused solely on improving writing skills have only a limited impact on reducing plagiarism unless these actions are supported by measures focused on increasing knowledge of plagiarism or monitoring academic misconduct (Abbasi et al., 2021; Ahmed et al., 2023; Pittam et al., 2009). These findings suggest that combining academic writing training with regular training sessions on academic integrity and best practices for avoiding plagiarism could help align perceptions and expectations. In this respect, institutions need to take steps to clarify plagiarism by developing policy statements that clearly explain what constitutes plagiarism and its consequences.

5. Conclusion

This article highlights a robust three-factor structure explaining the reasons inciting undergraduate students to plagiarize. While the overall structure of the proposed model is confirmed for both teachers and students, the order of the factors differs, suggesting varying concerns for members of each group. Considering these differences could lead to better prevention of plagiarism and stronger academic integrity practices within educational institutions. By adapting prevention and awareness strategies to the realities perceived by each group, institutions could foster a stronger and more sustainable culture of academic integrity.

In terms of sampling, a large proportion of respondents (40%) came from the same European institution, which may limit the generalizability of the results. Although the final sample is sufficiently large, the exclusion of incomplete questionnaires may also have limited the diversity of the profiles represented. In addition, data collection took place

at the very beginning of the propagation of generative artificial intelligence, in a rapidly evolving technological context. The results should therefore be interpreted with caution, as the uses and perceptions of this new technology may have greatly changed since then. The same applies to distance learning, which has become established in teaching practices since the COVID-19 pandemic. These realities, which are still relatively new for teachers and students alike, require further research to verify the changing reasons leading students to plagiarize.

Nevertheless, our results are based on a considerable sample size of respondents from various regions across two different continents. Moreover, we provide a comparison between teachers' and students' perceptions from the same universities and academic disciplines by using the same data collection instrument. These aspects of our research are enhancing its empirical rigour, allowing for scientific contributions that are complementary to the theoretical models existing in the current literature. Moreover, our social contributions are focused on the education of both teachers and students, as well as providing new knowledge that can be used by other actors of higher education establishments to promote academic integrity through tailored pedagogical strategies, academic initiatives, and institutional policies.

All in all, our research findings contribute to explain the reasons why undergraduate students plagiarize according to the perceptions of teachers and students from the same institutions, which is not a methodical approach that has been often adopted in past studies. Future research could focus on the wording and interpretation of the items to assess the extent to which certain lexical or conceptual ambiguities may lead to empirical groupings that differ from those expected in theory. In addition, further studies could deepen and explore the contextual or individual determinants that influence the empirical structuring of responses, for example by examining the effect of cultural or motivational variables.

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