Project-based learning and its contribution to avoid plagiarism of university students

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Abstract

This study presents the results of a documentary research on recent approaches related to the causes and solutions of university student plagiarism. It contains a classification of causes according to the level on which they occur. Thus, based on the results of a direct observation, the study shows that in Romania, where project-based learning is promoted, the students' habits to unethically use Internet based sources is developed rather than academic education, with the requirement for pupils to elaborate school projects. This is proposed as an additional cause of plagiarism

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by part of the university students. The habit of copy-pasting available materials online is difficult to counter efficiently, but it can be corrected and directed towards the acquisition of new knowledge. Plagiarism is no longer efficient for students when they are explicitly asked to make comments about materials which are already available online.

Keywords: Plagiarism; University Students; Project-Based Learning; Online Resources

Aprendizaje basado en proyectos y su contribución para evitar el plagio de estudiantes universitarios
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Resumen

Este estudio presenta los resultados de una investigación documental sobre los enfoques recientes de las causas y soluciones del plagio de los estudiantes universitarios. Contiene una clasificación de las causas de acuerdo con el nivel en el que ocurren. Además, según los resultados de una observación directa, el estudio muestra que en Rumania, donde se promueve el aprendizaje basado en proyectos, la costumbre de los estudiantes de usar fuentes basadas en internet de manera poco ética se desarrolla antes de la educación académica, con el requisito de que los alumnos elaboren proyectos escolares. Esto se propone como una causa adicional de plagio de estudiantes universitarios. El hábito de copiar y pegar materiales disponibles en línea es difícil de contrarrestar de manera eficiente, pero puede corregirse y dirigirse hacia la adquisición de nuevos conocimientos. El plagio ya no es eficiente para los estudiantes cuando se les pide explícitamente que hagan comentarios sobre materiales que ya están disponibles en línea.

Palabras clave: Plagio; Estudiantes Universitarios; Aprendizaje Basado en Proyectos; Recursos en Línea

Introduction

The academic environment increasingly confronts with the issue of managing various forms of plagiarism. Some of these have led to spectacular resignations on behalf of political decision makers a few years ago (in Germany, the Minister of Defense, Karl-Theodor zu Guttenberg, in 2011, and the Minister of Education, Annette Schavan, in 2013; in Hungary, the president of the country, Pal Schmitt, and the vice prime minister, Zsolt Semjen, in 2012; in Romania, the Minister of Education, Ioan Mang, in 2012; the Chief French Rabbi, Gilles Berheim, in 2013) or at least have persistently brought into the limelight the possibility of resignation as it was the case of the Romanian Prime Minister, Victor Ponta (who was accused of having plagiarized his doctoral thesis in 2012, resigned from his position in 2015 but for completely different reasons and his doctor diploma was only withdrawn in 2016). There were also instances when the accusations of plagiarism were dismissed as unfounded by academic institutions –as it was the case of the current president of the European Commission, Ursula von der Leyen, who asked for a review of her doctoral thesis in 2015 in order to refute accusations, as well as that of the current EU Chief Prosecutor, Laura Codruţa Kovesi whose doctoral thesis was reviewed again in 2016 after accusations of plagiarism related to her work had already been rejected in 2012. Nonetheless, even the last two cases highlight the issues raised by plagiarism nowadays.

On a less spectacular level, plagiarism has increasingly become a topic for studies published in scientific or ethical journals around the world. A search for the term *plagiarism* in ScienceDirect yields 57 search related results for 2000 and 444 for 2019. SpringerLink displays 101 articles on plagiarism in 2000 and 893 in 2019. As one of the specific instances of academic lack of integrity plagiarism is probably one of the most frequent unethical behaviors (Marques, Reis, and Gomes, 2019).

As academics at the Transilvania University of Braşov, Romania, we have directly noticed a growing number of plagiarized papers submitted by students for the past years. Even though it started as an isolated phenomenon, it has soon transformed into a quite common approach to our didactical requirements.

We wanted to find out what are the causes of this phenomenon, which disrupts the development of the educational process. If they plagiarize, students miss the opportunity to apply and consolidate the knowledge gained during the course. They do not really involve themselves in the teaching process. They also miss the exercise of thinking alone and trusting their own opinions. Thus, why do students plagiarize? Our objective was to configure a comprehensive table of the causes of university student plagiarism.

We considered it necessary to overview the approaches to student plagiarism in academic journals for the past two decades (2000-2019 period). We compared the documentary research data with the ones generated by direct observation of Internet use in contemporary Romanian pre-university education system. The observation focused on our own children, the children from our groups of friends and these children's friends, that is, seven teams with 2-4 members, a total of 22 children aged 10-17 years, classmates at various schools in the city. The sample was made using the snowball method. Our observation was an exploratory one. Its results are briefly presented below in support of the causal explanation suggested as a hypothesis for a future research that will be designed with a representative sample.

Thus, we added to the list of causes underlying university student plagiarism one more that was not explicitly mentioned in the consulted articles, which we consider important, at least in the Romanian students case. We thought that adding this cause requires reconsidering the efficiency of the solutions to university student plagiarism advanced by researchers and we tried to highlight the appropriate solution.

Analysis of results: theoretical answers concerning causes of student plagiarism

The question *Why do students plagiarize?* has been answered in multiple ways for the past two decades. We grouped the answers identified in the works on student plagiarism in five categories, concerning: Students, Academics, Internet, Institutional environment, and Educational framework. These are, from simple to complex, the actors and the contextual factors that are deemed responsible for plagiarism (*Figure 1*).

As Comas-Forgas and Sureda-Negre (2010) indicate, when directly interviewed, students attributed the spread of plagiarism to the following three factors: students' behavior (poor time management along with task overload), technological opportunities to access and use Internet based sources, as well as the relationship between teachers and students (the latter representing, according to the students, the most important one). These factors correspond metonymically to the triad Students- Internet- Academics presented in *Figure 1.* They have also been mentioned, either separately or together, in other authors' research: Granitz and Loewy (2007), East (2010), Ramzan et al. (2012), Heckler and Forde (2014), Dias and Bastos (2014a, 2014b).
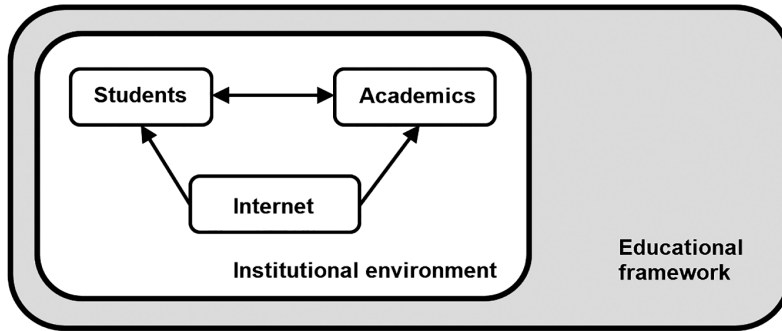
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Figure 1. Relations among the factors deemed responsible for student plagiarism

Internet access simultaneously affects the attitude of students and the attitude of academics towards plagiarism. These attitudes adjust each other according to the characteristics of the institutional environment, in the wider context of the educational framework. Each of these five categories of identified answers is presented in detail below.

Students and their share of the blame

Besides faulty time management, already mentioned previously, students also indicate their lack of experience in research and in academic writing as cause for plagiarism (Singh, 2017). Adam, Anderson, and Spronken-Smith (2017) in their turn refer to assumed problems of moral and academic writing. In addition to the causes of plagiarism assumed by students themselves, researchers blame them for other causes of plagiarism spreading.

Investigating the articulations and meanings of student plagiarism by resorting to the philosopher's instruments, Granitz and Loewy (2007) identify six categories of answers to the ethical dilemmas associated with student plagiarism that correspond to the same number of distinct ethical theories: deontologically speaking, students believe they can plagiarize if they do not understand or are not aware of theories; from a utilitarian perspective students believe that they can plagiarize as long as that generates good results; in terms of their own justifications, they believe plagiarism is justified if tasks are boring and irrelevant; from a Machiavellian perspective students believe their own interest prevails; in terms of cultural relativism, they view plagiarism as justified since it is an acceptable norm in their culture; from the perspective of situational ethics, they think that special circumstances justify plagiarism.

Heckler and Forde (2014) refer to students' disrespect for authority. Chen and Chou (2017) indicate lack of interest for the subjects to be learned about, lack of knowledge as to how to cite and lack of research skills as causes of plagiarism, causes already assumed by students themselves, as we have indicated above. Atudorei (2015) highlighted a significant correlation between the level of the Romanian university students' fraud intentions and the distribution upon their admission in the chosen versus assigned university profile.

As for students' capacity to understand the problem of plagiarism, there are various opinions: students can define it, hence they know what it means (Heckler and Forde, 2014); students recognize the phenomenon, but they lack the necessary competences required by adequate academic writing standards (Löfström and Kupila, 2013) or vice versa, students learn in courses how to cite but they do not correlate these to plagiarism because they are not aware of the latter and its meaning (Vanbaelen and Harrison, 2013). Many students are convinced they know what plagiarism is, but their understanding does not meet academic standards (Šarlauskienė and Stabingis, 2014) and thus are not able to recognize it as such (Chien, 2017; Rets and Ilya, 2018). Anyways, lack of information on the rules of academic writing or difficulty in understanding it are also pointed out as causes underlying the spread of plagiarism among students (Vanbaelen and Harrison, 2013; Busch and Bilgin, 2014; Zarfsaz and Ahmadi, 2017; Rets and Ilya, 2018; Palmer, Pegrum and Oakley, 2019). That is the result of to the students' lack of attention to teachers' advice, and of their lack of resources (Busch and Bilgin, 2014).

Gómez, Salazar, and Vargas (2013) show that students are more inclined to plagiarize when the stakes are smaller, which means that they are aware of the possible consequences of plagiarism. In this respect, Löfström, Huotari and Kupila (2017) point out that students mostly plagiarize in ways that they do not view as serious and that they cannot relate to their own texts as creations of their knowledge. The previously mentioned authors belive that as students progress in their studies they plagiarize in more subtle ways. On the contrary, in Russia, as Maloshonok and Shmeleva (2019) show, the higher the certainty of punishment, the higher the involvement in unethical practices becomes.

Uzun and Kilis (2019) indicate morals, attitudes (as the source of critical thinking and efficient access to information) and past behavior as predictors related to students' intent to plagiarize (knowledge about the Internet and computers are not predictors since there is no need for advanced skills to copy-paste). Jereb et al. (2018) consider a lively social life and having a job while being a student as factors favoring plagiarism.

Zarfsaz and Ahmadi (2017) point out poor English level (in Iran), lack of motivation (related to academics' reaction towards students who plagiarize), the strong wish to get better grades, fear of failure and overwork (which can be associated with students' laziness) as causes underlying students' option for plagiarism. Sometimes, the latter is associated with a commendable goal, such as shielding their parents from disappointments (Heckler and Forde, 2014).

In a previous study, Bernard E. Whitley showed that "among the strongest correlates of cheating were having moderate expectations of success, having cheated in the past, studying under poor conditions, holding positive attitudes toward cheating, perceiving that social norms support cheating, and anticipating a large reward for success" (1998: 235).

Academics and their share of the blame

When directly interviewed, teachers state an easy access to the Internet, the lack of a critical approach to information on the students' part, their laziness and poor time managing skills as reasons for plagiarism, show Dias and Bastos (2014a, 2014b). Nonetheless, researchers also show teachers' role in the spread of students' plagiarism.

Townley and Parsell (2004) mention teachers' failure in disseminating their intellectual and moral values in the new information context as a cause contributing to student plagiarism. The failure resides in the formers' inability to transmit practices, meanings, academic virtues and trust to their students.

It is not an easy task for teachers to manage student plagiarism, mentions Rosenberg (2011): checking texts is time consuming and students can easily change plagiarized text in such a manner that plagiarism is hard to detect; the rigor employed in checking texts for plagiarism can be viewed as maniacal and there are many chances that students continue to plagiarize when opportunities are presented. There are teachers who assume that students plagiarize anyway and hence they avoid asking for written papers even in the case of disciplines when such a requirement is necessary, Rosenberg (2011) point out. For many teachers it is more comfortable to ignore the possible cases of plagiarism for various reasons: lack of direct evidence, bureaucracy, lack of administrative support, lack of consequences (Busch and Bilgin, 2014). Reporting on plagiarism is the attitude deemed by teachers as the correct one and yet it requires a lot of extra work and encountering potentially unpleasant situations (Stowe, 2017). Vanbaelen and Harrison (2013) show that some teachers hesitate to reveal student plagiarism because they view it as pointless or they believe that the accusation will fire back at them as suspicions of poor didactic performance. Cortes-Vera, Garcia, and Machin-Mastromatteo (2018)

suggest that teachers may be reluctant to use digital resources, such as Turnitin. Teachers experience the dilemma of clear institutional procedures on reporting plagiarism on one hand, and the discomfort of giving up their own decision-making authority on the other hand, point out Peytcheva-Forsyth, Mellar, and Aleksieva (2019).

Students' lack of knowledge on academic writing is mostly due to teachers's preconception that their students are already familiar with the concepts as a result of their previous training in academic behavior (Halupa and Bolliger, 2013; Busch and Bilgin, 2014). Childers and Bruton (2016) believe that student's difficulty in recognizing different forms of plagiarism could be the consequence of teachers' reluctance to sanction other forms of plagiarism than copy-paste. Amiri and Razmjoo (2016) indicate that students consider teachers' clemency as a factor favoring plagiarism. Löfström, Huotari, and Kupila (2017) signal teachers' tendency to view plagiarism as part of a learning process, as well as the likelihood of teachers' lack of emotional ability to manage student plagiarism.

The Internet as a factor favoring plagiarism

Researchers agree on the important role played by the Internet in the current educational context. As a public source of information, the latter is easily accessible and encourages the spread of plagiarism practices (Dias and Bastos, 2014a, 2014b; Chen and Chou, 2017). Because of the Internet, plagiarism is perceived as a practice that is easy and handy to use (Heckler and Forde, 2014; Zarfsaz and Ahmadi, 2017; Maloshonok and Shmeleva, 2019). Comas-Forgas and Sureda-Negre (2010) believe that the structure of the Internet favors the copy-paste practices. Internet access puzzles students when it comes to copyright rules (Löfström and Kupila, 2013) and leads them consciously or unconsciously to plagiarism (Vanbaelen and Harrison, 2013). Amiri and Razmjoo (2016) also focus on the role played by the Internet in the spread of plagiarism and highlight the attractiveness of using paper mills in order to fulfill school tasks without making too much of an effort.

Heckler and Forde (2014) signal that most students do not view their copying from the Internet as academically unethical; they perceive plagiarism, which is spread out in all campuses, as part of college culture. Ramzan et al. (2012) also signal that since access to the Internet is free for everybody and easy, students consider plagiarism from the Internet not dangerous for academic integrity and less serious that the "classical" plagiarism.

The Internet allows for the use of plagiarism detection software. Li (2013a) highlights the two facets of the request made to students to check

their own texts with an anti-plagiarism software: honest authors can identify and manage accidental borrowings, but the less honest authors are forced to plagiarize in an even more sophisticated manner in order to avoid plagiarism detection. Alzahrani, Salim, and Abraham (2012) believe that potential plagiarizers have an advantage in their battle with institutions whose strategies in detecting plagiarism are expressions of their incapacity and limited resources. Additionally, detection systems work well for copied texts but not in the case of intelligent plagiarism (Alzahrani, Salim, and Abraham, 2012; Townley and Parsell, 2004) and the success of Turnitin depends on the amount of the available database (Townley and Parsell, 2004). Wrigley (2019) shows that the dependency on the Internet to elaborate papers along with the generalization of plagiarism detection services like Turnitin and Grammarly leads to the development of the *de-plagiarism* strategy, namely cleaning copied texts in order to avoid plagiarism detection. Students' dependency on online resources makes them invisible in the writing process, according to Wrigley (2019). According to the aforementioned author and based on his direct observations, students write better (that is the content is better and more original) if they write by hand rather than if they typewrite.

The institutional environment as a factor favoring plagiarism

Bell (2018) signals the lack of neutrality in quoting practices, which are indicators of power and influence in the academic community. He shows that students may be asked to apply different practices of quoting depending on each subject matter. Busch and Bilgin (2014) refer to absence of activities related to anti-plagiarism education in the academic curriculum.

Heckler and Forde (2014) discuss the rare detection and sanctioning of plagiarism, and thus its efficiency. In Russia, as Maloshonok and Shmeleva (2019) show, students' decisions are strongly influenced by their peers' behavior and they often see their colleagues cheating without being punished. Mungiu-Pippidi and Dusu (2011) show the weak interest in integrity policies among students, academics and researchers in the Romanian academic environment. According to Zarfsaz and Ahmadi (2017), students are not really convinced that teachers are interested in detecting plagiarism since they do not see any detection results.

The dominant tendency for students witnessing their peers plagiarizing is not to tell on these (Busch and Bilgin, 2014; Ramzan et al., 2012). Teodorescu and Andrei (2009) point out the general passive attitude of Romanian students towards academic integrity and show that many of these do not feel that it is their duty to report on their colleagues' plagiarism.

The pressure to perform well on exams, along with the obligation to publish also contribute to the wide spread of plagiarism, show Ramzan et al. (2012) and Li (2013a).

The educational framework favoring plagiarism

Helgesson and Eriksson (2015) highlight the relativism of statements on plagiarism, as well as the fact that the circumstances that lead to it make it more or less serious and blamable. The appetite for plagiarism could be culturally rooted, indicate researchers. According to Chien (2017), for more than half of Taiwanese student plagiarism is a cultural issue. The Chinese academic environment has been discussing plagiarism as a form of academic corruption for the past years. The loose approach to this phenomenon has already triggered a strong critical reaction against Chinese academics on behalf of the editors of prestigious journals, highlights Li (2013b). As far as Chinses students are concerned, if a text is well-written, than the odds are that it is plagiarized (Li, 2013a). On the other hand, Vassallo (2018) reminds that memorizing and repeating the texts of the masters are part of the Confucian culture. Stoesz et al. (2019) underline that students' learning needs depend on their educational backgrounds and students' dissatisfaction towards a new learning environment can be a factor that favors plagiarism.

Researchers highlight the existence of a broader educational context that contributes to plagiarism. Teachers' failure to become role models for the youth which was mentioned above is part of this context. Similar problems seem to occur in various parts of the world. As a result of the Bologna Convention, the European education shifted the focus from acquiring information onto the activities conducted during the course (Comas-Forgas and Sureda-Negre, 2010). The relation between traditional American values and plagiarism has multiple factes, possibly opposed, but each underpinned by its own foundational ideas, Heckler and Forde (2014) show. The American competitive environment favors profit over moral uprightness and thus shapes a "culture of plagiarism" (Callahan, 2004, according to Heckler and Forde, 2014). Publishing for promotion reasons and financial gain has affected the ethics of research in Pakistan (Ramzan et al., 2012).

Financial interests interfere with the academic spirit, making universities adopt a market oriented attitude (East, 2010) and, while changing the students/teachers ratio, diminishing the attention paid to each individual student (Busch and Bilgin, 2014). The academics are encouraged/pressed to merge their didactical activities with their research, the traditional didactical design becomes inadequate in the context of enlarging student work groups,

and discouraging competition and protecting the access to students' individual performance transform the educational process from an instrument into a result (Heckler and Forde, 2014).

A plethora of causes leading to student plagiarism

Most of the aforementioned causes can be found in the classifications resulting from other documentary researches made by Amiri and Razmjoo (2016) and by Husain, Al-Shaibani and Mahfoodh (2017). We reproduce below these classifications.

Amiri and Razmjoo (2016) divide the factors responsible for plagiarism in *major factors* (individual, academical, cultural, and technological) and *minor factors* (curriculum demands, parental issues, and personal characteristics) (*Table 1*).

Major factors	Individual	Unfamiliarity with the topic	
		Perceived seriousness	Students
			Academic staff
			Educational system
	Academical	Poor writing skills	
		Lack of citation skills	Weak authorial stance
			Weak argumentative skills
			Giving excessive credit to the source
	Cultural	Culture	Western
			Eastern
	Technological	Paper mills	
		Internet	
Minor factors	Curriculum demands	Excessive workload	
		Time constraint	
	Parental issues	Parents'pressure	
		Fear of consequences of failure on family	
	Personal characteristics	Desire to receive good grades	
		Laziness	
		Fear of asking for help from instructors	

Table 1. Factors contributing to student plagiarism according to Amiri and Razmjoo (2016)

Minor factors, individual and academic factors may be subordinated to the category of Students in our classification. The cultural factor can be subsumed to the Educational framework, and the technological factor to the Internet.

Husain, Al-Shaibani, and Mahfoodh (2017) classify the factors leading to student plagiarism identified by the literature in the field in five main categories: institutional, academic, external, personal, and technological factors (*Table 2*).

Institutional factors	Educational framework (teaching strategies and methodology)
	Conventional teaching methods
	Unclear policy of academic misconduct behaviour and penalties
Academic factors	Difficulty and nature of students' tasks
	Type and difficulty of the tasks set / difficulty of assignments
	Subject matter of the course
	Lack of understanding of tasks / assignments
	Language skills (such as students' poor writing skills)
	Assignments on theories
	Excessive demand for assignments
	Large number of assignments
External factors	Peer behaviours
	Cultural factors and ethnicity
	Group pressure
	Pressure from parents
Personal factors	Poor time management
	Students' perceptions of plagiarism
	Students' attitudes towards plagiarism
	Desire for better grades
	Students' perception that lecturers have apathy and disinterest regarding plagiarism committed by students
	Students' laziness
	Students' perceptions that lecturers do not know plagiarism well
	Students' perceptions that the assignments are boring
	Unfamiliarity with the concept of plagiarism
Technological factors	Ease of access to material via the Internet
	Ease of copying via ICT and the Internet
	Students' access to software programs used for detection of plagiarism

Table 2. The five factors contributing to plagiarism according to Husain, Al-Shaibani and Mahfoodh (2017)

Personal, technological and academic factors directly impact student plagiarism, while external and institutional factors only indirectly impact the latter, as Husain, Al-Shaibani, and Mahfoodh (2017) indicate. Institutional, academic, and partially external factors can be subordinated to the Institutional environment in our classification. Personal factors and the other part of the external can be subordinated to the Students category, and the technological factors to the Internet.

Synthesizing the results of the documentary research, we can group the causes of student plagiarism previously outlined, whether assumed by students and/or attributed to them by the authors of the studies (*Table 3*).

Students	Lack of time	Bad time management
		Very hard tasks
		Lively social life
	Lack of motivation	Tasks viewed as boring or irrelevant
		Failure in understanding lectures
	Lack of information	Lack of experience in conducting research and in academic writing
		Information literacy
	Lack of consequences	Small of odds of getting discovered and punished
		Risk propensity
	Lack of ethics	Lack of respect towards authority
		Attitudes towards plagiarism
		Students' morality
		Previous behavior
	Contextual factors	Working while studying
		Studying in inappropriate conditions
		Specific circumstances used as justification
	Expectations towards the benefits of plagiarism	Desire to obtain good results
		Fear of failure
		Desire not to disappoint parents

Academics	Mismanagement of problems	(Individual) relation with students
		Failure in conveying personal values
		Teachers' lack of emotional readiness to manage plagiarism
		Suspicions of poor didactic performance
		Assumption that students already know the rules of academic writing
		Teachers' clemency
	A source of discomfort	Verifying plagiarism is time consuming
		Individual decision-making autonomy
		Teachers sanction only the copy-paste form of plagiarism
	A lost battle	The battle with students who plagiarize is already lost
		Plagiarism is difficult to prove beyond any shadow of doubt
		Bureaucracy in reporting on plagiarism
		Lack of administrative support in managing plagiarism
		Reporting on plagiarism bears no consequences
Internet	An instrument ease of use	Easy access to resources
		Plagiarism is handy
		The attractiveness of paper mills
		The structure of the Internet favors copy-paste plagiarism
	Fuzzy ethical dimension	Confusions about copyright
		The Internet prompts plagiarism
		Copying from the Internet is not considered unethical
	Improved plagiarism strategies	Anti-plagiarism software leads to sophisticated techniques to avoid detection
		De-plagiarism

Institutional environment	Ambiguity about rules	Different requirements for different disciplines
		Absence of anti-plagiarism education from academic curriculum
	Tolerant attitude	Plagiarism is seldom detected and sanctioned
		Studen s do not report on their peers' plagiarism
	Pressure for professional success	Pressure for getting good grades
		Pressure to publish
Educational framework	Cultural relativism	Culturally justified plagiarism
		The relativism of references to plagiarism
		Insatisfaction with the new learning environment
	Financial gain orientation	Favoring profit over morals
		Publishing for personal gain
		The financial interest of universities prevails
		Increasing the number of students/series
		Many commercial sites targeting students
	Reconfiguring the educational process	Switching interest from information acquisition to the conduct of common tasks in higher education (after Bologna Convention)
		Diminished interest showed to each student
		Discouraging competition among students
		Research tasks added to teaching tasks

Table 3. Causes of student plagiarism

As grouped in the *Table 3*, the causes are subordinated (are subcategories) to the five categories highlighted above (*Figure 1*): Students, Academics, Internet, Institutional environment, and Educational framework. *Table 3* contains all the types of answers we identified to the question *Why do students plagiarize?*

DISCUSSION: POPULARITY OF SCHOOL PROJECTS AND PLAGIARISM IN THE CONTEMPORARY EDUCATIONAL CONTEXT

The contemporary educational environment features a shift from acquiring knowledge to compiling and using available information and a wide spread of Internet access.

In Romania, the Education Law (issued in 2011 and updated in 2016) imposed a paradigm change: from a learning focused on information gathering towards a more pragmatic, skills-oriented learning. The systemic change proposed is aligned to the EU policy, tendencies and norms (Ulrich, 2016b).

Competence acquisition as proof of educational performance is at the core of the change. It does not involve diminishing or dramatically changing the knowledge contents, but it requires an applied, functional approach to these contents (Cojocariu et al., 2006). Learner-centered education is viewed as adequate in this context and is encouraged as educational policy.

Collaborative learning is a learner-centered education strategy. It is based on team work and encourages students to express themselves within the group, their critical thinking and the development of metacognitive skills (Predescu, 2006). Project-based learning, that continues the child-centered learning method of William Kilpatrick (Pecore, 2015; Ulrich, 2016a), is a form of collaborative learning. Research shows that students who benefit from project-based learning have more self-confidence, get better results in school, pay more attention in class (Ulrich, 2016a), develop better independent learning skills (problem solving skills included), learn to be more open, better remember what they learned and do better in standard test than the other students (Ulrich, 2016b).

We briefly present below the results of direct observation on the use of the Internet in Romanian pre-university school environment. The observation was an unstructured one, made for a long period started with the debut of our own experience as parents of pupils who have been in elementary, secondary and high school. We noticed that the children from our group of friends and their colleagues were encouraged to use the Internet for various school projects in the schools from Braşov city. We employ observation results to support a new causal explanation, which we recommend as hypothesis in order to complete the framework of the causes underlying student plagiarism already identified.

As the results of the observation show, project-based learning is in fashion in Romania. This situation indirectly influences the entire educational process through the school behavior that it yields.

Frequently, starting with elementary school (grades I - IV), pupils work individually or in teams on projects for various disciplines. Such a project means choosing a topic from the list proposed by the teacher, making a plan, searching information on the Internet (each team member is assigned a specific issue related to the main topic), organizing information and presenting it in front of the class in an inciting manner.

The long work meetings required by such projects usually unfold at the weekend in the house of one of the team members and may become a nice past time with friends. If pupils are not frightened by the teacher whose requirement they have to meet, they are delighted to work together. What is more, the scores gained as a result of projects are higher than the ones

obtained as a result of traditional forms of knowledge evaluation. In many cases the requirement to elaborate a project is a solution to increasing the average score of pupils. Therefore, the latter's perception of projects and their inherent documentation stage is favorable.

Projects are included in the educational process for pedagogical reasons since they support pupils develop their search skills, as well as the ability to work as part of teams. The teachers view project based evaluation as a proof of their open attitude to novelty (project-based learning) and that increases their professional prestige in front of their own evaluators, namely inspectors. This is a good thing, elsewhere is the problem: encouraging pupils to use online resources is not accompanied by adequate instructions or training concerning their correct use. Teachers prefer not to explain to their pupils how and why they need to indicate the source of the information they employ. This reality observed in the case of the pupils from Braşov agrees with the research conducted by Dias and Bastos (2014a): only a third of European students who were interviewed acknowledged having been told about plagiarism by their teachers. Given the access to a huge amount of information available online (that is actually difficult to check in terms of quality or accuracy) as a result of contemporary technological means students are encouraged ever since primary school to plagiarize. Besides, today's young teachers in secondary and high school have been students in their turn already accustomed to project based evaluation and the use of the Internet with no ethical constraints.

We could consider this situation an expression of a lack of energy and enthusiasm (Ulrich, 2016b), or of a generalized demotivation of teachers working in pre-university education in Romania. For a long time now, they have gotten used to finding the less demanding solutions to the requests of the ministry, whose representatives they do not actually have a very good opinion of. Nonetheless, it is our opinion that the lack of commitment and diligence on behalf of educators and teachers does not cause, but only favors the increase in university student plagiarism. The deep cause of the phenomenon is the incorrectly defined requirement to elaborate projects based on the information that is available online. Thus, the educational focus on project elaboration has been unwillingly accompanied by the treasure of information on the Internet that can be plagiarized.

Researchers have agreed that the way the Internet is structured and works encourages this phenomenon. Using it for writing school projects in pre-higher education strengthens this tendency. Therefore, we believe that this situation is characteristic not only of Romania, but also for all shallow promoters of learner-centered education –project-based learning, in which case it can be considered an undesirable effect of the paradigmatic change

in the European educational policy. Making pupils realize the almost unlimited capacity of Internet to find answers to every requirement is one of the purposes of school projects. This goal is the priority of teachers' programmatic efforts. It also explains the limited number of resources the same teachers employ to check whether the sources consulted are mentioned or not, especially in the case primary school pupils.

However, students have been encouraged for years to adopt such an approach to using Internet based resources, are evaluated and rewarded for the complexity and spectacularity of their project (whereas the deontology is not an evaluation criterion). Therefore, nowadays, they find it difficult to change their habits and understand that what was deemed worth of praise in primary, secondary and high school actually becomes a crime during university (Sorea, Borcoman, and Rățulea, 2011).

Thus, we deem that the requirement to elaborate projects in pre-university years is a cause of plagiarism that should not be ignored when configuring the means to manage the increase in the phenomenon. On long term, teachers in secondary and high school should be educated on how and how important it is to teach their students to ethically employ materials that are available online. Many of the academic curricula in Romania include academic writing course. Additionally, pedagogical modules (which are optional and grant undergraduates the right to teach) and improvement courses targeting teachers should allow time for the didactics of working using information available on the Internet. Simultaneously, the requests for projects can explicitly be accompanied by rules (formulated by taking into account students age) on how to correctly use the sources of information. The importance of early education is signaled in several recent studies on student plagiarism. The earlier educators take action in relation with plagiarism, the lower the chances are for the educated to plagiarize in the future, past behavior has proved the best predictor of future behavior, Uzun and Kilis (2019) show. The level of awareness concerning plagiarism needs to increase as early as possible in order to minimize its frequency later and, if mistakes are not recognized in the early stages, they will repeat later, as Amiri and Razmjoo (2016) indicate. Powell (2012) signals the importance of previous learning experiences that students bring with them in higher education institutions and Jereb et al. (2018) underline that when they get into universities students already have their own system of values.

For now, on short term, we believe that the situation needs to be treated as it is: by working in the same manner on the projects that students are encouraged to elaborate in their pre-university years, they actually learn how to plagiarize. The educational orientation on projects, which is not a bad one by itself, increases the appetite for plagiarism.

Concerning the Internet, everybody agrees on the impossibility to ignore its existence in the educational process: it simply exists. One of the main engines driving human kind evolution is people's capacity to exploit their surrounding environment to their interests. Thus, it would be rather worrisome if such a friendly and easy to use resource would not be employed.

For most of the causes underlying plagiarism and identified by the researchers in the field, ready available solutions to the academic staff involved in the didactical process have also been proposed: better educated students, more involved teachers, using anti-plagiarism software, clear anti-plagiarism policies. All of the above counter (that is prevent or sanction) students' habit to unethically use online available information.

As for the case of the implicit encouragement of the phenomenon through the projects required of the pupils in pre-higher education, the academic staff cannot manage them directly even though they are supposed to tackle their consequences. In such cases, they can actually contribute to building a future academic community based on trust by simply managing the students' motivations. Such intervention is less costly that the one on the causes of university student plagiarism.

Related to the use of deontological theory to motivate student plagiarism, Granitz and Loewy (2007) suggest that teachers should ask their students summaries of the materials that are available online. Such a solution builds upon and supports the inherent interest of the students in the Internet and therefore its application may turn plagiarism into a meaningless temptation. In our opinion, this is the best means to approach the issue of student plagiarism. The core of this practical approach consists in teachers valuing (and not inhibiting) the Internet using trend manifest among students. We believe it is more efficient for university students to be asked to explain and comment what they find rather than be prevented from plagiarizing. Plagiarism is no longer be encouraged if university students are asked to identify the relevant information sources for a given topic and to present their content along with their own opinions. If these requirements are clearly presented as rules of a game that has as a stake the acceptance of the evaluation portfolio, they are to be acquired by students since, after all, one of university students' salient features is their capacity to learn.

Conclusions

Contemporary students have grown up using the Internet. The requirement for school projects during their pre-university education have shaped

their skill of resorting to the Internet in order to meet teachers' didactical requirements in sometimes ethically challenging ways. We consider this requirement to be one of the main causes underlying the spread of university student plagiarism, even though there are no references to it as such in the literature on plagiarism. That comes along with the natural human tendency to build upon every opportunity (that sometimes may be an illegitimate one, as Plato indicated when referring to the myth of Er) and to search for the simplest means to gain benefits, and thus it becomes difficult to eradicate. In fact, it should not be eradicated. It is much more efficient if it is corrected (by imposing the rules of the game) and built upon in order to support the acquisition and processing of new information. Thus, the use of relevant materials available online can become useful to all the actors involved in the educational process if it is turned into a requirement.

Unethically orchestrated project-based learning is a cause of plagiarism that is outlined in the educational framework. The solution suggested for its short-term management targets a better involvement of teachers in conducting their didactical activities (only the solution outlined for the long-term situation brings the discussion back to the educational framework).

To make use of the natural manifest tendencies of a phenomenon is more efficient than to misappropriate them and is in line with the pedagogical orientation towards constructively valuing desirable behaviors. Martial arts have this kind of efficiency. We believe that what teachers can best do (that is in terms of the educational process) is to actually "fight" students with the latter's own weapons. Thus, teachers can be the ones who set out the conditions (that is the resources and the rules to be complied with) for their students to use the information available on the Internet.

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