

Organising research on university student plagiarism: A process approach

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Abstract

This paper examines the management of the seemingly ubiquitous problem of plagiarism by students in higher education. An integrated review of the conceptual and empirical literature to date is undertaken in the pursuit of two objectives: First, to provide structure to the scattered knowledge about the topic, which is achieved by developing a process framework of plagiarism management. Second, to identify, group and locate the determinants of each of the major events of the plagiarism management process: the occurrence of a plagiarism instance, its detection and the subsequent actions undertaken in response. Moreover, the framework incorporates the roles of the different actors involved (students, professors and the university) and the importance of the cultural, legal and technological context in which the instances of plagiarism may take place. This process approach aids in the identification of more integrated avenues for further research.

Keywords: plagiarism; university education; process; integrative review.

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Introduction

Plagiarism by university students is a significant and growing issue for universities worldwide (Elander et al. 2010; Curtis and Vardanega 2016). Throughout this century, a host of studies suggest that plagiarism is endemic in higher education (Park 2003; Embleton and Helfer 2007; Walker 2010; Cosma et al. 2017). Although a certain degree of plagiarism has always existed, the main reason for its exponential growth from the turn of the century is the Internet (Duggan 2006; Akbulut et al. 2008), to the point that, in Western contexts, many present-day university students have grown in a heavily Internet-dominated world (Hu and Sun 2017; Torres-Diaz, Duart and Hinojosa-Becerra 2018).

Plagiarism has been widely interpreted as a form of academic dishonesty or academic misconduct (Hard, Conway, and Moran 2006; East 2010; Bashir and Bala 2018) and, more specifically, as a type of cheating (Larkham and Manns 2002; Bing et al. 2012). There is general agreement that it is difficult to come to a unified, clear and simple definition of plagiarism (Leask 2006). Indeed, there is a broad range of definitions in the literature and in university policies dealing with this matter (Eaton, 2017). In general, these definitions involve behaviours such as copying verbatim, appropriation of someone else's work, failing to reference the original author, poorly paraphrasing, submitting an assignment previously submitted or preparing a piece of work in group and submitting it as an individual project (Selwyn 2008).

Among these different conceptions of plagiarism, for the purposes of this study we concur with Park (2003: 472) when considering plagiarism as “literary theft, stealing (by copying) the words or ideas of someone else and passing them off as one's own without crediting the source”. Our understanding of this phenomenon also includes Youmans' (2011) reflection that plagiarism may be intentional or unintentional. Under this conceptualisation, plagiarism materialises in a wide range of behaviours such as those outlined above, but would

exclude activities such as contract cheating. Contract cheating (Bretag et al., 2019a, 2019b) involves engaging a third party to prepare an assignment (Bretag et al., 2018). This difficult-to-detect type of academic fraud (Bretag 2017) is qualitatively different from plagiarism because it is necessarily intentional, as the student needs to solicit the help or service of a third party, whether this entails a commercial relationship or not, thus not involving a direct theft of words or ideas.

An overview of the publications on plagiarism demonstrates how the concern for the phenomenon is widespread among the academic community. For instance, a general search of Scopus shows that plagiarism was a marginal topic until the mid-1990's to 2000 (with approximately 5 articles published on the topic per year). Interest slowly rose from 2001 to 2003 (with about a dozen articles per year), with a first dedicated special issue in 2006 (Duggan 2006), then rapidly growing to approximately 90 articles by 2013, and remaining so until 2018.

However, this interest and effort has overall lacked structure and integration: An overwhelming proportion of research deals with specific and isolated aspects of plagiarism, and in so doing, has not adequately captured the nature, structure and circumstances surrounding plagiarism in contemporary university education. Some of the loose aspects targeted by plagiarism researchers are, for example, the significant software-based industry that has emerged to fulfil the need to detect plagiarism (McKeever 2004; Badge, Cann, and Scott 2007; Heather 2010) and, more recently, the means used by students to overcome the detection capacities of current software tools (Rogerson and McCarthy 2017, Prentice and Kinden 2018), the experiences of university professors who struggle to cope with the implications of uncovering plagiarism (Coren 2011; Gottardello, Pàmies and Valverde 2017) or the underwhelming success of their tactics to prevent it (Samuels and Bast 2006). This fragmented approach to research has answered many varied questions, but at the same time, it has left us with a disjointed view of the phenomenon as a whole, which poses difficulties to apprehending

it from both conceptual and practical perspectives. This is despite the fact that, for long, there have been clear calls to focus on the theoretical integration of the phenomenon (Brimble and Stevenson-Clarke 2005) and to examine plagiarism with more holistic approaches (Macdonald and Carroll 2006).

In order to address these calls, we undertake an integrative review of the academic literature on student plagiarism in university education. In particular, we pursue two objectives: First, to organise and provide structure to the knowledge to date about the management of university student plagiarism. With this contribution, researchers and practitioners will be better able to understand the links between different facts and factors related to the topic, as well as to detect where further research and policies would be useful. Second, we aim to identify the range of factors that augment or deter the existence of this phenomenon, with a view to minimize it. The identification of the determinants of plagiarism will serve as our research question, and guide both the search and the analysis of the literature in the topic.

The paper is structured as follows: Firstly, we outline the method employed to search and analyse the literature for this review. We then address the first objective by generating a conceptual framework arranged as a process. Next, we use this framework to articulate the subsequent analytical sections addressing the second objective, where we examine the determinants of each phase in the plagiarism process (occurrence of plagiarism, detection and corresponding actions), considering the main agents involved (students, faculty, the university). Finally, we discuss the findings and propose suggestions for further research.

Method

In order to achieve our objectives, an integrative review of the literature was undertaken. The integrative approach facilitates the analysis of both conceptual and empirical literature (Whittemore and Knafl 2005). The database used for the search was Scopus, as it is a recognised

source of scientific papers and it has a wide coverage of scientific disciplines. The amplitude of fields was necessary as the topic of plagiarism has been mainly studied by the education and educational policy literatures, but also by many other disciplinary fields interested on the issue in their own higher education specialities. Undertaking this search, we placed no starting time restriction and included all articles until the year 2018. The key search terms we employed were plagiarism, academic dishonesty, academic misconduct, academic integrity and cheating, in combination with higher education and university.

The search yielded 1181 results, to which we applied the following automatic exclusions: Articles not in English (62)=1119. Articles that were retractions because of plagiarism by the authors (10)=1109. Conference proceedings (193)=916. Subsequently, a close reading of all abstracts led to the following exclusions: Articles that had been incorrectly captured in the search and did not actually talk about university students' plagiarism in general (59)=857. Articles that talked about professors' plagiarism and plagiarism by academics when publishing (72)=785. Articles related to other forms of academic misconduct, breaches of academic integrity or academic dishonesty, such as stealing exams, contract or exam cheating, in order to examine plagiarism as specifically defined in the introduction above (608)=177. The analysis of the literature was carried out based on the full reading of this collection of 177 articles. The full reference list can be obtained from the authors.

Arranging knowledge about plagiarism: a process framework

As recommended in the analytical phase of integrative literature reviews, authors should prioritise the conceptual structuring of their source material, as this will provide a central argumental line for their results (Torraco, 2005). Thus, an initial effort was made to group the findings of the collection of papers into categories. It was expected to simply identify content-based clusters of topics, but in fact, the classification endeavour showed that a more

sophisticated structure was needed in order to organise the multiple determinants of higher education student plagiarism.

Thus, the primary output from our analysis was the generation and development of a structured framework, on which we could later place the knowledge to date. To devise such a framework, we worked both inductively, and also followed Macdonald and Carroll's (2006) recommendation to account for the complexity of the phenomenon of study by focusing on plagiarism detection and retribution as well as considering the importance of the elements surrounding prevention. The subsequent rearrangement of these elements resulted in a process view for the study and management of plagiarism. This process can be expressed as a framework of connected determinants and phases, as presented in Figure 1.

[Figure 1 near here]

The framework includes a main axis of a **process** containing a series of events that may or may not take place (the shaded boxes in Figure 1). First is the occurrence or non-occurrence of instances of plagiarism; second, their detection or their passing unnoticed; and third, the undertaking or not undertaking subsequent actions once the instances of plagiarism have been discovered. Each of these discrete events is preceded by a number of determinant factors that will help/hinder and shape their materialisation: the conditions that determine the likelihood of plagiarism taking place, the determinants of whether or not plagiarism will be detected, and the factors that will lead to a decision about whether and how to respond to the instances of detected plagiarism.

The process model of plagiarism also highlights that each event phase will have an impact on the determinants and events occurring in the subsequent phase (thus the links with arrows). Moreover, the outcomes of each event in the process feed back to the initial stage and represent themselves an important determinant in the form of **awareness of previous**

experiences. Although the literature has not categorised this variable as part of such a **feedback loop**, there is plenty of evidence suggesting that students are more prone to plagiarise when they know that other peers have done so (McCabe and Trevino 1993, 1997; Jordan 2001; Rettinger and Kramer 2009) -i.e., after the first event in the process: occurrence of a plagiarism instances-, but particularly if they know that other plagiarists (Ahmed 2018) or themselves (Cronan, Mullins and Douglas 2018) have not been caught -i.e., after the second event: detection/non-detection-. Similarly, students take good note of the consequences that plagiarism may bring about when detected (third event) and may decide to plagiarise themselves if no clear response is given (Culwin and Lancaster 2001) or, on the contrary, avoid this behaviour for fear of being punished if caught (Bennett 2005). This feedback loop also involves professors' experiences. For example, Broeckelman-Post (2008) notes that faculty members who have detected plagiarism instances are more prone to later undertake preventive actions, while Coren (2011) shows that professors who have had bad experiences in pursuing plagiarism cases will be less likely to engage in action in future situations.

This process framework of plagiarism management includes a second structural axis in response to Macdonald and Carroll's (2006) proposal to consider the inputs of the different **actors** involved in this phenomenon. Indeed, plagiarism in higher education concerns a wide range of people (including university administration, librarians, ethics committees, etc.) at multiple levels, but we focus our analysis on the three main agents involved: students, faculty and the institution (mainly universities) (Flint, Clegg, and Macdonald 2006; Macdonald and Carroll 2006). Although they all have an input in determining each subsequent phase of events, Figure 1 highlights how, as we progress through the process, the role of faculty becomes more prominent.

Apart from the phases of the process and the actors' dimensions, our analysis of the literature suggested that **contextual factors** are also fundamental in shaping plagiarism.

Therefore, Figure 1 also includes the cultural, legal and technological context as an additional dimension of the framework, encompassing all phases, determinants and actors in the model.

The following results sections explicate this plagiarism management process framework by considering the determinants associated with the three actors (students, faculty and institutions) and how their characteristics, perceptions and actions influence each of the three event phases of the plagiarism process (occurrence, detection and subsequent action). As it would be beyond the confines of the space of a single article to fully discuss each and every one of the numerous factors identified in this study, the text only notes the key issues and is illustrated with a sample of just one or two references on each determinant covered. However, a collection of detailed tables with the references of all the papers studying each factor in each group of determinants is available from the authors.

Determinants of the occurrence of plagiarism

The occurrence of an instance of plagiarism is the event that begins the process of plagiarism management. Since it is precisely this event that the university system attempts to eradicate, it is necessary to clearly understand the factors determining whether plagiarism will ultimately occur or not (see Figure 1). It is within the determinants of this first event where we encountered the greatest number of references in the literature. It is also the stage where we identified the largest variety of factors, including both causality (e.g. preventive actions) and correlation (e.g. plagiarists' individual characteristics), demonstrating that attempting to avoid incidents of plagiarism is a complex, multidimensional endeavour. These determinants are explained in turn for each of the three agents: students, faculty and institutions, as outlined next.

Students

The identification of student factors associated with the occurrence of plagiarism has been a longstanding enquiry (e.g. see Whitley's 1998 review of studies between 1970 and 1996). Our classification of student determinants includes individual characteristics (studies attempting to profile *who* will be more likely to plagiarise), perceptions, abilities and motivations (enquiring as to the *why*).

Individual characteristics

The patterns of students' personal characteristics on their propensity to plagiarise have been widely studied (Bennett 2005; Ellery 2008a). Gender is the most commonly studied variable (Jereb et al. 2018), although its precise relationship with the tendency to plagiarise remains unclear: while many studies found that males are more likely to plagiarise than females (Teixeira and Rocha 2010; Zhang, Yin and Zheng 2018), others found no difference between the genders (Franklyn-Stokes and Newstead, 1995; Trost 2009).

As university student populations become increasingly culturally diverse, students' country of origin has received increasing attention from academics studying plagiarism (Doss et al. 2016; Ehrich et al. 2016), as different concepts (Leask 2006) and attitudes towards plagiarism exist between cultures (Diekhoff et al. 1996; Lupton, Chapman, and Weiss 2000). This can be due to cultural nuances, the educational system and social factors (Teixeira and Rocha 2006, 2010; Hayes and Introna 2005). Although the literature on intercultural aspects of plagiarism is considerable, it is important to note the largely ethnocentric nature of research on plagiarism, mainly based on an Anglo-Saxon university-model that rarely contemplates the possibility that there may be different, culturally shaped, interpretations of plagiarism. To overcome this, Leask (2006: 183) proposes deterring plagiarism by considering the different culturally constructed conceptions of plagiarism as "an intercultural encounter rather than a battle that needs to be won".

Other personal characteristics addressed by the literature are the age and maturity of students, with older and more mature students being less likely to incur in plagiarism (Walker 2010); mother tongue, identifying higher incidences of plagiarism among non-native English speakers (Perkins, Gezgin and Roe 2018); having a busy social life correlating with finding plagiarism acceptable (Jereb et al 2018); and personality characteristics, with students high in conscientiousness and agreeableness being less inclined to plagiarise (Wilks, Cruz and Sousa 2016).

Perceptions

Students' perceptions and knowledge about plagiarism can also influence their propensity to engage in plagiarism: While students easily understand the concept of plagiarism (Cosma et al. 2017), they are not always clear as to what precise behaviours constitute plagiarism (Rísquez, O'Dwyer and Ledwith 2013; Childers and Bruton 2016). This can lead to uncertainty and the possibility of unwittingly engaging in plagiarism (Ashworth, Bannister, and Thorne 1997). Furthermore, there is a lack of consensus between students and faculty's perception about the definition and seriousness of plagiarism (Power 2009; Kwong et al. 2010). Thus, students regard penalties for plagiarism as being too severe except in cases of major intentional plagiarism (Gullifer and Tyson 2010; Newton 2016) and act accordingly. Indeed, research suggests that the perceived seriousness of sanctions (Teixeira and Rocha 2006, 2010) and the perceived likelihood of being caught (Do Ba et al. 2017) negatively influence students' propensity to plagiarise.

The likelihood of students engaging in plagiarism is also related to perceptions about their peers: Indeed, thinking that their peers plagiarise influences their own propensity to do the same (Broeckelman-Post 2008). On the contrary, their peers' disapproval makes them less likely to plagiarise (McCabe and Trevino 1997).

Abilities

Research highlights that students' abilities can also influence their propensity to plagiarise. This includes their overall competence, their ability to manage their time when it comes to submitting assignments and their knowledge of the concept of plagiarism. In this context, it is important to note that plagiarism by students is not always intentional (Adam, Anderson, and Spronken-Smith 2017). Sometimes, from lack of training (Mohamed, Mohy and Salah 2018), it is the result of incompetence or lack of understanding on how to properly reference or cite (Chen and Chou 2017). However, this lack of ability can be used as an excuse by students, as Ellery's study (2008b) showed how, even after participating in specific training in referencing and plagiarism, one in four students still incurred in plagiarism.

Motivations

Given the importance of understanding why students plagiarise, a number of studies focus on examining students' motivations (Ashworth, Bannister, and Thorne 1997; Park 2003). A key lever is time pressure (Finchilescu and Cooper 2018), particularly when students must complete multiple assignments in a short time frame (Arce Espinoza and Monge Najera 2015). Therefore, they may plagiarise to save time (Park 2003). However, other students plagiarise because of a general lack of motivation (Rettinger, Jordan and Peschiera 2004), while others plagiarise in order to pass the subject or to obtain higher grades (Franklyn-Stokes and Newstead 1995; Park 2003) than they would if they had solely relied on their own work.

Faculty

The literature has studied how faculty's individual factors and actions to prevent plagiarism can also influence the occurrence of plagiarism.

Individual factors

Individual factors of faculty members include faculty's own understanding of plagiarism and their previous experiences of plagiarism. Some studies suggest there is a lack of understanding among faculty of what constitutes plagiarism (Pickard 2006; Marcus and Beck 2011) and thus they may be uncertain about how to prevent it. There can also be an imbalance between faculty perceptions of what is required in terms of actions necessary to avoid plagiarism (such as referencing skills) and students' real abilities (de Jager and Brown 2010). Research by Pickard (2006) found that some faculty prefer not to become involved in plagiarism debates where the outcome may be a reduction in class grades leading to a negative perception of the individual faculty member.

Prevention actions

Faculty play a crucial role in preventing plagiarism among students (Lim and Coalter 2006) with three different groups of actions: In the first place, they must avoid individual interpretations and perceptions (Flint, Clegg, and MacDonald 2006; Marcus and Beck 2011), which can lead to confusion among students. To this end, it is important for faculty to engage in training about definitions of plagiarism and good prevention practices (Beute, van Aswegen, and Winberg 2008; Marcus and Beck 2011).

Secondly, a crucial set of deterrents involves engaging students through multiple actions: informing students early in the program about what plagiarism is and engaging students in discussions on the topic (Leask 2006); explaining how to avoid plagiarism by focusing on improving writing skills, promoting the use of reference software, or explaining how to properly cite sources (Austin and Brown 1999; Barrett and Cox 2005), in sum, through training them (Liu et al. 2018). Other actions towards students include signalling elements, such as creating a positive learning atmosphere (Akbulut et al. 2008) or demonstrating zero tolerance (Levy and

Rakovski 2006).

Finally, professors can build prevention measures in the design of their courses, for example, by including plagiarism information in the syllabus (Lim and Coalter 2006; Broeckelman-Post 2008) in order to ensure that students are well informed, and by asking students to summarise their papers in class, by encouraging original ideas, by focusing on the process, by submitting drafts and by breaking assignments into parts so that work-in-process is presented (Austin and Brown 1999; Samuels and Bast 2006; Beute, van Aswegen, and Winberg 2008; Gómez-Espinosa, Francisco and Moreno-Ger 2016).

Institution

The institution is the educational arena where plagiarism occurs. In this sense, higher education institutions may undertake a number of actions in order to prevent plagiarism. These actions can be related to the generation of academic integrity policies, to the provision of communication and training towards the agents involved, and to the adoption of technologies as deterrents to the attempt to plagiarise.

Culwin and Lancaster (2001) consider *academic policies* on plagiarism as proactive, where institutions make an effort to reduce the occurrence of plagiarism (as opposed to reactive measures once it occurs), and designing a sophisticated and multi-dimensional set of policies can ameliorate the situation (Levine and Pazdernik 2018). Moreover, academic integrity policies and honour codes need to be not only designed and implemented, but widely *communicated* and promoted throughout the institution (Austin and Brown 1999), as studies demonstrate that many students may not even read them (Gullifer and Tyson 2014). In this sense, it should be noted that there is no general agreement as to the effectiveness of academic policies to reduce plagiarism among students: While some authors agree that the existence of such policies effectively reduce plagiarism (Brown and Howell 2001; Teixeira and Rocha 2006,

2010), especially when reminders are in place (Bing et al. 2012), others found that it does not have an impact (Vandehey, Diekhoff, and LaBeff 2007).

Beyond the need to be communicated, a further reason for the lack of results of integrity policies may be their sole focus on regulatory aspects. Indeed, Hu and Sun (2017) argue that institutional plagiarism programs should adopt an educative approach. Thus, they need to include practices to ensure that professors (Ransome and Newton 2018) and students (Lowe et al. 2018) alike acquire the necessary awareness and *training*. Furthermore, Palmer, Oakley and Pegrum (2017) emphasise that these training efforts must not be one-off, but include follow-up actions to maintain such awareness and proficiency. Other practices that can aid to this end include making students sign a pledge (Sims 2002) or student authentication and authorship checking systems (Mellar et al. 2018).

Finally, the presence of a *detection software* may not only be used as a detection tool, but also as a deterrent (Badge, Cann and Scott 2007). There are several software packages available, including some that can handle different languages and characters (e.g. Maulik for Hindi, Garg and Goyal 2016), and among them, Turnitin being one of the most popular (Heather 2010). Although some authors have found that detection software helps reducing the occurrence of plagiarism (Heckler, Rice, and Bryan 2013; Ewing, Anast and Roehling 2016; Kumar and Tripathi 2017), others found that it does not have a significant influence on its prevalence even when students are clearly warned (Youmans 2011) and even that, in some cases, they may further impair international students (Hayes and Introna 2005). When universities consider the adoption of plagiarism detection software as a deterrent, they must take into account that this technology has been shown to be helpful not only for control purposes, but also as a formative or learning tool (Davis and Carroll 2009; Halgamuge 2017) as it can help students to reference correctly and improve their writing skills (Orlando, Hanham and Ullman 2018).

Determinants of plagiarism detection

In an ideal situation, where all the above policies are effectively implemented and practices put in action, the first stage event, that is, the very occurrence of plagiarism, would not take place. This would subsequently feed back into the determinants of the occurrence of plagiarism as a positive reinforcing influence. However, as stated before, in the current context the incidence of plagiarism is high. Therefore, efforts should be made in order to effectively detect the instances of plagiarism. Thus, we now focus on the second phase in the process: the determinants leading to or preventing the detection of already occurred instances of plagiarism. The analysis of these factors highlights the opposite forces of students trying to conceal the instances of plagiarism and professors (not always) attempting to uncover them.

Students

When students plagiarise intentionally, they simultaneously pursue the objective of evading detection. Sometimes, rather than simply copying and pasting from the Internet or other sources, they substitute some words or alter sentences so that faculty cannot trace their wrongdoing (Rosenberg 2011). With the advent of software packages, the methods employed by students to avoid detection became more technical but also relatively simple (Heather 2010). Although countermeasures are available, they involve time expenditure on the part of faculty (Heather 2010). Some more recent methods to attempt being detected include back translation, that is, changing the language of the copied text in order to disguise it (Jones and Sheridan 2015), and patchwriting. Although patchwriting can be considered either a way of hiding plagiarism or a state in the learning process of academic writing, essay spinning is clearly a technique to disguise the lack of originality (Prentice and Kinden 2018). To this effect, students have at their disposal online tools to modify articles, assignments, sentences, etc. with the aim of not being caught by plagiarism detection software (Rogerson and McCarthy 2017).

Faculty

Faculty is a key protagonist in determining whether plagiarism is detected or passes unnoticed. Professors have a number of tools at their disposal to detect plagiarism, with the most common being plagiarism detection software (Heckler, Rice, and Bryan 2013; Bruton and Childers, 2016), although McKeever (2004) warns that such systems are not without disadvantages.

Where institutions do not provide plagiarism software, faculty may find other ways to detect plagiarism, such as manually searching the Internet (Sutherland-Smith 2005) or more specifically, searching with Google (Rosenberg 2011). Professors may also check the writing style to see if a student is capable of using a sophisticated terminology (Larkham and Manns 2002), notice discrepancies throughout different sections of an essay (Jones and Sheridan 2015), or use their experience combined with common sense (McKeever 2004). Although the technological ease of all strategies has developed over time, the actual use of different methods has not changed much since Austin & Brown made a list of recommended strategies for identifying plagiarism (1999) two decades ago.

An explanation as to why so many tools are available but plagiarism often goes undetected is the fact that not all faculty actually devote effort to this activity: Indeed, de Jager and Brown (2010) found that almost three quarters of the faculty they surveyed did not use the detection software available to them (and from these, only one in four it was because their type of assignment did not require it). Similarly, Bruton and Childers (2016) reported almost half of the faculty not using the software. Studies begging the question as to why this lack of use have identified two main reasons: Firstly, a matter of *skill*, as some faculty do not understand the relevant academic integrity policies (Marcus and Beck 2011) in general or the detection software in particular, as was the case for about 15% of professors surveyed by de Jager and Brown (2010). Secondly, a matter of *willingness*, as some professors declare a lack of time to engage in the detection of plagiarism instances (Atkinson and Yeoh 2008). Without skill and

willingness on the part of faculty, the crucial event of plagiarism detection may never take place.

Determinants of the actions taken as a response to plagiarism

As shown in Figure 1, whether an incident of plagiarism is detected or not, it will have implications: if not detected, the feedback arrow indicates that students having incurred in plagiarism (as well as others who know about this) will take note that it is possible for plagiarism to go unpunished, thus adding to the perception that one can repeat this behaviour. But if the incident of plagiarism is detected, this is not the end of the process, as then a response may or may not be triggered by the professor concerned in this third and final phase of the plagiarism process.

Faculty

In the same way that professors decide whether to exert an effort in order to detect plagiarism for the reasons considered above, once they have discovered a case, they need to make a decision as to whether to act upon it. Coren (2011) reported that 40% of the professors he surveyed had not taken any action when faced with student plagiarism cases at least once, a percentage well fitted within the estimates of other studies he reviewed, which ranged from 15 to 51%. The following sections examine faculty reasons for acting or not acting when plagiarism is detected, as well as the types of actions that may be carried out.

Reasons for deciding whether to take action

If despite the institution's efforts to prevent and detect plagiarism, a considerable percentage of faculty decide not to do anything about it, it makes sense that a number of authors have examined the variables and reasons that lead faculty to act or not to act when they identify

plagiarism (Keith-Spiegel et al. 1998; Coren 2011). We classified these determinant factors according to their relationship with the specific plagiarism situation, with the plagiarising students, with how professors feel about responding, and with the university.

Regarding the *plagiarism situation*, faculty tend to distinguish between intentional and unintentional plagiarism, generally feeling that unintentional plagiarism should not be punished (Sutherland-Smith 2005). Faculty are also reluctant to take action when they have not gathered enough evidence to prove the incident (Coren 2011). In addition, faculty generally adjust the severity of the penalties according to the seriousness of the infringement (Robinson-Zañartu et al. 2005). In relation to *plagiarising students*, professors tend to adapt the penalties for plagiarism according to students' experience (Sutherland-Smith 2011). Keith-Spiegel et al. (1998) had also detected that professors would tend not to act when fearing retaliation or legal action from the students or their families, thus trying to avoid any escalation of the situation.

Among the *personal* reasons for professors not to take action are the lack of time to locate evidences even when they clearly see plagiarism has taken place (Sutherland-Smith 2005) and the additional workload necessary to pursue the consequences of the plagiarism instance (Atkinson and Yeoh 2008). There are also important emotional reasons for not acting, such as the lack of courage or feelings of stress to face such situations (Keith-Spiegel et al. 1998). Moreover, professors may be concerned with the effect a plagiarism case can have on their own image or professionalism (Austin and Brown 1999). Indeed, de Jager and Brown (2010) suggest that some faculty prefer not to penalise plagiarism but to deal with it later on through better teaching and learning strategies, so in this case, it would not be a matter of action versus inaction, but of deferred developmental versus present punitive actions. Importantly, Coren (2011) observes that unsuccessful or unsatisfactory past experiences in dealing with plagiarism cases are a key determinant in the decision not to act.

Finally, the relationship and expectations professors have towards their *university* will also affect whether they pursue a plagiarism incident: Barrett and Cox (2005) found that faculty who detect plagiarism often hesitate in invoking the institution's procedures and that this is often the result of a lack of understanding of the academic policy. Additionally, in some cases, faculty feel that the institution does not sufficiently support them (Lim and Coalter 2006). On the contrary, professors who trust in their university will be more likely to engage in reporting and pursuing plagiarism cases (Simon et al. 2003).

Type of action

The literature identifies a number of actions that are applied in the case of detected plagiarism. From an intuitive point of view, these actions should be covered under a heading related to the institution's role, particularly when their integrity policy involves the case being dealt with by a specific committee. However, when faculty decide to act, they also choose whether to follow the university procedures or deal with the case on their own (Simon et al. 2003). In this sense, Kwong et al. (2010) observed that professors tend to deal with plagiarism instances on their own rather than formally reporting them, even if individual procedures can lead to allegations of inequitable treatment (Sutherland-Smith 2005). The most commonly cited actions undertaken by faculty are allowing to re-submit the assignment, failing the assignment and failing the whole subject (Larkham and Manns 2002), while those more institutionally-based penalisations include failing the student in all of the subjects undertaken in the current academic year, placing the student in a plagiarism warning register, monetary fines, community service or even expulsion from the university (Sutherland-Smith 2011; de Jager and Brown 2010).

Discussion

The results of this literature review have addressed the twofold objective of providing order and structure to the extant knowledge about the management of university student plagiarism

(through the development of the process framework presented in Figure 1) and identifying the determinants for each of the discrete events in this process.

For the sake of clarity, thus far this material has been presented in a rather aseptic manner. However, a critical observation of this literature to date shows two crucial characteristics that will be discussed in turn: the focal topics of research have changed over time and the fact that claims made by the literature are based on mixed evidence.

Regarding the **change of topical foci**, the first years of interest in university student plagiarism (1970-1999) were centred in gauging the prevalence of plagiarism and examining the individual characteristics of students who plagiarised in order to define a profile of the students most likely to incur in plagiarism (Haines et al. 1986; Diekhoff et al. 1996; Whitley's 1998) and, to a lesser extent, student perceptions about plagiarism (McCabe and Trevino 1993; Pulvers and Diekhoff 1999). Next, the 2000's started looking at the motivations that lead students to plagiarise (Park, 2003; Rettinger, Jordan and Peschiera 2004). Thus, a step further was included in going beyond the *who* and trying to find out the *why*. Before this, students tended to be the only unit of observation of interest to researchers, but from this point on, some enquiries started to take place by focusing on what professors and universities did in order to prevent plagiarism (Brown and Howell 2001; McCabe, Treviño and Butterfield 2002; Park 2004) and later in that decade about their reasons for acting or not acting when having detected a case of plagiarism (Barrett and Cox 2005; Sutherland-Smith 2005; Lim and Coalter 2006). It has only been in the present decade when the interest has expanded to the types of actions carried out by professors and universities (De Jager and Brown 2010; Sutherland-Smith 2011), although with little continuation. There is currently a significant interest in separating related but different types of student misconduct (e.g. contract cheating –Bretag et al. 2019a, 2019b-; patchwriting -Prentice and Kinden 2018-) and developing specific actions and technologies in order to target each of them quite specifically. The progressive incorporation of more topics of

research and actors considered does not mean that the initial central interests on students' profiles, perceptions and motivations have decreased. In fact, they represent the major bulk of research in the topic to date, and only recently researchers have called for more attention to the role of professors in this matter (Gottardello, Pàmies and Valverde 2017). Looking onward, overall, one might consider whether these reorientations are due to the advancement of the state of knowledge in the topic with respect to what is cumulatively being known and what remains to be studied, or because the realities of the phenomenon have also been continuously evolving, particularly in terms of technological developments. Either way, researchers should keep abreast of the ever-evolving modes of plagiarising, detection and detection-avoiding mechanisms in order to adapt their behaviours for an effective prevention, detection and response to plagiarism.

In terms of the necessary **critical perspective** under which we should interpret the extant literature, a number of issues that characterise it should be taken into consideration: To begin with, the initial impression that the literature on plagiarism in university education is disjointed and fragmented, was corroborated throughout the analysis. This occurs both *across* articles, where a sizeable number of new studies are not sufficiently supporting their arguments on what has already been studied in order to progressively build a coherent body of research; and even sometimes *within* articles, as a considerable number of papers collect data on many (sometimes unrelated) factors, and report on them without achieving an integrated vision of the phenomenon (Jordan 2001; McCabe et al. 2006; Arce Espinoza and Monge Najera 2015). This eagerness to deal with many aspects of the phenomenon of plagiarism would be reasonable during the earlier periods of a new research topic, as plagiarism was in the 1990's and 2000's. But at this stage, the scientific community needs some models or schemata such as the one proposed in this paper in order to move beyond descriptions and start elaborating on mechanisms that more adequately explain the relevant connections in this topic.

Additionally, and perhaps as an unintended consequence of the previous point, the plagiarism literature is not conclusive in a significant number of aspects, a few of which have been highlighted in the results section. A dedicated study on the strength of the evidence about different aspects of plagiarism would certainly be of aid to the advancement of the field. For the time being, we pose that some of the reasons for this (at least apparent) lack of conclusiveness are related to the specificity of the contexts where the data has been collected. Sometimes this specificity is related to a unique national context, but in other occasions to even more particular environments, such as faculties of single disciplines or specific universities, with all the idiosyncrasies that they may contain. Focusing the empirical research efforts in a very narrow context is not necessarily a problem, but then the limits to the explicative capacity of such studies should be spelled out. In relation with this, the wide range of sample sizes in different studies should also be taken into account when comparing available results. Another of the reasons for this inconclusiveness, particularly in the case of contradicting conclusions between studies (e.g. implementing an integrity policy or buying a detection software does/does not reduce the prevalence of plagiarism), is the past and current focus on description and addressing the *what* of the matter. We submit that future studies make more emphasis on the *how*, that is, observing the surrounding circumstances of the main elements studies (for example, noticing whether a policy was implemented but not adequately communicated, actors sufficiently trained, tools made readily available, procedures easy to follow, etc.). We believe that the framework presented in this paper can aid researchers with the consideration of relevant factors, and their study can progressively and more rigorously improve the boundary conditions of future findings in the topic.

Last in the critical evaluation of the literature analysed is the call for a clearer separation between the materials that report strictly on the outcomes of empirical evidence from those based on inferences or opinions, both of which can be encountered in many studies, but not

always with sufficient intelligibility about whether it is one or the other. For example, an analysis of the specific texts of the collection of papers analysed in this article shows that some of the determinants studied, such as personal characteristics or motives for plagiarising are firmly based on the empirical evidence collected in the corresponding studies, whereas some others, such as the professors' and universities' actions to prevent plagiarism are a mix between evidence of what they actually do and recommendations inferred by the authors of the papers.

Further research

Although the previous section has already identified areas and particular ways of addressing future studies for the improvement of the management of plagiarism, in this final section we suggest additional avenues for further research. Firstly, in terms of the definition and characterisation of the phenomenon, there appears to be little differentiation between minor and major incidences of student plagiarism. The degree of seriousness of plagiarism incidents should be brought to the fore in order for future studies to be able to compare their surrounding circumstances and appropriate responses. Secondly, the stages identified in the process framework presented here should be tested through further studies in order to evaluate its appropriateness and robustness.

The next avenue for further research has to do with the scarce attention given to some of the actors involved in dealing with plagiarism, namely the institution and faculty. Despite the fact that there is continuous interaction among the three agents involved in plagiarism, previous research does not integrate their perspectives, but examines them separately or at most compares the perceptions of two agents side by side. Thus, efforts should be made in examining the relationships and interactions between the three, focusing on how one can support the other. With the wealth of literature on sensemaking, influence and leadership available from management and education studies, this endeavour could be readily tackled.

Two specific elements of the process model presented in this paper should also be given particular attention: On one hand, the mechanisms under which the awareness of one's own or others' **previous experiences** of plagiarism can influence a later decision to plagiarise. Indeed, if cases of plagiarism detection and subsequent forms of punishment are communicated through different channels, they can send powerful messages about what behaviours related to plagiarism are possible and tolerable within the student community. This promising research line could be aided by communication theories. On the other hand, taking into account **context** should be of prime importance in future plagiarism management studies. As stated in Figure 1, this includes the national and cultural context, of which some studies are already available, but more insight is still needed; the legal and the technological context. In the consideration of these contextual factors, it is crucial to take into account that they all are subject to continuous change and evolution: Culturally, globalisation is continuously bringing in new values (which affect attitudes towards plagiarism) to different national contexts or at least, modifying existing ones. Legally, in little more than a decade, many universities have introduced plagiarism regulations, while not so long ago there was even a debate as to whether and how plagiarism should be regulated (Austin and Brown 1999) and as to what level regulations should be defined (from individual universities to whole countries). Technologically, we encounter constant changes that affect not only how we deal with plagiarism, but also how plagiarism is even performed. Thus, researchers need to keep abreast of all these contextual developments.

In conclusion, although societal trends seem to point towards plagiarism becoming an increasingly complex and omnipresent phenomenon, the management of the succession of determinants and events of plagiarism identified in this review, arranged in the form of a process framework, could be used as a tool for institutions, professors and students alike in the aim to eradicate or, at least, keep plagiarism at bay.

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Figure 1. A process view of student plagiarism management: phases and determinants

