

IMRaD Journal

ISSN 2619-7820



Institutional
Multidisciplinary
Research and
Development
(IMRaD)
Journal

Volume 3

June 2020



Preventing plagiarism towards nurturing research integrity: A descriptive-mapping review

David Cababaro Bueno

<https://orcid.org/0000-0003-0072-0326>

Dean, Graduate School for Professional Advancement and Continuing Education
Director for Research, Innovation and Knowledge Development
Columban College, Inc.
Olongapo City, Philippines

Abstract. *Innovation and the development of knowledge in the field of scientific research is increasing exponentially, but it continues to be disjointed. It makes it difficult to keep up with state-of-the-art and to be at the forefront of research and dissemination, as well as to evaluate empirical evidence in the area of academic excellence. Recent literature reviews are frequently lacking in thoroughness and rigor and are carried out in part rather than using a specific design. This descriptive-mapping review aimed to illustrate plagiarism and research integrity literature published over a 10-year period (2010 to 2020). To achieve this goal, literature reviews were conducted to obtain relevant articles and documentation on plagiarism and its potential impact in the academic and publishing industries. Methodical searches in specific databases such as Web of Science and Scopus, including the Google Scholar Search Engine, have been undertaken to ensure the accuracy of the results. Thereafter, descriptive mapping was used to categorize qualifying articles. Over 350 titles were collected from the searches, of which 129 complete works were published in various journals during the covered period. Finally, in this review, 35 papers were eligible for inclusion. The themes were enumerated in the scholarly articles. Findings revealed a dearth of scientifically credible and relevant literature on plagiarism issues, such as the phenomenon in the academic environment, its particular specific factors and triggering causes, and the impacts of the institutional policy interventions being enforced. Although the results provided background information for the creation of a realistic guide to avoid plagiarism incidences, robust empirical and evaluative studies should be planned to identify the real implications of preventing plagiarism to uphold the credibility of scientific research and evaluate the impact of ethical issues, practices, and policies suggested by organizations and industries.*

Keywords: *Graduate education, plagiarism, research integrity, descriptive-mapping, literature review*

INTRODUCTION

Plagiarism as a student’s dishonest conduct is sadly a global trend. As a global problem among students (Dias & Bastos, 2014a) from different schools, colleges and universities, plagiarism is characterized in the literature as “literary theft” and “academic dishonesty” (Eret & Gokmenoglu, 2010), copying text from books and the Internet without referencing (Dias & Bastos, 2014a; Stabingis, Šarlauskienė, & Čepaitienė, 2014), illegal easy access to material on the Internet (Dias &



Bastos, 2014b), committing an intellectual property transgression, carried out to deceive the authors' true contribution and the originality and novelty of the knowledge (Abad-García, 2019), the custom of taking the words, the job or the thoughts of someone else and carrying them on as one's own (Mohammed et al., 2015), the omission of citations (Law, Ting, & Jerome, 2013), copying of journals, without referencing articles, or exams (Langa, 2013); intolerable acts of academic dishonesty (Stabingis, Šarlauskienė, & Čepaitienė, 2014), copying from previously plagiarized documents (Gómez, Salazar, & Vargas, 2013), and as a particular form of academic fraud (Eaton, 2017).

Researchers tend to have varying views on plagiarism. Many scientists thus noted in their research that there is no single concept of plagiarism (Sarlauskiene & Stabingis, 2014). It seems that many factors have put about such diverse ideas of plagiarism too. Students can plagiarize because of foreign language issues, time constraints and lack of knowledge (Eret & Gokmenoglu, 2010). Furthermore, students are also considered leading causes of its occurrence: easy access to internet content, lack of critical approach to interpreting information, laziness and poor time management skills (Dias & Bastos, 2014a). Other researchers have found out that students are plagiarizing, while they realize it is illegal due to easy access to Internet material, lack of knowledge, the pressure to achieve good grades, laziness and bad management (Dias & Bastos, 2014b), academic deferment (Patrzek, Sattler, Veen, & Grunschel, 2014), and inadequate thought, learning and motivation (Thomas, 2017), lack of focus on ethics in both academic and clinical settings (Abusafia, Roslan, & Yusoff, 2018), the contradiction between maintaining a positive self-image and committing academic misconduct (Law, Ting, & Jerome, 2013), limited focus on the interpretation of moral laws by students (Shamim, 2012), and the lack of knowledge of credibility and academic trustworthiness by students (Langa, 2013). Certain circumstances that justify this fraud, such as the demand associated with promotion and compensation, the existence of a market for the purchasing and selling of scientific papers, and the proliferation of unethical journals that do not have or have weak ethical standards (Abad-García, 2019). It also varies or is not officially published in various countries and also in different universities. While Sarlauskiene & Stabingis (2014) emphasized that this varied perception of academic group members could be one of the factors leading to plagiarism, and to Iorga, Ciuhodaru, & Romedea (2013), it is deeply related to the degree of academic readiness and the value of teachers as role models; for Dagienė (2014), it may be a burning issue and the scientific misunderstanding of teachers as role models.

Although the concepts and interpretation of plagiarism in the academic setting are contradictory and contentious, previous researchers in the field of computing sciences, such as Ghanem, Mouloudi, & Mourchid (2015); Baba, Nakatoh, & Minami (2017); Sindhu & Idicula (2016); Tresnawati & R (2012); Drlík, Munk, & Skalka (2011); Chew, Ding, & Rowell (2015); Duračík, Kršák, & Hrkút (2017); Sakamoto & Tsuda (2019); Kuruvila et al. (2017); Alzahrani, Salim, & Palade (2015); Karnalim (2019); and Chuda & Navrat (2010), the need for each academic setting to provide a locally accessible plagiarism detection system has been stressed, because the sources of each study performed are usually traceable online.

Therefore, practical implications have been put forward for educators to recognize the ease and availability of information and communication technology (ICT) use in teaching and learning among higher education institutions (HEIs) and to make it simpler and more interesting for most students in the modern world.



The use of Turnitin software could not only be for anti-plagiarism purposes, but could also be used as a self-method to inculcate critical thinking among students (Johari, Haji, Abdul, & Firdaus, 2015), and since the widespread use of ICT has greatly increased opportunities for students to find and use information that is readily accessible online, plagiarism prevention initiatives (Stabingis, Šarlauskienė, & Čepaitienė, 2014), and using effective paraphrasing techniques into prior research and critical thinking (Mori, 2018) can also help to avoid plagiarism.

Because education continues to be a critical means of saving the next generation from moral and academic misbehavior (Iorga, Ciuhodaru and Romedea 2013), a consistent moral self-image and academic conduct and expectations must also be maintained (Law, Ting and Jerome 2013; Shamim, 2012; Langa 2013; and Iorga, Ciuhodaru, & Romedea 2013).

This is especially evident with a small number of researchers proposing the establishment and implementation of policies to tackle academic misconduct and plagiarism among HEIs, and some simply argued that such an institutional approach to plagiarism is unlikely to be successful because it fundamentally fails to promote student learning and valid intertextual activities (Hu & Sun, 2017), emphasized academic qualifications (Gómez, Salazar, & Vargas, 2013), and there is a lack of coordinated efforts among academic groups to develop a common academic integrity framework (Eaton, 2017). And finally, other researchers such as Dagienė in 2014; Singh et al. in 2014; Burdine, Maymone, and Vashi in 2019; and Kakamad et al. in 2019, imply considering the important position played by publishers by having a common objective of generating and reviewing ground-breaking scientific writings for publications by following specific standards used to prevent fraudulent and voracious journals and publishers by strictly applying the guidelines of the Committee on Publication Ethics (COPE).

This review article has therefore played a crucial role in the research as the creation of information remains a collective effort (vom Brocke, Simons, Niehaves, Riemer, Plattfaut & Cleven, 2009). As in any academic area, thorough synthesizing of knowledge is becoming crucial in holding the contents of many scientific and analytical papers increasingly rising and helping professionals, academics and students to recognize, analyze and compile. The purpose of this article is to support a realistic guide for graduate and post-graduate students, prospective scientific research writers and authors, to avoid plagiarism, thereby nurturing the integrity of research in their respective fields.

METHODOLOGY

In this article, I used descriptive or mapping review to assess the degree to which the body of information in a given research topic indicates some interpretable pattern or trend concerning pre-existing hypotheses, ideas, methodologies or observations (King & He, 2006; Paré, Trudel, Jaana, & Kitsiou, 2015). By doing so, I have pursued a comprehensive and clear process, including the search, screening, and labeling of studies (Petersen, Vakkalanka, & Kuzniarz, 2015). Besides, organized search methods are used to shape a representative sample of a wider community of published works (Paré et al., 2015). In this report, I extracted from each paper the characteristics of interest, such as the name of the researcher, publication year, research design, data collection techniques, key findings, and functional consequences or intensity of the research results in the form of frequency analysis to obtain quantitative results (Sylvester, Tate & Johnstone, 2013). In general, each research used in the descriptive assessment is viewed as a unit of analysis, and the



reviewed literature as a whole offers a repository on which the authors seek to recognize some interpretable patterns or draw overarching conclusions based on current ideas, suggestions, procedures or observations (Paré et al., 2015). A descriptive analysis may assert that the findings of this analysis reflect the state of the art in a given area (King & He, 2006). Reviews based on the depth, complexity, and history of a subject are defined in the fields of review writing by Anderson, Allen, Peckham, and Goodwin (2008) as mapping reviews. The study problems are general and are generally linked to patterns and events, such as descriptive reviews. Therefore, while this should be carried out, there was no preconceived intention to study all literature regularly. Alternatively, scholars frequently address experiments that represent the bulk of publications in a given field and who suggest estimating a particular period.

The first step of the literature review was to identify appropriate articles for analysis. For appropriate papers to be identified, the accuracy of articles was assured by recognizing specific sources, for instance, the Web of Science and Scopus, including the Google Scholar Search Engine. Initially, a single keyword "plagiarism" was used to scan the article. This was done initially to define the papers recommended by repositories and search engines. It was necessary to define the keyword precisely as there are vast numbers of papers in databases. If the keywords were too broad, the site appeared to give a wide number of long and tedious articles for review. The following words of the quest have described publications: "plagiarism definition," "perception to plagiarism," "awareness to plagiarism," "elimination of plagiarism," "impact of plagiarism" and "plagiarism regulation."

There have been 345 downloaded documents with these keywords and phrases. The articles have been filtered through the Mendeley Desktop. In the final list of papers for analysis, only those publications with full details such as authors, the title of the paper, publishing year and journal publisher have been included. This knowledge, including data from the last ten years, was included in the paper inclusion criteria. Just 35 papers were considered for further review after applying the inclusion and exclusion criteria. These were then tabled with a "Literature Review Framework," which represents the author and the year of publication, the designs used, main findings, and the realistic implications and the theme. The method of synthesizing and paraphrasing the papers continued (Akbar, 2018). The themes were used in a table format to group and display the articles.

RESULTS AND DISCUSSION

Theme 1. Plagiarism Views and Perceptions. Table 1 shows that out of the 35 articles reviewed, four were referred to as "views and perceptions of participants about plagiarism." The data show that previous researchers used the descriptive-survey design frequently to evaluate participants' views, conceptions, and perceptions of the plagiarism issue. They further exposed people in various groups to plagiarism because of foreign language problems, time constraints and lack of information on plagiarism (Ereta & Gokmenoglu, 2010), and that institutes of higher education should develop strategies and raise awareness among participants. Copying many texts from books and the Internet without references is one of the common activities that contribute to plagiarism (Dias & Bastos, 2014a). Thus, it could have prevented student plagiarizing by addressing the development of students' skills, the introduction of honorary codes and detection software.



Moreover, Dias and Bastos (2014b) showed that easy access to content on the Internet, lack of knowledge, the pressure to achieve good grades, laziness and bad management of time, motivated students to report plagiarized content. There is also a need to encourage the ability of students to avoid plagiarism and to concentrate on pedagogical approaches to resolve the issue. Finally, understanding plagiarism among students was unambiguous, as stated in scientific publications and further analyzed (Sarlauskienea & Stabingisa, 2014). Concerned universities need to develop a systematic policy and clearly define plagiarism, as well as assist the academic community in establishing strategies for plagiarism prevention.

Table 1

A Matrix of the Reviewed Literature Based on Theme “Views and Perceptions” (N=4)

Author/s Full Name, (Year)	Design	Key Findings/ Implications
Esra Ereta & Tuba Gokmenoglu (2010)	Case study - survey design	Due to foreign language issues, time constraints, and lack of information about plagiarism, aspiring academics may plagiarize. Institutions of higher education should establish policies and become more aware of plagiarism.
Paulo C. Dias & Ana Sofia Bastos (2014a)	Descriptive Survey	Popular practices involve copying much of the text from books and without referencing the Internet. Tackle the skills promotion for graduates, implementation of honor codes, and tools for identification.
Paulo C. Dias & Ana Sofia Bastos (2014b)	Descriptive survey	Exposure to easy content on the Internet, lack of expertise, the pressure to achieve good grades, laziness and bad management. Promoting the skills of the students, concentrating on pedagogical problems.
Lina Sarlauskienea, & Linas Stabingisa (2014)	Descriptive Survey	Knowing plagiarism among students is unambiguous as described in scientific publications which have been analyzed. A comprehensive and consistent description of plagiarism, and different forms of plagiarism with concrete examples, may help the academic community improve the prevention of plagiarism.

Theme 2. Plagiarism as Academic Misconduct Affecting Research Integrity. Of the 35 articles, ten expressed a common pattern in which plagiarism can be seen as academic fraud and damage scientific research's integrity. Besides, only Langa used the mixed or hybrid approach (Quan-Qual) in 2013 to investigate the plagiarism problem. Others such as Abad-García in 2019; and Mohammed, Shaaban, Mahran, Attellawy, Makhlof, and Albasri in 2015, have used existing literature reviews which shared the same approach with the current researcher. On the other hand, Taliba, Othmanb, Hamidc, Zainuddin, and Nen (2013); Patrzeka, Sattlerb, Veenb, Grunschela, and Friesa (2014); Thomas (2017); Abusafia, Roslan, Yusoff, and Nor (2018); Bokosmaty, Ehrlich, Eady, and Bell (2017); Lawa, Tingb, and Jeromeb (2013); and Iorgaa, Ciuhodarub, and Romedeac (2013), have used the cross-sectional descriptive survey design to work on this issue.

Thus, the findings show that descriptive-survey design is a standard method to explain the potential outcome of plagiarizing that affects scientific research credibility. This means plagiarism emerged, irrespective of the research model to be used, as an academic fraud affecting the quality of the work.



Table 2

A Matrix of the Reviewed Literature Based on Theme “Academic Misconduct Affecting Research Integrity” (N=10)

Author/s Full Name, (Year)	Design	Key Findings / Implications
María Francisca Abad-García (2019)	Article Review	It identified the various situations under which there has been deliberate plagiarism, which is undermining the reputation of the scientific system. Another important thing for university students and researchers will be the creation of successful training programs on science ethics and responsible writing.
Noorhidayah Abu Taliba, Sarina Othmanb, Khamsi Che Abdul Hamidc, Azizan Zainuddin, & Zurina Md. Nen (2013)	Cross-sectional survey	The study revealed that most respondents could not be trusted with research misconducts such as plagiarism, fabrications, falsifications and fund misuse. The future analysis may include the relationships that are not discussed in this report on the characteristics of the researchers and the likelihood of occurrence on research misconduct.
Justine Patrzeka, Sebastian Sattlerb, Floris van Veenb, Carola Grunschela & Stefan Friesa (2014)	Cross-sectional survey	Academic procrastination was influencing the extent and range of all forms of academic misconduct. Found that academic procrastination has the greatest effect on using false excuses. Need to determine the impact of countermeasures and changing conditions for research.
Darrin Thomas (2017)	Cross-sectional survey design	Indicated that changes in attitude, learning environment and motivation could alter academic dishonesty perceptions. Environmental learning and motivation may contribute to academic integrity
Ali H. Abusafia, Nurhanis Syazni Roslan, Dariah Mohd Yusoff, & Mohd Zarawi Mat Nor (2018)	Cross-sectional design	Academic dishonesty is a common problem among nursing students in Malaysia, in both academic and clinical settings. In nursing curricula training on academic ethics is needed to enhance the quality of education among nursing colleges and reduce the prevalence of unethical behaviors among students.
Sahar Bokosmaty, John Ehrlich, Michelle J. Eady & Kenton Bell (2017)	Descriptive - correlation design	The student behaviors ranged from permissive to extreme based on several plagiarism-related factors. Using a psychometrically validated method will provide a true and accurate representation of the perceptions of students about plagiarism
Rabab A.A. Mohammed, Omar M. Shaaban, Dalia G. Mahran, Hamdi N. Attellawy, Ahmed Makhlof, & Abdulkader Albasri (2015)	Article Review	Plagiarism is the most frequent issue in writing the study. Knowledge raising on how to cope is the key to stopping this issue from getting worse. Successive workshops and software for plagiarism detection are expected at institutions.
Lily Lawa, Su-Hie Tingb, & Collin Jeromeb (2013)	Descriptive -survey Design	Reasoned deletion of citations due to lack of information and non-deduction of marks to delete quotations in assignments. With an increase in appropriate strategies for completing assignments and a concomitant decrease in incorrect strategies, the need to address the cognitive conflict is lessened.
Claudiu Langa (2013)	Mixed-Method Quan-Qual Design	There is a broad spectrum of views among students about the idea of academic honesty: honesty is synonymous with accountability, the need for information and preparation, honesty is a moral principle, a model of intellectual behavior. The teaching staff, who must assess student behavior correctly but also sanction it when appropriate, play an important role in forming this profile.
Magdalena Iorgaa, Tudor Cihodarub, & Sandy-Narcis Romedeac (2013)	Descriptive -survey Design	About 70 percent of students practice unethical practices, the findings showed. Unethical activities were commonly correlated with family-based variables. Unmarried students were more prone to practice unethical behaviors than married students.



The general character of the topic of plagiarism in the university, examined by these scholars, reveals a very negative effect on the university's research and publication center. This study would enhance understanding and increase knowledge of the quality of research. Confidence and honesty should be at the center of the scientific research's ethics since plagiarism shakes these values literally and creates a climate of mistrust which prevents scientific integrity. However, none of these measures will be very effective unless the administrators and scholars accept that the institution's reputation depends, whatever the external pressure, on each person's ethical actions. We can only seek to combat the deceptive acts which are inevitable to weaken the credibility of the scientific establishment if we know that.

It is also important that research institutions are more aware of their duties to counter fraud and establish realistic guidance to deter fraud and establish resolutions based on the standards of ethical and responsible study that must be followed and introduce successful investigation, resolution and penalty mechanisms for probable fraud cases (Abad-García, 2019; Taliba et al., 2013; Patrzeka et al., 2014; Thomas, 2017; Abusafia et al., 2018; Bokosmaty et al., 2017; Mohammed et al., 2015; Lawa et al., 2013; Langa, 2013).

Theme 3. Publishers' and Critics' Opinions on Plagiarism. For publishers, journalists and writers, a further trend emerged in the reviews I conducted. With the use of descriptive-survey design, Dagienė reported in 2014 that when new tools for the identification of plagiarism are available, third parties or publishers accept and use them actively as long as they have access to them. The fact that most of the editors use CrossCheck services as a monitoring mechanism to avoid a plagiaristic incident in the publishing industry may have substantiated this change. Also, in one scholarly article written by Burdine, Maymone, and Vashi (2019), using case analysis as a method, the authors revealed the lack of homogeneous guidelines among publishers when analyzing text replication documents had generated confusion among writers when submitting their articles to legit or predatory publications. Recently, this finding of previous authors was further elaborated by another group of scholars such as Kakamad, Mohammed, Najjar, Qadr, Ahmed, Mohammed, Salih, Hassan, Mikael, Kakamad, Baba, Aziz, Rahim, Ahmmad, Hussein, Ali, Hammood, Essa, and Hassan in 2019, who reviewed various literature and discovered the criteria used to recognize predatory journals and editors. This is why the authors themselves conduct a continuous study to reiterate stronger criteria to overcome Beall's critics by introducing Kscien's list to replace Beall's previous list. Because predatory journals and publishers have consequently continuously exploited the open access publishing model, hitting pseudoscience literature. Finally, for the spirit of integrity in academic research, authors (Singh, Mahendra, Yadav, Singh, Arora, & Arora, 2014) reviewed articles on the retraction process that discourage predatory publishing. They pointed out that in recent years, the time interval between submission and withdrawal of the article was reduced, disapproving of the correlation between the journal's impact factor and the retraction process. Nonetheless, they further revealed the retraction of articles is only an intermittent case, the continuous increase in scientific literature is rather annoying.

Thus, the group of scholars and scientists also expects further innovations to tackle plagiarism in the journal publishing industry, including the identification of translated text and figures. Additional solutions to end plagiarism, in particular text recycling, may include further training and education by the author, as well as close coordination with members of the editorial board and publishing industry reviewers during the submission process.



Table 3

A Matrix of the Reviewed Literature Based on Theme “Views of Publishers, Reviewers, and Authors” (N=4)

Author/s Full Name, (Year)	Design	Key Findings/ Implications
Eleonora Dagiene (2014)	Descriptive- survey Design	The findings showed that new plagiarism detection technologies are welcome and are being actively used if third parties, such as publishers, universities, communities, etc., grant them access. This can be substantiated by the fact that CrossCheck services continue to be used by more than one hundred journal editors. The scientific community is also awaiting further developments including the identification of text and figures translated.
Lauren K. Burdine, Mayra B. de Castro Maymone, & Neelam A. Vashi (2019)	Case analysis	There is a lack of homogeneous plagiarism guidelines which can be consulted by all journals when reviewing manuscripts for text replication generates confusion among writers when submitting to different journals. Additional approaches to counter plagiarism, specifically text recycling, include improving author awareness and coordination during the submission process with the editorial staff and review teams.
Fahmi H. Kakamad, Shvan H. Mohammed, Kayhan A. Najjar, Goran A. Qadr, Jaafar O. Ahmed, Karukh K. Mohammed, Rawezh Q. Salih, Marwan N. Hassan, Tomas M. Mikael, Suhaib H. Kakamad, Hiwa O. Baba, Masrur S. Aziz, Hawbash M. Rahim, Dlshad R. Ahmmad, Dahat A. Hussein, Rebwar A. Ali, Zuhair D. Hammood, Rawand A. Essa, & Hunar Ali Hassan (2019)	Review Article	The standards used to identify predatory journals and publishers rely on the abuse, manufacture and insufficient peer review of the publication. Work is underway to recapitulate more reliable standards with credible facts to surmount Beall's critics. Predatory journals and publishers abused the concept of open access publishing, bombarding pseudoscientific literature. Kscien's list was proposed to replace the vanished Beall's list in fake journals and publishers from the interior of the drawn area.
Harkanwal Preet Singh, Ashish Mahendra, Bhupender Yadav, Harpreet Singh, Nitin Arora, & Monika Arora (2014)	Review Article	The time interval between submission and retraction of the article has reduced in recent times. The impact factor and retraction do not have any significant correlation. Although retraction of articles is a rare event, its constant rise in scientific literature is quite worrisome. It is still unclear whether misconduct/mistakes in articles are increasing hastily or the articles are retracted at a rapid rate in recent times.

On the other hand, writers must be the first to sanitize their manuscript before submitting, although the publishing industry is still accountable during the submission process, whether there are questions in the manuscripts about text-recycling or self-plagiarism. These contentious issues emerging in or from the scientific writing of the author to the examination and approval processes of the publisher seemed to be more to be done to explain whether misconduct is that rapidly in the writings of the writer or whether the papers are being rejected at a rapid pace to this date. It is, therefore, a well-thought-out topic as a challenging one, and it is the responsibility of the journal



editors and reviewers to track wrongdoing by adopting guidelines for scientific research integrity in the Committee on Publishing Ethics (Dagienė, 2014; Burdine et al., 2019; Kakamad et al., 2019; Singh et al., 2014).

Theme 4. Detection and Avoidance of Plagiarism. The fourth theme emerging from the review of current plagiarism literature is detection and prevention, as illustrated in Table 4. Of the 35 papers examined, fourteen (14) revealed this theme. Recent researchers (Ghanem, Mouloudi, & Mourchid, 2015; Baba, Nakatoh, & Minam, 2017; Sindhu & Idicula, 2016; Tresnawatia & Kuspriyanto, 2012; Chew, Ding & Rowell, 2015; Đuračika, Kršaka, & Hrkút, 2017; Sakamotoa & Tsuda, 2019; Kuruvila, Lal, Roy, Baby, Jamal & Sherly, 2017; Alzahrani, Salim & Palade, 2015; Karnalim, 2019; Chuda & Navrat, 2010; Joharia, Alias, Rahman, & Ibrahim, 2015; Stabingis, Šarlauskienė & Čepaitienė, 2014; Mori, 2018) have shared common path in the works of other academics in different fields to avoid and identify plagiarism problems.

Most of them were using the experimental method to suggest a computer-based interface model detect plagiarism in different types. Like the wish of many research scholars, they expressed the same while avoiding plagiarism and cultivating honesty in the written works of the scholar. Such noble actions in the field of scientific writing would certainly serve as an eye-opener for academic scholars and authors to ethically represent, consider and perform work in their respective fields to build, grow and contribute new knowledge. Therefore, it is always possible to detect and eliminate useless studies by young researchers either locally or commercially accessible with the aid of state-of-the-art technology. The use of Turnitin, semantic plagiarism identification, word representation to identify a document similarity, algorithms, and patterns, flowcharts to find correlations between multiple source codes, and the automated generation of a review article is so important platforms to finally cultivate the credibility of the work of the scholar.

These tools, as well as other available smart technology and artificial intelligence, if used wisely, can also serve as self-assessment and self-learning aid to improving writing. Indeed, if there are completely understanding and acknowledgment of the shortcomings of cultures concerning scholarly literature, critical strategies such as proper paraphrasing, quotation, and referencing aimed at preventing plagiarism become effortless for them. Therefore, it may be important to explore and implement these strategies and processes in every institution to fully realize the academic excellence that we are all aiming for. Such creative approaches should be incorporated into all academic disciplines to help instill critical thinking among mentors and students. And the use of modern e-applications should be promoted in the instruction. Finally, it is quite opportune to study the current institutional policies and processes, with a greater focus on accountability, fairness, and dignity. Also, Bueno (2020) recently published a report on the blend and localization of a web-based free platform or e-mentoring for professional development and continuing education in a graduate school. Accordingly, the AI-enhanced e-mentoring was highly successful where checking of manuscripts could be completed in a relatively shorter time compared to manual inspection in the initial assessment. Besides, the platform was successful in evaluating the accuracy of the language and quality of references. Nonetheless, the platform's innovative features posed a new challenge for mentors, which needed more technical training to successfully implement the hybrid approach.



Table 4

A Matrix of the Reviewed Literature Based on Theme “Detection and Prevention” (N=14)

Author/s Full Name, (Year)	Design	Key Findings / Implications
Mohamed Ghanem, Abdelaziz Mouloudi, & Mohammed Mourchid (2015)	Experimental Design	The platform using the ontology approach hastened researchers' tasks by reacting to complex queries that take a lot of time and manual work while using traditional search engines. Future work would be to identify scientific articles based on their abstracts and lists of references.
Kensuke Baba, Tetsuya Nakatoh, & Toshiro Minam (2017)	Experimental Design	The approach was useful to detect complex plagiarisms strictly. Investigating the impact of the corpus on the identification of plagiarism is important in cases where extra information is allowed.
Sindhu. L. & Sumam Mary Idicula (2016)	Experimental Design	The SCAM and PPChecker algorithms were applied to similar paragraphs and, respectively, calculated the degree of plagiarism at the paragraph and document level. The device has obtained high precision that shows the efficacy of the proposed method
Dewi Tresnawatia, Arief Syaichu R, & Kuspriyanto (2012)	Experimental Design	The model based on the Moodle and distribution method showed that by producing a percentage of similarity between two files or several files, the program can detect any similarities in the assignment. Besides, the app will provide the students with warnings from the instructor that plagiarism is detected using SMS Gateway.
Esyin Chew, Seong Lin Ding & Gill Rowell (2015)	Experimental Case Study Design	Turnitin encouraged students to perform self-service and independent learning by pedagogically using the originality study. The research revealed only the juxtaposition of the views of lecturers and students for the two institutions without comparative experiences.
Michal Ďuračička, Emil Kršáka, & Patrik Hrkút (2017)	Experimental Design	The systems shared several common elements and recognizing the elements could help us improve the systems further. The future belongs to the algorithms which can manage vast amounts of source code.
Daisuke Sakamotoa, & Kazuhiko Tsuda (2019)	Experimental Design	At the same time, the proposed method measured the composition rate of the plagiarized segment called the plagiarism rate. Finally, the heuristics developed will increase the accuracy of plagiarism detection and reduce the calculation time considerably.
Jithin S Kuruvila, Midhun Lal V L, Rejin Roy, Tomin Baby, Sangeetha Jamal, & Sherly K K (2017)	Experimental Design	The experimental findings showed that the method proposed is capable of detecting plagiarism in flowcharts. Contrasting the flowcharts is achieved by contrasting both types, orientation, and text. For this end, line detection algorithms like Canny, Sobel, etc. are used.
Salha M. Alzahrani, Naomie Salim, & Vasile Palade (2015)	Experimental Design	A fuzzy semantic-based plagiarism detection model was based on fuzzy rules and semantics word knowledge in comparative texts. Potential research will include studies on other word-to-word semantic metrics, and the introduction of more semantic principles such as word-order similarity and semantic function marking.
Oscar Karnalim (2019)	Experimental Design	In terms of processing time on cases with various derived methods, the technique is more effective. The review of the suggested solution will be carried out on cases of actual plagiarism taken from an object-oriented programming course.
Daniela Chuda & Pavol Navrat (2010)	Experimental Design	The tool recognizes certain unique characteristics of the Slovak language. Implementation of an effective, commonly used tool with more reliable results in placing it in the Faculty environment.
Fuadah Joharia, Mohammad Haji Alias, Asma Abdul Rahman, & Mohd Firdaus Ibrahim (2015)	Experimental Design	This result showed that there is still a lower level of critical thinking among the students as this integration. This should be an integration of the knowledge Naqli (revealed) and Aqli (human) to transform and build value for the land, ummah, and humanity.
Linas Stabingis, Lina Šarlauskienė, & Neringa Čepaitienė (2014)	Experimental Design	A software tool has been adopted to automatically compare presented research with documents in open access databases, foreseeing people, responsible for frequent inclusion in special list addresses of websites and databases, documents from which students like to plagiarize.
Miki Mori (2018)	Classroom Ethnographic Methods	Despite its ambiguity and relation to the transgressive act of plagiarism, it occupies an indispensable position in academic literature. A closer look at the perception of the paraphrase by students and teachers shows its presumed functions and highlights pedagogical areas of development for writing classes and academia.



He concluded by discussing the advantages of AI-mediated e-mentoring by looking for additional features of plagiarism detection, abstract intelligence certification, journal scope analysis and technical compliance that are not covered in the report and thus considered to be the limitation of the study to future research.

Theme 5. Plagiarism towards Institutional Policy. As already mentioned, this section shows the theme 5 that emerged from the review of the literature available (Table 5). Three of the 35 papers examined were evaluated with a shared aim of revisiting institutional policy. Hu and Sun's (2017) case analysis illustrated that even with inter-institutional policy gaps in plagiarism as an act of academic misconduct, the policy documents concentrated on moralistic and regulatory discourses, while the documents lack an educational approach to plagiarism.

Table 5

A Matrix of the Reviewed Literature Based on Theme “Institutional Policy” (N=3)

Author/s Full Name, (Year)	Design	Key Findings / Implications
Guangwei Hu & Xiaoya Sun (2017)	Case Analysis	The study revealed that the policy papers, despite inter-institutional differences, were dominated by moralistic and regulatory discourses and marked by the conspicuous absence of an educational approach to plagiarism. The researchers concluded that such an institutional approach to plagiarism is unlikely to be successful since it fundamentally fails to promote the development of academic literacy and valid intertextual practices by students.
Jaime Gómez, Idana Salazar, & Pilar Vargas (2013)	Descriptive-evaluative Design	The findings obtained indicate an inverse relationship between the corresponding percentages of plagiarism in each text and the contribution to the final ranking of these documents. Temporary comparison of similar percentages indicates that certain pre-plagiarized working teams are more likely to proceed with this action. The research also provides details of the sources used to plagiarize students. The need to include clearer and more comprehensive descriptions of the actions required of students, on the rules to be followed at referencing time, and on the correct references to be used, among others.
Sarah Elaine Eaton (2017)	Article Review (Institutional web-based Documents Analysis)	Results revealed broad variability as a particular form of academic misconduct in the institutional definitions of plagiarism. The findings call for a concerted effort among universities in Canada to create a shared academic integrity framework that includes clear and concise definitions of plagiarism, as well as other types of academic dishonesty consistent across provinces.

In addition, in 2013 Gómez, Salazar and Vargas conducted a study using the descriptive-evaluative design. They also revealed the inverse relationships between the plagiarism percentages in the learner's writing and the final mark of success. This means that academics who have plagiarized previously are more likely to continue this academic manipulation. In such a situation



the current institutional strategy cannot be followed exclusively or religiously. Indeed, I checked Eaton's institutional web-based document study (2017), as well as the findings, revealed broad differences in institutional definitions of plagiarism as a particular type of academic misconduct. For these contradictory theories and concept statements, and with the realistic implementation of available policies within educational institutions, a common vision of a workable research integrity agenda may require further research. Also, providing a clearer and more comprehensive explanation of the actions required of each student about the rules to be followed when citing appropriate sources of knowledge and proper referencing, etc., can help to resolve this issue (Hu & Sun, 2017; Gómez et al., 2013; Eaton, 2017).

CONCLUSIONS AND FUTURE RESEARCH

Innovation and knowledge creation in scientific research are accelerating exponentially while remaining interdisciplinary at the same time. It is challenging to remain up to date and at the forefront and evaluate collective evidence in the area of credibility in scientific study. For this reason, the descriptive-mapping review is increasingly necessary as a tool. Reviews of recent literature often lack comprehensiveness and strictness and are completed in a fragment, rather than adopting a specific technique. This review aimed to identify trends in the literature on plagiarism and research integrity over 10 years (2010 to 2020). A thorough literature search was conducted to achieve this ambitious aim to obtain significant articles and papers on plagiarism and its potential impact in the academic and publishing industries. Efficient searches have been performed in specific repositories, such as the Science Web and Scopus, including the Google Scholar Search Engine, to ensure the accuracy of the articles. After that, procedures of descriptive mapping analysis were used to categorize the quality of articles in this field. Over 350 titles were collected from the searches, of which 129 complete manuscripts were published in various journals throughout the time covered.

In the end, 35 articles were eligible for inclusion in this study. Such articles have been classified as themes. The results revealed a lack of scientifically based literature on relevant plagiarism issues, such as the phenomenon in academia, its specific types and causes, and the effect of the institutional policy initiatives. While the results provided essential information for the creation of a realistic guide to the prevention of plagiarism incidences, a systematic empirical and evaluative analysis should be planned to identify the specific implications of avoiding plagiarism for the preservation of scientific integrity and to evaluate the effect of ethical practices and policies adopted by institutions and industries.

REFERENCES

- Abad-García, M. F. (2019). Plagiarism and predatory journals: A threat to scientific integrity. *Anales de Pediatría (English Edition)*, 90(1), 57.e1-57.e8. <https://doi.org/10.1016/j.anpede.2018.11.006>
- Abu, N., Othman, S., Che, K., Hamid, A., & Nen, Z. (2013). An alternative dimension towards integrity: A perception of University researchers. *Procedia - Social and Behavioral Sciences*, 90, 940–948. <https://doi.org/10.1016/j.sbspro.2013.07.171>



- Abusafia, A. H., Roslan, N. S., & Yusoff, D. M. (2018). Snapshot of academic dishonesty among Malaysian nursing students: A single university experience. *Journal of Taibah University Medical Sciences*, 13(4), 370–376. <https://doi.org/10.1016/j.jtumed.2018.04.003>
- Akbar, A. (2018). Defining plagiarism: A literature review. *Ethical Lingua: Journal of Language Teaching and Literature*, 5(1), 31-38. <https://doi.org/10.30605/ethicallingua.v5i1.750>
- Alzahrani, S. M., Salim, N., & Palade, V. (2015). Uncovering highly obfuscated plagiarism cases using a fuzzy semantic-based similarity model. *Journal of King Saud University - Computer and Information Sciences*, 27(3), 248–268. <https://doi.org/10.1016/j.jksuci.2014.12.001>
- Anderson S., Allen P., Peckham S., Goodwin N. (2008). Asking the right questions: scoping studies in the commissioning of research on the organization and delivery of health services. *Health Research Policy and Systems*, 6(7), 1–12. <https://doi.org/10.1186/1478-4505-6-7>
- Baba, K., Nakatoh, T., & Minami, T. (2017). Plagiarism detection using document similarity based on distributed representation. *Procedia Computer Science*, 111(2015), 382–387. <https://doi.org/10.1016/j.procs.2017.06.038>
- Bokosmaty, S., Ehrich, J., Eady, M. J., Bell, K., Bokosmaty, S., Ehrich, J., ... Bell, K. (2017). Canadian university students' gendered attitudes toward plagiarism. *Journal of Further and Higher Education*, 9486, 1–15. <https://doi.org/10.1080/0309877X.2017.1359505>
- Bueno, D. C. (2020). Mentoring G-SPACE thesis and dissertation writers via smart technologies and artificial intelligence in a blended setting during COVID-19 catastrophe. *Institutional Multidisciplinary Research and Development (IMRaD) Journal*, 3(1), 1-14. <https://doi.org/10.13140/RG.2.2.27202.32963>
- Burdine, L. K., Maymone, M. B. D. C., & Vashi, N. A. (2019). Text recycling: Self-plagiarism in scientific writing. *International Journal of Women's Dermatology*, 5(2), 134–136. <https://doi.org/10.1016/j.ijwd.2018.10.002>
- Chew, E., Ding, S. L., & Rowell, G. (2015). Changing attitudes in learning and assessment: “Cast-off” plagiarism detection and cast-on self- service assessment for learning. *Innovations in Education and Teaching International*, 52(5), 454–463. <https://doi.org/10.1080/14703297.2013.832633>
- Chuda, D., & Navrat, P. (2010). Support for checking plagiarism in e-learning. *Procedia Social and Behavioral Sciences*, 2(2), 3140–3144. <https://doi.org/10.1016/j.sbspro.2010.03.478>
- Dagienė, E. (2014). Findings of the survey on the prevention of plagiarism in Lithuanian research journals. *Procedia - Social and Behavioral Sciences*, 110, 1283–1294. <https://doi.org/10.1016/j.sbspro.2013.12.975>
- Dias, P. C., & Bastos, A. S. (2014a). Plagiarism in Portugal – secondary education teachers' perceptions. *Procedia - Social and Behavioral Sciences*, 116, 2598–2602. <https://doi.org/10.1016/j.sbspro.2014.01.618>



- Dias, P. C., & Bastos, A. S. C. (2014b). Plagiarism phenomenon in European countries: Results from the GENIUS project. *Procedia - Social and Behavioral Sciences*, 116, 2526–2531. <https://doi.org/10.1016/j.sbspro.2014.01.605>
- Drлік, M., Munk, M., & Skalka, J. (2011). Usage analysis of a system for theses acquisition and plagiarism detection. *Procedia Computer Science*, 3, 866–871. <https://doi.org/10.1016/j.procs.2010.12.142>
- Đuračik, M., Kršák, E., & Hrkút, P. (2017). Current trends in source code analysis, plagiarism detection and issues of analysis big datasets. *Procedia Engineering*, 192, 136–141. <https://doi.org/10.1016/j.proeng.2017.06.024>
- Eaton, S. E. (2017). Comparative analysis of institutional policy definitions of plagiarism: A Pan-Canadian University study. *Interchange*, 48(3), 271–281. <https://doi.org/10.1007/s10780-017-9300-7>
- Eret, E., & Gokmenoglu, T. (2010). Plagiarism in higher education: A case study with prospective academicians. *Procedia Social and Behavioral Sciences*, 2(2), 3303–3307. <https://doi.org/10.1016/j.sbspro.2010.03.505>
- Ghanem, M., Mouloudi, A., & Mourchid, M. (2015). Towards a scientific research based on the semantic web. *Procedia - Procedia Computer Science*, 73, 328–335. <https://doi.org/10.1016/j.procs.2015.12.041>
- Gómez, J., Salazar, I., & Vargas, P. (2013). Dishonest behavior and plagiarism by university students: An application to management studies. *Procedia - Social and Behavioral Sciences*, 83, 766–770. <https://doi.org/10.1016/j.sbspro.2013.06.144>
- Hu, G., & Sun, X. (2017). Institutional policies on plagiarism: The case of eight Chinese universities of foreign languages. *System*, 66(October), 56–68. <https://doi.org/10.1016/j.system.2017.03.015>
- Iorga, M., Ciuhodaru, T., & Romedea, S. (2013). Students and unethical behavior during academic years. *Procedia - Social and Behavioral Sciences*, 93, 54–58. <https://doi.org/10.1016/j.sbspro.2013.09.151>
- Johari, F., Haji, M., Abdul, A., & Firdaus, M. (2015). The usage of “Turnitin” as an innovative educational tool: Inculcating critical thinking in integrating Naqli and Aqli for the subject of the Malaysian economy. *Procedia - Social and Behavioral Sciences*, 195, 821–827. <https://doi.org/10.1016/j.sbspro.2015.06.186>
- Kakamad, F. H., Mohammed, S. H., Najar, K. A., Qadr, G. A., Ahmed, J. O., Mohammed, K. K., ... Ali, H. (2019). Kscien’s list; a new strategy to hoist predatory journals and publishers. *International Journal of Surgery Open*, 17, 5–7. <https://doi.org/10.1016/j.ijso.2019.01.002>
- Karnalim, O. (2019). IR-based technique for linearizing abstract method invocation in plagiarism-suspected source code pair. *Journal of King Saud University - Computer and Information Sciences*, 31(3), 327–334. <https://doi.org/10.1016/j.jksuci.2018.01.012>
- King, W. R., He, J. (2006). A meta-analysis of the technology acceptance. *Information & Management* 43(6):740-755. <https://doi.org/10.1016/j.im.2006.05.003>



- Kuruvila, J. S., L. M. L. V. Roy, R., Baby, T., Jamal, S., & Sherly, K. K. (2017). Flowchart plagiarism detection system: An image processing approach. *Procedia Computer Science*, 115, 533–540. <https://doi.org/10.1016/j.procs.2017.09.111>
- Langa, C. (2013). Investigation of students' attitudes to academic honesty – an empirical study. *Physics Procedia*, 76, 426–430. <https://doi.org/10.1016/j.sbspro.2013.04.140>
- Law, L., Ting, S., & Jerome, C. (2013). Cognitive dissonance in dealing with plagiarism in academic writing. *Procedia - Social and Behavioral Sciences*, 97, 278–284. <https://doi.org/10.1016/j.sbspro.2013.10.234>
- Mohammed, R. A. A., Shaaban, O. M., Mahran, D. G., D. M., Attellawy, H. N., D. M., ... Albasri, A. (2015). Plagiarism in medical scientific research. *Journal of Taibah University Medical Sciences*, 10(1), 6–11. <https://doi.org/10.1016/j.jtumed.2015.01.007>
- Mori, M. (2018). Our speech is filled with others' words: Understanding university student and instructor opinions towards paraphrasing through a Bakhtinian lens. *Ampersand*, 5(November), 45–54. <https://doi.org/10.1016/j.amper.2018.11.002>
- Paré, G., Trudel, M. C., Jaana, M., & Kitsiou, S. (2015). Synthesizing information systems knowledge: A typology of literature reviews. *Information & Management*, 52(2), 183–199. <https://doi.org/10.1016/j.im.2014.08.008>
- Patrzek, J., Sattler, S., Veen, F. Van, & Grunschel, C. (2014). Investigating the effect of academic procrastination on the frequency and variety of academic misconduct: a panel study. *Studies in Higher Education*, 0(0), 1–16. <https://doi.org/10.1080/03075079.2013.854765>
- Petersen, K., Vakkalanka, S., & Kuzniarz L. (2015). Guidelines for conducting systematic mapping studies in software engineering: An update. *Information and Software Technology*, 64, 1–18. <https://doi.org/10.1016/j.infsof.2015.03.007>
- Sakamoto, D., & Tsuda, K. (2019). A detection method for plagiarism reports of students. *Procedia Computer Science*, 159, 1329–1338. <https://doi.org/10.1016/j.procs.2019.09.303>
- Sarlauskiene, L., & Stabingis, L. (2014). Understanding of plagiarism by the students in HEIs of Lithuania. *Procedia - Social and Behavioral Sciences*, 110, 638–646. <https://doi.org/10.1016/j.sbspro.2013.12.908>
- Shamim, T. (2012). Plagiarism reporting: My experience. *The Saudi Dental Journal*, 24(2), 119. <https://doi.org/10.1016/j.sdentj.2011.12.003>
- Sindhu, L., & Idicula, S. M. (2016). A plagiarism detection system for Malayalam text-based documents with a full and partial copy. *Procedia Technology*, 25, 372–377. <https://doi.org/10.1016/j.protcy.2016.08.120>
- Singh, H. P., Mahendra, A., Yadav, B., Singh, H., Arora, N., & Arora, M. (2014). A comprehensive analysis of articles retracted between 2004 and 2013 from biomedical literature – A call for reforms. *Journal of Traditional and Complementary Medicine*, 4(3), 136–139. <https://doi.org/10.4103/2225-4110.136264>



- Stabingis, L., Šarlauskienė, L., & Čepaitienė, N. (2014). Measures for plagiarism prevention in students' written works: A case study of ASU experience. *Procedia - Social and Behavioral Sciences*, 110, 689–699. <https://doi.org/10.1016/j.sbspro.2013.12.913>
- Sylvester, A., Tate, M., & Johnstone, D. (2013). Beyond synthesis: Re-presenting heterogeneous research literature. *Behavior and Information Technology* 32(12): 1199-1215. <https://doi.org/10.1080/0144929X.2011.624633>
- Thomas, D. (2017). Factors that explain academic dishonesty among university students in Thailand. *Ethics & Behavior*, 27(2), 140–154. <https://doi.org/10.1080/10508422.2015.1131160>
- Tresnawati, D., & R, A. S. (2012). Plagiarism detection system design for programming assignment in virtual classroom based on moodle. *Procedia - Social and Behavioral Sciences*, 67(November 2011), 114–122. <https://doi.org/10.1016/j.sbspro.2012.11.312>
- vom Brocke, J., Simons, A., Niehaves, B., Riemer, K., Plattfaut, R., and Cleven, A. (2009). Reconstructing the giant: On the importance of rigor in documenting the literature search process. " in *Proceedings of the ECIS 2009*, S. Newell, E. A. Whitley, N. Pouloudi, J. Wareham, & L. Mathiassen (eds.), Verona, Italy, pp. 2206–2217. <https://preview.tinyurl.com/wsujgdo>