

Iranian University EFL learners' Perceptions of Plagiarism Detection Tools: Effectiveness and Use

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Abstract

The present study attempted to shed light on the status of plagiarism detection tools (PDT) in the Iranian EFL context. It tried to survey the Iranian EFL university students' perceptions of the use and effectiveness of such tools. To this end, the data were collected through a 17-item researcher-made questionnaire, with close and open-ended items, designed to gather information on the foreign language departments' policies for plagiarism detection and the effectiveness of the tools if used by EFL learners and their instructors. Respondent-driven sampling was used to sample the hard-to-reach target population during the Covid outbreak. Two hundred and eighteen Iranian EFL students filled the questionnaire. The results indicated that the effectiveness and use of tools are at a moderate level. The findings also highlighted that half of the respondents believed PDTs could be utilized to drop the rate of plagiarism as well as the probability of failing the courses. The results also revealed that specific course context and its requirements have an impact on the students' implementation of the PDTs. The study found that while the respondents' perception of the tools' effectiveness and use is independent of their gender, it is positively correlated with their academic degree and age.

Keywords: Effectiveness, Perception, Plagiarism Detection Tools, University EFL Learners, Use

1. Introduction

In the last two decades or so, plagiarism incidence has drastically increased due to the exponential growth of online resources and widespread use of digital information technologies (Foltynek, Meuschke & Gipp, 2019). Although plagiarism occurs in academia at all levels (Finn & Frone, 2004; Hexham, 2005), recent years have witnessed a surge of studies on university students' plagiarism. The reason lies behind the fact that a common challenge faced by higher education teachers today is acknowledging the authorship of the texts they receive from their students in different forms and functions, ranging from a short term project to a full-fledged article to be submitted to a related journal (Mansoorzadeh & Rahgooy, 2016; Shrivastava, 2017).

The advanced prevention of punitive measures taken against this academic dishonesty has been made possible by the advent of plagiarism detection technologies. Academia can utilize the Plagiarism Detection Tools (PDTs, hereafter) to screen their manuscripts before submitting them to the target journal, and students can self-assess their course projects and assignments before submitting them to their instructors. Not only that: the ex post facto reports of PDTs have saved manual authorship analysis, which seems impossible considering the time and personnel resources constraints (Stappenbelt & Rowles, 2010).

Although the implementation of PDTs suffers from some shortcomings, such as failure to detect stolen ideas taken from other authors (Sun, 2012) and providing no guarantee to the users of the tools that plagiarism has occurred (Allan, Callagher, Connors, Joyce & Rees, 2005), it has been shown that using the tools can reduce the incidence of plagiarism instances. It has also been demonstrated that the tools can be adopted as formative learning instruments that instantly provide feedback for the writers (Rolfe, 2011). The tools have been suggested to be used for "encouraging a

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developmental approach to writing by providing the impetus for a significant change to existing processes” (Penketh & Beaumont, 2014, p.97).

Applying PDTs seems to be specifically significant for/by English as a Foreign Language (EFL, hereafter) learners in higher education because they have to reproduce an accepted academic discourse in English while they are still struggling to acquire linguistic competence (Sun, 2012). Moreover, and more importantly, as noted by Hyland (2001), despite the evident need to provide EFL students with feedback on plagiarism, English language teachers are reluctant to do so since they believe that the way plagiarism is defined and perceived is culture-dependent.

Some researchers have touched upon the issue of plagiarism in the context of Iran (e.g., Ahmadi, 2014; Babaii & Nejadghanbar, 2016; Shahghasemi & Akhavan, 2015), focusing on how plagiarism is perceived and recognized by university students. When it comes to PDTs, a few studies are found in the Western context (e.g., Bruton & Childers, 2015; Nova & Utami, 2018; Penketh & Beaumont, 2014; Stappenbelt & Rowles, 2010). Yet, it seems university students’ perception of PDTs and their effectiveness, particularly in the context of Iran, has been under-written-about and under-researched.

2. Literature on Plagiarism and Plagiarism Detection Tools

Plagiarism is an ‘academic felony’ (Laird, 2001, p. 56) that deserves punitive consequences. It has been defined in various ways over time and in different cultures. Graham-Matheson and Starr (2013, p.2) have defined plagiarism as “taking someone else’s work and passing it off as your own,” in Western culture. For Pecorari (2002), plagiarism is “an object which has been taken from a particular source by an agent without acknowledgment and with or without intention to deceive” (p. 60). Researchers in different societies addressed the reasons behind plagiarism and its increase. Mu (2010), for instance, examined why EFL students in China plagiarize and what their perception of plagiarism is. He found that lack of familiarity with academic writing conventions, teachers’ encouragement of their students to imitate and memorize sentences from native English writers, and not attaching enough importance, in Chinese culture, to plagiarism were the main three reasons for this academic misconduct. Ahmadi (2014) surveyed the EFL learners’ perceptions of and reasons for plagiarism. Employing a researcher-made questionnaire with close and open-ended items, and selecting a sample of 132 respondents from different Iranian universities, he found that not a few respondents had a negative attitude towards plagiarism. They reported they commit plagiarism quite commonly. Moreover, the most frequent reasons for plagiarizing mentioned by the respondents were the shortage of time in writing assignments, lenient and careless professors, and ease of plagiarizing.

Similarly, using a researcher-made questionnaire, Rezanejad and Rezaei (2013) investigated the reasons for plagiarism among undergraduate and graduate Iranian language students. The authors also intended to address the language students’ perception of plagiarism and their attitudes towards their professors’ harshness towards plagiarism. The main two reasons for plagiarism were its ease of implementation and not having a good command of English. Most of the respondents believed what was regarded as plagiarism was submitting an assignment produced as a joint effort but under their own name only and copying a completed assignment from their friends. The results also revealed that they considered their professors inconsiderate of plagiarism and its penalties. Zafarghandi, Khoshroo, and Barkat (2012) surveyed Iranian EFL Master’s students’ understanding, perceived seriousness, and prevalence rate of plagiarism. The findings indicated a high rate of plagiarism among the EFL Master’s students. The most prevalent form of plagiarism was illicit plagiarism, where the students paraphrase the materials from a secondary source without acknowledging where the information has come from.

Preventing plagiarism as the most prevalent form of academic integrity violation has traditionally attracted the attention of university officials and faculty members. Apart from respecting the ethical issues of information ownership and being fair to others (Omenn, 2008), plagiarism prevention involves respecting the most basic principle of education, i.e., educating long-life, independent learners and critical thinkers (Nilson, 2010). Besides, if someone tries to present another’s work as his/her own, s/he is not learning.

Plagiarism has turned into a serious concern in recent years, partly because of the ubiquity of the Internet, which brought the availability of information (Graham-Matheson & Starr, 2013). It is thus of great importance for teachers, as well as universities, to handle the issue effectively. Traditionally, various efforts have been made to deal with students' plagiarism. University teachers, for example, have warned their students against committing plagiarism with varying degrees of clarity in Western and non-Western countries (Graham-Matheson & Starr, 2013; Nushi & Firoozkahi, 2017; Rezanejad & Rezaei, 2013). They have also attempted to introduce the concepts of this form of academic malpractice, instructing their students on how to avoid it in their academic writings (Nova & Utami, 2018). Universities, on the other hand, have developed regularities and taken measures to deal with plagiarism (Nova & Utami, 2018). Although detecting and combating academic plagiarism, particularly student plagiarism, are not new, the exponential advancement of information technology has offered convenient and instant access to software and tools, which have made its detection easier than ever (Foltynek et al., 2019). Paradoxically, technologies can assist universities and educators in dealing with the issue they have aggravated.

The use of anti-plagiarism software in higher education dates back to 2001 (Tedford, 2003). A professor of Physics at the University of Virginia, where he screened 1500 student papers collected during three years, developed custom codes. The event highlighted that plagiarism-enforced detection mechanisms at the university were ineffective. Subsequently, Internet technology afforded new ways to detect plagiarism, such as simple Google searches or implementing commercial plagiarism packages (e.g., "iThenticate" (<http://www.ithenticate.com/>) and "Turnitin" (<http://turnitin.com>)) (Stappenbelt & Rowles, 2010). Most universities worldwide use the tools to identify the incidences of plagiarism in the academic reports of their students and provide the evidence to take action (Mphahlele & McKenna, 2019).

There is a vast body of literature on PDTs. The non-empirical scholarly articles devoted to the issue predominantly have dealt with arguments on the effectiveness of these anti-plagiarism tools. However, there are discrepancies in this group of articles. Not counting the tools' functionality in driving down the plagiarism rate, much of the literature in favor of implementing such text-matching tools argues that they are effective since they can be used to develop writing skills through a process approach (Penketh & Beaumont, 2014), to safeguard universities against this academic malpractice (Davis & Yeang, 2008), and to teach students proper citation (Turnitin.com, 2010). Partly, the arguments against plagiarism, which endorse using PDTs, boil down to strengthening academic misconduct procedures so that academic integrity is fostered.

Despite verifying their dual function in identifying plagiarism occurrences and working as pedagogical tools, some authors have reservations about the ethical issue of adopting PDTs, reasoning that being obsessed with plagiarism detection and prevention may give rise to the destruction of trust between instructors and their students (Adler-Kassner et al., 2008). Instead, they believe that rather than conceive plagiarism as misconduct, which brings negative consequences, teachers should realize the need to "reframe the ways that educators- and writing instructors specifically- talk about the convention of textual practices" (Adler-Kassner et al., 2008, p. 244). For this group, the focus should shift from "preventing, detecting, and punishing" (243) to the development of students' writing skills, their recognition of writing situation variability, and textual expectation (Adler-Kassner et al., 2008).

Another category of objections involves the tools' reliability. For example, Weber-Wulff (2016) has reported that the tools are prone to making inaccurate reports, known as false positives. It implies highlighting some part of a text as unoriginal while the text is appropriately cited. Moreover, the tools cannot differentiate between intentional plagiarism and commonly used expressions and formulaic speech (Ali, 2013; Mphahlele & McKenna, 2019), so they frequently mark these expressions. Weber-Wulff, Moller, Touras, and Zincke (2013) have also found false negatives, where plagiarized parts in a text are not marked since no matched source is located. It mostly happens when books or papers are either not digitized yet or not stored in the database of the software system (Weber-Wulff, 2016).

Several data-driven empirical studies in this area investigated students' and faculty members' perceptions of PDTs. Bruton and Childers (2015), for instance, studied whether and how faculties of different departments in a public university in the US use Turnitin to manage their students' plagiarism. Employing a qualitative approach, the authors found almost all faculties, no matter whether they use Turnitin or not, believed that most of the students' plagiarism is accidental. They also reported that only extreme verbatim copies and pasted are penalized and that they deal with plagiarism on a case-by-case basis.

Penketh and Beaumont (2014) intended to know if working with Turnitin would lead to a shift from viewing writing as an assessment to a developmental model of writing. Two groups of participants, undergraduate students and their tutors, took part in a focus group and individual interviews. Tutors believed Turnitin might be beneficial for students in supporting their writing because they are provided with a snapshot of their writing. They also mentioned that Turnitin could work as a diagnostic tool assisting tutors in identifying those students who need support. Although some students reported having difficulties uploading their files, others appeared to use Turnitin as part of their assignment submission. The main purpose of using Turnitin for students was plagiarism detection rather than supporting their writing. A few students also believed Turnitin made them aware of their citation and referencing. Similarly, McCarthy and Rogerson (2009) reported the improvement in writing skills of postgraduate students when they analyzed the software results.

Nova and Utami (2018) conducted a case study on EFL university students in Indonesia to examine their views toward Turnitin for plagiarism detection. After receiving guidance on how to submit their written texts on the software and how to interpret the results, the students were assigned to write a research proposal and submit them on Turnitin. Upon receiving the results, they were asked to write their comments on their experience. The students' general perception was that the software could make them aware of their writing originality and similarity. They also believed that Turnitin could improve their creativity and critical thinking. Using Turnitin raised some negative attitudes too. They stated they were concerned about the software's failure to differentiate direct quotations from fixed, common phrases. In another study, Gullifer and Tyson (2013) surveyed higher education students' understanding of an institutional policy on academic integrity in Australia. They found that only half of the students, mostly male ones, were likely to study the Academic Misconduct Policy.

Kaktiņš (2019) studied how useful Turnitin and other anti-plagiarism software were in assisting international students in Australian universities to develop their understanding of academic culture and academic success. Collecting data through interviews and questionnaires from teachers and international students, the authors found that for the international students, the main reason for plagiarism was their difficulties in creating a written text at an academically acceptable level. Teachers reported that using Turnitin could not be the only strategy to combat plagiarism. Most of the student participants agreed that internet materials required citation, but some stated the information taken from the Internet does not require acknowledgment.

Despite a significant amount of research on plagiarism and PDTs, in the context of Iran, a few researchers have addressed plagiarism among EFL Learners (e.g., Ahmadi, 2012; Babaii & Nejadghanbar, 2016; Rezanejad & Rezaei, 2013). The study related to ours is that of Nushi and Firoozkahi (2017). The authors examined how Iranian TEFL teachers' syllabus represents the way they deal with plagiarism and their expectations from their students. The authors analyzed the teachers' syllabuses to check them for their plagiarism policy and the provision of guidelines on how to avoid plagiarism in their assignments. In the majority of the syllabuses, they found an absence of any plagiarism policy. Those syllabuses, which contained such statements, suffered from vague definitions of plagiarism. Some syllabuses with plagiarism policy briefly instructed how to avoid plagiarism. Only in a small number of the syllabuses could one see clearly spelled-out consequences and penalties of plagiarism.

Obviously, without knowing about university students', particularly EFL learners', perception of the tools and their effectiveness, doing any corrective action and intervention would be futile. Accordingly, collecting both quantitative and qualitative data, the present study intended to

investigate Iranian EFL university students' perceptions of using PDTs and their effectiveness. Moreover, since potential variables like their gender, age, and academic level might affect their perceptions of PDTs, the researchers also intended to see how their perceptions of the effectiveness and use of these tools differ across their academic level, gender, and age. As such, the study aimed at answering the following research questions:

Research Question One: To what extent do Iranian EFL university students use plagiarism detection tools in their academic courses?

Research Question Two: What are Iranian EFL university students' perceptions of plagiarism detection tools' effectiveness?

Research Question Three: Do Iranian EFL university students' perceptions of plagiarism detection tools' effectiveness and use differ as far as their gender, age, and academic level are concerned?

3. Methodology

3.1. Design of the Study

The present research is a descriptive survey study. Adopting this research design allowed the researchers to benefit from descriptive instruments to represent and analyze the quantitative as well as qualitative data collected through a questionnaire. The design enabled the researchers to describe the perception of a sample of EFL university students about the effectiveness of plagiarism detection tools and the extent of their use.

3.2. Sampling and Participants

To reach and sample Iranian EFL university students, the researchers employed respondent-driven sampling (RDS) which takes advantage of several sampling techniques to collect data (Gile & Handcock, 2010). The technique, also known as Chain-referral sampling, can be used as an umbrella term for a group of sampling methods where the target population of the research is hard-to-reach. It should be noted that the required data for the present study were collected during the Covid-19 pandemic in September and November 2020. Initially, a group of participants was selected from a convenience sample of students studying English teaching, translation, and literature at Sheikhabaee, Khorasgan, and Isfahan universities. Other participants, engaged in the same practices, were recruited by this group of participants. Therefore, they were asked to send the instrument to other people who were studying English at whatever levels at whatever universities in Iran. The researchers also tried to reach EFL Iranian university students through social media platforms (e.g., LinkedIn, Twitter, Facebook, and WhatsApp) to include more students of different academic levels from different universities in Iran. The total number of participants was 218, of whom 133 (61%) were females, and 85 (39%) were males. One hundred thirty-one were studying in one of the English majors at Sheikhabaee, Isfahan, and Khorasgan universities, and 87 were EFL students at Mashhad, Tabriz, Shahreza, Najafabad, and Ahvaz universities. Their age range was from 18 to 47, with an average age of 27.47. In terms of their academic levels, out of 218, 20.6% had a BA, 48.2% had an MA, and 31.2% had a Ph.D. degree.

3.3. Instrument

To attain the goals of the present study, a questionnaire with close and open-ended questions was specifically developed to collect information on PDTs' effectiveness and use. The questionnaire consisted of four sections. The first section recorded the participants' basic demographic information, including age, gender, the field of study, and degree. The second section included three items that asked respondents about their departments' policy on plagiarism and its detection. The third part of the questionnaire included ten items. The first eight items in this section asked about the learners' use of plagiarism detection tools and its effectiveness. Seven items were constructed on a Likert scale with five options running from Yes/always (1) to Not at all (5). One item in this section, which asked if they had ever used the tools, had a binary-answer format (Yes/No). The remaining two items were open-ended questions, which allowed the respondents to describe what they thought might be the benefits of using the tools and name the courses for which using the tools might help the EFL learners.

The next section of the questionnaire included four items, which were related to their ideas about the effectiveness of using PDTs if used by their instructors.

To develop and validate the questionnaire, DeVellis and Thorpe's (2021) framework was used. First, the researchers closely examined the related literature and determined what they wanted to measure. Then, they generated 22 items and determined the format of the items. In the third step, they had two experts from foreign language departments at Isfahan and Sheikhabaee universities and one research methodologist in the social science department at Isfahan University review the items. In this step, the experts evaluated how every single item was relevant to measuring the effectiveness and use of PDTs. They also evaluated the clarity and conciseness of each item. In this process, five items were omitted since they overlapped with other items. The second draft, i.e., the 17-item questionnaire, was administered to a sample of 10 BA level EFL university students, and three items were revised for their clarity of meaning. The final draft was a questionnaire with 17 items. The reliability of the questionnaire was calculated using Cronbach's Alpha, which is acceptable (0.78). The questionnaire was written in Persian to avoid any misunderstanding on the part of the respondents.

3.4. Data Collection and Data Analysis Procedure

At first, 27 participants were selected from Sheikhabaee, Khorasgan, and Isfahan universities to complete the questionnaire. This group of participants was asked to send the questionnaire to other students studying in one of the English majors in any university in Iran. Moreover, using the Google Forms facility, an online version of the questionnaire was created. Then the link was made available through the social media platforms such as LinkedIn, Twitter, Facebook, WhatsApp, etc. It took four weeks to collect the required data.

It is necessary to mention that the participants voluntarily participated in this study. The participants were assured that their identities would be kept confidential. In addition, they were informed that their participation would not influence the courses they attended and their scores. Moreover, they were assured that the collected data would not be used for any other purpose than what is mentioned at the beginning of the data collection process.

The collected data from the close-ended questions were subjected to descriptive statistics. The statistical analyses were run using SPSS software, version 26, to calculate the frequencies and percentages of the respondents' responses. To answer the third research question, a set of Spearman's rank and Kendall's tau-b correlations were run to see if their perception of effectiveness and use of the tools is significantly related to their gender, age, or academic degree. The qualitative data were analyzed utilizing manifest content analysis (Potter & Levine-Donnerstein, 1999). The second author of the present study initially studies the responses for the appearance of certain words and contents manually. The respondents were free to make their comments in either Persian or English. Upon identifying those contents related to the benefits of using PDTs and the courses in which the tools can be used, the researchers used quantification by counting the frequency of the extracted words and contents (Kondracki & Wellman, 2002).

4. Results

4.1. Results of the Close-ended Items

With regard to the items addressing the participants' perception of their departments' information on acceptable academic practice and conventions, the data are presented in Table 1.

Table 1: Descriptive Statistics for Perceptions of Foreign Language Departments' Policy about Plagiarism

Items	Yes		To some extent		No	
	F	P	F	P	F	P
1. Does your department provide information to students on Good Academic Practice and the Avoidance of Plagiarism?	22	10.1	88	40.3	108	49.5
2. Do you feel that the department has clear guidelines in place for dealing with plagiarism?	34	15.6	77	35.32	107	49.1
3. Do you think that the use of plagiarism detection tools should be mandatory in all courses you, as an EFL student, attend?	111	50.9	69	31.7	38	17.4

As Table 1 shows, out of 218 respondents, only 22 have stated that their departments have informed them of the appropriate academic practice concerning plagiarism. A similar pattern was found concerning their feeling about the existence of established guidelines in relation to committing plagiarism. Only 34 respondents felt there are clear guidelines when dealing with plagiarism. The results revealed that more than half of the participants believed plagiarism detection must be used in all courses.

The following two sections of the questionnaire aimed at studying their perception of plagiarism detection tools' effectiveness if used by EFL university students and their instructors. The results of these two sections are presented in Table 2.

Table 2: Descriptive Statistics for Perception of Use and Effectiveness of PDTs

Items	Yes/always		To a very great extent		To a large extent		To some extent		No/ Not at all	
	F	P	F	P	F	P	F	P	F	P
1. Have you, as an EFL student, ever detected a case of plagiarism in the courses you attended using plagiarism detection tools?	155	71.1	--	----	---	----	---	---	63	28.9
2. Do you use plagiarism detection tools in courses you attend as an EFL student?	37	15	30	13.8	47	21.6	44	20.1	60	27.5
3. Do you use plagiarism detection tools before submitting your paper/assignment to your teacher?	30	13.8	52	23.8	41	18.8	55	25.2	40	18.3
4. Do you use plagiarism detection tools before submitting your manuscript to a journal?	73	33.5	50	22.9	24	11	20	9.1	51	23.4
5. In your opinion, does using plagiarism detection tools by students in universities prevent their plagiarism?	90	41.3	36	16.5	57	26.1	30	13.8	5	2.3
6. In your opinion, can plagiarism detection tools provide students with support in detecting their plagiarism?	77	35.3	58	26.6	30	13.8	14	6.4	39	17.8

PDT used by students

	7. In your opinion, does using plagiarism detection tools motivate student authors to improve citation?	70	32.1	17	7.8	69	31.6	13	5.9	49	22.5
	8. In your opinion, can using plagiarism detection tools lead to improvement of second language writing skills in EFL students?	25	11.5	40	18.3	30	13.8	63	28.9	60	27.5
PDT used by instructors	1. Does informing you about using plagiarism-checking tools by your instructors serve as a deterrent to plagiarism?	80	37	30	13.8	64	29.3	27	12.4	17	7.8
	2. In your opinion, does using plagiarism detection tools by instructors at university result in developing students' academic integrity?	37	16.9	53	24.3	23	10.5	26	11.9	79	36.2
	3. In your opinion, does using plagiarism detection tools help instructors identify plagiarized texts?	80	37	60	27.5	24	11	16	7.3	38	17.4
	4. In your opinion, can plagiarism detection tools by instructors provide a useful snapshot of his/her students' writing?	15	6.9	18	8.2	31	14.2	40	18.3	114	52.3

As Table 2 depicts, 71.1 percent of respondents (n=155) stated they had used PDTs at least once for their university studies and courses. In response to the question which asked them to indicate if they use PDTs for their courses, about 15 percent (n=37) reported they always use the tools, while about half of the respondents stated they either infrequently (n= 44) or never (n=60) use the tools. As for their tendency to use the tools when they want to submit their written assignments to their teachers, fifty-five respondents (25%) reported they rarely check their assignments for plagiarism. Only 18 percent stated they never do this. About one-third of the learners, 33.5 percent (n=73), reported they use the tools before they submit their manuscript to a journal. Concerning the effectiveness of PDTs as perceived by the EFL learners, 41.3 percent (n=90) believed using the tools may result in plagiarism prevention of the learners, and only five (2%) thought it not to be effective in this regard. Above one-third of the respondents, seventy-seven (35%) perceived the use of PDTs leads to the self-discovery of plagiarism by the learners. Seventy respondents (32%) claimed using the tools can work as citation assistance to EFL learners. Over half of the respondents believed the tools are not effective (n= 60) or are to some extent effective in helping them develop their second language writing abilities.

Regarding the next set of questions, eighty (37%) believed that if their instructors inform them they use the tools to check their assignments and projects, it will have a discouraging effect, and only seventeen (8%) have the opposite idea. A different pattern was found concerning the effectiveness of PDTs in developing EFL learners' academic integrity. About thirty-six percent (n=79) reported if their instructors use the tools, it might not cause any development in their academic integrity. On the other hand, eighty (37%) stated their instructors might identify plagiarized materials if they used the tools. Finally, a substantial number of respondents (n=114, 52.3 %) believed using PDTs does not give the instructors a brief and quick idea of the EFL learners' writing abilities.

The results of Kendall's tau-b correlations (Table 3), conducted to measure the degree of association between gender and the respondents' perception of the effectiveness and use of PDTs, revealed that the respondents' perception was independent of their gender.

Table 3: Correlation between Gender, Age, Academic Degree, and Perception on PDTs' Effectiveness and Use

Questionnaire items	Gender	Age	Academic Degree
Foreign language departments' policy about plagiarism	$r_t=0.073$	$r_s=0.071$	$r_s=0.042$
PDT used by students	$r_t=0.08$	$r_s=0.55$	$r_s=0.68$
PDT used by instructors	$r_t=0.06$	$r_s=-0.199$	$r_s=.177$

However, as shown in Table 3, based on the results of Spearman's rank correlation, their perception of the effectiveness of PDTs, if used by students, was positively correlated with their age. As age increases, they tend to perceive the tools as more effective ($r_s=0.55$, $n=218$, $p<0.05$). Moreover, the results indicated that their perception of the effectiveness of the tools was dependent on their academic degree ($r_s=0.68$, $n=218$, $p<0.05$), so that BA students tend to perceive the tools as less effective than MA students do, and MA students tend to perceive the tools as less effective than Ph.D. students do.

4.2. Results of the Open-ended Items

Of all participants, 184 answered both open-ended questions, which provided the qualitative data of the present study. Table 4 demonstrates the themes derived from the responses with the frequencies and percentages. In response to the question asked about the benefits of using PDTs, the results of the content analysis revealed that 37% of the EFL learners ($n=69$) believed they could benefit from plagiarism detection tools to find the plagiarized parts. This was the most important response made by the respondents. The second benefit was 'being assisted in writing an article ($n=51$). The third frequent answer was 'reducing the risk of failing' repeated thirty-seven times in the collected data.

Table 4: Respondents' Views on the Benefits of Using PDTs

Answer	Frequency (%)
To find the plagiarized parts	69 ^a (37.5)
To become better at writing an article	51 (27.7)
To reduce the risk of failing	37 (20.1)
To save time	31 (16.8)
To have an original work	16 (8.7)
To get better grades	8 (4.3)
To follow the rules	6 (3.2)
To learn more	4 (2.1)
To find more related sources	3 (1.6)
To test their writing skill	2 (1.09)

Note. The totals listed do not add up to 218 due to missing data.

^a Frequency refers to the number of students' ($n=184$) comments contributing to the derived theme.

Percentage is reported based on the total number of students (184) who answered the open-ended question.

At the lowest level, it can be seen that two respondents believed using PDTs could be used to test their writing skills. In response to the question which asked "For which courses, can using plagiarism detection tools help EFL students?" the results of the content analysis revealed that most of the participants believed EFL students can benefit from plagiarism detection tools in their research-based courses (Table 5).

Table 5: Respondents' Views on the Courses for which PDTs Can be Effective

Answer	Frequency (%)
Research-based courses (essays, articles, papers, and projects)	107 ^a (58.1)
Writing-based courses	73 (39.6)
Thesis writing	44 (23.9)
Assignments and homework	36 (19.6)
All the courses	9 (4.9)
Courses that require advanced English	5 (2.7)
No course	2 (1.08)

Note. The totals listed do not add up to 218 due to missing data.

a Frequency refers to the number of students' (n = 184) comments contributing to the derived theme.

Percentage is reported based on the total number of students (184) who answered the open-ended question.

As shown in Table 5, the first, second, and third frequently courses mentioned by the EFL learners were research-based courses (n=107), writing-based courses (n=73), and thesis writing (n=44), respectively. The least frequently reported theme (n=2) was 'no course', indicating that they cannot find any benefit in using PDTs for their university courses.

5. Discussion

The present study investigated EFL university students' perception of PDTs' effectiveness and use in the Iranian academic context. For the sake of ease, the Likert scale categories 'Yes' and 'To a very great extent' were collapsed to represent positive answers, and the categories 'To some extent' and 'No/Not at all' were collapsed to represent negative responses.

It was found that, as far as institutional policies on this form of academic misconduct are concerned, almost half of the participants believed neither their universities informed them of what good academic practice is, nor did the students feel there were clear guidelines on how the university officials manage students' plagiarism. That half of the participants stated their universities had not provided any clear guidelines for avoiding plagiarism is not surprising given the fact that it was not until 2016 that The Iran Ministry of Science, Research, and Technology revised *The Academic Integrity and Breach of Instruction Regulations* and outlined the behaviors that violate academic integrity and the possible processes to be undertaken by the concerned teacher or committee when a student is accused of academic dishonest. Despite the existence and implementation of straightforward plagiarism policies in Iran in recent years, higher education institutes seem to suffer substandard situations (Nushi & Firoozkahi, 2017). That only 10 percent of the participant reported they know about their university policies against plagiarism is surprising given that about 80 percent of the participants were postgraduate English students who, as Babaii and Nejadghanbar (2016) reported, are warned against plagiarism commitment upon their admission in the MA and Ph.D. programs. This may imply that despite being announced such guidelines, the policy is not an integrated part of their courses, so that not all university teachers are obliged by university officials to include a plagiarism policy in their syllabuses (Nushi & Firoozkahi, 2017). The results may also indicate that the students have not studied the guidelines. This may suggest that, according to Gullifer and Tyson (2013), whenever plagiarism and its detection are the issues, EFL learners may perceive the guidelines as irrelevant to their course contents and training. It is quite probable that they responded to the items negatively because they do not have any information about the policy.

The study found that a substantial number of participants (71%) reported they have, at least once, used one of the PDTs. On the other hand, less than 30% of the respondents reported they use the anti-plagiarism tools for their university courses, and only 37% reported they use the tools before submitting their assignments to their instructors. This could imply that PDTs are not widely used by Iranian EFL university students probably because instructors and academic gatekeepers, at least in Iran, do not outspoke what is allowed or prohibited in the students' writings. In this regard, Ahmadi (2014) maintains that, in the context of Iran, those ELF learners who plagiarize are rarely caught, and those caught are seldom punished. Moreover, the results of the second open-ended question showed assignments are not as regularly checked for content similarity as articles and thesis are. Therefore,

this may be related to their assumption that, as suggested by Mu (2010), when completing their assignment, it is acceptable to copy other authors' contents. The results contradict the findings of some previous scholars, such as Ali (2013), who examined the use of anti-plagiarism tools and concluded that Turnitin is popular among the majority of the respondents. The results may suggest that Iranian EFL university students either feel safe enough to submit their assignments without being checked for similarity by their instructors or are not aware of what the consequences might be. After all, as indicated in the literature, at least one of the reasons EFL learners are engaged in plagiarism is that their teachers do not attach enough importance to plagiarism and are reluctant to employ anti-plagiarism technology to detect plagiarized parts in the assignments submitted (e.g., Ahmadi, 2014; Mu, 2010; Nushi & Firoozkahi, 2017). University professors' leniency in the matter of plagiarism detection gives the students enough margin of security for their academic misconduct (Ahmadi, 2014). Moreover, as revealed by Nushi and Firoozkahi (2017), Iranian university teachers are not straightforward in spelling out the consequences of plagiarism, which may be rooted in their concern that adding information about the penalties of committing plagiarism might leave the impression of a rigorous cruel instructor. Another possibility for teachers' avoidance of clearly stating the consequences of plagiarism might be that they believe they are educators, not detectives (Scanlon, 2003). The findings regarding their use of PDTs lend support to those obtained by other researchers (e.g., Ahmadi, 2014; Rezanejad & Rezaei, 2013; Nushi & Firoozkahi, 2017), indicating that EFL university students may not receive enough information and instruction on plagiarism and plagiarism policies from their teachers and institutes.

About half of the respondents indicated they check their articles for plagiarism before submitting them to a journal. Given that about three-fourths of the participants were MA and Ph.D. students, and considering that a recurring theme in the open-ended items was using PDTs for research-based courses, the results are interpretable in light of prior research findings reporting that postgraduate students are more familiar with the academic writing and its requirements and, as a result, comply with the principles of academic writing more than BA students (Ahmadi, 2014). Moreover, facing the publish-or-perish syndrome at postgraduate levels and being involved in essay-based course works based on which the products of their writing are assessed, MA and Ph.D. students seem to be more disposed to use the opportunities to submit their articles to the PDTs, revise them before submitting them to the instructors and journals to fulfill their course requirements (Atai, Karimi & Asadnia, 2018). It can also be assumed that although the students might be informed about plagiarism and anti-plagiarism policies, they do not receive direct instruction from their instructors. Moreover, as Nushi and Firoozkahi (2017) suggested, the university instructors' syllabuses for MA students put a higher emphasis on plagiarism and its consequences, and this may raise the students' awareness of plagiarism and academic writing ethics.

The study found that only half of the respondents believed using plagiarism detection tools would prevent their plagiarism. This part of our results can be explained by the findings of previous studies (e.g., Zafarhandi, Khoshroo & Barkat, 2012) in that, for most EFL university students, patchworking and paraphrasing plagiarism as two prevalent types of plagiarism among Iranian EFL students, are used as writing strategies that improve their discorsal development and help them deal with their limited "discorsal and linguistic skills" (Pecorari, 2015, p. 4). Therefore, that half of the participants believed the tools could not prevent their plagiarism may imply that, if warned against the consequences of plagiarism, they might stop using other types of plagiarism, such as verbatim copying. However, they cannot overcome their temptation to take the materials from different sources, paraphrase them, and present them as texts "resembling a patchwork quilt of source extracts" (Pecorari, 2015, p.2).

About 62% indicate their use of PDTs might support them in detecting plagiarized parts. This is in line with Balbay and Kilis (2019), Nova (2018), and Graham-Matheson and Starr (2013) studies in that the participants perceived PDTs as effective in detecting their plagiarism. The results of the first open-ended question, which showed their dominant reason for using PDTs is plagiarism detection (Table 4), would indicate that they perceive the tools to be effective, more than anything, in supporting them in heightening their awareness of plagiarism. The results, however, might suggest

that employing PDTs can not be the only strategy to curb their plagiarism which might be further attributed to their unfamiliarity with the concept of plagiarism and their difficulty in interpreting the PDTs' output.

As for the effectiveness of PDTs in improving their citation, only about 40% responded positively; a smaller portion of the respondents (29.8%) reported the effectiveness of PDTs in the improvement of their writing skills. As accounted by Kaktins (2019), due to students' insufficient knowledge on why citations are important, they are inclined to include a reference list and citation without understanding the main reason behind this practice. It seems that those students who implement PDTs are more obsessed with detecting their plagiarism than paying attention to the citations and improving the skill. Moreover, poor training in citation skills, as reported in the literature (e.g., Gullifer & Tyson, 2013; Kaktins, 2019), makes them incompetent to draw a line between proper and improper citations. Concerning the role of PDTs in improving their writing skills, the findings of this study do not support Nova's (2018) reporting that after using Turnitin, EFL students perceived it to be effective in making them think critically and write more creatively and assisted them in paraphrasing. The results are consistent, though, with those of Penketh and Beaumont (2014). A possible explanation for the results of the present study may be that EFL university students plagiarize primarily because of their linguistic incompetency, which is a matter of concern for most of them where their writing has a key role in their assessment. The results of content analysis (Table 4) provide corroborating evidence that they employ the PDTs for the courses they need to submit a written project and because they want to earn credit for their courses.

In terms of their perception of the effectiveness of PDTs, if used by their instructors, half of them responded positively. In this relation, 65% reported if their instructors use PDTs, they can identify plagiarized texts. However, only 15% believed using the tools can provide a useful snapshot of their students' writing. Juxtaposing the results of this section to those of PDTs' effectiveness for self-detection of plagiarism, it can be inferred that the most significant function they consider for PDTs is plagiarism detection. These results match those observed in earlier studies (e.g., Penketh & Beaumont, 2014; Nova, 2018). Bilic-Zulle et al., (2008) reported that even warning against plagiarism does not affect the occurrence of plagiarism. Only when they are informed that PDTs are used to track down their plagiarism, that prevents them from committing this form of academic malpractice. It is worth bearing in mind that since issues of academic integrity are not an integral part of education at universities (Gullifer & Tyson (2013), the students may perceive them to be less relevant to their training. The importance of findings as related to the instructors' ability to acquire a rough idea about their students' writing resides in how they perceive plagiarism and the output of PDTs. As long as they think plagiarism can be detected by the absence of acknowledgment to the original author, and as far as they do not receive instant feedback from their instructors, we cannot expect them to view PDTs as a diagnostic instrument to identify those students who need help in academic writing.

The study also revealed that the respondents' perception of PDTs' use and effectiveness is independent of their gender. However, how they perceive the tools is significantly and positively related to their age and academic degree. As for their age, as their age increases, they perceive the tools to be more effective. Literature on plagiarism shows that the rate of plagiarism is negatively related to age (Ahmadi, 2014), which can support the idea that older students, who are more likely than younger ones to be postgraduate students, are more aware of university policies on plagiarism. Moreover, older students have more respect for moral values and are more inclined to be conservative; therefore, they use the tools more commonly and perceive them as effective.

The results also indicated that the higher the academic degree, the more they perceive the tools to be effective. Expectedly, the findings can be explained by the fact that postgraduate students are more familiar with academic writing principles, and they are more likely expected to write academic papers than graduate students do. Moreover, since MA and Ph.D. classes are less crowded than BA classes, university instructors are more likely to check their papers and assignments, and this may encourage them to check the similarity index of their papers before submitting them.

6. Conclusion and Implications

The present study intended to address Iranian EFL university students' perception of use and effectiveness of PDTs. The findings indicated moderate use of PDTs among Iranian EFL university students. As far as their perception of PDTs' effectiveness is concerned, the findings highlighted that they believe PDTs can work as a shortcut to drop the rate of plagiarism. The results obtained from the closed and open items of the questionnaire may indicate that the specific course context and its requirements have an impact on the students' implementation of the PDTs. Yet, it seems that to develop students' academic writing practices and employ the tools as a formative pedagogical means to develop their writing skills, referencing, and citation skills, universities need to modify their approach to plagiarism and plagiarism detection. Students can escape punishment if they understand what they need to do is paraphrase the lifted texts to avoid being detected (Mphahlele & McKenna, 2019). Moreover, as put by Braumoeller and Gaines (2001), to ensure that the use of PDTs effectively prevents plagiarism incidence, it is necessary to define the nature of the after-effects of this malpractice. To ensure that plagiarism detection policies of universities, based on using PDTs, act as an effective deterrent, it seems fundamental to discuss and define the nature of penalties if a plagiarized paper or assignment is detected.

Although the findings provide insights into the perception of EFL students on PDTs, due to some limitations, the results should be taken with care. This study collected data during the Covid outbreak from 218 university students studying language majors in different universities, which carry out different policies to curb plagiarism. It could help if the researchers could employ interviews to triangulate the data sources and add depth to the findings. Moreover, making comparisons between the perception of EFL learners sampled through cluster sampling would make it possible to examine how, for example, the type of the higher education institutes may correlate with how the PDTs are perceived.

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8. Declaration of Conflicting Interests

The authors declare that they have no conflicts of interest.

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