An evaluation of the use of Turnitin as a tool for electronic submission, marking, and feedback in higher education in South Africa: Students' perspective

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Abstract

Turnitin has been operating for over 20 years checking plagiarism in student assessments and giving feedback to improve student writing skills and encourage originality, and over the years the use of Turnitin has been published mainly by lecturers and teachers. Thus, the main objective was to understand and determine the underlining viewpoint of students towards Turnitin as a submission, marking, and feedback tool in higher education. The research involved identifying the benefits and drawbacks of Turnitin as an electronic submission, marking, and feedback tool for students, determining the effectiveness of Turnitin tools for lecturer feedback and identifying the possible implications of Examsoft and Gradescope as marking and feedback tools. Due to the nature of this study, a quantitative approach was adopted with the use of a questionnaire. Data were collected from 51 students at Eduvos from different academic levels and analysed through descriptive statistics using graphs. The results showed that students in South Africa experience benefits of Turnitin such as accessibility and convenience as electronic tools, convenience view for grades, and clear originality reports. The drawbacks were: loss of work after submission, issues with file upload size, negative marking due to no feedback, restricted file types for submission, identification of false positives, and no section for late submissions. It was also evident that the effectiveness of lecturer feedback tools differs per academic level. These findings can be used to enhance students' academic experience as there were more drawbacks than benefits identified in the study.

Keywords: effectiveness, Examsoft, Gradescope, plagiarism

1. Introduction

Turnitin has become a worldwide tool in universities across the world for detecting plagiarism through a text-matching system and providing feedback through grading tools (Marsh, 2019). Plagiarism is described as the act of taking someone's work or ideas and making them your own without acknowledging the source (Streefkerk, 2018).

Furthermore, Turnitin has expanded its focus from academic integrity in writing to encouraging students to do their best in being original through every assessment they work on, especially after education worldwide has rapidly shifted to remote learning on account of the Covid-19 pandemic (Caren, 2021). Due to the Covid-19 pandemic, the private higher education institution in this study moved all academic programmes online using Turnitin for assessment purposes. For this reason, the researcher wanted to evaluate the use of Turnitin as a submission, marking, and feedback tool to determine the effectiveness and usefulness of this tool for students. Firstly, it is important to understand how Turnitin works.

Turnitin works by comparing submitted documents with journals, blogs, articles, textbooks, and biographies, in their database, and other authentic published material across the internet (Marsh, 2019). Afterward, it generates a "similarity index" – the percentage of matches obtained after comparison, which is then interpreted by educationalists to determine student grades using Feedback Studio (Anaesth, 2019). Feedback Studio is an interface in Turnitin that allows educationalists to provide a quick and personalised written or oral response to meet each student's needs (Olajire, 2020).

Currently, students use Feedback Studio to obtain instructor feedback, and originality reports, resubmit assessments, and numeric grades, and download work with or without comments (Kiugu, 2020). Turnitin has recently acquired new features, namely, Examsoft and Gradescope to provide modern assessment abilities (Caren, 2021). Thus, the researcher has investigated the use of Turnitin in terms of the submission, marking, and feedback received by students as this was the main tool that was used during the Covid-19 pandemic.

1.1. Purpose of the study

The purpose of this study was to evaluate the use of Turnitin as an electronic submission, marking, and feedback tool in higher education in South Africa from a student's perspective.

Plagiarism is an expanding academic issue among students – undergraduate and postgraduate, as it has a critical impact on both their marking and integrity (Kokemuller, 2018). Turnitin detects plagiarism by identifying the percentage of content similarity and uses colour codes to represent the percentage range of the similarity index as well as indicating the source of the citation - using different colours per source (Caren, 2021).

Moreover, Turnitin announced its implementation of Gradescope and Examsoft as grading tools (Caren, 2021). Gradescope is an online modernised grading tool used for marking and providing feedback on students' assessments through artificial intelligence (AI). It does this by scanning handwritten documents and converting them to PDF then proceeds to scan the handwriting for solutions, calculation workouts, or even code and awards marks according to the provided rubric. In case a student's handwriting is illegible, the AI-based software will mark it so that it is checked by educators (Brennen, 2020). In light of the Covid-19 pandemic, Gradescope has evolved its features to accommodate the surge from transitioning to remote assessments (Gradescope, 2020). The features consist of providing an interface for students to

answer timed assessments remotely without having to scan documents and automatic grading. Additionally, the pandemic has also contributed to Examsoft increasing its usage from 8 to 500 customers with a short timespan to preserve academic integrity during online learning (Farrell, 2020).

Examsoft is an exam delivery system designed to secure, monitor, and assess assessments. It works by disabling internet usage, files, and programs and making use of AI to closely monitor student behaviours from eye movement to sound in the background to prevent academic dishonesty (Foresman, 2020). Similarly, Examsoft allows students to submit their assessments which are then graded with the use of AI that generates a report that comprises analytical performance and graded feedback (Examsoft, 2020).

Over the years, controversies surrounding Turnitin as a submission, marking, and feedback tool have come to light, as these points are known to influence student's similarity index and submission such as unnecessary matching content, unrecognising quoted material, restrained file submission to 1, limited access to content online, locates false positives (Romero, 2018), unrecognising images, file size restriction for submission and limited file type options for submission (Brennen, 2020).

Despite having its limitations Turnitin has been praised for encouraging referencing and marking assessments with rubrics (Lee, 2019), encouraging deep learning discipline, and fast submission response (Abbasi, et al., 2020). The material gathered from students in this research helped to determine ongoing or new challenges, advantages, and degree of reliability, of using Turnitin as a tool for submission, marking, and feedback in higher education in South Africa. Thus, the purpose of the study was to provide an understanding of the use of Turnitin as an electronic submission, marking, and feedback tool. The submission aspect also focused on plagiarism.

The rise of internet usage and independence has brought about new ways to create, share, and acquire easy access to content worldwide such as articles, books, videos, and journals which has contributed to the rise of plagiarism. Another factor is the shift to remote learning that occurred as an effect of the Covid-19 pandemic (Clements, 2020). These actualities are what have contributed to the rise of plagiarism which has led many students to taint their academic integrity (Santana, 2020).

Additionally, another study based on higher education in South Africa, concluded that there was an increase in published plagiarised work, particularly in the field of management (Farber, 2019). The factors influencing the rise of plagiarism in higher education include pressure for good performance, summarising and paraphrasing, inadequate time management, lack of adequate writing skills, use of quotation marks, poor referencing skills, advancement in web technologies and academic environment (Abbasi, et al., 2020).

Current studies do not provide evidence on the effectiveness of Turnitin as a submission, marking, and feedback tool in higher education in South Africa from a student's perspective but is focused more on the plagiarism aspect. Therefore, the researcher investigated this study, to determine how reliable Turnitin has been for students based on submission, marking, and feedback.

1.2. Significance of the study

This study has contributed to the current knowledge of Turnitin by determining the reliability of its current implementations as a tool for electronic submission, marking, and feedback and has established how its delivery from a student's perspective can be improved by higher education institutions to enhance student's academic journey in higher education in South Africa.

2. Turnitin usability

Turnitin is not only used to detect plagiarism through text-matching submitted work and comparing it against multiple online contents but also possesses different uses (Harris, 2020). Turnitin allows students to submit their assessments electronically from any browser making it accessible (Santana, 2020). Additionally, after submission students receive Turnitin feedback consisting of an originality report which identifies the percentage of plagiarism, this allows students to be educated on their referencing and quoting techniques (Harris, 2020). Besides allowing lecturers to view students' content similarity reports, Turnitin's Feedback Studio interface also grants lecturers ways to provide feedback to students through the following: comments, inline comments, quick mark comments, rubrics, general comments, and audio feedback (Hetherington, 2019).

These Turnitin Feedback Studio features are known for encouraging proper citation and academic integrity, students who have reviewed their feedback can improve on adding value and originality to their assessments (Wike, 2020). The features consist of comments, inline comments, quickmark comments, rubrics, and audio feedback.

As discussed, Gradescope and Examsoft both have been acquired by Turnitin and make use of artificial intelligence (AI) to grade and provide feedback. Gradescope has been known for bringing efficiency in assessment marking by providing lecturers with resources to create rubrics to avoid repeatedly writing the same comments for different students, and as a result ensure consistency in marking (Simon, 2021). When lecturers scan and import students' work in PDF format, Gradescope computes data about the work – by categorising grades and showing each student's performance per question (Simon, 2021).

Another feature of Gradescope is that it provides information on the details of each question answered, including errors made. This allows students to get constructive feedback and know how to improve for future assessments. Similarly, Gradescope allows requests to be made in case clarification or re-mark is needed.

Besides Gradescope, Examsoft is known to be a trusted platform promoting academic success. This feature of Turnitin allows students after submitting their assessment, to receive a thorough downloadable view of their performance detailing strengths and weaknesses, which will help ameliorate areas that need improvement (Examsoft, 2019). However, students with disabilities exhibiting self-stimulatory behaviour and those who are prone to be interrupted by family members could get unnecessarily penalised when writing assessments because Examsoft proctoring will consider it cheating, thus affecting final grades (Wike, 2020).

This section presented and explained relevant literature to provide an understanding of Turnitin and its factors that influence submission, marking, and feedback in higher education in South Africa. This review also provided information aimed to determine Turnitin's degree of

reliability as a submission, marking, and feedback tool in higher education in South Africa from a student's viewpoint.

The next section will outline the research methodology for the study.

3. Methodology

Research methods describe tools used to collect data from a specific group of people to explain a hypothesis and get definite answers (Bhatia, 2018). The researcher made use of quantitative data analysis which involved collecting numerical data for the study, making it suitable to draw conclusions from data samples and reach a hypothesis (Bhatia, 2018). Since quantitative analysis involves numerical data, the researcher made use of a statistical method of analysis like basic calculations and complex analyses.

The research method for this study was questionnaires. Due to the current Covid-19 pandemic, the researcher made use of questionnaires in digital form that comprised both open and closed-ended questions. Google forms was the platform that was used to collect the responses. The researcher emailed the link to the questionnaire to the participants via the student database. The advantage of using this research method is that it is simple, and brief compared to other quantitative methods (Bhatia, 2018). However, it has the disadvantage of being respondent bias.

Respondent bias is a term used to describe factors that influence the participant's answer to a question, making answers inaccurate (Aprameya, 2015). To counteract this the researcher; provided clear and simple language questions, made use of question intervals, and avoided using any leading questions.

3.1. Population and sample design

For this study, the researcher distributed online questionnaire links to 51 students from Eduvos, a total of 51 answered responses were processed and analysed.

A non-probability sampling, convenience sampling, was used as it is known to be the easiest sampling strategy as students from Eduvos were selected according to their availability, willingness, and accessibility. However, this sampling has the disadvantage of being biased, not representing differences between subgroups and individuals, and false answers can be provided which may spoil results (Gaille, 2020). To get past the disadvantages of convenience sampling, stratified sampling was also used. This sampling allowed a more relevant and smaller scale of participants to be chosen and ensured reliable results from adequate sample representation.

Moreover, the researcher made use of snowball sampling to access students who were not easily accessible due to the Covid-19 pandemic. The next section will outline in more deatil the data collection process.

3.2. Data collection and analysis

The researcher composed an online questionnaire based on the research questions and associated literature. The researcher obtained ethical clearance from Eduvos, (a higher education institution in South Africa) approving the questionnaire and granting permission to

collect data from the students. Links to the questionnaire were distributed to students and reshared with other Eduvos students following the snowball sample as described above.

The data collected was analysed and interpreted through descriptive statistics. Descriptive statistics is a quantitative data analysis method that allows a visual understanding of sample data by providing the researcher with the ability to extract precise details (Jansen & Warren, 2020).

3.3. Limitations

The limitation of this study is that Examsoft and Gradescope are not currently implemented in higher education in South Africa, thus preventing the researcher from investigating the use of Turnitin in-depth regarding these two features. However, students did use Turnitin for the submission of assessments (assignments, projects, and examinations), so the Turnitin features of submission, marking, and feedback by academics were evaluated in detail.

Due to the Covid-19 pandemic, the researcher was not able to collect data in person. Thus, the collection of responses online took a longer time than if it was facilitated in person.

4. Results and findings

This section encompasses the results and findings of the study derived from the questionnaire which was answered by 51 students at Eduvos with academic levels ranging from pre-degree to 4th year. The sample of students consisted of 2 pre-degrees; 5 first years; 12 second years; 20 third years; 12 fourth years. Although there were differences in the year of study of the respondents, this did not affect the reliability or validity of the study as all of these students were using Turnitin to submit assessments and the students from the second year-fourth year had prior knowledge of using Turnitin in their previous years of studies.

The findings were separated into four subcategories, namely *Turnitin as an electronic submission, Turnitin as a marking tool, Turnitin as a feedback tool, and the Benefits of Turnitin.*

4.1. Turnitin as a tool for electronic submission

This section is comprised of results and findings about Turnitin as a tool for electronic submission. It must be noted that the results may be similar to other studies but what makes this study unique based on the results is that the study specifically looked at Turinitn usage in higher education in South Africa were access to Turnitin may not have been easily accessible to all students especially those that live in rural areas where internet connectivity is not relaible or available. Additionally, during South Africa's ongoing problem with the electricity crisis where the country experiences load shedding (electricity is cut-off for hours) on a daily basis.

4.1.1. Accessibility of electronic submission

Participants were asked if they were able to submit their assessments on Turnitin from any device to determine its accessibility. A total of 45 students (88%) agreed that they can submit their assessment on Turnitin from any device and 6 students (12%) disagreed. According to a study conducted by Simon (2020). Turnitin is easily accessed from many types of browsers such as Internet Explorer, Google Chrome, Firefox, and Safari allowing students to have access from any device and location. Therefore, based on the results, Turnitin is easily accessible to most students in higher education in South Africa.

4.1.2. Convenience

Participants were asked whether they preferred electronic submissions over hard copy submissions. The purpose of this question was to determine the convenience of Turnitin as a tool for electronic submission. A total of 27 students (53%) agreed, 9 students (18%) strongly agreed, 3 students (6%) disagreed, 3 students (6%) strongly disagreed, and 9 students (18%) were neutral. Therefore, based on the results, most students in higher education in South Africa find Turnitin as a tool for electronic submission convenient, especially during a pandemic.

4.1.3. Lost work after submission

Participants were asked if their assessments have ever gotten lost after submission via Turnitin. A total of 15 students (29%) have lost their work after submitting it through Turnitin and 36 students (71%) have not. Therefore, based on the results in Figure 3, most students in higher education in South Africa do not have their work lost after submitting it through Turnitin.

4.1.4. Issues with file upload size

Participants were asked how often they included screenshots of their work for submission. A total of 30 students (59%) do not submit screenshots in their work, 18 students (35%) often include screenshots for submissions, and 3 students (6%) always do.

Figure 1 shows screenshots of submissions
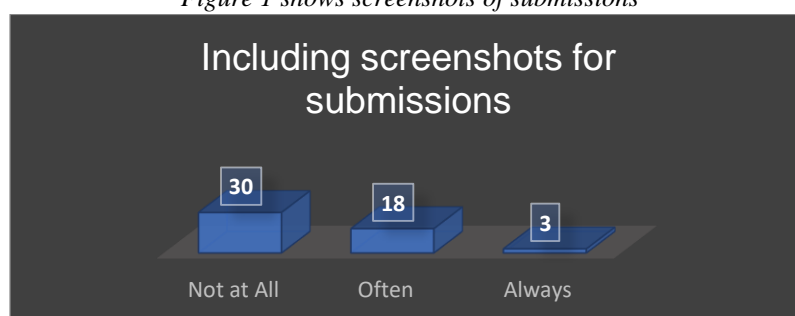
Participants were asked if the file size has ever been a problem when uploading work for submission through Turnitin. A total of 29 students (57%) experience file size as an issue during Turnitin submission and 22 students (43%) do not have an issue with file size.

According to Zheng (2021), Turnitin has a limited size for file uploads as it is restricted to 10MB, and it is bad as assignments may contain graphical elements adding on to the file size to be uploaded. Therefore, based on the results, most students in higher education in South Africa have issues with Turnitin's file upload size and some students include a screenshot of work for submission.

4.1.5. Similarity report

Participants were asked if their marks were ever negatively affected after not receiving a feedback report from Turnitin when submitting a zip file. The purpose of this question was to identify if a lack of feedback affected marking. The results showed that a total of 10 students (20%) were often affected, 2 students (4%) were always affected, 19 students (37%) were rarely affected, and 20 students (39%) were not at all affected.

Figure 2 shows results for negative marking due to no feedback
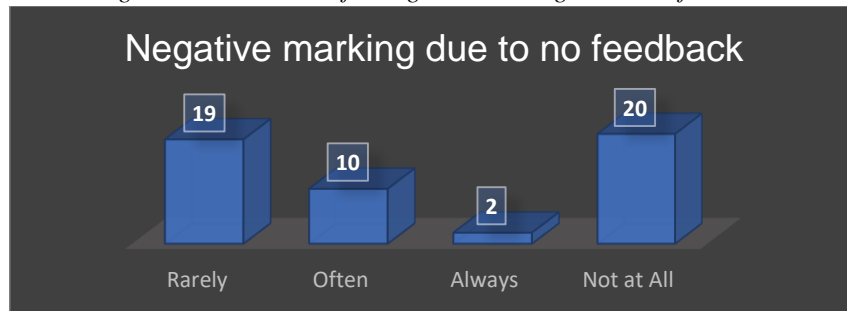
Similarly, when participants were asked if they received a similarity report after every submission a total of 41 students (80%) agreed, and 10 students (20%) disagreed. When participants who did not receive a similarity report for every submission were asked to explain why the main reason was due to zip file submissions not generating feedback reports.

Based on past research, there is no literature related to negative markings. Therefore, from the results retrieved, most students in higher education in South Africa have received negative markings due to no feedback report.

4.2. Turnitin as a marking tool

This section is comprised of results and findings about Turnitin as a tool for marking.

4.2.1. Preferred grade viewing

Participants were asked if they preferred viewing their grades online compared to paper-based assessments. A total of 23 students (45%) agreed, 10 students (20%) strongly agreed, 4 students (8%) disagreed, 3 students (6%) strongly disagreed, and 11 students (21%) were undecided. Therefore, based on the results, most students in higher education in South Africa prefer to view their grades on Turnitin compared to paper-based assessments. Based on this, the institution is considering using Turnitin as the main submission platform rather than using paper-based submissions.
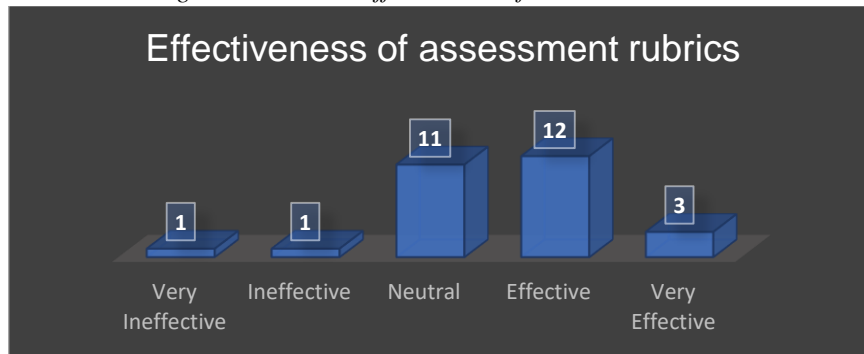
4.2.2. Effectiveness of assessment rubrics

Participants were asked if they received assessment rubrics indicating how their marks were awarded. This question was aimed at determining the number of students that were provided with assessment rubrics in higher education. A total of 22 students (43%) agreed and 29 students (57%) disagreed.

Participants were then asked to indicate the effectiveness of their assessment rubrics. This was asked to determine the effectiveness of assessment rubrics for students in higher education in South Africa. From 28 students (55%) that answered, a total of 12 students (24%) found it to be effective, 3 students (6%) very effective, 1 student (2%) very ineffective, 1 student (2%) ineffective, and 11 students (22%) found it neutral.

Figure 3 shows the effectiveness of assessment rubrics

Therefore, based on the results in Figure 3, most students in higher education in South Africa find assessment rubrics effective. Based on the results, the academic institution is looking at the benefits of adopting rubrics in all assessments.

4.3. Turnitin as a feedback tool
This section is comprised of results and findings about Turnitin as a tool for feedback.

4.3.1. Originality report
Participants were asked if they understood their originality report. A total of 44 students (86%) agreed and 7 students (14%) disagreed.

Therefore, from the results displayed in Figure 15, Turnitin's similarity report is understood by students in higher education in South Africa. Additionally, participants were asked if they were provided feedback on the screenshots of their written/typed content. A total of 20 students (39%) answered yes and 31 students (61%) answered no. The participants were then asked if not receiving feedback has ever affected their marks. Based on 35 students (69%), a total of 5 students (10%) agreed and 30 students (59%) disagreed.

Therefore, from the results displayed, most students in higher education in South Africa do not receive feedback for screenshots, which affects their grades.

4.3.2. Identify false positives
Participants were asked to indicate their agreement on Turnitin unrecognising quoted material in their work and flag it as plagiarism. This question was aimed at determining Turnitin's ability to identify plagiarised content correctly as a feedback tool. A total of 30 students (59%) agreed, 8 students (16%) strongly agreed, 4 students (8%) disagreed, 2 students (4%) strongly disagreed, and 7 students (13%) were undecided.
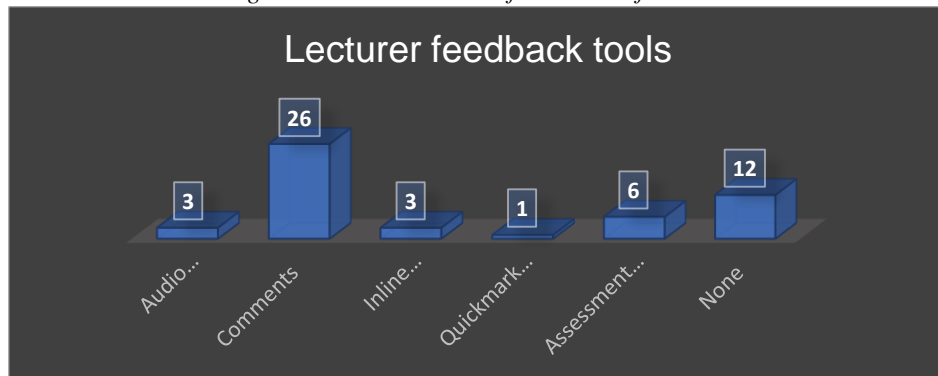
Participants were also asked to indicate their agreement on Turnitin often matching unnecessary content in their work and flagging it as plagiarism. A total of 30 students (59%) agreed, 13 students (25%) strongly agreed, 3 students (6%) disagreed, 1 student (2%) strongly disagreed, and 4 students (8%) were undecided.

Therefore, from the results, most students in higher education in South Africa find that Turnitin's plagiarism detection identifies false positives. These results identified that academics had not altered the assessment settings in Turnitin which allows certain text/content to be ignored or not flagged as plagiarism. The results made acadmeics aware of this problem and the necessary changes that needs to be put in place for future assessements.
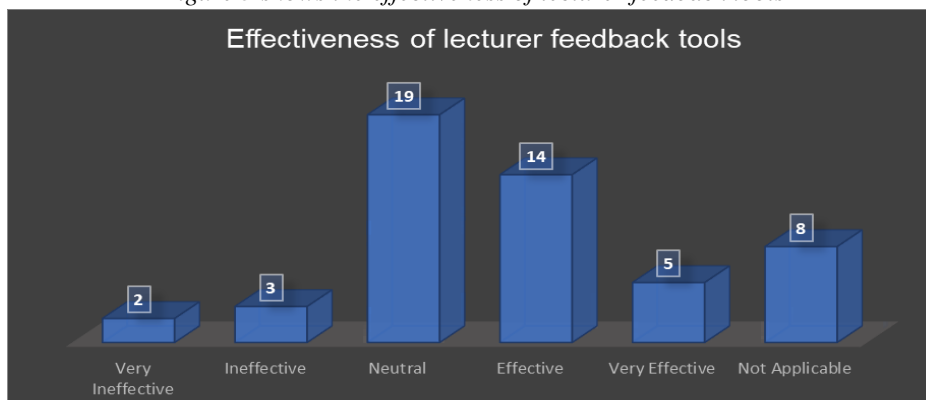
4.3.3. Lecturer feedback tools

Participants were asked to indicate the methods of feedback used by their lecturer. The purpose of this question was to identify the use of feedback tools students use in higher education. A total of 3 students (6%) indicated audio feedback, 26 students (55%) indicated comments, 3 students (29%) indicated inline comments, 1 student (8%) indicated quickmark comments, 6 students (25%) indicated assessment rubrics, and 12 students (24%) indicated none.

Figure 4 shows tools used for lecturer feedback

Participants were then asked to indicate their agreement with the effectiveness of the indicated method of feedback used by their lecturer. A total of 14 students (27%) agreed that it was effective, 5 students (10%) indicated that it was very effective, 3 students (6%) indicated that it was ineffective, 2 students (4%) indicated that it was very ineffective, 19 students (37%) indicated that it was neutral, and 8 students (16%) indicated that it was not applicable them.

Figure 5 shows the effectiveness of lecturer feedback tools

Therefore, from the results displayed in Figure 5, students in higher education in South Africa are familiar with the different types of lecturer feedback tools, but the majority do not find them effective. This is becuase some lecturers did not provide feedback or did not provide constructive feedback to students. The results are important to make lecturers aware that feedback is important and that they need to pay more attention to the feedback that is given to students. The feedback needs to be individual based and not a generic feedback that in some cases may not be applicable or useful to all students.

5. Conclusion

The purpose of this study was to evaluate the use of Turnitin as an electronic submission, marking, and feedback tool in higher education in South Africa from a student's perspective.

This study contributed to the current knowledge of Turnitin by determining the reliability of its current implementations as a tool for electronic submission, marking, and feedback delivery from a student's perspective and has established how its delivery can enhance a student's academic journey in higher education in South Africa.

From the findings, the combined benefits of Turnitin as a tool for electronic submission, marking, and feedback are that it improves cognitive skills, understanding of plagiarism, improves writing skills, improves referencing skills, and it is a reliable tool.

According to the findings, the benefits of Turnitin as an electronic submission tool were identified as accessibility and convenience. The identified benefit of Turnitin as a marking tool was its preference for viewing grades. The identified benefit of Turnitin as a feedback tool was its provision of a clear originality report. The second objective of the study was aimed at identifying the disadvantages of Turnitin as an electronic submission, marking, and feedback tool for students. According to the findings, it was evident that the disadvantages of Turnitin as an electronic submission tool were issues with file upload size, negative marking for no feedback, and loss of work after submission. The identified disadvantages of Turnitin as a marking tool were not present.

The identified disadvantages of Turnitin as a feedback tool were affected by marking for no feedback and identifying false positives. The third research objective was aimed at identifying the effectiveness of Turnitin tools used for lecturer feedback. From the findings, it was evident that the lecturer's feedback tools were ineffective.

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