PLAGIARISM DETECTION SERVICES FOR FORMATIVE FEEDBACK
AND ASSESSMENT: EXAMPLE OF TURNITIN

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Abstract

The Internet has drastically changed the way we do and handle everything. Student homework is no exception, especially in higher education. As a result of easy access to information, copy-paste and plagiarism have become widespread behaviors among students even when they submit graded homework in the university level. As a response to this ethical evil, plagiarism tracking services like Turnitin have been released and welcomed by university professors. However, it cannot be said that the potential of such services has been fully realized by university teachers. The aim of the present study is to introduce Turnitin as a tool not just to detect and deter plagiarism but also to provide formative feedback and assessment which is of utmost importance in learning. It is believed that when Turnitin is used as a means of formative assessment, it will not only deter plagiarism but will also enhance student learning which will lead to more quality student work.

Keywords: Turnitin, formative feedback, formative assessment.

INTRODUCTION

Technology is both a savior and a troublemaker. Whenever a technology is invented, it is intended to make lives easier, yet it also brings unforeseen or unanticipated problems. The Internet is just one of those inventions. The Internet has drastically changed the way we do and handle everything. Student homework is no exception, especially in higher education. As a result of easy access to information, copy-paste and plagiarism have become widespread behaviors among students even when they submit graded homework in the university level. As a response to this ethical evil, plagiarism tracking services like Turnitin have been released and welcomed by university professors. However, it cannot be said that the potential of such services has been fully realized by university teachers. The aim of the present study is to introduce Turnitin as a tool not just to detect and deter plagiarism but also to provide formative feedback and assessment which is of utmost importance in learning. It is believed that when Turnitin is used as a means of formative assessment, it will not only deter plagiarism but will also enhance student learning which will lead to more quality student work.

FORMATIVE FEEDBACK AND ASSESSMENT

The significance of feedback in enhancing learning and improving student performance has long been established in education (Bandura, 1991; Bandura & Cervone, 1983). Shute (2007: 6-7) has grouped the benefits of formative feedback as following:

- It can point at a discrepancy between the current performance and desired performance,
- It can lower the cognitive load,
- It can "provide information that may be useful for correcting inappropriate task strategies, procedural errors, or misconceptions".

Formative assessment is an assessment that that aligns with Vygotsky's (1978) "zone o proximal development" whereby students are assisted by a more informed person during the process of learning and development. The student performance is evaluated and feedback is provided for the present work so that the student can improve his/her performance. There are two types of formative assessment:

- Informal formative assessment
- Formal formative assessment

Informal formative assessment is any type of feedback that the student receives during learning. According to Yorke (2003), this type of formative feedback that the student receives may be given any time, even spontaneously, by anyone. Formal formative assessment is the assessment that is made as a part of predetermined curricular activity (Yorke, 2003).

Students can be assisted in their learning process with the use of formative feedback and assessment. With the introduction of online tools, it has become easier to provide immediate and instant feedback to student assignments. Learning Management Systems (LMS) are among the most widely used systems that are used to provide feedback for student papers and assess their performance. Some other teachers expect students to send their assignments via e-mail and provide feedback through the electronic mail channel (Turnitin, 2016:4). This paper investigates how Turnitin can be used as a system to provide formative feedback.

LITERATURE REVIEW

In this section a review of literature about research on the use of plagiarism detection services, including Turnitin, for formative assessment and feedback is made.

Davis (2007) used Turnitin to provide feedback on student work to reduce plagiarism. The first drafts were uploaded to Turnitin, and a one-to-one feedback session which will not count towards the total grade was conducted. The students were given information on their matches and later were asked to rewrite the draft for a second time in a four week period. The originality reports of the first and final draft were then compared by the instructor and a questionnaire was administered to identify student views on the use of Turnitin. The results yielded that the students seemed to plagiarize less after the feedback on Turnitin. Besides, the students reported that the Turnitin and the feedback they received helped them to learn more about proper citation, avoiding overreliance on some sources, proper paraphrasing.

Davis and Carroll (2009) conducted a longitudinal study during the years 2007-2008-2009 with 66 students who attend a one-year pre-Master's diploma writing course. After a six-weeks of instruction, each group were expected to submit their first draft on Turnitin, and each student was given a 15 minute o tutorial in which the instructor gave feedback on the work with the help of originality reports on Turnitin The students, were then expected to revise and submit their final version to Turnitin. The researchers compared the results of both versions of the same work. The results revealed reduction in the amount of plagiarism, over-reliance on one source, citation errors and insufficient paraphrasing.

Rolfe (2011) investigated the use of Turnitin as a means of instant feedback formatively. A group of 76 students were given training on how to use and interpret the originality reports on Turnitin. Following the training, they were expected to submit their drafts on Turnitin and evaluate their originality reports. They were then expected to upload the revised version. Though the use of Turnitin did not significantly reduce plagiarism, the results of the student questionnaires conducted after the application yielded that the students benefited from the formative feedback they received.

Allen and Bentley (2012) compared typed comments and audio feedback features of Turnitin. The researchers found that in time, the instructor efficiency increased in both types of feedback, yet concluded that audio feedback took less time to give. The researcher then investigated views of 66 students on the use of both techniques. While students stated that both types of feedback were effective, they showed slightly higher preference for typed feedback.

Betts, Bostock, Elder and Trueman (2012) used Turnitin to check whether it would formatively contribute to reduction of plagiarism in student work or not. 116 freshmen in psychology department were expected to submit a laboratory report on a course on research methods and statistics. 71 of the students participated in an online evaluation which was followed by an online questionnaire measuring their satisfaction and transferable skills. It was reported that most of the students found Turnitin helpful in improving their academic writing by increasing consciousness on plagiarism.

Prescott (2012) investigated how Turnitin can be used formatively in a supportive way to teach avoiding plagiarism, student views on plagiarism and how teachers used the Turnitin. Participants were a multicultural group of high school students and their teachers. Data were collected through questionnaire, opinion pool, focus group and semi-structured interviews. The results yielded that students had varying views on plagiarism and cheating, yet they believed Turnitin contributed to their writing. They also indicated a desire for face to face feedback.

Buckley and Cowap (2013) investigated staff perceptions and experiences of using Turnitin for formative feedback. 11 staff members were given training on the use of originality report and grademark and then focus group interviews were conducted. The participants responded to the use of originality reports very positively whereas they had difficulties in online marking.

Khoza (2015) investigated whether Turnitin would deter students from plagiarizing or not. The participants of the study were six Grade 12 highschool teachers. The teachers were expected to use Turnitin s a part of their Learning Management System and were then asked to evaluate their experiences. The participants reported that the service was very effective in scaring students out of plagiarism.

In their survey 900 students, Turnitin (2016) found that there is a discrepancy between what they expect from feedback and what they receive as feedback from their teachers. Most of the feedback that the students receive on Turnitin are reported as grammar and citation feedback whereas they reported feedback on their thesis and development as the most valuable.

As can be seen from the literature, the research on Turnitin primarily deals with its use for detecting and deterring plagiarism. There is just limited research on the use of Turnitin for formative feedback, especially given on the content and development of student performance. This can be evaluated as a lack of understanding of the potential of Turnitin. Therefore, this paper aims to introduce several components of Turnitin that can be helpful in providing formative feedback and assessment.

TURNITIN

Turnitin is a web-based plagiarism detection software which was founded by four UC Berkeley students as a peer review application in 1998, and in 2000 the application introduced plagiarism prevention service (Turnitin, 2015b). It is now used by 15,000 institutions and 30 million students (Turnitin, 2015a), and is one of the most frequently used plagiarism tracking software worldwide. It is used in 140 countries (Turnitin, 2016).

Turnitin generates originality reports on submitted work that shows matches between submitted work and the works that are stored in its database, the internet sources, periodicals etc. The system uses color-codes to rate the percentage of the similarity index, and demonstrates which part of the sumitted work matches with another work. It also links to the work that was plagiarized from in a pop up page.

The literature on Turnitin reveals that in most cases the originality report generated by Turnitin is used as a means of formative feedback and assessment. However, originality reports just report the percentage of plagiarism in a submitted work and do not provide feedback on the content, organization and other aspects of the student work. With its 4 different types of assignments and different services for giving feedback, Turnitin can be used as a tool to improve student learning.

TYPES OF ASSIGNMENTS ON TURNITIN AND HOW THEY CAN BE USED FOR FORMATIVE FEEDBACK

There are four types of assignments that can be given on Turnitin; and each of these assignments can be used for formative feedback and assessment:
1. Paper assignment
2. Peermark Assignment
3. Revision Assignment
4. Reflection Assignment

Paper Assignment

The first and the most essential type of feedback on Turnitin can be given on the paper assignment. Once the instructor creates a paper assignment, each enrolled student uploads his/her work to the set assignment until the announced due date. In paper assignment, the learners can upload the following types of files (Submitting a Paper, 2016):

- Microsoft Word® (.doc/.docx)
- OpenOffice Text (.odt)
- WordPerfect® (.wpd)
- PostScript (.ps/.eps)
- HTML
- Hangul Word Processor file (.hwp)
- Rich text format (.rtf)
- Plain text (.txt)
- Google Docs via Google Drive™
- Adobe® PDF
- Microsoft PowerPoint® (.pptx, .ppt, .ppsx, and .pps)
- Microsoft Excel® (.xls and .xlsx)

The variety in the file format allows instructors to expect students to submit various kinds of assignments for different purposes. However, it should not be forgotten that Turnitin converts these documents to pdf, and especially the animations on powerpoint slides disappear and the slides can be viewed statically. Nevertheless, this does not deter teachers from providing feedback. The instructor can give feedback on all of those types of files although Turnitin does not guarantee generating originality reports on all of them.

After the due date, the instructor can use the grademark function to provide detailed feedback. Grademark function provides two types of feedback:

- Voice feedback
- Written feedback

Voice feedback can be given by the voice comment function and can be accessed from the menu bar of the grademark, and it allows for three minutes of recording. If the instructor has too many students or has very limited time to provide detailed feedback on each student work, voice comment is a practical tool. Although it does not allow to select a specific part of the student work to give feedback on, it is an easy-to-use and a time-saving device to provide overall feedback.

The second type of feedback that can be given on Turnitin is written feedback. It is possible to give two types of written feedback on Turnitin. One of them can be accessed from the same menu with voice comment. Instead of recording their voice, the instructors can type their overall comments. The system allows up to 5000 characters including spaces. Though 5000 characters may not be enough for detailed feedback, text comment like the voice comment, is very practical in the abundance of students and absence of time required for detailed feedback.

The optimal use of Turnitin for effective formative feedback and assessment however comes with the "quickmarks" menu. Quickmarks are preset comments that are default on the Turnitin. The readily available comments are categorized as "composition", "composition marks", "format", "punctuation" and "usage". Each comment under these headings can be saved to the "commonly used" category which allows for the customization of the service. The instructor can select a text and click one of the quickmarks to provide feedback. These quickmarks can also be used as drag-and-drop tools if the instructor does not feel it necessary to select text. These readily available comments are mostly about the mechanics, organization and the format of a composition and can be very helpful and time-saving for the instructors as each comment is accompanied by an explanation about the mistake that the student makes. Nevertheless, they do not deal specifically with the student paper and the content. As reported by the Turnitin (2016) students value feedback on the content of their paper most.

It is possible to add instructor's own comment directly on the student work. The lengthy comments and the comments that are specific to the student work can be written in two ways:

- Bubble comments
- Text comment

Bubble comments allow the users to select text from the student work and type comments on the speech bubble. Once the comment is typed, the instructor can save this on the student paper and the bubble shrinks. The student then clicks on the speech bubble to see the comments. Furthermore, if the instructor believes that the comment s/he makes is a comment that is likely to be made for other students' work, s/he can save this comment to the quickmarks menu for future use. Especially when the feedback is not about the writing conventions but about the content or when the comment that is to be made is long, bubble comments are handy to ponder questions, stimulate thought and provide guidance. All of the comments that are hidden in the speech bubbles are also listed at the end of the printed originality report of Turnitin to allow students to see their overall performance. What makes bubble comments especially helpful for formative feedback is the color-coding option. When selecting the text to give feedback, the bubble comments highlight the text. Turnitin allows five different colors to highlight the text, which allows the instructor to provide feedback on different aspects of the student work. If the instructor informs the students about the system used in the color-coding process, the students can follow the comments systematically, and if this system is sustained for the following assignments, students can have an overall idea about their progress in different aspects of the learning process. The last type of written feedback that can be provided on Turnitin is the "text comment" under the "quickmarks" menu. Unlike the bubble comments that hide the comment in a speech bubble, text comments directly appear on the page with italicized blue fonts which is very much like writing on physical student papers. Although text comments can be helpful for making students to view both their work and the instructor comment at the same time, when these comments are very long, they overcrowd the page and it may not be very reader-friendly. As such, these comments should be used sparingly.

Peermark Assignment
Peer feedback and peer assessment have already proven to be of benefit for active learning when used formatively (Topping, 2010). While giving feedback to eachother, the students not only evaluate their peer's work, but they also reflect on their own performance as it is possible for students to make the same mistakes or have similar strengths. Peer-feedback is also a valuable technique especially in large classes where students get limited chance for detailed feedback from the instructor (George-Walker & Keeffe, 2010; Snowball and Mosterd, 2013).

The peermark function of Turnitin is significantly flexible in that it allows various combinations of peer feedback. The peermark assignment is created in three steps allowing the instructors to customize each assignment. In the first step, once the instructor chooses the assignment to be given feedback on, s/he can give a point value if the grades are going to be collected on the gradebook, and there is an option to grant full points if the review is written. In the options of this step, the instructor can allow students to read all submitted papers by their peers after the start date of the assignment. If the instructor does not want the students to see all papers until the post date which is the date that the students can se the comments on their work, the instructor then can allow students to read all papers as well as reviews after the post date.

The second step involves the distribution of the student papers. Here the teacher may allow Turnitin to distribute the student papers. It allows to assign more than one paper per student. If the instructor does not want Turnitin to randomly assign student work, s/he can pair the students manually. The instructor can also exclude some students from the review assignment. For instance, the students who did not submit their work can be excluded from the list. The instructor can also expect students to review their own papers.

The final step of the peer-review assignment is labeled as questions. This menu is especially helpful in guiding the students in their review of their peer's work. The instructor creates questions related to the assignment which can be regarded as criteria upon which the students will base their reviews on. There are two types of responses that the instructors can expect here. In the first one, the instructor asks questions and expects students to write their free responses. In order to ensure that the students give thoughtful feedback to each

other, the instructor can set the minimum number of words that should be used. The second type of question calls for scales from 1 to 5. The teacher also label the question to guide the students. If the instructor finds it difficult to create questions or label them, there is a sample library in the same menu which provides examples. These samples can be added to the assignment one by one or all together. Nevertheless, the questions in the sample library are generally questions that are about composition conventions and paper assignments. Thus, especially for works other than composition type of assignments, sample library may not be used very effectively. Still they can be used as a guide by the instructors to formulate their own questions. Scale questions can be especially practical when the students are expected to review more than one paper. This tye of review can also help learners to work with rubrics.

Revision Assignment

Mezirow (1990: 1) defines learning as "the process of making a new or revised interpretation of the meaning of an experience, which guides subsequent understanding, appreciation, and action" . Revision is especially a very significant part of written assignments. It enables the writers to rethink, evaluate and make judgments about their writing (Smalley, Ruetten & Kozyrev, 2001). In order to enable students to go through these steps, instructors can create revision assignments on Turnitin and improve their work. Because the revised version is expected to be an improved version of the first draft, it naturally is a partial replica of the first work that is submitted. In order to avoid matches with the first draft, instructors should create revision assignment on Turnitin so that it does not match the same or similar parts with the first draft since Turnitin keeps the submitted works in its database. In this way, students can both revise and improve their writing based on the instructor or peer feedback and demonstrate this to their instructors.

Reflection Assignment

Reflection is defined as "a generic term for those intellectual and affective activities in which individuals engage to explore their experiences in order to lead to new understandings and appreciation." (Boud, Keogh, and Walker, 1985: 3). The new understanding developed by the student can be used formatively to shed a light on the future performances of the student. According to Mezirow (1990: 5), reflection may involve activities like "making inferences, generalizations, analogies, discriminations, and evaluations, as well as feeling, remembering, and solving problems, […] using beliefs to make an interpretation, to analyze, perform, discuss, or judge". These types of activities can enable learners to review their learning process and take control of their own learning which will eventually lead to autonomous learning.

After the paper, feedback and revision assignments, the instructors can create a reflection assignment and expect students to reflect on their own learning process. Like the other types of their assignments, the instructor can give specific instructions in the revision assignment optionally. Depending on the type or the focus of the assignment, the instructor can expect students to reflect on specific aspects of the assignment. The only thing that should be cautious about here is that Turnitin does not produce originality reports for reflection assignments.

OTHER FUNCTIONS OF TURNITIN FOR FORMATIVE FEEDBACK AND ASSESSMENT

Though Turnitin is generally perceived as a plagiarism detection service, it does a lot more than that. As discussed above, various types of assignments and feedback are just two of them. The two other functions of Turnitin can also be used for formative feedback and assessment:
- Discussion
- Gradebook

Discussion on Turnitin

Peer to peer learning can be done in different ways. Asynchronous discussions have long been used in online learning environments to contribute to active and social learning. Vonderwell, Liang and Alderman (2007) found that "asynchronous online discussions facilitate a multidimensional process of assessment demonstrated in the aspects of structure, self-regulatory activities, learner autonomy, learning community and student writing skills". As such, asynchronous discussions can be used as a part of formative feedback assessment.

The discussion board of Turnitin can be used for this purpose as a part of the assignments or the topic of the week. The instructor can post a discussion topic with a start and end date. It is possible to make a description of the discussion topic or make explanations about the instructor expectations. One of the most appealing features of the Turnitin is its moderator options. Instructors can choose a student to moderate the discussion, heave the discussion unmoderated or moderate the discussions themselves. Making students moderators of the discussion not only can enable them to critically review the topic of discussion but can give the responsibility of the learning process. Besides these, the instructors can enable anonymous replies or not.

Gradebook

The gradebook of Turnitin is a very handy tool with many functions. To begin with the grading system, it is possible to grade student work in four different ways on Turnitin. The first one of them is grading over 100 points. The other option is grading with letters (A+,A,A-, B+,B,B-, C+,C,C-, D+,D,D-,F). The system allows users to set the intervals for each letter grade which allows customization for different institutions with a different grading system. In addition to letter grades, it is possible to grade student work on a 4.0 scale. Again, it is possible to determine the intervals for each scale. Last, the system allows users to create their own scales.

Once the grading system is determined, the instructor can assign points for each assignment s/he creates so that the learners can monitor their grades for each assignment. When the instructor enters the grades on the gradebook, the system automatically calculates the weight of each assignment on the total grade. The system also produces line graphs or pie charts that show the performance of students for each assignment or all assignments together. These graphs can be created as graphs of percentage or grades. Such a tabulation of class performance can be very valuable in providing teachers with an overall view of their classes. The online gradebook can also be downloaded as an excel file from the export option.

As can be seen from the options that the grading system of Turnitin allows, both the students and teachers can monitor student progress on Turnitin. It is also possible to keep attendance on the gradebook and count it as a part of the overall performance of the student.

CONCLUSION

Turnitin which is widely used to prevent plagiarism is a very practical tool for formative feedback and assessment with its various types of assignment options, feedback and other services like discussion board and the gradebook. With all its components, it is very much like a Learning Management System (LMS) except that it does not have the option to upload course content. In this sense, it enables instructors to manage student assignments from a single place which saves time and space. Moreover, students can monitor their own progress, help each other in the learning process and even discuss with their peers. Turnitin can also be integrated in LMSs (Learning Tools Interoperability -LTI, 2016).

Recommendations
- In order to test the effectiveness and efficiency of Turnitin for formative feedback and assessment for learning other than checking and deterring plagiarism, empirical studies can be made.
- Teachers can be given trainings on the use of Turnitin to fully benefit from its potential.
- Students can be given trainings on the use of Turnitin to benefit from their learning experiences optimally.

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