

PERCEPTIONS OF STUDENTS CONDUCTING PEER REVIEW USING CLOUD-BASED SOFTWARE

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Abstract

This study looks at the change in perception regarding the effect of peer feedback on writing skills using cloud-based software. Pre- and post-surveys were given. The students peer reviewed drafts of five sections of scientific reports using Google Docs. While students reported that they did not perceive their writing ability improved by being peer reviewers, they observed that having others peer review their work did improve their writing. They also indicated that they preferred to use cloud-based tools to paper, and their comfort level sharing their personal information increased. Future studies should involve digital literacy pedagogies to improve collaborative writing skills.

Introduction

Research shows that having 21st-century skills is necessary in the global shift to a knowledge-based society (Premier's Technology Council, 2010). Learning how to work collaboratively, asynchronously and synchronously with technology is a part of this skill base (Yim, Warschauer, Zheng, & Lawrence, 2014). Although little research has been done on best practices for incorporating new "Technological Literacy" and "Collaboration and Teamwork" as well as "Critical Thinking" (Premier's Technology Council, 2010, p.1), pedagogies need to be developed to keep up with the changing societal needs. Past research on literacies using web design indicate that cooperative learning is *de facto* the major approach for teaching theories (Liu, Lin, Chin, & Yuan, 2001). Warschauer and Ware (2008) report that the writing process is even more collaborative, iterative and social than in past times.

Today's digital literacies include using cloud-based software to facilitate writing exchanges among students (Warschauer, 2011). A variety of choices exist for these collaborative writers as they brainstorm, edit, comment, and publish their work using programs such as iCloud, OneDrive, or Google Docs, to name a few. With the use of online tools, students must be taught how to give effective feedback if they are to provide feedback to peers so that both parties can benefit from the collaborative approach of peer review (Zheng, Warschauer, & Farkas, 2013). However, some risk may exist that students could copy each other as a byproduct of peer reviewing an assignment that is done with other teams and not the team with which they are working. Many researchers such as Kao (2013) have had positive results for such kinds of peer assessments, though they have not looked at incorporating feedback using online environments (Liu et al., 2001).

Furthermore, students must be made aware of privacy issues as they embrace new realms of online educational tools (Freedom of Information and Protection of Privacy Act, 2016). A full understanding of privacy also affects their choices of how to securely present themselves as writers in online environments. Before students become writers and peer reviewers and post their writing online, explicit instructions on how to give feedback can level the playing field for both non-native speaking and native-speaking

partners (Yim et al., 2014; Ellis, 2008; Myhill & Jones 2007). All writers, native speaking, and non-native speaking can benefit from getting peer review. Learning how to give effective feedback can reduce the possibility of unintended plagiarism (Noel & Robert, 2004) that can happen when one student asks another student to peer review their writing, and another offers their advice. Going one step further where giving and receiving writing feedback that is anonymous online, can take peer review activities to a new level. However, using the technology to share coursework can bring up issues of plagiarism. (Freedom of Information and Protection of Privacy Act, 2016). As a result, students who are sharing their writing must agree not to copy another's work and fully understand where the nuances of plagiarism are. Therefore, reminding students of exactly what academic integrity entails (BCIT, n. d.) must be a part of the peer review process.

This paper will give background with documented research cases and references to support the hypothesis that participating in cloud-based collaborative writing activities will increase the positive attitudes towards peer review. Research questions addressed are as follows: Does participating in cloud-based, collaborative writing activities increase the percentage of students who agree that being peer reviewed, doing peer review, and using cloud-based software will improve their writing skills? Does participating in such activities change students' concerns about plagiarism? As best practices in these areas are developed and shared, cloud-based technologies can be used to their full potential (Yim et al., 2014).

Methods

Study Context

The research sites were two classrooms (called "labs") of students in the Fish, Wildlife, and Recreation Diploma Program in Renewable Resources of the Construction and Environment Department at BCIT. The 33 (16+17) adult students take four terms of Technical Communication courses during their two-year diploma program. For this study the students were in their second term of studies in winter 2016 focusing on the writing of a scientific report. At the end of the second term, students were required to write a reflection on how their communication skills had evolved since the first term. Within this group of students, one was "international," two were non-native speakers, and 30 were local students. Each student had their own laptop. Many of the students held a bachelor's degree. Due to the BCIT's requirement for Ethics Approval by the Research Ethics Board (REB) at BCIT, specific forms were required to be collected and distributed to conduct this action research project. These documents listed below correspond to the REB requirements at BCIT.

Consent for Action Research Participation

First, the students were given a Consent for Action Research Participation document outlining what would happen over the 12 weeks and outlining their participation in peer review activities, specifically writing an Introduction, Methods and Study Site, Results, Discussion, and Abstract sections of a scientific report. In the consent form, the students were informed of the following risks and benefits of participating including several opportunities for opting out. Topics covered included:

- feeling that the teacher is in a position of power and students not having an option to opt out
- privacy concerns: recommendation was to create a new account with no identifying info

- feeling they would be judged on their writing samples: the risk being circumvented through anonymity
- becoming better writers by seeing the writing of others and having their work edited
- benefitting because they had seen at least two other versions of the same assignment
- being a part of a stronger, more supportive cohort because of receiving balanced feedback

Students were able to opt out but still do peer review activities during the class. They were also given an explanation of privacy with another handout called the Student User Agreement form.

Student User Agreement Form (available at tinyurl.com/StudentUserAgreement)

The Student User Agreement form was a standardized form that Cynthia Kent, BCIT Associate Director of Privacy, Records Management, and Copyright had given to the principal researcher. The intent was that the students be informed on the privacy issues of using cloud-based software, in particular, Google Docs, which they were asked to use for their anonymous peer review activities; the form also covered consequences of not conducting oneself according to the Institute policies.

Providing Feedback with HOC and LOC Forms (available at <http://uwp.duke.edu/wstudio>)

For students to avoid plagiarism they need to be explicitly taught strategies for giving and asking for feedback from peers (Warschauer, 2011). To ensure students were avoiding plagiarism during peer reviews, the students were reminded of an excerpt from BCIT's Academic Integrity Policy that "Cheating, in part, is preparing work, in whole or in part, with the expectation that this work will be submitted by another student for appraisal" (BCIT, n. d., p.3). Since the ever-increasing demands of the workforce will require many kinds of collaborative writing tasks, the Higher Order Concerns (HOCs) and Lower Order Concerns (LOCs) from Duke U. (n. d.) were explicitly taught. With this leveled-playing field all the writers in the cohort could offer peer review in the same fashion without rewriting a colleague's draft. The methodologies were also advocated by Guasch, Espasa, Alvarez, and Kirschner (2013) who have coined two terms corresponding to the Duke U. styles of feedback: *epistemic and suggestive* (HOCs) and *corrective* (LOCs). Tseng and Tsai (2007, p. 1169) have also added the category of *reinforcing* (giving positive comments which address positive feelings and recognition and building community). A summary of the same handout from Duke University (n. d.) they had been given in autumn 2015 was re-distributed.

Perceptions Survey (available at <http://tinyurl.com/PerceptionsonPeerReviewSurvey>)

To get a baseline understanding of the students' perceptions before the action research began, students were given the survey so they could record their perceptions of the peer review concept, the use of cloud-based software, and plagiarism. Seven statements covered topics such as whether they thought they and their peers were capable of doing peer review, whether cloud-based applications had value, and whether they felt concerned that their shared work could be plagiarized if the documents were shared amongst their peers. The same survey was given out at the end of the study to see which, if any, of their perceptions had changed. All students present were given the opportunity to add clarifications or subjective comments and the Likert-based scale used

was as follows: Strongly Agree, Agree, Disagree, No Opinion, and It Depends. For “It Depends,” anecdotal comments were possible. For analysis during the results stage, data in the Strongly Agree and Agree categories were combined and compared to responses in the Disagree category.

Statistical Analysis. The distribution of students agreeing and disagreeing with the statements before and after peer review activities was compared using a χ^2 test of independence whenever possible. When the requirements of the χ^2 test were not met, a permutation χ^2 test was used to obtain approximate P – values.

Request for Ethical Review/TCPS Tutorial (Certification) (Government of Canada, n. d.)

Part of the Ethical Review process at BCIT also includes completing a course in Research Ethics offered by the Government of Canada. Documentation of the completion of the course was attached to the ethics application. The researcher received a Certificate of Ethics (Government of Canada, n. d.).

Anonymous Peer Review

Once all of the forms had been distributed and signed, the peer review process took place for each section of the scientific report that the students wrote. As was set up by Liu et al. (2001), the cloud-based peer review system acted as an information distribution channel, a medium for peer interaction and knowledge construction, and as a storage centre which was emptied out at the end of the data collection. The following procedure describes the anonymous peer review process:

1. Participating students copied and pasted their writing sample to an anonymous Google Doc corresponding to a customized “TinyURL” link. The students would log out of their account once they had set up a “Share” link for another student to access the writing sample. The students selected “edit” or “comment” not “view” when setting up their shareable Google Docs, so the peer reviewer could type in their anonymous feedback.
2. Each student was given a checklist of the assignment rubric and space for a “compliment sandwich,” i.e., what was done well, what trends for improvement were noticed, and a final strength or encouragement phrase. This feedback system would provide data for the *reinforcing* observations, the HOCs, and LOCs they had trained on. On the checklist students recorded their TinyURL so other students could access their writing sample online. No identifying information was included.
3. Their papers with the TinyURL link were placed on a table at the front of the class.
4. The TinyURL was also provided to the instructor so she could analyze the peer feedback.
5. Students randomly took one of the papers and navigated on their laptops to the TinyURL to the anonymous Google Doc site that corresponded to the one marked on the paper.
6. Students gave anonymous reinforcing and HOC and LOC feedback on the original document and then exited the document *without logging into their Google Account*. Students also used the assignment rubric to give content and style-related feedback. When necessary, students spent the first hour typing a draft for sharing, then proceeded with the anonymous peer review process as described above.

- The process from Step 3 above was repeated so each student would get feedback from two peers for each draft.

Note: If a student had not brought a writing sample to share, they were either paired with another student, or they would work on the section of the scientific report they had not yet completed.

Results

Thirty-three students responded to the pre-survey statements on February 3, 2016. Twenty-nine students responded to the post-survey statements on April 13, and 14, 2016; the number was lower in April due to four students being absent from class when the post-survey was distributed.

Of the seven responses to the pre- and post-survey statements, most students agreed with statements 1-4, with no significant change. The results for all statements are given in Table 1.

Table 1. *Comparison of Results for Survey Part I and Part II*

Statement	Before		After		Increase In Percentage Who Agree	P
	Strongly Agree or Agree	Disagree	Strongly Agree or Agree	Disagree		
1	30	0	25	0	0.00%	not applicable
2	27	1	25	2	-3.84%	0.61*
3	30	0	25	1	-3.85%	0.46*
4	30	0	27	0	0.00%	not applicable
5a	8	12	17	3	45.00%	< 0.01
6	27	0	25	6	-19.35%	0.03*
7	7	18	8	12	12.00%	0.60

* Approximate P values obtained with a permutation χ^2 test.

Relevant anecdotal results taken from the “It Depends” column are included in italics below.

1. “A peer in my class is capable of doing a peer review of my writing.” *“The ability and commitment of each peer reviewer varied.”* and *“Peer review can help depending on the person who is editing it.”*

2. “Having an anonymous sample helps me to stay neutral with the feedback I give my peers.” *“It doesn’t matter to me [sic] if the sample is anonymous.”*

3. “Peer review will help me improve my learning (as opposed to editing myself).” *I will continue to practice my writing skills, [sic] and have my work peer read until my grammar usage is improved.”* and *“I believe peer-review [sic] edits given throughout my COMM course is [sic] an effective mechanism to get constructive feedback. I look forward to making use of this exercise whenever the opportunity presents itself.”* and *“Remembering to edit grammar mistakes and get feedback from others will allow me to maintain strong writing skills.”*

4. “Knowing how to do a peer review helps me focus my comments effectively.” No comments were given regarding how peer review training helped reduce plagiarism or build community.

Students were not consistently in agreement with statements 5-7.

5a. “Using a cloud-based software program like iCloud/OneDrive, Google Docs or Dropbox is better than seeing a sample on paper.” The percentage of students in agreement increased from 40% to 85% ($P < 0.01$). Although the shift was to prefer cloud-based software, two anecdotal comments were in support of paper-based samples: *“If they need immediate feedback, paper is better.”* and *“I prefer to do edits and mark up on a hard copy.”* On the other hand, anecdotes which supported the significant difference in perception were as follows: *“It’s much easier to share and be anonymous digitally.”* and *“It’s easier to read with a cloud-based sample.”* The results of questions 5b incorporating **“comfort level of sharing personal information in cloud-based programs”** increased from 53% to 78% and 66% to 86% respectively for iCloud and OneDrive specifically; Google Docs and Dropbox did not change.

As for privacy perceptions of cloud-based software use, anecdotal comments are as follows: *“It depends on what kind of personal information is being shared.”* Two students stipulated the difference between where their comfort level lay: *“...depends on what personal info is shared.”* and *“...depends on the type and sensitivity of info; I’m okay with name and email in general location, maybe not deeper than that.”*

6. “My writing improves by reviewing peer samples.” In the first survey, students expected that *being* a peer reviewer would improve their writing. However, after the peer review activity, only 80% of students agreed with this statement. This difference is significant ($P = 0.03$). No anecdotal comments were made about this statement.

7. “I am concerned about others copying my work when I share my writing with peers.” The percentage of students in agreement changed from 28% to 40% for statement 7. Students became more concerned that plagiarism would be a factor in the sharing of their work, but the change was not statistically significant ($P = 0.60$). One anecdotal comment *“It’s hard to visualize your own way to do things after reading someone else’s work.”* indicates that a student had an awareness of plagiarism, but whether the student plagiarized or not is unknown. Results show that by the post-survey, students concern that plagiarism could occur increased.

Peer Review Results Out of the potential 33 students for each part of the project were 15 samples of Introduction, 9 Methods, 7 Results, 7 Discussions, and 4 Abstracts. During the writing of the Discussion and Abstract sessions, due to Wi-Fi problems, 4 students were not able to upload their drafts of the Discussion and the Abstract to Google Docs, so laptops were exchanged instead of putting information in the cloud; anonymity was compromised.

Of all the feedback that was uploaded to Google Docs, only the following data was collected Introduction: 12; Methods: 7; Results: 5; Discussion: 3; Abstract: 5. Of those 32 writing samples, the kinds of feedback were analyzed: Reinforcing comments: 59, Epistemic and Suggestive (HOC) comments: 41; Corrective comments (LOC): 101. A possible explanation for the number of writing samples that differed from the number of students may be made clearer from comments students wrote: *“falling short in the last*

week when the amount of due dates piled up” and “having problems in the past with procrastinating large assignments.”

Unexpected Results – Teamwork While it was surprising to this researcher that sensitivity for the team was mentioned in the year-end reflection comments, according to the research, collaboration has been noted as a *de facto* result of using online tools (Warschauer & Ware, 2008). Creating supportive environments for students to feel safe to share their writing samples despite their perception of whether they are good writers or not can be helped with the anonymous process set up in this study. When a peer praised the ability of a less-than-confident student, they were markedly encouraged by the praise.

In other cases, students commented that at times, when the sample numbers were small, the anonymity of the data was not possible. Moreover, when the students were asked if they felt penalized for having to do peer review instead of preparing for a huge exam taking place the following hour, like some of their peers who had not brought a writing sample, they stated, *“No! We want to see the others’ work and get feedback!”*

Other comments regarding teamwork included things like *“It also created a teamwork environment, where everyone was giving each other feedback and tips on how to improve in areas where one had more difficulties. We seemed to be sharing ideas more and reflecting on how we did things properly or how things went wrong.”* and *“For most of [sic] peer review sessions I worked with a partner. Thus, I’ve learned that when working with someone else, one has to be mindful of another’s perspective, or another opinion which is imperative for improving teamwork skills. However, I believe the best way to improve one’s current skill set is to reflect on those skills, and identify what one needs to do to achieve improvement.”*

Discussion

As digital natives, students today think and process information fundamentally differently from their digital immigrant predecessors (Prensky, 2001). The students in this study were open to using cloud-based tools to share their writing samples and transferred this preferred use of medium to their other “out of school literacies” (Warschauer & Ware, 2008, p. 234). Students became more comfortable using cloud-based software for their classroom activities and hopefully transferred their use into activities in other courses where the sharing of files and ideas was required.

Research on technology and literacy is intertwined with culture and society (Warschauer & Ware 2008). Millennials use and rely on technology to socialize and build their identities with little regard for the implications of sharing personal information. In the consent form, students had “personal information” defined for them so they would understand what kind of information they would be sharing in the cloud by having a Google account. The students were curious to know what constituted “personal information,” but once the term was explained, students agreed to use Google Docs and most students agreed to participate in the study. Later when the data from the survey was tabulated, results showed that students had become more comfortable with two cloud-based programs like iCloud and OneDrive compared with their pre-survey answers. In their anecdotal comments they said what they were sharing “depended” on whether they were concerned about privacy issues. For written reports, if the content was not personal in nature, students could agree more that using cloud-based software

programs was effective for peer review of their technical writing. By using cloud-based software to move them beyond their experiences with social media, students can eventually apply new literacy practices in the classroom and eventually the workplace.

For the sixth statement perhaps students were not able to appreciate other subtle changes that were happening regarding their writing skills when they did not see a connection between being a peer reviewer and its effect on their writing improvement. One student, who was able to clarify what “could have happened”: *“Speaking of peer editing, [sic] I think providing comments and suggestions on peers’ writing, editing also improved my writing by association. I made sure to double-check my writing by following the checklist.”* Furthermore, the overall sense was that feedback was positive and supportive, but the percentage of students in agreement shifted. Shifting from 100% to 80% although significant, 80% is still high. Perhaps other factors affected the change of agreement; one student commented that by *“doing peer review anonymously, the feedback cannot be discussed.”* Without anonymity, the HOCs and LOCs would possibly provide the opportunity to learn from the original writer. Two students indicated that sometimes some of the feedback was “wrong,” which benefits neither student without further discussion.

Having students think through why they perceived that *giving* feedback did not improve their writing skills could be an activity for future classroom follow-up. Moreover, also adding a second peer review of the changes made from the first peer review feedback would be another way to follow up on the effectiveness and perception of the peer review process.

By the end of 12 weeks, some of the students’ concerns about plagiarism increased. For the seventh statement in the survey one student candidly commented in the “It Depends” column that *“If someone copies my work, I guess they thought it was good.”* and *“Depending on who is reviewing and whether or not I think I have a unique perspective, (I would be concerned about others copying).”* The change in agreement was not significant, but an awareness of the situation was more heightened. Given that this is a group of well-educated students with good work ethics and an understanding of plagiarism, their concern was appropriately increased, but not to a significant degree. The level of community, trust, and respect amongst the cohort would have played a role in their not plagiarizing each others’ work as well.

While students felt the peer review process improved their learning in general, another explanation could be that they transferred their existing academic skills to the technical writing technique. This group of students, overall, were just strong writers. One student said, *“Coming into the program, I thought I was a pretty good writer. Obtaining a BA in [department] from UBC involved writing countless papers (and many sleepless nights). I honestly didn’t think there was much left for me to learn, or even improve upon in terms of my writing ability. However, I was wrong.”*

Many other good writers in the course were able to follow the rubric provided for the assignment and could tweak some of their HOC comments and see the benefit of getting peer review. Furthermore, adding reinforcing comments to the peer review feedback process was good for building a caring community, an essential requirement for collaborative writing as pointed out by Hull (2003), but only HOCs and LOCs truly build good writing skills *as long as the edits are made to the original copies*. Following

up on checking in on how or if students incorporated the suggested changes into their writing, would be advised.

The small number of writing samples that had been brought to class during the study may be due to time management and nothing to do with the perception of whether the students felt the peer review activities had merit or not. Students also expressed the impact of teamwork as a positive result of their peer review process. The answers to these findings are beyond the scope of the study, but could be followed up for future studies.

Not all feedback contributes to improving writing, but many researchers such as Guasch et al. (2013) and Tseng and Tsai (2007) have studied how to make the most effective peer review process. The research indicates that students appreciate feedback from the instructor *as well as* their peers. In this course students are invited to liaise with the teacher to get feedback, but this term only two students did so.

Limitations This study did not have a system to follow up as to whether the students incorporated the peer review feedback into their final drafts as other researchers did in their studies (Lui, Lin, Chiu, & Yuan, 2001). The students were expected to apply the suggested changes to their final drafts if they deemed them appropriate, correct, or helpful.

The number of contributions from the potentially 33 students for each part of the project was 15/33 Introductions, 9/33 Methods, 7/33 Results, 7/33 Discussions, and 4/33 Abstracts. While students offered their appreciation for the peer review process, the number of submissions was far below the expected number of documents for peer review affecting the ability for all participants to make informed comments on the process.

A student asked for a more “*streamlined process*” to be given to the anonymous peer review system. The system was, indeed, complex, but the creation of anonymous documents and feedback, overall, was not compromised.

A further limitation was that the students who responded to the survey were all in the same class, and so do not represent a random sample. The statistical analysis was performed as if the survey results were obtained from an independent random sample. Although the sample was not random, using such a sample for future research would be recommended.

These reported results may also possibly be biased. The survey included both Strongly Agree and Agree responses, but no category for Strongly Disagree was included with the Agree category. Furthermore, responses given as “It Depends” were omitted from the mathematical analysis, which may also have affected the results.

Conclusion

Participating in cloud-based, collaborative writing activities can increase the percentage of students who agree that doing peer review and using cloud-based software improves their writing skills. Students, however, still are aware that sharing coursework materials runs the risk of being plagiarized, but in this study, with this cohort, students were not overly concerned.

New pedagogies are being researched to add to peer review and cloud-based tools (Liu et al., 2001). In this 2016 study a positive correlation between the use and application of cloud-based software tools was found. The introduction of a cloud-based software tool extended to the students' incorporation of new technologies into their self-reported "out-of-school literacies" (Warschauer & Ware, 2008, p. 234) and their awareness of "sharing personal information."

As digital natives in the 21st century (Prensky, 2001), the students are open to innovations with technologies that help them communicate as students and also as collaborative members of the workforce and the field of research. Students can be quick and ready to take on new technology like cloud-based software. Furthermore, today's students need to be successful in the changing knowledge economy (Warschauer & Ware 2008). The students in this study, in particular because of their level or education or writing experience, perceived that they were not improving as peer reviewers, but they are connecting to a much larger set of skills which will take them into their collaborative writing careers and use of technology in the workplace to "expand educational, social and economic opportunities" (Warschauer & Ware, 2008, p. 227).

Regarding the peer review system for improving learning, had 33 samples been contributed to each of the peer review feedback sessions, the results may have been different regarding their perceptions of the impact of being a peer reviewer on writing improvement. Negative perceptions of improving writing skills as a peer reviewer could have been the reason why students did not end up bringing samples to class to review; this issue deserves further research and consideration to make definitive conclusions. Further consideration also needs to be given to the fact that no record was made as to whether students applied the suggested changes from their peers' feedback or not. Moreover, peer review is not to replace teacher evaluation, but systematic knowledge-building for the participants (Liu et al., 2001).

Although the change in student perception that their work could be copied was not significant, ensuring that clear expectations of campus policies for academic integrity and respect for the learning environment and acceptable use of technology are still crucial. This particular group may have felt their work would not be plagiarized. However, the potential for plagiarism exists for all students who do peer review activities on graded assignments. Depending on the group of students and their ethics can affect the outcome.

The surprising result that was not anticipated in the methodology was the students' appreciation for the teamwork experience. In their final reflections, students commented on the fact of how important it was to be "*mindful of another perspective*" which supports the "caring community" that Warschauer & Ware (2008, p. 225) suggest can be fostered by instructors being innovative and creative with their digital literacy pedagogies that go beyond reading and writing in the classroom (Kao, 2013). Cooperative learning is the standardized approach for worldwide web teaching theories, and while taken for granted by the researcher, we must be reminded how important teamwork is in achieving collaborative writing success (Liu et al., 2001).

This study has demonstrated that cloud-based software is an effective tool for digital natives who indicate they prefer the tool to paper-based peer review media. Students also reported that they transferred the comfort with Google Docs to other cloud-based

software for other “out of school literacies.” While students agreed less that being a peer reviewer improves their writing, their agreement about benefits of peer writing overall was still high – the students knew that being peer reviewed improves writing and learning. To address the finding that students did not see how being a peer reviewer could benefit their writing skills, in future, students can be asked in a reflection assignment about how being a peer reviewer may help them become a better writer. Metacognition activities can be presented to have students reflect more on whether being a peer reviewer can help or not. In the post-survey students indicated that their concern about plagiarism increased, which reminds us how important having discussions on the topic of what plagiarism is and how not to plagiarize when students are doing peer review activities.

Implications

As innovators or *early adopters* of technology, educators need to keep striving to adapt and find new ways to find best practices for uses of Information Computer Technology (ICT). Success in schools can stem from understanding the importance of the knowledge economy which helps to promote and expand 21st-century literacies (Guasch et al., 2013). Students who understand the benefits of peer review for the purpose of writing improvements can spend time when an instructor brings metacognition to the classroom to get students aware of both being a peer reviewer and doing peer review. To address students’ concerns about plagiarism, knowing what does and does not constitute as plagiarism must be taught. Perhaps peer review activities can be done with practice exercises instead of assignments that are worth marks. The process can be the same, but the assignments which are for higher stakes can be given feedback by the instructor instead of by peers.

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