







time consuming.” One student even indicated that she did not participate because she could not figure out where to go to access the content, and gave up. There were also comments that the videos were repetitive, not as interesting as it could be, and that in some cases the content overlapped with lectures.

## 5. Discussion

Overall, there were many similarities between the data collected and the data reported in the literature. In the present study, students indicated that they found access to the e-learning material, and specifically the video clips, to be helpful in their learning. This was similar to the results of Sutton-Brady, Scott, Taylor, Carabetta, and Clark [4], Jalali, Leddy, Gauthier, Sun, Hincke, Carnegie [6], Nicholson and Nicholson [13], and Luna and Cullen [5].

Students in this study reported that they liked increased learner control and the flexibility to access, start, and stop video as desired when using the streaming video clips/podcasts. This finding is similar to that of Jalali, Leddy, Gauthier, Sun, Hincke, and Carnegie [6] where students reported that they liked the self-paced learning. Sutton-Brady, Scott, Taylor, Carabetta, and Clark [4] also reported that students liked the flexibility of the podcasts to support their learning.

Many of the students in the present study also appreciated having access to learning material in a different mode for learning and reviewing. Fernandez, Simo, and Sallan [7] found that the use of podcasting allowed for a diverse range of student skills and learning styles. This was also evidenced by Cofield [12], who found that students indicated that the streaming video clips supported their attention and learning styles.

Several students in the present study indicated in their comments that in their perspective, their participation in online learning activities resulted in better grades. Video-watching was associated with better course grades in the study by Romanov [10]. Evans [11] also found that there was data to indicate that screencasts had a positive effect on student outcomes. This could be the result of the enhancement or clarification of the material in the streaming video clips/podcasts as evidenced in the data collected by Luna and Cullen [5].

Sutton-Brady, Scott, Taylor, Carabetta, and Clark [4] found that most of the students participating in their study used the podcasting in their traditional study space at home. In the present study, the majority of the students reported using a lap top to access the streaming video clips/podcasts rather than a desk top computer. However, it is not known if they were using their lap tops in their traditional study space in their homes, or if they were using the

lap tops as a mobile device. A minimal number of students in the present study reported downloading the streaming video clips/podcasts onto mobile devices such as an MP3 player despite the ease of using this type of device with this kind of content. It is surprising that with the access to podcasts that can be downloaded onto mobile devices, that so few students actually exercised this option. So many students in this age demographic almost live on their mobile devices, but it appears that using the mobile device for learning purposes is not something that they consider. Perhaps students do not want to use their mobile devices that they use for pleasure and socialization for academic learning activities. Perhaps students are not aware of their ability to download academic materials onto their personal devices. Direction and support in this regard might encourage students to use their mobile tools for learning purposes.

Not all students in this study chose to participate in the online learning enhancements and a number of students indicated that the streaming video clips/podcasts were not useful to their learning. This was similar to the results presented by Luna and Cullen [5] where 24% of the participants had a neutral response or negative response to the value of podcasts in their learning. There are likely students in every post-secondary classroom that are not interested in participating in “extra” activities to improve their learning, for whom the most direct track to course completion and grade is satisfactory. These may also be students who have well-rehearsed and effective learning strategies who do not require extra support.

Technical issues with student access to e-learning content appeared to be an issue for some students in the present study, even with a younger age demographic. Similar concerns were also expressed by Kukulska-Hulme, Foster-Jones, Jelfs, Mallett, and Holland [9], who reported technical issues, and difficulties with the quality of the video related to bandwidth. Computer literacy and student motivation and ability to problem solve technical difficulties should not be assumed. Many students have access to current educational technologies and have the skills to access and use online materials. Other students may have access to technology, but the technology may not be current and lack the memory capabilities, program updates, and bandwidth that make access seamless for students. There may also still be students whose computer literacy is still at a rudimentary level.

The time commitment for students was a significant issue in the perspective of a number of students in this study. Students may have concerns about the use of podcasting for repetitive or supplemental educational experiences as indicated in the study by Walls, Kucsera, Walker, Acee, McVaugh, and Robinson [2]. When using

supplemental streaming video clips/podcasts, it may be necessary to build time into the course schedule for students to access the content. Students may also need to see the direct link between the streaming video clips/podcasts to course objectives, assessment strategies, and feedback in order to be motivated to participate in e-learning activities.

## 6. Conclusion

The use of streaming video/podcasting in post-secondary environments offers considerable opportunities for teaching staff to develop engaging learning activities for students. Streaming video/podcasting offers students the opportunity to learn course content in different ways in their home environment, or on the move with mobile devices. There is a growing body of evidence in the literature to indicate that many students find streaming video/podcasts to be useful in their learning. They value the flexibility of these tools and the fact that the presentation of course content using these types of media does accommodate different learning styles and rates. There is also evidence that the use of these online learning enhancements can have an impact on student performance. However, there are a number of issues that need to be addressed when implementing these strategies. Students are concerned about the time commitment involved in using these tools, some students may lack access to the necessary computer technologies, and some students may still not have the computer literacy skills to access the materials in an effective and timely manner. Finally, although many students have indicated in this and other studies in the literature that they have benefitted from the use of streaming video/podcasting, there may be students who do not wish to engage in this kind of learning. These students may need to have the option to not participate, or may require additional encouragement to explore the learning options and opportunities these tools afford.

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