

Using digital learning technologies for back-on-track

[Science](#), [Computer Science](#)



Introductory Note

The aim of this report is to examine the use of digital learning technologies in the Back-on-Track study support program. The two short videos above have been included to set the scene for this discussion. The first video (UBC Wellbeing 2017) identifies key pedagogical issues that need to be addressed in supporting students, while the second video (Research Shorts 2016) highlights four foundational elements of the digital learning environment.

Contextual Background

The Swinburne Back-on-Track program is a semester-long series of workshops run by the Academic Development Advisor (ADA) team. The program is designed to support struggling students who have failed numerous units over consecutive semesters. These weekly workshops focus on helping students set goals and stay motivated throughout the semester (Schwartz 2018, pp. 1-2; Swinburne 2018).

While the Back-on-Track program is not an academic unit, it nevertheless has definite desired pedagogical outcomes (Gerstman 2017; Helberg 2018, p. 4). The sessions are conducted as face-to-face discussion groups, and to date there has been no real attempt to move the program into the digital learning environment (DLE). The following report will discuss the possibilities for using learning technologies to enhance the delivery and outcomes of Back-on-Track. After reviewing and analysing the few digital tools that have so far been used, I will consider two other technologies which may be more useful in achieving the intended outcomes of Back-on-Track, namely Trello

and online surveys. The SAMR Model (Puentedura 2014) will be used in evaluating each of these digital learning tools.

Review of Learning Technologies Currently Used

Currently, any use of digital tools in Back-on-Track is almost incidental. The aim has always been to get students physically into a room to engage in discussions in person. One issue, however, is that numerous students who should attend these sessions are not able to because of either having classes at the same time or being too far from campus. (For this reason Swinburne Online students are also not able to access the support program.) In an attempt to address this, I have used two very basic digital tools:

Email communication for student reflection, and

PowerPoint presentations (discussion slides) of the weekly sessions which can then be emailed to students unable to attend.

In this way, selected students have the option of participating in the program by means of viewing the discussion slides and then completing a weekly reflective email check-in (Appendix A). Any issues identified by the students can be followed up by phone, email or in person.

Critical Analysis Using the SAMR Model

Email is a very useful tool for inviting students to Back-on-Track (particularly when used with Mail Merge) and seems to yield quite good results in getting

students to attend. However, it has been less effective as a learning tool to enable students to participate in the program remotely.

When I originally invited several students to check in with me by weekly email, I had intended that this would be a basic ‘ Substitution’ enhancement as per the SAMR Model. For example, students who attended the sessions in person would discuss with the group their motivation levels and any time management issues they had in completing assessments. The group would reflect on this and give suggestions. I had hoped that the students who engaged through email would be able to comment on these same issues and that this self-reflection would bolster their motivation levels. In this case, the technology would be acting “ as a direct ... substitute [for the face-to-face discussion] with no functional change” to the activity (Puentedura 2014). For students who really took the weekly email check-in seriously, there even seemed to be a possibility of ‘ Augmentation’. Typing their reflections into an email message could potentially have been a “ functional improvement” (ibid.) over merely speaking about it with the group and not writing anything down.

While this switch from face-to-face group reflection to email self-reflection was certainly a substitution, it was ultimately not found to be an enhancement (compare Hamilton, Rosenberg & Akcaoglu 2016, p. 436). In fact, none of the students who participated by email continued to engage with the program throughout the semester, and it was clear that they needed the element of group interaction to properly achieve the pedagogical outcomes of the exercise. The Back-on-Track workshops are essentially

group-based learning tasks, and while these discussions can certainly “ take place ... in electronic learning platforms” (Kettunen, Kairisto-Mertanen & Pentillä 2013, p. 336), having students participate by email turned it into a less-effective individual learning activity.

On reflection, a discussion board may have been better as a group-based option, but I believe this would still be ineffective with the Back-on-Track cohort. Previously, these students were “ more often than not, disengaged from university life” (Schwartz 2018, p. 2), hence they would have needed a great deal of extra support to engage with a discussion board activity.

The use of PowerPoint presentations in my Back-on-Track sessions has been a more positive innovation. Students are already very familiar with PowerPoint as a digital presentation tool used heavily in learning and teaching contexts. Although the major learning in Back-on-Track occurs through group discussions, the addition of PowerPoint slides enables students to focus visually on key points related to the weekly themes.

In relation to the SAMR Model, the addition of PowerPoint presentations is a definite ‘ Augmentation’ to the sessions. Whereas in previous semesters we would just talk with occasional use of the whiteboard, weekly PowerPoint presentations have given the program greater structure. The technology “ acts as a direct tool substitute [for the whiteboard and marker], with functional improvement” (Puentedura 2014) in that visual content can be conveyed more quickly. I have especially used the slides to display pertinent problem-solving questions, and this visual aid helps to keep the group on

task during discussions. Another benefit is that the PowerPoint presentations are easy to distribute to students by email if they wish to review the content or if they could not attend the session.

Used in this way, regular emailed PowerPoint presentations almost function as a primitive form of learning management system (LMS) in that they distribute learning resources to the students and can be used as a basic tool for announcements (Colbran & Gilding 2013, p. 222). Nevertheless, this technology has still not pushed any of the Back-on-Track learning tasks to the 'Transformation' stages of the SAMR Model where the digital tool in itself allows for "significant task redesign" (Puentedura 2014). To achieve this, more sophisticated tools will be needed.

Exploring and Evaluating Additional Tools: Trello and SurveyMonkey

One of the desired learning outcomes for Back-on-Track is that students will be able to "create a weekly semester study plan and apply time-management principles to adhere to this plan across the semester" (Helberg 2018, p. 4). There is a considerable level of problem-solving involved in this as students are essentially required to 'project-manage' their semester. To achieve this outcome, students are given an A3 semester-calendar planner which they have to customize by filling out assessment dates and planned study periods to successfully complete these assessments. This calendar then becomes a working document that can be modified and added to throughout the semester.

In exploring digital alternatives to this exercise, I found Trello highly recommended as an online tool that can be used in a learning context. Described as “ a scheduling app and a project management tool rolled into one, which also sports a brilliantly designed user interface” (Bartee 2016), this technology has the potential to engage students. The interface is arranged as an online notice board where a timeline or ‘ to-do’ list can be created, and tasks can be arranged and ordered using drag-and-drop cards (Atlassian 2018; Minchew 2015, p. 168; Kaur 2018, p. 97). The app allows for group collaboration, hence the ADA facilitator and students would be able to communicate through the Trello notice board.

Measured against the SAMR Model, replacing the A3 hard-copy planner with an online Trello board would be an enhancement for the desired pedagogical outcomes. Applying time-management principles to using Trello across the semester would definitely be an ‘ Augmentation’ as there would be functional improvement to modifying and updating the semester plan. If the collaboration features were fully utilized, the activity could even be transformed to the ‘ Redefinition’ category as the app would allow for “ the creation of new [communicative] tasks, previously inconceivable” (Puentedura 2014) if only using an A3 paper planner. The semester time-management tasks could be redefined and students could be required to collaborate online either synchronously or asynchronously (Reberger 2013). However, as with my reservations mentioned earlier on using discussion-boards with this particular cohort, I imagine that transforming the learning into a Trello board group task would be more complex but not necessarily

more effective. To achieve the intended pedagogical outcomes, it would be preferable to have students working within their own individual Trello boards to project-manage their semester. This would be a ‘Modification’, but not a ‘Redefinition’ on the SAMR Model.

Another intended learning outcome for Back-on-Track is that students would “identify and implement specific actions to stay motivated and avoid procrastination” (Helberg 2018, p. 4). To assist them in achieving this, every three weeks the students are given a self-reflective ‘Check-Point’ survey to review how well they are sticking to their semester plan. (See example in Appendix B.) Some of the Check-Point questions ask students to reflect on how well they are using digital tools in their course. For example, the question “Have you checked ‘My Grades’ for each of your units in Blackboard yet?” appears on the Week 3 Check-Point survey. This question was included because of research that found that students who regularly check their grades in the LMS perform “significantly better than students who do not” (Whitmer 2016). The survey thus serves to remind students of actions they should be taking.

Currently, the Check-Point survey is filled out on paper, but given the many free digital questionnaire tools available, it would be easy to perform this learning activity in the DLE. I decided to look at the options offered by SurveyMonkey as this is one of the better known survey technologies and it can be used to improve educational outcomes (Gilliam 2017; SurveyMonkey 2018). Conducting the Check-Point reflections online through SurveyMonkey would certainly enhance the learning task. Against the SAMR Model, it would

be an ' Augmentation' from the students' viewpoint as it would give definite functional improvement. For the instructor, this innovation might even be at the ' Redefinition' grade of Transformation (Puentedura 2014) as the survey could be embedded into the Trello board, thus combining two digital tools. By analysing the data gathered from SurveyMonkey, the ADA facilitator would more easily be able to tailor future Back-on-Track sessions to the learning needs of the students.

Recommendations

The use of Trello and SurveyMonkey in future learning activities would be a positive step towards making Back-on-Track more accessible for students. Research suggests that a blended combination of face-to-face and online delivery produces " slightly better student outcomes" (Colbran & Gilding 2013, p. 223), and there is no reason why this should not be true for a student support program as well. I would therefore recommend trialing both Trello and online surveys in Back-on-Track throughout the semester to observe how these digital tools improve the pedagogical outcomes for students.