**Supporting learning through online learning strategies**

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**Abstract**

Opportunities for blended learning initiatives have become more commonplace in today’s educational environment. Students are more likely to be accessing classroom materials through mobile devices as they are increasingly more available in an online context. However, the extent to which students, in the context of foundation education, use digital skills and strategies to support their learning is not well understood. This paper intends to explore data collected from the Online Learning Strategy Inventory (Frey, Faul & Yankelov, 2003; McSporran, 2004) alongside a qualitative investigation into the online learning strategies used by students enrolled in a university preparatory programme. It contends that the identification of students’ perspectives on their own use of different online learning strategies can inform strategies offered by educators and institutes.

This paper maintains students studying at pre-degree level have different online learning needs to those studying at under-graduate or post-graduate level. These differences are explored so as to inform potential approaches, within the context of foundation and bridging education, that would enable students to develop the online learning strategies that best support their learning needs.

**Introduction**

Access to learning and teaching materials is increasingly occurring in online or blended environments. We are becoming less reliant on recalling facts and more focussed on learning skills that will support acquisition of knowledge. This focus on developing skills and strategies is also being felt in the online environment. This study focussed on which online learning strategies students in pre-degree, foundation courses were accessing and to whom they turned to provide support.

This study was twofold. On one hand, the study aimed to develop an understanding as to what learning strategies students already accessed to support their learning and, on the other hand, who did they turn to for support when confronted with difficulties in their studies? Subsequently the research questions that guided this study were:

1. Which web-assisted strategies do you use to support your learning?
2. When you have difficulty with your studies, who do you turn to for support?
3. When you need support, how do you prefer to access it?

## Literature review

Technology is being used widely to encourage more dynamic, engaging and stimulating learning opportunities (Balanyk, 2013; Park, 2011) and blended learning initiatives which see classroom, face-to-face learning and teaching environments supplemented with digitally available resources (Adams Becker et al., 2017; Contact North, 2015; Johnson et al., 2016; Owston, York & Murtha, 2013) are becoming increasingly more commonplace.

Teachers are able to promote accessible, anytime, anywhere learning (Traxler, 2007) through the integration of technology. This integration has also contributed to a shift towards a more collaborative educational paradigm (Falloon, 2015) in which not only self-efficacy can be improved but also collective efficacy can be fostered (Tilton & Hartnett, 2016). In addition, andragogic learning principles are supported by enabling students to take ownership of their own learning and facilitating a more collaborative dynamic between students and teachers (Merriam & Bierema, 2014). Not only can we enable facilitated opportunities for collaborative learning between peers, but also between, teacher(s) and students(s) through the mediated use of online tools.

Studies that have investigated how the use of mobile devices can support learning and teaching indicate that the intentional integration of technology, based on pedagogic decisions, can strengthen opportunities for increased innovation, interaction and heightened student engagement (Heinrich, n.d.; Jarvis & Achilleos, 2013; Keane, Lang & Pilgrim, 2012; Perkins & Saltsman, 2010). New technology has the potential to enrich classroom instruction by making activities more individualised, valid, economical and accessible (Stephenson & Harold, 2008). However, some studies (such as Sims & Butson, 2014) have indicated that students are not necessarily as digitally literate as some researchers may assume. Kirschner and De Bruyckere (2017) also found that whilst most students have grown up with access to technology, digital literacies and digital competencies cannot be assumed nor linked to any particular demographic.

Frey, Faul and Yankelov (2003) created an inventory of learning strategies titled *Value rating checklist for web-assisted technology* to rank the perceived value of 18 online learning strategies. The research examined the perceptions of undergraduate students enrolled in a Bachelor of Social Work in the United States. The study was replicated in New Zealand a year later with postgraduate students completing a Master of Science (McSporran, 2004). The online learning strategy inventory used included strategies that “have been attributed to increased knowledge and positive learning experiences for students” as identified through available literature (Frey, Faul & Yankelov, 2003, p. 447). These two studies informed this current investigation into online learning strategies used by students in a pre-degree, foundation context.

## Methodology

This study used a mixed method approach to data collection and consisted of two parts. The first part was based on the Online Learning Strategy Inventoryas developed by Frey, Faul and Yankelov (2003), for the use with undergraduate students, and McSporran (2004), who replicated the study with postgraduate students. The inventory used a seven-point Likert scale to indicate the perceived value of a set of strategies. The survey was delivered online to students enrolled in a pre-degree, university preparation study skills course in Semester 1, 2018. The survey was first implemented in the pre-degree context in 2016 (Saavedra, 2018) and this article aims to outline and compare the findings from a second round of data collection of students enrolled in the same course, two years later. In addition to the online learning strategies inventory, students in the second cohort were also asked as a secondary part of the survey to share their own experiences regarding who they turned to for support and their preferred medium for accessing that support.

## Context

Students who participated in this study were enrolled in pre-degree university preparation courses in foundation education programmes at an urban New Zealand university. All courses are delivered using a blended learning approach. Students attend face-to-face classes but class materials are accessed online. The foundation education programmes provide opportunities for students to gain university entrance and acquire the necessary skills and strategies to promote success at undergraduate level study. Foundation education (also referred to as bridging or enabling education) is designed to offer an alternative entry into tertiary studies and enable students to return to formal education after having had a break from studies. The courses, at the site of this study, are taught in small, supportive groups where teachers have a significant role in providing pastoral support alongside academic studies.

## Demographics

Of those who participated in this study (n=32), 54.5% identified themselves as international enrolments and 45.5% as domestic students. Fifty-four percent identified as female, 40% as male and 6% preferred not to say.

As foundation education aims to provide alternative entry to university studies, within any particular cohort, students often have a range of different academic needs. Within the particular group of students who participated in this study, a variety of backgrounds were represented (see Figure 1 below). Fifteen students identified as being non-native English speakers (ESOL), constituting 45.5% of the participant pool. An additional four students identified as either Pasifika or Māori. Twelve students were over the age of 20 years. These students were enrolled as adult or mature learners (sometimes referred to as second chance learners) which would indicate that they were likely to be returning to their studies after having had a break in formal education. Seven identified with more than one category and only eight students indicated that they were neither ESOL, Pasifika, Māori or mature students.



Over 20 years

Pasifika

Māori

ESOL (English is your second language)

None of the above

0

2

4

6

8

10

12

14

16

Number of students

*Figure 1.* Student demographics

## Findings

The survey was administered in the mid-semester break of a 12-week course. At that point in the course, all participants had been exposed to the online learning strategies included in the inventory. This study also investigated *who* they are relying on for support and *how* they prefer to access that support. The findings according to these aspects are presented in this section.

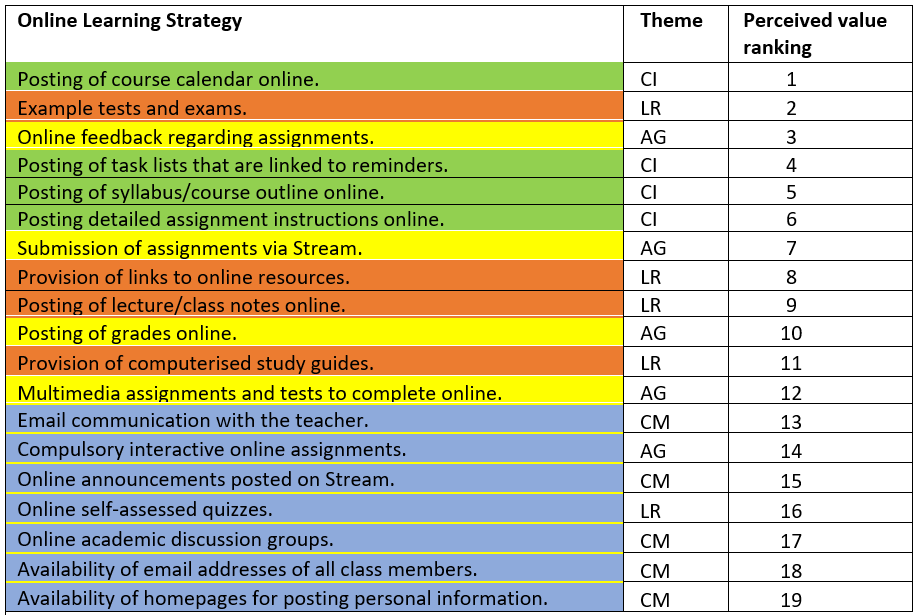
## *What strategies do students use?*

As per the original studies that used this inventory (Frey, Faul & Yankelov, 2003; McSporran, 2004), the strategies can be divided into four themes: Course information (CI /green); communication (CM/blue); assignments and grading (AG/yellow); and learning resources (LR/orange) (see Table 1 below).

To ascertain *what* online learning strategies students were accessing, students rated each strategy by allocating a numerical value to demonstrate the perceived value of each strategy. The scale ranged from 1 (of no value at all) to 7 (very valuable). If a strategy was not used, students were directed to choose 0 (zero) to indicate that the strategy was not applicable. The mean of each rating allocated has been collated and ranked from 1 (most valuable) to 19 (least valuable) (see Table 1 below).

The online learning strategy that was perceived to be the most valuable was the posting of a course calendar online, which could indicate that having access to organisational tools regarding course information was valued. The second most valuable online learning strategy was having access to example tests and exams, followed by the third most valuable strategy of online feedback regarding assignments.

Table 1  *Perceived value of online learning strategies*

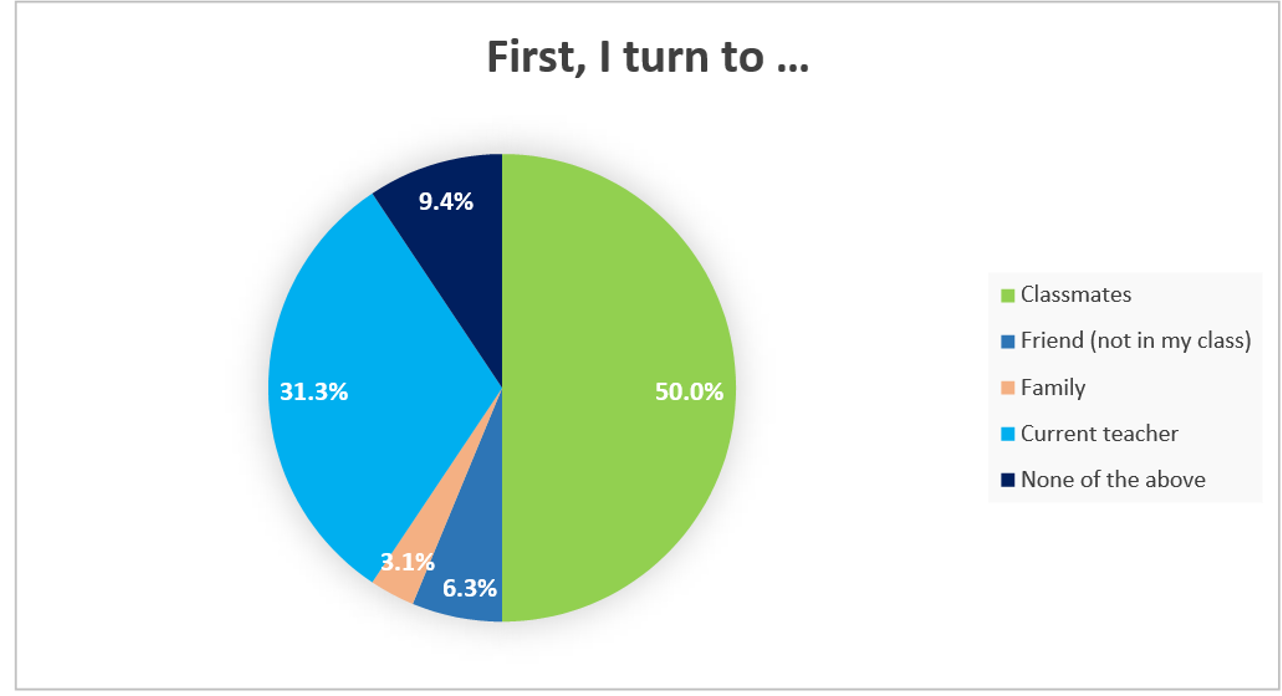


According to the perceived value ranking, students appeared to perceive online learning strategies related to course information to be the most valuable. This was evidenced by the four learning strategies linked to this theme being ranked in the top six. The strategies related to communication ranked as the least valuable (being ranked in the bottom seven). Online learning strategies regarding learning resources and assignments and grading were perceived to be ranked as having middling value. Although thematically linked to learning resources and assignments and grading respectively, notably the items *having access to exam exemplars* and *feedback from assignments* were ranked as the second and third most valuable strategies.

## *Who do students turn to?*

As part of the online survey, students were asked to identify who they turned to for support when they faced difficulties in their studies. Students chose from a list of probable support people: classmates, friend (not in my class), family, church members, current teacher, previous teacher (someone who is no longer my teacher), an academic advisor, or none of the above. The results indicated that students were turning to a wide support network and accessing support services both online and in person. Participants were prompted to consider who they turned to in order of priority from first, second to third. Figure 2 (below) shows who students identified as their first point of contact. The results indicated that 50% of students relied on classmates as their primary point of support when they had difficulty with their study. An additional 31.3% identified their current teacher as the first person they would turn to for support.

Of the remaining group of students, 9.3% relied on friends and family for support and the final 9.4% responded *none of the above*. No students identified church members, previous teachers nor academic advisors as their first point of contact.



*Figure 2.* First-level supporters

This dynamic changed to a certain extent when students were asked who the second person was they would turn to (see Figure 3 below) but the primary points of contact continued to be classmates and current teachers.

Classmates

Friend (not in my class) Family

Current teacher

Previous teacher (someone who is no longer my teacher)

An academic advisor

None of the above

**Second, I turn to …**

**3.1%**

**6.3%**

**3.1%**

**34.4%**

**40.6%**

**6.3%**

**6.3%**

*Figure 3.* Second-level supporters



As a third point of contact, answers were more varied (see Figure 4 below). Slightly over 28% of the students surveyed considered an academic advisor as their third point of contact. Teachers (31.3% when combining previous teachers and current teacher) and peers (18.7% friends and classmates) were still the main points of contact.



**Third, I turn to …**

**12.5%**

**3.1%**

**15.6%**

**28.1%**

**9.4%**

**18.8%**

**12.5%**

Classmates

Friend (not in my class) Family

Current teacher

Previous teacher (someone who is no longer my teacher)

An academic advisor

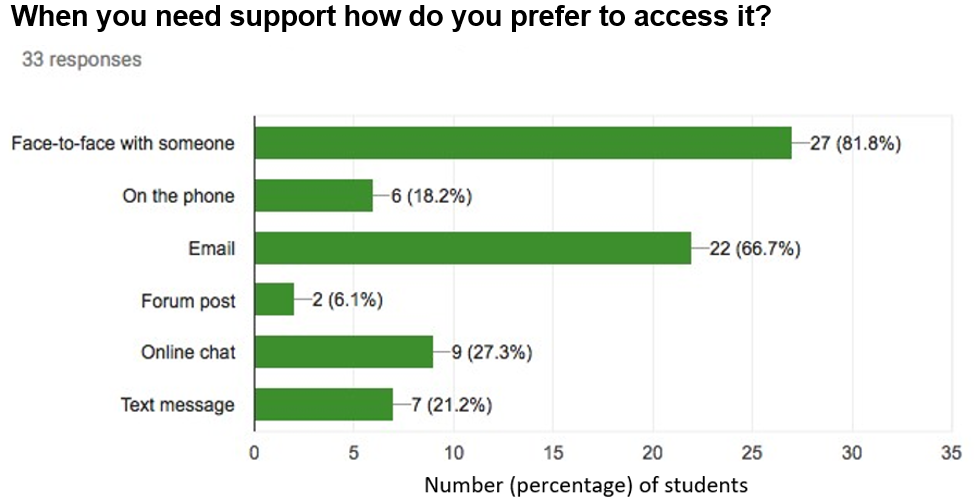
None of the above

*Figure 4.* Third-level supporters

*How do students prefer to access support?*

Students were asked to identify their preferred medium for accessing support (Figure 5). There were no restrictions to the number of responses to this question so students could choose as many of these options as they wanted.

The overall preference was for face-to-face support. Sitting with someone was deemed to be the most preferred medium for accessing support with 81.8% of students indicating face-to- face contact. With 66.7%, email was also identified as a preferred method of receiving or accessing support. This would indicate two in every three students in this group also had a preference towards accessing support via email. Closely clustered together were online chat, text messages and phone support which were third, fourth and fifth most preferred method with nine, seven and six students respectively choosing these as media through which to access support. Forum posts were considered the least preferred medium for accessing support (see Figure 5 below).



*Figure 5.* Access to support

## Discussion

Garnering an understanding of the strategies that pre-degree students access in order to support their learning is important for teachers to comprehend so as to guide students to maximise opportunities for learning support. By understanding what students perceive to be more valuable, we can ensure that students’ needs are being met or approaches can be made explicit to encourage students to access appropriate support networks.

One example of this can be seen when we examine the perceived value of specific online learning strategies. In this cohort, students expressed a perception that access to exemplars was of higher value than feedback regarding assignments. This could indicate that exemplars are deemed to be more valuable prior to completing assessments than the feedback on actual progress received post-activity. Receiving feedback on assignments (ranked third) was perceived to be significantly more valuable than accessing grades (ranked tenth). Although this disparity in ranking was not as stark, the perception that feedback was deemed more valuable than posting of grades online was consistent with findings from a similar cohort where feedback was ranked fifth and grades ninth (Saavedra, 2018). Knowing that more value is perceived in receiving feedback than in the grades, teachers should be encouraged to spend more time providing constructive feedback that is growth-oriented.

If we look at the perceptions for cohorts at different stages of their academic pathways, there is a discernible shift in focus. A crosswalk of the top three most valuable online learning strategies across the three different studies (Table 2) shows that pre-degree students perceive the value of some strategies differently to students in under-graduate (Frey, Faul & Yankelov, 2003) and post-graduate students (McSporran, 2004).

Table 2

*Comparison of perceived value of online learning strategies (top three)*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Perceived ranking value** | **Pre-degree (this study)** | **Undergraduate** | | **Postgraduate** |
| **1st** | Post of course calendar online | Post of grades online | | Posting detailed assignment instructions online |
| **2nd** | Example tests and exams | Posting detailed assignment instructions online | Online announcements posted online | |
| **3rd** | Online feedback regarding assignments | Online feedback regarding assignments | Posting of lecture/class notes online | |

Students at a pre-degree level appear to value strategies that support organisation. For example, support with time management through the availability of an online course calendar and access to assessment exemplars that can be used to guide assessment organisation ranked as the top two most valued online learning strategy. This would indicate students at pre-degree level value more of a “how-to” or scaffolded approach to support as opposed to undergraduate students who had a stronger assessment focus in their top three most valued online learning strategies. Undergraduate students perceived more value in accessing results by ranking post of grades online as number one, in contrast with pre-degree students who rated this at tenth most valuable (see Table 1 above). This indicates a substantial difference in perceived value. On the other hand, access to feedback after an assignments was rated equally at third most valued online learning strategy by both pre-degree and undergraduate students. Therefore, both pre-degree and undergraduate students attributed value to accessing online feedback on submitted assignments.

Also with regard to assignments, one online learning strategy that ranked highly for both undergraduate and postgraduate students was the online posting of detailed assignment instructions at second and first respectively. Interestingly, this strategy ranked at sixth with the pre-degree students. One possible interpretation for this could be that undergraduate and postgraduate students are more confident with interpreting instructions as opposed to relying on exemplars to identify task requirements.

Postgraduate students appeared to value online learning strategies that required more self- direction and self-regulation by rating instructions, announcements and self-access to course materials as the top three most valued online learning strategies for their cohort. This is perhaps unsurprising, given that to reach this level of academic study students have had to prove themselves academically on a number of occasions and have experienced success throughout their studies. Pre-degree students, conversely, are just embarking on their academic pathways and may not have had the same opportunities to experience success in their education thus far. Therefore, a stronger focus on online learning strategies that are developmental and focus on supportive aspects are perceived to be of more value to pre- degree, foundation students.

To complement the online learning strategy inventory, this study sought to understand who pre-degree students studying on a foundation programme turn to when encountering difficulty with their studies. This study demonstrated that although students identified a varied support network, teachers and classmates were the primary points of contact for the majority of students who partook in this survey. By identifying current classmates and teachers as the primary contacts for support, this finding is possibly illustrative of an educational paradigm that is more collaborative as suggested by Falloon (2015). Open collaboration between students and teachers alike can facilitate an environment that enables students to take ownership of their learning as they integrate learning strategies with support networks.

It is evident theses pre-degree students were accessing a number of support services, both in an online environment and in person. However, the students clearly identified a preference for face-to-face as the most preferred medium through which to access support. The opportunity to build a sense of whakawhanaungatanga*,* which requires establishing relationships and patterns of interaction (Smith, 2018) to provide a sense of belonging, can be fostered through multiple opportunities for face-to-face interactions. This success in establishing a sense of belonging can also contribute to the support of andragogic principles such as collaborative learning, ownership and self-direction (Merriam & Bierema, 2014; Rolls, Northedge, & Chambers, 2017). Whilst it is acknowledged that face-to-face, human contact is a preference, smartphone based support, such as online chat, text messaging, and phone calls are also media that can be exploited to ensure students are able to access support in a timely manner. Arguably, by integrating opportunities for access to support, through the active encouragement of considered online learning strategies such as those outlined in the Online Learning Strategy Inventory (Frey, Faul & Yankelov, 2003), we can facilitate students accessing appropriate support at the appropriate time.

An area for future investigation is those students who indicated *none of the above*, when referring to who they turn to for support. Questions that need to be explored in more depth would include, but not be limited to, prompts such as: Who is supporting them? Is there any additional support that could be done to support those students? Are they falling through the gaps? Does this lack of accessing support affect success or retention for these students? By investigating this group of students in more depth, we may be able to identify issues that could be addressed when implementing future support initiatives.

When investigating the third level of support, it is clear, the support network is more varied. There is a wider spread of touch points including those outside the immediate academic context. This differs from the points of contact found in the Figures 2 and 3 (above). By way of example, family is a particular touch point that can be seen to be contacted with regard to academic support only once previous support levels have been explored. Family was rated by 3.6% at first level, 6.3% for second-level and 9.4% for third level. Although outside the scope of this survey, wider consultation is needed to ascertain why family are not perceived to be a source of support within this context.

## Conclusion

Foundation students cover a range of different ages and stages within the academic lifecycle. Some students have come directly from high school whereas others have had a hiatus in their formal studies. They also come from a range of backgrounds with a variety of different learning needs. These needs may differ from those studying at undergraduate and postgraduate levels. A comparison of perceived value placed on the specific learning strategies identified in the Online Learning Strategy Inventory indicated postgraduate students placed more value on strategies that enabled self-directed study. Whereas undergraduate students placed more value on online learning strategies that focussed on assessments and pre-degree students placed more value on strategies that provided support. Gaining an understanding of the particularly nuanced demographic of pre-degree, foundation students is vital for providing adequate support to enable these students to succeed in their academic endeavours.

Variety is essential to cater for the multivariable demographic that is often represented in foundation education classes. It is also equally important to continue to monitor and explore the needs of students as they may vary from cohort to cohort, particularly with foundation education where students can come from a variety of backgrounds. Identifying the different support networks and preferences of each cohort is vital for maximising opportunities for success. As such, it is worth educators checking how each cohort value the interaction in both the face-to-face and online learning and teaching space so they can adjust their approach to best fit the needs of their current cohort.

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