Well-being and Academic Success

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Executive summary

The engagement, retention and success of tertiary students in New Zealand is of strategic importance (Ministry of Education, n.d.), and increased levels of success in terms of course and qualification completion is a key requirement of government funding. Yet many students do not complete their courses and qualifications successfully – currently around 25 per cent of New Zealand tertiary students do not complete their qualifications (Scott, 2009).

While institutions and teachers play a significant role in whether or not students engage in learning at optimum levels and achieve academic success, students' own motivation and actions play an important part (Ross, 2011), as does student well-being. Previous research has shown that well-being is linked to better academic outcomes (El Ansari & Stock, 2010). For example, students who use their strengths more report more engagement with their learning and intrinsic motivation to learn (Louis, 2009), and growth mindsets improve both well-being and learning outcomes (Dweck, 2006). Research has demonstrated that well-being is largely related to engagement – higher well-being leads to higher engagement, and higher engagement leads to better academic outcomes.

This research project aimed to discover how well-being impacts on the academic success of first-year tertiary students studying at a distance. Specifically, it asked if participation in a well-being improvement program (The Tuesday Program) had an impact on students' well-being and final grades. Forty-six first-year Open Polytechnic students, studying in Trimester 1, 2011, participated in the research by completing the online 7-week well-being program The Tuesday Program, prior to beginning their Trimester 2 study. Each Tuesday the students were instructed to log on and watch a short animation video. After the video, they downloaded a document that summarised the video content and provided suggestions and instructions on how to implement that week's psychological skill. At the end of Trimester 2, students' academic results and well-being scores were measured. In addition, five students were asked about the usefulness of The Tuesday Program topics and the impact these had on their study and well-being.

The results revealed an improvement in all well-being measures, but not an increase in students' academic performance. High-performing students enrolled in Trimester 1 generally performed more poorly in Trimester 2 following completion of the Tuesday Program. The effect we measured was the opposite of the expected effect – the literature suggested we should find an increase in performance. While the results of the research showed a negative impact on the academic performance of the students who participated, the five students who were interviewed or completed

the online questionnaire were positive about the usefulness of what they had learned from The Tuesday Program for both their study and their life.

This research comprised a small study involving only 46 first-year students. Results must be interpreted with caution. Findings cannot be generalised across first-year students at the Open Polytechnic and the conclusions we have reached are therefore tentative only. The authors recommend that more research be carried out. In addition, we recommend that The Tuesday Program be made available to first-year Open Polytechnic students in 2013 and data gathered through the program's feedback processes to inform future practice.

Acknowledgement

Introduction

Tertiary student success is of strategic importance (Ministry of Education, n.d.) and is a requirement of the current funding regime. New Zealand has a capped funding environment, and the government has challenged the tertiary education sector to lift educational success and introduced performance-based funding. Tertiary education organisations need to ensure that the majority of students succeed in their study and are retained and progress to higher levels of learning. Yet many students do not complete their courses and qualifications successfully – currently around 25 per cent of New Zealand tertiary students do not complete their qualifications (Scott, 2009). Furthermore, significant numbers of first-year students do not enjoy success to the degree that returning students do (Krause, 2005). The first-year experience is critical for student engagement and success (Krause & Coates, 2008; Krause, Hartley, James, & McInnis, 2005).

The high rate of non-completion among first-year tertiary students is an international phenomenon (Ishitani, 2006; Marshall, 2007) and is particularly noteworthy in distance and online education (Boyle, Kwon, Ross, & Simpson, 2010; Jenkins, 2011; Smith et al., 2011). Although the reasons why students do not complete their intended studies are complex and multifaceted (Berge & Huang, 2004), and also somewhat unclear (Moxley, Najor-Durack, & Dumbrigue, 2001), non-completion is demonstrably common for first-year distance students (Burtenshaw, Ross, Hoy-Mack, Bathurst, & Zajkowski, 2006; Ross, 2011).

Current approaches in tertiary settings aim at improving retention and completion rates by largely focusing on demographic factors – for example, age, ethnicity and gender (Ashby, 2004) – with resources directed to support factors shown to be related to lower-than-average course retention and completion rates (for example, specific cultural support for Pasifika people, technology support for older people). However, the limited data available to justify such support approaches is both sparse and lacklustre. In other words, it is not conclusive at this stage that such an approach is particularly beneficial in relation to retention and completion rates. As Smith et al. (2011, p. 41) mention, "no one factor, on its own, accounts for the majority of success in student retention, but a combination of factors, which meet a combination of needs for a majority of students, will go a long way towards maintaining student engagement." The current strategies for retention and completion include "factors such as course selection, orientation, layered support, communication between students and faculty, support between students and faculty, and building social interaction and community in an ODL environment" (Smith et al., 2011, p. 33). These factors are based within a framework of overarching student demographics, which have even less of an effect in an online environment

compared with face-to-face teaching environments. For example, Fisher mentions that "particularly age and gender appear to have no effect in the online environment, and race/ethnicity – strong predictors on-campus – also seem to have little effect" (cited in Lorenzo, 2011, p. 4). In other words, it is possible that students may fail to finish a course because of "problems in living", life stressors, depression, and so on, rather than traditional factors such as appropriate course selection or layered student support. Nonetheless, with strategies such as layered support being current best and recommended practice, we outline an argument that well-being can increase engagement and thus success in academic study (measured via retention and course completion rates).

Aspects such as well-being and engagement need to be assessed before, and monitored throughout, study. Simply knowing prior to a course, and during the teaching of a course, which students have low well-being, and using this information to provide targeted support to increase the motivation and well-being of such students, may subsequently increase engagement in study, and thus retention and course completion rates and academic performance. Additionally, intervening before study to increase well-being may position students better to engage in their study, leading to better retention and completion rates, and higher course grades. With this line of reasoning in mind, we now briefly review literature related to well-being and academic success.

Review of literature

We are assuming the link between student engagement and academic success has been demonstrated to a sufficient extent in the literature that we do not need to review it here. (For a review, see Kuh, Kinzie, Buckley, Bridges, & Hayek, 2006; or Zepke & Leach, 2008.)

Well-being is a broad construct that is defined in different ways by different disciplines (Haybron, 2008). In psychology, a strong focus on well-being began with the development of the positive psychology movement in the 1990s (Hefferon & Boniwell, 2011; Peterson, 2006), with many studies of subjective well-being (for instance, happiness) and character strengths (Peterson & Seligman, 2004) appearing in the literature. This refocusing demarcated a shift from focusing on "ill-being" and what was going wrong for individuals, to a focus on well-being and what was going right for them. As Seligman (2009), the founder of the field of positive psychology, stated, "there are two complementary strategies for improving the human condition. One is to relieve what is negative in life; the other is to strengthen what is positive. Mainstream psychology focuses largely on the first strategy; positive psychology emphasises the second."

More recently, positive psychology principles and approaches have been applied in educational settings – at individual level, group and school levels (see Gilman, Huebner, & Furlong, 2009) – with now widespread and conclusive evidence in existence (for instance, multi-site replication studies, meta analyses, and both cross-sectional and longitudinal studies) highlighting the strong link between well-being and academic success (El Ansari & Stock, 2010; Gilman & Huebner, 2006; Verkuyten & Thijs, 2002). As just one example of such research, Quinn and Duckworth's study found that "participants reporting higher well-being were more likely to earn higher final grades, even when controlling for IQ, age, and the previous year's GPA" (2007, p. 1). They further stated that "recent findings have consistently linked academic achievement with well-being" (p. 1), and "children higher in subjective well-being earn higher grades" (p. 5).

Such research fits within a larger research base linking well-being to success via increased engagement in various life domains – from work, to relationships, to health status (for a review, see Lyubomirsky, King, & Diener, 2005). In a tertiary setting, much of this research has recently been reviewed and summarised in Parks' "The State of Positive Psychology in Higher Education" (2011). In summary, the relationship between well-being and engagement is that higher well-being leads to higher engagement, and higher engagement leads to better academic outcomes.

Research context

The Open Polytechnic is an open and distance learning institution delivering a variety of certificate, diploma and degree programmes with a focus on vocational learning for people in the workforce. Compared to the overall New Zealand tertiary sector, a significantly higher percentage of Open Polytechnic students are people in the workforce, adult learners and part time learners.

In 2011, 82 per cent of Open Polytechnic students were over the age of 25 with 38 per cent in the 40-plus age bracket and 57 per cent were female. Of the 41,189 students enrolled with the Polytechnic in 2011, 69 per cent were in employment and 96 per cent were studying part-time (Open Polytechnic Annual Report, 2011).

Research aims and expected outcomes

This project aimed to discover how well-being impacts on the academic success of first-year tertiary students studying at a distance. Specifically, it asked if participation in a well-being improvement program (The Tuesday Program) had an impact on:

1. students' well-being

2. students' final grades.

The expected path was from well-being to engagement in that higher well-being would lead to higher engagement and higher engagement would lead to better academic outcomes. Evidence suggests that increased well-being boosts resilience in students and helps to maximise study experiences and connection (Jackson & Bartlett, 2011), and students who are fully engaged in their learning are more likely to be successful than those who are not (Coates, 2005).

If it was found that a well-being program had a positive impact on students' academic success, The Tuesday Program would be made freely available to all first-year students enrolling at the Open Polytechnic.

The Tuesday Program

The Tuesday Program (www.thetuesdayprogram.com) is a free, short, online course designed to increase people's psychological skills and resources. It aims to help people to flourish, thrive with life's challenges, live with a purpose, utilise their resources better, and become a little bit happier.

The Tuesday Program has been developed by experienced well-being academics who also have experience and knowledge in e-therapy (Dr Aaron Jarden, Dr Jo Michell, Dr Alexander MacKenzie, Dr Jacolyn Norrish, Dr Ravi Iyer, Dr Kennedy McLachlan, Dr Kathryn Page, Chelsea Todd (PhD Candidate) and Denise Quinlan (PhD Candidate)). The program's elements are based on the scientific literature with much guidance from Lyubomirsky's (2007) *The how of happiness: A practical guide to getting what you want*. The program has not been devised for an educational context specifically and has not been formally tested. It has, however, been sufficiently informally tested for its developers to be confident about its efficacy. There are no similar internet-based programs available at the present time.

The Tuesday Program is a 7-week course, with new topics covered each week. The topics are:

1. Discovering and using your strengths.

2. Developing a growth mindset.[1]

3. Clarifying your purpose and values you.

4. Thinking about and being grateful often.

5. Communicating

6. Utilising relaxation techniques.

7. Being more mindful.[2]

Each topic is designed to fit into people's lives and takes around 10 minutes a week. In practice, each Tuesday participants log on and watch a short online teaching

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[1] Mindsets are beliefs about oneself and one's most basic qualities, such as intelligence, talents, or personality. 'Fixed mindset' individuals believe that their basic qualities, such as intelligence, talent and personality, are fixed traits that do not and cannot change. 'Growth mindset' individuals believe that their basic qualities can be cultivated and developed across the life span through dedicated effort.

[2] Mindfulness involves paying attention in a particular way: on purpose, in the present moment, and non-judgmentally.

video (about 4 to 6 minutes) covering one of the topics listed above (see Fig. 1).

Fig. 1 *Developing a Growth Mindset video*

After the video participants download a short document (from one to three pages) that summarises the video content and provides suggestions and instructions on how to implement that week's psychological skill (see Fig. 2).

The Tuesday Program

Developing a *Growth Mindset*

Your task is to:

1. Understand the difference between fixed and growth mindsets. Mindsets are beliefs about yourself and your most basic qualities, such as your intelligence, talents, or personality.

   - **Fixed Mindset** individuals believe that their basic qualities, such as intelligence, talent and personality, are fixed traits that don't and can't change.
   - **Growth Mindset** individuals believe that their basic qualities can be cultivated and developed across the life span through dedicated effort.

   One of the keys to success isn't having greater amounts of innate intelligence, talent or ability;; it's whether you look at these qualities as things that can be developed through dedication and effort.

2. Now work at developing a growth mindset. Accept that having innate intelligence or talent is just the starting point, and that most people accomplish great things through years of passionate practice, learning and effort. Over the coming week, aim to use process-oriented praise, rather than person-oriented praise:

   - **Process-orientated praise**, such as "you put in a lot of effort" or "that was a good strategy you chose", emphasises that achievement comes from striving and use of effective strategies. It also allows others to interpret setbacks in terms of lack of effort, or inappropriate strategies.
   - **Person-orientated praise**, such as "you are so smart", emphasises innate talents and abilities. It assumes that success is due to personal attributes and teaches others to interpret difficulties in terms of their personal weaknesses.

More information on Mindsets:

Books

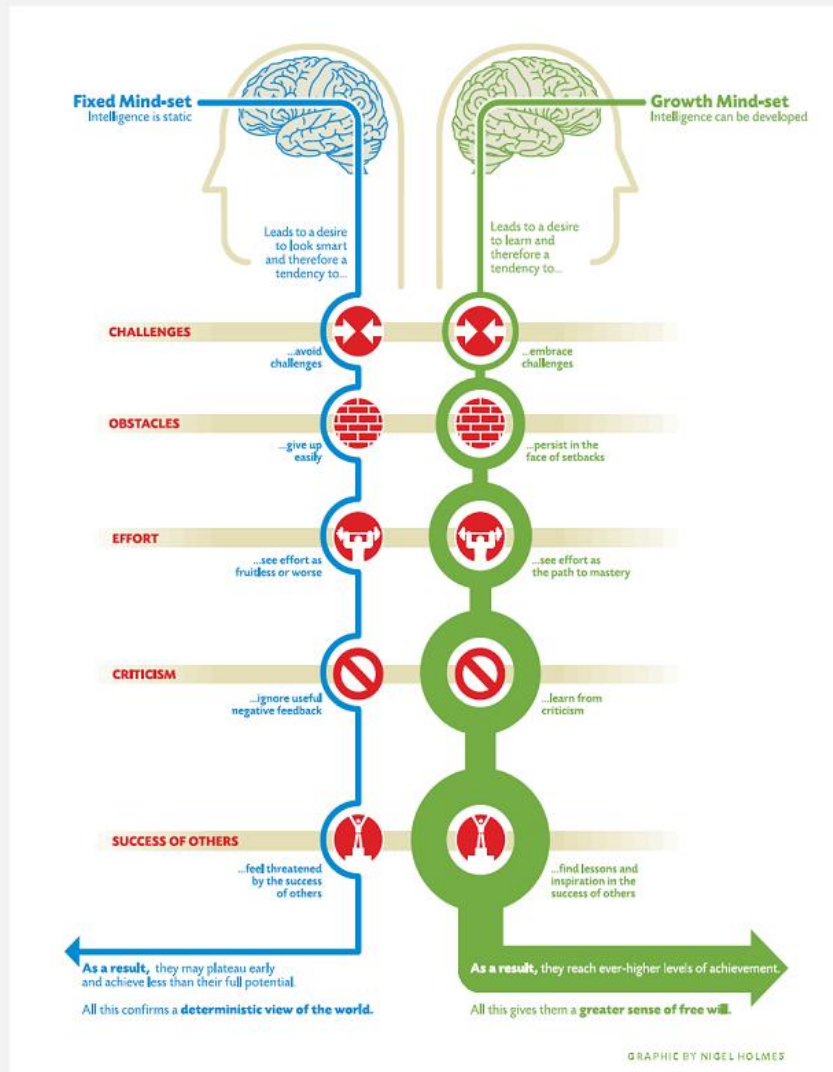   - Dweck, C. (2007). *Mindset: The new psychology of success*. New York: Ballantine Books.

- Arden, J. (2010). *Rewire your brain: Think your way to a better life.* Hoboken, NJ: John Wiley & Sons.

Websites

- http://mindsetonline.com

Fig. 2 Developing a Growth Mindset resource

Research method

The research integrated questionnaires, semi-structured interviews and students' academic results to determine the impact of participation in The Tuesday Program on students' well-being and academic performance. A list of students enrolled at the Open Polytechnic for the first time in 2011 and studying one or more courses at National Qualification Framework (NQF) Level 4 and above in Trimester 1, and who had enrolled for Trimester 2, was compiled. One hundred and eighty of these students were not invited to participate and comprised a quasi-control group – the remainder ($n = 897$) were invited to participate. Those students who consented to participate ($n = 115$) were emailed the URL to The Tuesday Program website 7 weeks prior to the trimester start date and asked to complete the pre-program well-being assessment before progressing through the 7-week program. The pre-program assessment questionnaire used already empirically validated measures to assess various aspects of people's well-being (see Appendix A).

At the program's completion participants answered the same pre-program assessment questions again in order to measure their well-being before and after the program. Students who did not answer the assessment questions post-program completion were contacted in the week prior to the trimester start date and encouraged to complete the assessment as they had agreed to.

At the end of Trimester 2, 2011, students' final results and well-being scores were compiled and the following two aspects measured:

1. Levels of well-being: The difference in various aspects of students' well-being scores between the pre-program assessment completed prior to starting The Tuesday Program and the same assessment completed after they had finished the program but before they continued study in Trimester 2.

2. Academic success: The difference in the Trimester 1 and Trimester 2 final grades of students in the participant group.

Finally, students were invited to complete an online questionnaire or be interviewed about their perceptions of the usefulness of the seven topics in The Tuesday Program and the impact of these on their study and their well-being.

This project was approved by the Open Polytechnic Ethics Committee.

Participants

Invitations to participate in the project were sent to 897 students enrolled at the Open Polytechnic for the first time in Trimester 1, 2011. The invitations covered 1566 courses at NQF Level 4 and above. A total of 115 students responded in the affirmative (a response rate of 13 per cent), but only 46 of those students participated fully in the project. The 46 students who participated fully in the project completed a course in Trimester 1, did the pre-program assessment, completed the 7-week Tuesday Program and the post-program assessment, and then completed a Trimester 2 course. This response rate was a disappointing 5 per cent, against an anticipated response rate of at least 20 per cent. Of the 46 students, 39 were female (85 per cent). Four students identified as Māori and two as Pasifika. Ten students were aged 25 years and under.

The number of responses to the invitation to be interviewed was also less than expected. Half of the students who had completed The Tuesday Program were invited to be interviewed, but only two students consented. The remaining students were then invited, but no students responded. The interview questions were then put online and all students who had not responded to the invitation to be interviewed were e-mailed and invited to complete the interview questions online. Three students did so on this occasion. Of the five students who answered the interview or online questions, four were female and all were over the age of 25. None of these students identified as Māori or Pasifika. The semi-structured interviews (see Appendix B) comprised six questions. The questions aimed to explore students' perceptions about the usefulness of the seven Tuesday Program topics for their study and their well-being.

Data analysis

The administration of the well-being measures and the Tuesday Program were both online, and results downloaded into an Excel spreadsheet. Course grades were extracted from the Open Polytechnic's student management system and added to the spreadsheet. Records of responses to the well-being measures from students in the Tuesday Program were manually matched with final course grades in this spreadsheet.

The interviews were audiotaped and transcribed, and questionnaire responses were downloaded and printed. Data was then analysed for themes relating to students' perceptions of the impact of The Tuesday Program topics on their study and well-being.

Findings

Tables 1 and 2, and Figure 3, display the results from before and after The Tuesday Program, with both the well-being measures and academic performance scores.

Table 1: Differences in participants' well-being scale scores before and after completing The Tuesday Program

Scale	Mean (SD)	Before	After	Change (%)
Happiness measures	7.59(2.21)	7.8(1.6)	8.0(1.9)	2.6
Temporal Satisfaction with Life Scale – past life satisfaction	20.60(7.11)	17.6(7.4)	19.6(6.9)	11.4
Temporal Satisfaction with Life Scale – present life satisfaction	22.46(7.46)	21.2(6.9)	24.2(6.7)	13.7 *
Temporal Satisfaction with Life Scale – future life satisfaction	22.46(7.46)	22.5(6.7)	24.2(6.6)	7.6
Percentage time using strengths	63.52(20.26)	54.0(23.5)	61.6(17.0)	14.1 *
Knowledge of strengths	27.62(4.48)	26.3(5.5)	27.2(3.6)	3.4
Use of strengths	26.72(5.23)	23.2(6.3)	26.3(4.0)	13.4 **
Combined knowledge and use of strengths	54.34(8.98)	49.5(11.0)	53.5(6.9)	8.1 *
Gratitude total	35.42(5.75)	32.6(6.6)	34.6(6.8)	6.1
Grit total	3.53(.64)	3.5(0.9)	3.8(0.3)	8.6 *

Presence of meaning	25.13(6.92)	23.4(6.2)	26.0(6.6)	11.5 *
Search for meaning	21.74(8.01)	21.1(7.8)	20.8(8.7)	−1.4
Depressed mood total	13.97(10.94)	16.0(12.4)	12.6(12.0)	−21.3
Happiness total	7.69(3.20)	7.5(3.3)	8.6(2.7)	16.0 *

n = 46.

 Numbers in parentheses are standard deviations. Statistical significance: * = p<0.05, ** = p< 0.01.

Scale means and standard deviation based on 14,675 completed International Wellbeing Study responses

(www.wellbeingstudy.com).

Compared to the means for each scale, before completing The Tuesday Program, students were less satisfied with life in the past, present and future, reported less knowledge and use of strengths, less time using strengths, less gratitude, lower presence of meaning and search for meaning in life, and were slightly less happy. They also reported more depressed mood, and about the same levels of grit.

Nonetheless, an improvement is shown for each scale after students had completed The Tuesday Program. Note that a lower search for meaning is related to higher well-being. A decrease in depressed mood is a positive outcome. Improvements in "present life satisfaction", "percentage time using strengths", "use of strengths", "grit total", "presence of meaning" and "happiness total" are statistically significant at the levels indicated above.

The biggest improvements are in the use of strengths, presumably as a result of students discovering what their strengths are, as evidenced by the increase in the "combined knowledge and use of strengths" scale.

Potentially these changes in well-being indicate that either A or B applies:

A. Using strengths and having meaning in life results in an increase in life satisfaction and happiness.

B. Using strengths results in an increase in meaning in life, life satisfaction and happiness.

However, more data is needed to test these hypotheses. In addition, while The Tuesday Program did not focus on applying strengths in the educational environment specifically, results suggest this would be an interesting area for future research.

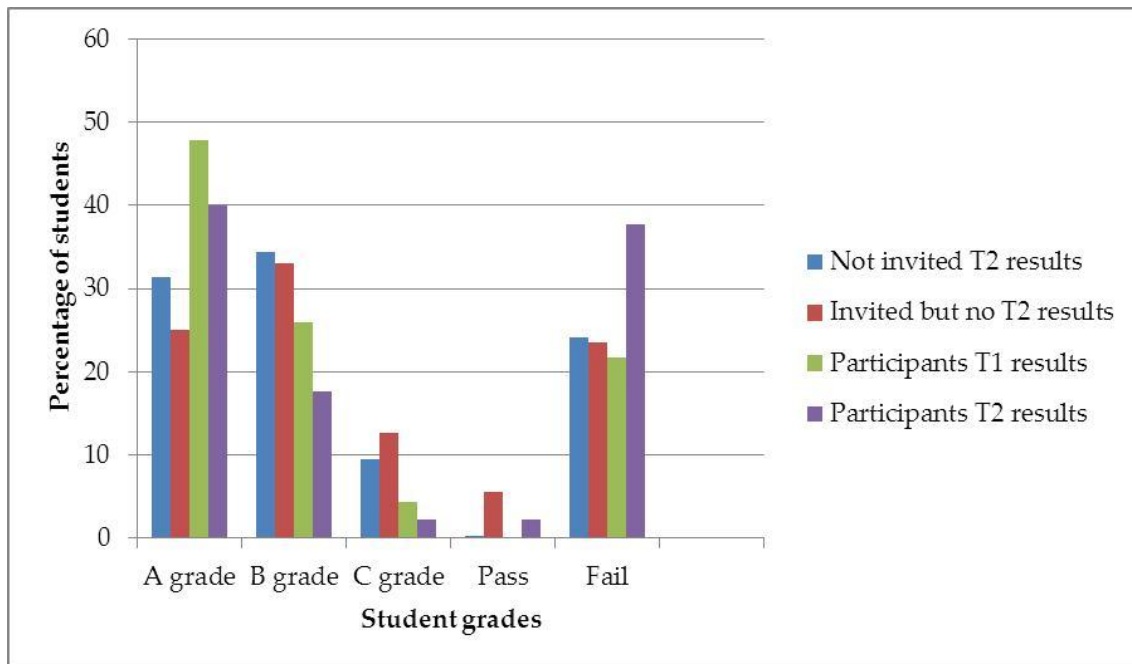**Table 2:** Participants' and non-participants' course grade distribution

	A grade	B grade	C grade	Pass	Fail
Non-participants' T 2 course grades by number of courses					
Invited but did not participate	393	518	198	86	371
Not invited	83	91	25	1	64
Participants' T1 and T2 course grades by number of participants					
Participants Trimester 1	22	12	2	0	10
Participants Trimester 2	18	8	1	1	17

n = 1566 for Trimester 2 grades of those invited but who did not participate; n = 264 for Trimester 2 grades of those not invited; numbers are courses enrolled in: many students enrolled in more than one course.

n = 46 for participants' Trimester 1 grades; n = 45 for participants' Trimester 2 grades (one of the 46 students withdrew in Trimester 2).

Passes are awarded for unit standard courses. Fails arise from several different causes, such as D or E grades, academic withdrawals and late withdrawals, or other administrative reasons.

Table 2 and Figure 3 indicate that Trimester 2 results for participants show a shift to poorer grades and fails.

Fig. 3 *Course percentage grade distributions for participants and non-participants in the Tuesday Program*

Participants in The Tuesday Program in general had a higher proportion of A grades than non-participants, and lower proportions of B and C grades than non-participants. It appears that the more able students elected to take part in The Tuesday Program, as evidenced by the number of A grades obtained in Trimester 1, but they produced poorer results in Trimester 2 than the control groups. Around 38 per cent (*n* = 17) of participants produced failing Trimester 2 grades compared with 24 per cent of the control groups. While 38 per cent of participants attained failing grades for their Trimester 2 grades, only 21 per cent of them had received failing grades for their Trimester 1 courses. For seven of the 45 participants, therefore, The Tuesday Program may have had a negative effect on course grades.

Findings from the two interviews and three responses to the online questionnaire revealed largely positive results. That students were positive about their experience is unsurprising given that the students who volunteered to give feedback were most likely those who had invested time and effort in the program and had been committed to it. Students named all of the topics, except purpose and values, as being useful for increasing their well-being. The most popular topic, identified by four of the five students, was relaxation. One student told us:

> I found the most helpful in my situation was the relaxation techniques. I had been through a particularly stressful few months and was amazed that by applying these more often how much better I managed with everything. (S1)

Communication skills, being more mindful, developing a growth mindset and gratitude were the next most popular topics in equal measure. One student said:

Gratitude was the one that was quite a powerful one for me. Just being thankful for what you've got and, actually, I did a little exercise about trying to find something to be grateful for every day. And I did, I really practised that and it was great. (S5)

Interestingly, gratitude and relaxation were the two topics students said they had used most since completing the program. One mentioned:

I have continued to use the relaxation techniques and always try to show gratitude to the people and situations that surround me on a daily basis. (S2)

Another agreed with the comment about gratitude:

Being more thankful was a really important thing. I really did think when I watched that segment that I don't always thank people for what they do – I take it for granted. So I've been much more focused on being thankful and saying "I really like it when you . . ." – whatever it might be. (S4)

All five students believed that well-being had an impact on study: "Well-being impacts significantly" (S4); "It's huge" (S3); "It impacts your ability to focus on tasks, complete readings and think creatively" (S2).

One student summed it up as follows:

It impacts my study a lot. There are times when I may not be feeling the best, be it health wise or exhausted from work, or something has got me down, then my study suffers. If I am feeling on top of my game I power through the work required. (S1)

Communication and relaxation were the two topics most commonly used by students in relation to their studies. One of the students thought she had become a more confident communicator, which she said was important, particularly when she needed help with her study:

Developing communication skills has helped me greatly in my studies, being able to ask other students or tutors if I needed help, instead of being shy and trying to battle on ahead by myself. (S2)

Another student used the communication skills she had learned in The Tuesday Program during online chat sessions. She had not participated in chat sessions prior to this course of study and was nervous:

We had a chat session and I've never done one before but I found myself using the communication bits in the chat session. And it really helped. I might be thinking to myself, gosh that's a bit stupid, or a stupid thing to say – but I tried not to be like that and not to have negative thoughts about it but try and find something positive in it. (S3)

Students also commented on the usefulness of the relaxation topic. One student

thought:

> The relaxation techniques helped greatly when it came to dealing with outside pressures and to be able to concentrate on the study tasks at hand. (S2)

Another explained:

> I can't study if I'm not in the right frame of mind and often I'm not with mum being as ill as she is. I learnt to relax a little bit and I learnt to be happy for the small things. That definitely helped my study a lot. And I haven't studied for many years. (S5)

The relaxation techniques she had learnt proved particularly useful to one student during exam time:

> I used the relaxation techniques a lot, especially during the exam, especially when I started to get a bit panicky. There's so much information going on in your head it starts to get jumbled, well for me anyway. I found that deep breathing and focusing, closing my eyes and taking a few seconds out helped me to refocus. I used relaxation techniques as a way to get information out of my head and onto the paper. (S4)

Despite the fact that study was tough going for one student she found that applying what she had learnt was helpful:

> There were times through the last semester that I felt like giving up because of the pressures that surrounded me outside of my study. We had some devastating family news which made it very hard to keep going. It took going over the topics several times and implementing them in my daily life before I really started seeing the benefits both with study and life. (S3)

While one student thought she derived no benefit to her studies from participation in The Tuesday Program, others firmly believed there was a benefit to theirs. An improvement in marks was the outcome for one student, who said:

> I believe that using these techniques definitely benefited me with the results that came through after I started using them. I was passing papers before but have received higher marks since taking part in the program. (S1)

This same student went on to say:

> I feel like I went from being a timid studier to a studier who had more confidence in my own ability. Occasionally I look back over the videos as a reminder. (S1)

Another student commented:

> I feel that it has encouraged me and given me more confidence, especially using strengths. It highlighted to me areas of my strengths, plus areas that I wanted to work on to develop. The relaxation techniques were also beneficial for getting to sleep at night after spending several hours studying. (S3)

Finally, one student recommended:

> I think it would be great for all students to have to do something like this before they begin study to get them in the right frame of mind. It would be neat to have a mandatory course like that. (S5)

Discussion

The literature shows that academic performance is negatively affected by depression (Deroma, Leach, & Leverett, 2009), and it would be expected that an increase in well-being would lead to an increase in academic performance for depressed students. For students who are not depressed, an increase in well-being has been shown to lead to better academic outcomes through perceived control over academic outcomes. If students optimistically expect to do better, they generally do (Ruthig, Haynes, Perry, & Chipperfield, 2007).

It is surprising that our work has not showed an increase in students' academic performance following small improvements in well-being as shown by the increase on all of the well-being scales. However, this is likely to be due to the very low sample size and may also be due to program compliance, that is, we did not systematically measure engagement or compliance with the program activities and duration. We do not know whether or not participants completed every module in the program or read and reflected on all the resource materials after watching each video.

High-performing Trimester 1 students generally performed more poorly in Trimester 2. The effect we measured is the opposite of the expected effect – the literature suggested we should find an increase in academic performance. There is a small amount of anecdotal evidence that a decrease in performance from Trimester 1 to Trimester 2 may be the case for Open Polytechnic students in general. However, there is no empirical data available to either support or refute such a position.

While results showed a decrease in students' academic performance there was an increase in their levels of well-being. The five students who were interviewed believed that their participation in The Tuesday Program had a positive impact on their well-being. They identified communication skills, relaxation techniques and being thankful as the most useful tools in this regard, and all but one student continued to use these skills and techniques after they had finished the program.

The well-being scale scores (Table 1) show the biggest improvement in the percentage of time participants used their strengths. Macaskill and Denovan (2011) found that helping students become aware of their personal strengths boosts their self-confidence and contributes to their development as autonomous learners. This outcome was certainly true for one of the participants who said that knowing and using her strengths encouraged her and gave her more confidence in her study. Not only does awareness of strengths boost confidence but also students who use their strengths more report increased engagement in and intrinsic motivation for learning (Louis, 2009). Increased engagement in learning leads to improved success

outcomes (Coates, 2005).

Despite the fact that the quantitative data suggested unexpected negative results in relation to academic achievement, the qualitative data provided positive accounts of the impact of The Tuesday Program on students' learning behaviour and study engagement. In these accounts students described an increase in confidence in their own ability, which also gave them confidence to ask for help from teachers and peers and participate in the online classroom. Being confident in these ways helps students to feel competent, and self-perceived competence is a key motivator for student engagement and action (Fazey & Fazey, 2001). In addition, when students feel competent they set themselves goals and persist in overcoming obstacles (Yorke & Knight, 2004).

Persistence is linked to grit and the well-being scale scores (Table 1) show an improvement in the grit measure for participants. Despite the lack of improvement in their Trimester 2 course grades, participants nevertheless had persisted with their study; only one of the 46 participants withdrew from their course. This finding is supported by the results of a previous Open Polytechnic research project (Burtenshaw, Ross, Hoy-Mack, Bathurst, & Zajkowski, 2006) which found that students who persisted with their study had grit. Students in that project reported they had persisted with their study regardless of difficulties because they were 'determined to succeed'. While results show an increase in the grit measure for participants in the present study, and all but one persisted, there is insufficient evidence to assert that The Tuesday Program had an impact on whether or not participants persisted with their study.

Unfortunately, relatively few students took part in The Tuesday Program and then went on to complete their Trimester 2 courses. Students were required to start The Tuesday Program 7 weeks prior to the start of Trimester 2, and because they would have been busy with their Trimester 1 study and exam revision over the 7 weeks of the program, they may have had little appetite for participating in it. In addition, the students who participated were self-selecting, and it is possible there was some common characteristic that attracted them to this trial. It is also possible that all of the students who thought they could do better academically if they took part in the program had misplaced optimism. Presumably students who knew they would do well did not take part. It would be interesting to speculate on what characteristics students who seek self-improvement have in common, and then look at their academic performance. This could be a profitable line of research.

Conclusion and recommendations

This research comprised a small study involving only 46 first-year students. Results must be interpreted with caution. Findings cannot be generalised across first-year students at the Open Polytechnic and the conclusions we have reached are therefore tentative only. Further research is required.

While the results of the research suggested a negative or null impact on the academic performance of the students who participated, the five students who were interviewed or completed the online questionnaire were positive about the usefulness of what they had learnt from The Tuesday Program for both their study and life. Therefore, making The Tuesday Program available to first-year Open Polytechnic students in 2013 and gathering data through the program's feedback processes would be a useful approach to inform future practice. In particular, more detailed measures of engagement with and completion of the program are needed.

The authors believe the program could be made more effective by having mechanisms in place which encourage students to engage and comply fully with it. The Tuesday Program developers consider that there are no issues with the program content. Therefore, developing mechanisms through which students can be encouraged to complete all aspects of the program would be useful. These mechanisms, which we are investigating for future development, include:

1. Installing automated email or text prompts: For example, "Now's the time to do your third Tuesday Program topic."

2. Encouraging students to complete The Tuesday Program with a 'study buddy'. The polytechnic could take a proactive role in setting students up with a 'buddy' or helping to organise small groups of buddies who would work through the program together.

   A model of working with a 'buddy' was trialled at the Open Polytechnic in 2012 with a group of staff who worked in the same business unit. In this trial, staff were given time each week to participate in the program and worked in pairs to complete and discuss each week's topic. The unit manager reported that working in pairs was an effective method of ensuring that staff completed all aspects of the Program over the seven weeks. Staff reported that having the opportunity to discuss the topics with another staff member increased their commitment to the program, their learning and the overall benefit they derived from the program.

3. Establishing a dedicated site on the polytechnic's Learning Management

System (Moodle) from which students could access The Tuesday Program. Forums could be created to encourage students to form informal learning groups to discuss the topics with others and monitor their progress through the program if they wish to. Program completion could be acknowledged/celebrated in an appropriate way .

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Appendix A: Pre- and post-Tuesday Program assessment questionnaire

The pre-Tuesday Program assessment questionnaire comprised a battery of assessment modules related to well-being, as well as standard demographic questions. The assessment modules included:

1. Email and study code.

2. Demographic information (gender, age, country, city, ethnicity, occupation, relationship status).

3. The Happiness Measures:

    Fordyce, M. W. (1988). A review of research on the Happiness Measures: A sixty second index of happiness and mental health. *Social Indicator Research*, *20*, 355–381.

4. The Temporal Satisfaction with Life Scale:

    Pavot, W., Diener, E., & Suh, E. (1998). The Temporal Satisfaction with Life Scale. *Journal of Personality Assessment*, *70*, 340–354.

5. The Strengths Use and Current Knowledge Scale:

    Govindji, R., & Linley, P. A. (2007). Strengths use, self-concordance and wellbeing: Implications for strengths coaching and coaching psychologists. *International Coaching Psychology Review*, *2*(2), 143–153.

6. The Gratitude Questionnaire:

    McCullough, M. E., Emmons, R. A., & Tsang, J. (2002). The grateful disposition: A conceptual and empirical topography. *Journal of Personality and Social Psychology*, *82*, 112–127.

7. The Short Grit Scale:

    Duckworth, A. L., Peterson, C., Matthews, M. D., & Kelly, D. R. (2007). Grit: Perseverance and passion for long-term goals. *Personality Processes and Individual Differences*, *92*(6), 1087–1101.

8. The Meaning in Life Questionnaire:

Steger, M. F., Frazier, P., Oishi, S., & Kaler, M. (2006). The Meaning in Life Questionnaire: Assessing the presence of and search for meaning in life. *Journal of Counselling Psychology*, *53*, 80–93.

9. The Centre for Epidemiological Studies Depression Scale:

Radloff, L. S. (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, *1*, 385–401.

The post-program assessment questionnaire comprised the same battery of assessment modules as the pre-assessment battery, as well as various feedback questions. These feedback questions aimed to assess the extent to which participants participated in The Tuesday Program (for instance, the video modules they watched, the exercises they tried, the amount of effort they put into the program, and the impact they thought it had on their lives).

Appendix B: Student interview questions

1. The Tuesday Program included eight topics, including using strengths, developing a growth mindset, identifying purpose and values, gratitude, communication skills, relaxation techniques, and being more mindful. Of these, what topic/topics did you find the most useful for increasing your well-being?

2. Which particular topic or topics have you continued to use on a regular basis since you have completed the program?

3. Which particular topic or topics have you used in relation to your studies?

   Prompt with an example if necessary – for example, have you used a growth mindset when undertaking a task, or focused on how to use one of your strengths to get an academic task completed?

4. Has participation in the program benefited your studies? How?

5. How do you think your well-being impacts on your studies?

6. What else would you like to tell us?

Appendix C: Researcher profiles

John Bathurst

John teaches in both the management and psychology areas at the Open Polytechnic, where he has worked for over 21 years. He is interested in applications of psychometrics to measuring aspects of personality and intellectual functioning, along with applications of psychometrics to the workplace. He is involved in projects that try to predict academic performance in introductory psychology courses. These projects have led to large increases in successful completion rates in these Level 5 courses.

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Aaron Jarden

Aaron is a senior lecturer in psychology at the Open Polytechnic of New Zealand, president of the New Zealand Association of Positive Psychology, lead investigator for the International Wellbeing Study, founder of The Tuesday Program, co-editor of the *International Journal of Wellbeing*, and director at GROW International.

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Catherine Ross

Catherine Ross is the manager of the Open Polytechnic Learning Centre, a specialist centre that provides advice and support to students and staff covering all aspects of study and learning. She holds an MEd with first-class honours in adult education from Massey University and is currently completing a doctorate in education. Catherine's doctoral research investigates the practice of learning advising. Her research interests are primarily in the fields of student engagement and persistence, and learning support.

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