Replication of the learning alliance inventory to blended student populations

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Abstract

The therapeutic working alliance by Bordin has been demonstrated as a 'common ground' variable attributable to change in identified change enterprises, including education. In this context, working alliance (renamed learning alliance) has been empirically demonstrated to predict positive on-campus student outcomes. However, minimal research investigating whether learning alliance predicts blended student outcomes has been conducted. A measure of on-campus student teaching alliance (the learning alliance inventory, LAI; Rogers), which operationalises (measures) learning alliance using three subscales (collaborative bond, teacher competency and student investment) was administered to 199 Australian tertiary students, enrolled in a counselling program delivered in the blended learning modality (online learning coupled with synchronous tutorials and an on-campus intensive). The aim of the study was to investigate if this on-campus measure of learning alliance can validly measure learning alliance in blended student populations as well. Results revealed that learning alliance in the blended student population is best operationalised as a two-factor model (collaborative bond and student investment) only. Thematic analysis of an open question revealed learning alliance in the blended teaching environment is understood as four themes: qualities of the teacher, teacher style, mastery of the technology and unique online factors. These results were interpreted as evidence that the bond factor of the original learning alliance construct as operationalised by Bordin (1979) continues to be important in the

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blended teaching space, but other factors unique to blended learning are important for online learning alliance, including content relevancy, currency and validity, as well as a transparent and structured course delivery style, flexibility when technology fails and online objectivity. Study limitations, implications and future research recommendations are discussed.

The therapeutic working alliance by Bordin (1979) operationalises a 'common ground' variable which could be attributable to change in all change enterprises, including therapy, education, community action and even parenting. Bordin (1979) defines the therapeutic working alliance as including three features: an agreement on goals, an assignment of task or series of tasks and the development of bonds. Since the construct of a therapeutic working alliance was suggested by Bordin, investigations have been consistently published demonstrating sound construct validity in both the therapy and the educational change enterprises and establishing its presence and efficacy in these contexts (Ackerman & Hilsenroth, 2003; Duff & Bedi, 2010; Falkenström, Grastrom, & Holmqvist, 2013; Porter & Ketring, 2011; Siefert & Hilsenroth, 2014; Wampold, 2001).

Further, in recent years, the change enterprises of therapy and education have extended to online models (Norcross, Hedges, & Prochaska, 2002; Shachar & Neumann, 2010), and research has thus also included investigating the construct of a working alliance in these online change enterprises, mainly in the e-therapy contexts. Findings of these investigations generally demonstrate that a therapeutic working alliance is demonstrable and efficacious in the online therapy context (Cook & Doyle, 2002; Preschl, Maercker, & Wagner, 2011).

However, the online education contexts have received much less empirical attention investigating whether a teaching alliance can be demonstrable in online classroom contexts, and if so, whether it is efficacious to student outcomes. Given that students are increasingly preferring to study online due to the convenience and flexibility this model of education offers (Shachar & Neumann, 2010), it is imperative that student outcomes are not compromised due to a lack of understanding of whether a working alliance can also be established in the distance education change enterprise.

For this reason, the current study aimed to investigate whether an existing measure of working alliance in on-campus student populations (known as the learning alliance inventory, or LAI) also validly measures learning alliance in blended/online student populations. It is hoped that findings of this study will

increase understanding of what is important in the online relationship between the student and teacher, as well as promote research into whether improved online student/teacher relationships effect student outcomes. A review of the available literature follows.

Face-to-face and online tertiary settings

As mentioned earlier, Bordin (1979) intended his construct of working alliance to generalise across all change enterprises, including the student–teacher relationship. A recent review paper by Ursano, Kartheiser, and Ursano (2007) coined the term 'teaching alliance' to refer to the teacher–student relationship akin to the well-established therapeutic alliance, and also included the three domains of shared goals, tasks and relationship bonds. Benson, Cohen, and Buskist (2005) examined the student–teacher relationship by comparing student (self-reported) likelihood of engaging in academic behaviours [tasks] and their experience of positive affect [bond] between classes in a within-subject design. Student academic behaviour engagement was significantly higher in classes where undergraduate students reported established rapport with their teacher (defined as a relationship; especially one of mutual trust or emotional affinity, and measured with a single yes/no item) compared with classes where the same undergraduate students reported no rapport, $t(164) = 11.16$ to 32.37, all ps < .001.

Further, using qualitative research methods, Benson et al. (2005) identified the following teacher qualities as conducive to rapport, including encouraging, open-mindedness, creative, interesting, accessible, happy, having a good personality, promoting class discussion, approachability, concern for students and fairness. Benson et al. (2005) concluded that rapport (understood as analogous to the 'relationship bond' domain within the teaching alliance construct) is a major key to teaching effectiveness. More recently, Smith (2011) found similar results when investigating the student–tutor relationship in a counselling training course. Using template analysis methodology, Smith (2011) concluded that students who reported acceptance, affirmation, encouragement and support, openness, genuineness and self-disclosure, empathy, a sense of equality, tutor modelling, giving and receiving feedback and providing a safe, supportive learning environment by their tutor also reported these having a positive impact on their learning experiences and outcomes.

Less empirical research has been reported in relation to the teaching alliance domains of shared tasks and goals and their influence on student outcomes. A recent study by Larose, Chaloux, Monoghan, and Tarabulsy (2010) examined the role of a working alliance (measured using a short version of the WAI; Tracey & Kokotovic, 1989) between high-risk undergraduate students receiving a mentoring program (which included alliance constructs such as shared goals, tasks and relationship bonds) and matched low-risk undergraduate students, on their academic adjustment including competence, affective involvement and participation (measured using the test of the origins and indicators of academic motivation,

TOIAM; Barbeau, 1994). Results indicated that high-risk mentored students who reported high WAI (alliance) scores had higher academic competence scores compared to the low-risk control group, $F(1, 47) = 23.43$, $p < .001$, $\eta_p^2 = .27$, and higher 'seeking help from teachers' scores, $F(1,47) = 4.01$, $p < .05$, $\eta_p^2 = .27$. It was concluded by Larose et al. (2010) that students who reported having a positive working alliance with their tutor were more likely than the control group to show more favourable outcomes on academic adjustment (academic competence and seeking help from teachers).

In order to apply the working alliance construct to the academic context, Rogers (2012) developed a measure of the student–teacher alliance, known as the LAI (Rogers, 2012, 2014). Internal reliability of the LAI was established (Rogers, 2012), and the three subscales of collaborative bond (CB), teacher competency (TC) and student investment (SI) were shown to be stable across samples. Rogers also found a significant correlation between the LAI with an on-campus sample of students, and measures of rapport (measured using the Professor–Student Rapport Scale, PSRS; Wilson & Ryan, 2013) and immediacy (measured using the nonverbal immediacy scale, NIS; Richmond, McCroskey, & Johnson, 2003).

In terms of the effects of the teaching alliance on academic outcomes in the online learning community, only one study was located (Murphy & Rodriquez-Manzanares, 2012). This is surprising considering attention to the therapeutic working alliance in online therapy contexts has attracted much empirical attention, as outlined above, and online education for adult learners is increasing as the preferred method of course delivery, particularly since the development of internet technologies (Shachar & Neumann, 2010). Murphy and Rodriquez-Manzanares (2012) investigated the importance of rapport in online education, as well as the challenges and indicators of rapport-building in online education, using thematic analysis methodology. Results reported that teachers working in online education contexts believe that rapport is necessary given the lack of face-to-face communication, and the more you 'know' the student, the more chances they have of success. In terms of the challenges to rapport-building, teachers reported that establishing rapport in online education is more difficult than in face-to-face contexts because of the limits of the software, the workload of the teachers, teachers may not see the need for it, or students are perceived as not wanting to be contacted. Finally, in terms of the perceived indicators of rapport-building in online education contexts, teachers reported six categories, including: (a) recognising the person, (b) supporting and monitoring, (c) availability, accessibility and responsiveness, (d) non-text-based interactions, (e) tone of interactions, and (f) non-academic interactions.

The present study

Given the paucity of research into the validity of an online/blended teaching alliance, the present study aimed to investigate the construct of learning alliance in blended/online student populations, in order to have an increased understanding

of learning alliance in this context. It aimed to do so by investigating two specific questions. Firstly, does the standardised measure of learning alliance for on-campus students (the LAI; Rogers, 2012, 2014) validly measure learning alliance in online/blended student populations? This will be investigated using structural equation modelling methods. Secondly, what are the perceived indicators of a positive online teaching alliance as perceived by online/blended student populations. This will be investigated using thematic analysis methods.

Method

Design

Using an observational cross-sectional research design, the investigation proceeded by administering the LAI and an open-ended question to blended/online tertiary students using online survey software. The results of this administration were used to investigate both research questions. Structural equation modelling methods were chosen to investigate the quantitative data as this is the recommended technique to use when confirming existing or hypothesised relationships between variables (Tabachnick & Fidell, 2014), which the current study aims to achieve. Thematic analysis techniques were used to investigate the qualitative data, as this is a robust and recommended technique to elucidate common themes in interview data (Braun & Clarke, 2006).

Participants

A total of 221 online/blended students participated in the current study. All participants were studying a counselling degree in a private tertiary provider in Australia at the time of investigation. One hundred and seventy-five participants (79%) were female, and the mean age of the sample was 43.8 years. On average, the sample had been studying via the blended/online delivery mode for 2.7 years.

Materials

The LAI (Rogers, 2012, 2014) is an 18-item three-factor scale, measuring on-campus learning alliance with three subscales (CB, TC and SI) each with six items. Each item is scored along a 7-point Likert-like scale (not at all to very much), and subscale and total scale scores are achieved by summing the item scores. Higher scores indicate increased alliance. An example item is 'My teacher and I have connected'. The LAI has good convergent validity with a similar scale ($r = .46$ to $.70$, $p < .01$) and excellent internal and external reliability ($\alpha = 0.92$, split-half reliability $= 0.92$, and test–retest reliability of $.83$; all ps $< .001$).

An open question about online student–teacher rapport was asked: 'If you believe you had a strong student–teacher relationship with your lecturer, please write about what online behaviours and characteristics contributed to this

student-teacher relationship'. Participants were required to write down their answer in the online survey.

Procedure

The survey was distributed as an online survey link (GoogleForms) via the tertiary institute's online learning portal at the end of one trimester of study. Interested students clicked on the survey link, which opened up an information page, including the email address of the chief investigator for further questions. Students agreeing to complete the survey were instructed to continue with the online survey.

Results

Quantitative analysis

Initial screening of the data resulted in the deletion of 22 cases due to being identified as outliers (Mahalanobis' distances > 35). Mardia's statistic indicated multivariate normality, making the data suitable for Structural Equation Modelling (SEM) analysis (Mardia, 1970, 1974).

Using confirmatory factor analysis (CFA; AMOS, v .23), a three-factor structure (Figure 1) was tested, and indicated only a moderate to poor fit of the model to the data (Chi^2 = 406.653, $p < .0001$, df = 132; RMSEA = .103, p (close) < .0001, range .091–.114; CFI = .930; TLI = .919), indicating that three factors of learning alliance that Roger's 2012, 2014) found in on-campus students (CB, TC and SI) were not being replicated in blended/online student populations.

For this reason, an exploratory factor analysis of the data was performed to discover which items were forming correlated yet relatively independent and interpretable subsets, and which may give a better idea of which items of the LAI were consistently answered by the blended/online student participants. Initially, a principal axis factor analysis was conducted with oblimin rotation, selecting two factors to be extracted, as indicated by an initial parallel analysis (Horn, 1965). The KMO statistic for this analysis was good at .95, indicating that the sample was adequate for the analysis. This analysis indicated a two-factor solution, which accounted for 82.3% of variance. The solution indicated that the CB items were loading on one factor, and the SI items were loading on a second factor, with the TC items cross-loading on both of these factors.

A subsequent review of the items resulted in a theoretical-based decision that the TC items be removed as it was believed that many of the TC items in the LAI were confusing the blended/online students given they asked about typical on-campus student–teacher relationships, resulting in the cross-loadings reported above (e.g. My teacher is actively engaged in this course).

Next, a CFA was performed on a two-factor model, suggested by the above EFA results (Figure 2).
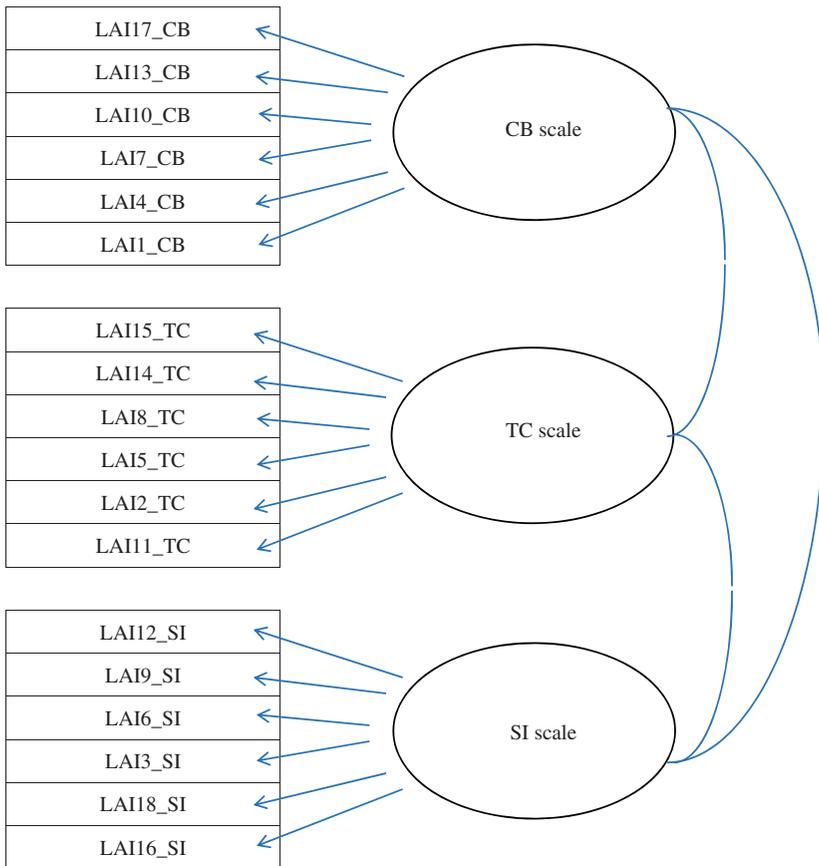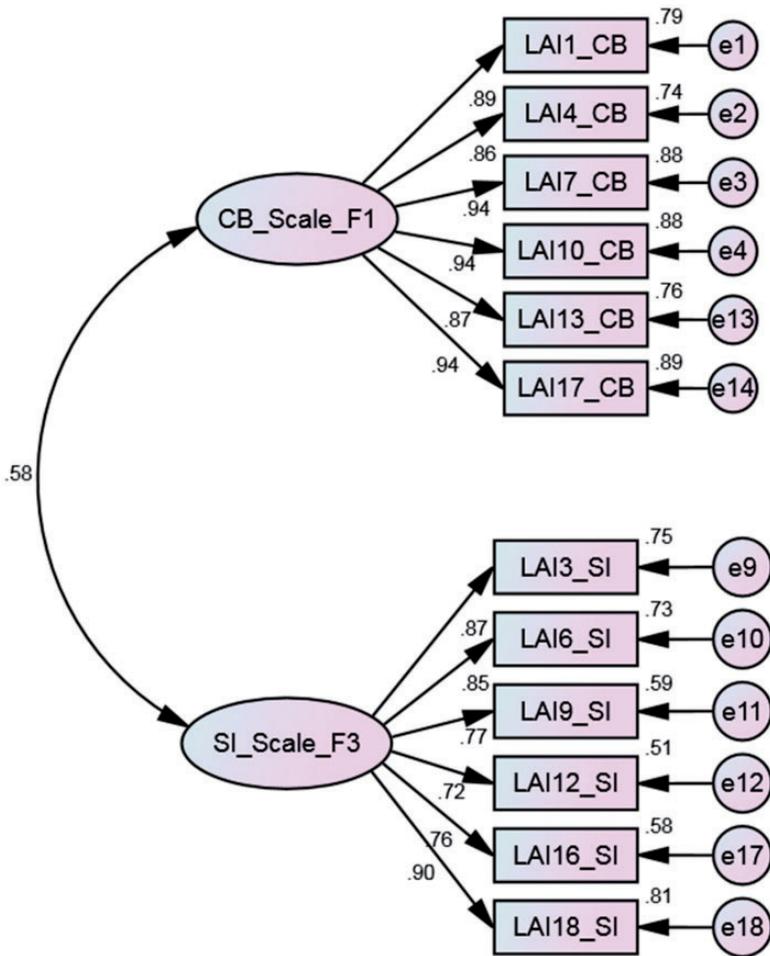
Figure 1. Hypothesised three-factor model.

The fit of this model was better than that of the three-factor model (Chi^2 = 153.925, $p < .0001$, df = 53; RMSEA = .098, p(close) < .0001, range .080–.116; CFI = .961; TLI = .952). As model fit was still not satisfactory, modification indices and the residual correlation matrix were examined (Kline, 2011), indicating that co-variances between the error terms of items 3 and 12 and between the error terms of items 9 and 4 would improve fit. Given the poor performance, if item 12 indicated by the residual matrix, a first modification was to remove item 12. This resulted in a final model (refer Figure 3).

The fit for this final model was not perfect, but was considered much better than the others tested. The error co-variances indicated measurement reliability problems in the data, and it is quite possible that this is still a mis-specified model. Another concern is the possibility that the model is over-fitted to the sample(s) at hand. Nonetheless, the better fit of the two-factor model suggests that the idea of a learning alliance might better be understood, at least for this sample, in terms of

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Chi2 = 90.714 p = .001
df = 53
RMSEA = .094 p= .021
range .060 to .127
CFI = .961
TLI=.951
NFI=.912

Figure 2. Hypothesised two-factor model.

just two factors, theoretically reflecting the CB and SI subscales of the LAI. The factors that are retained in this modelling relate directly to the theoretical concerns and the idea of the learning alliance, much more obviously than does the factor related to teaching practice (TC); the implication of this is discussed and explored
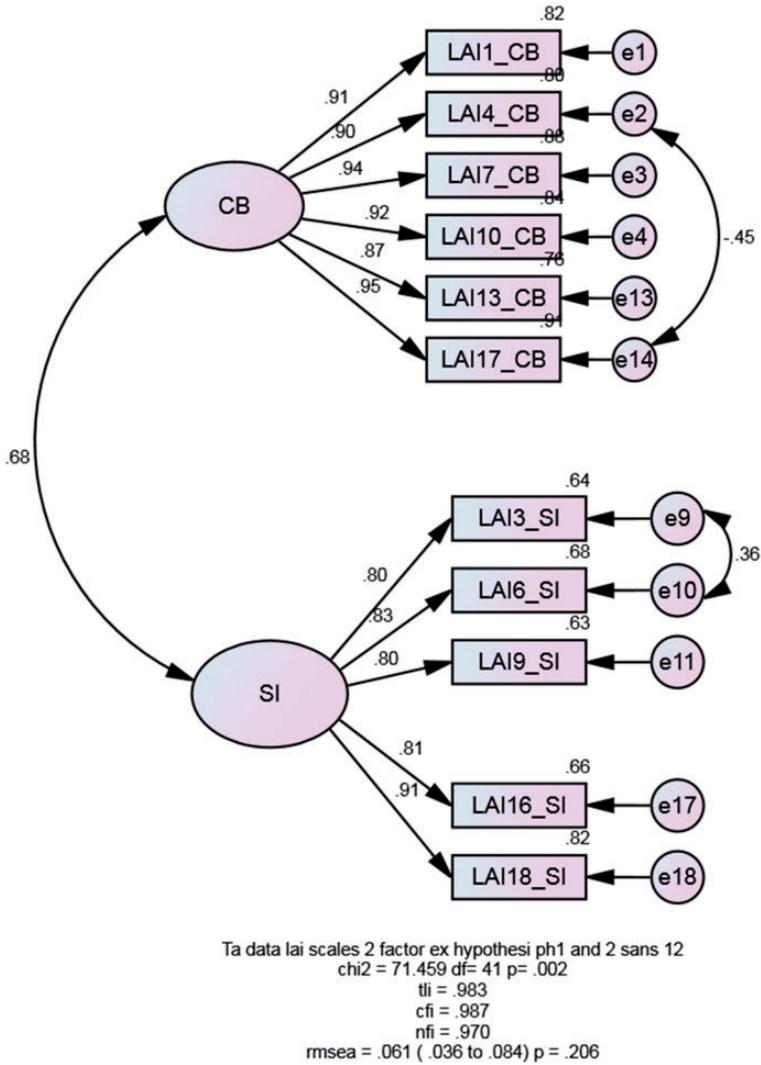
Figure 3. Final two-factor model.

more below. A summary of the descriptive statistics for the two-factor model is provided in Table 1.

Qualitative analysis

Using thematic analysis coding techniques (Braun & Clarke, 2006) on the open question, four major themes, termed qualities of the teacher, teacher styles, mastery of technology and unique online factors, were identified.

Table 1. Means, SDs, and Cronbach's Alpha coefficients for the final two-factor model.

	M	SD	Alpha
Factor 1 (CB)	23.1	10.4	.97
Factor 2 (SI)	27.0	6.9	.90
Total scale (CB + SI)	50.1	15.7	.95

CB: collaborative bond; SI: student investment.

Theme 1: Qualities of the teacher

This referred to those attributes or characteristics of the blended educator which the participants identified as helpful to the teacher alliance in the blended environment. Theme 1 included four sub-themes, the first being 'Attributes of the Teacher' such as understanding, listening, caring, patience, being helpful, generous with time, taking an interest, approachable, friendly, encouraging, inspiring, knowledgeable, authentic and vulnerable;

> *Being listened to and teachers taking the time to reply to concerns and questions promptly created a stronger student/teacher relationship as you felt like they actually cared about your studies. Clear and open communication also assisted. Treating everyone equally and not focusing on the dominant students in the group also assisted.*

The second sub-theme was referred to as 'Relationship with Students' and included the effort that blended educators adopted to develop that relationship or bond with their students during synchronous tutorials;

> *She was always on time and would chat for a little while before classes, she invited questions and participation, she was very happy to engage in conversation or respond to typed comments, she gave us time to be involved, she was patient with questions and talking through assessment requirements, she remembered things we spoke about from one lesson to the next, she was very encouraging about my progress.*

The third sub-theme, entitled the 'Teacher/Practitioner' reflected the appreciation that blended students had for their their educators who were also practitioners in the field;

> *Their overall knowledge on the subject has been outstanding for each and every teacher so far. The fact that most of the time they are still working in the field they are teaching gives me an incredible insight into what it really all about.*

Finally, the fourth sub-theme of Theme 1 was 'Prioritising Student Communications' and captured the priority that educators gave

their online students, in regard to emails, phone calls and during synchronous tutorials;

> *My teacher answered my questions very promptly and gave accurate detailed and helpful feedback on my assignments so that I knew what I needed to do to improve. My teacher also contacted me before the on campus workshop to find out what participation and inclusion needs I might have because of my disability. He then followed up in his teaching strategies on the weekend so that everything in class worked smoothly for everyone as well as me.*

Theme 2: Teacher style

Theme 2 recognised the behaviours or principles that a blended delivery teacher would adopt in their style of teaching over the internet which contributed to the student/teacher alliance. This theme includes eight sub-themes. The first was labelled 'Actively Online' and represented the students appreciation of the immediacy of contact, the encouragement and relatedness of responses: *'My teacher was very engaged with the students and enjoyed giving positive feedback. My teacher showed she was involved with the teacher-student relationship by sending lots of materials and positive affirmations'*.

Secondly, 'Adjustment to Student Needs' which recognised that blended educators would go out of their way to ensure attention and time was given: *'All tutors engaged in my online education have willingly shared their time generously at all times and [have] shown dedication to a good outcome for me'*.

'Clear and Structured Delivery' was the third sub-theme, and acknowledged the time taken to be clear in explanations, expectations and course structure;

> *Always prepared to go the extra mile to explain the unit content and assignment requirements. Very approachable nature and highly knowledgeable on the subject. Genuinely cared about her students. Provided extra information which helped cement the learning and provided helpful feedback. Encouraging and inspiring as a lecturer. Always available via email and quick to reply – an absolute must in online education.*

The fourth sub-theme was 'Providing Extra Resources' which students appreciated in order to aid their continued learning: *'Providing articles on interest throughout the course, separate to the course work'*.

Fifth, 'Teacher Availability' referred to the students observations of teacher availability outside of timetabled synchronous tutorials, which was helpful to their learning;

> *Feed back was direct and positive even when explaining shortcomings. I believe learning is a choice and when fed positively my choices are enhanced. My teachers with the minor*

exception have been willing to make themselves available for phone catch ups outside of the BBC formatted times.

'Material Relevancy and Currency' was the sixth sub-theme, referring to the access to relevant and current materials provided by the educator: *'Openness to questions, explaining theory, being as honest as possible with explainations [sic] to answers or questions given. All via online disscusions [sic] and messages. Up to date messages for class room progression'.*

Seventh, 'Equity of Class time' referred to the appreciation when the blended educator ensured all students were heard and given equal air time;

> *Being listened to and teachers taking the time to reply to concerns and questions prompt-ly created a stronger student/teacher relationship as you felt like they actually cared about your studies. Clear and open communication also assisted. Treating everyone equally and not focusing on the dominant students in the group also assisted.*

Finally, 'Meta-teaching' was the eighth sub-theme, and acknowledged the effort that blended educators took to explain their style of teaching: *'The teacher explaining how they go about teaching the course (their style and structure of teaching)'.*

Theme 3: Mastery of technology

This theme captured the appreciation that blended students offered in regard to the teachers mastery of the various forms of technology available to advance their learning. This theme was defined by two sub-themes, known as 'use of technology' and 'flexibility with technology'.

'Use of technology' referred to the appreciation that blended students felt when their educators made use of various forms of online collaborative software to build alliance;

> *Minimal connection available for strong rapport, however connection via email and assistance in this manner are very helpful. In units where there is face-to-face workshops and phone options to touch base with your lecturer I feel a greater working alliance and support.*

The second and final sub-theme, 'flexibility with technology', referred to the problem solving and flexibility the educator offered when technology sometimes let them down;

> *The teacher was very clear with how the lecture would run, with her expectations, patient when there were internet problems, worked out how to manage the class so it ran smoothly in the online space. Always ran to time. Always welcomed questions, was quick to respond to email/online queries with very detailed answers.*

Theme 4: Unique online factors

This final theme referred to the attributes that are unique to blended delivery, that students appreciate over and above on-campus courses, that lend to good student/ teacher alliance. Three sub-themes are included, being 'adding some face-to-face space', 'collaboration between peers' and 'online objectivety'.

Sub-theme 1, 'adding some face-to-face space' referred to the inclusion of intensive weekend tutorials, which students acknowledged as increasing the alliance building between themselves and their educator;

> _Minimal connection available for strong rapport, however connection via email and assistance in this manner are very helpful. In units where there is face-to-face workshops and phone options to touch base with your lecturer I feel a greater working alliance and support._

Sub-theme 2, 'collaboration between peers' represented the appreciation given to the educator when they encouraged student collaboration, during blended tutorials;

> _I find forming a strong relationship during online study almost impossible and it has not happened in any of my classes with the exception of Group Work. What worked well there was we did an online assessment with other students so we had to talk with both students and lecturer and this allowed much better two-way interaction._

Finally, sub-theme 3, entitled 'online objectivity' acknowledges the objectivity that blended delivery offers and is considered a contributing factor to the online student/teacher alliance;

> _I have had a different teacher/educator for each of the 9 subjects that I have completed. On average, the educators have been quite good, some better than others. I have had 2 on campus educators (women) which I was not particularly happy with, as they tended to 'identify' and 'crowd please' the younger students. I often felt out of things, which is mostly why I chose to study online. Since I didn't have the distraction of a younger 'culture' to contend with. I am serious about my study, and I got off to a slow start, but now I'm getting reasonable results. My online educators knowledge of me is based (I believe.) on my online participation and my assignment results – which is the way I want to be 'judged' – i.e. not on my age or cultural differences._

Triangulation of data sources

The quantitative results indicated that only the 'bond' and 'SI' subscales of the LAI were common with both on-campus and blended student populations. The qualitative results agreed that 'bond' is important to blended students, but other

factors not measured in the LAI are also important for learning alliance in the blended context, including qualities and styles of the teacher (rather than TC), mastery of technology and factors unique to the blended context.

Together, these sources of data are understood to reflect that blended students not only value the collaboration or bond that the teacher builds in the online space but also recognise the content and value of the course being studied, for the establishment of an alliance between themselves and the teacher. However, these sources of data also highlight that the existing measure of learning alliance, the LAI, does not measure other factors that are valued specifically by online/blended students, including the personal qualities of the teacher, the teachers style of teaching, mastery of technology, the encouragement of face to face and online collaborations, and finally the objectivity that online/blended delivery can offer students.

Discussion

The current study aimed to generalise a measure of an on-campus tertiary student learning alliance (the LAI; Rogers, 2012, 2014) with blended tertiary student populations. The study was motivated to find a measure of learning alliance with blended student populations, since to the authors' knowledge, learning alliance as understood by blended student environments has yet to be defined and measured.

In order to achieve this, a mixed-methodology was adopted, involving the modelling of the existing LAI items following its administration to blended student populations using SEM techniques. This was followed by a thematic analysis of an open question asking for blended student perceptions of qualities (behaviours and characteristics) of the educator that contributed to the perceived alliance. Finally, the results of the two data sources were triangulated for a more comprehensive result that reflected a large sample with in-depth qualitative reflections.

Overall, this study contributed to an emerging understanding that the construct of learning alliance is different between the two tertiary student populations (on-campus and blended). Whereas Rogers (2012, 2014) reported a three-dimensional construct (CB, TC and SI), the current results indicate an emerging blended learning alliance construct that includes a 'bond' factor similar to that theorised by Bordin (1979) and Rogers (2012, 2014), and an 'SI' factor, but is yet to definitively demonstrate whether 'TC' is more or less important than other values of a teacher, including their personal qualities and their style of teaching. Finally, the results indicated that there are other factors, not captured by the LAI, that are valued by blended students in the establishment of the learning alliance, including 'mastery of technology', and the opportunity for students to collaborate, and the objectivity that is offered to students who choose to study using blended/online delivery modes.

The current results partially support the previous results by Murphy and Rodrequez-Manzanares (2012) in that many of the factors identified by Murphy et al. (2012) including 'supporting and monitoring', 'availability, accessibility and

responsiveness', 'non-text-based interactions', 'tone of interactions' and 'non-academic interactions' were factors that also emerged in the current study, using different terms.

Unique findings from the current study include the importance that blended students gave the experience of the teacher (Teacher/Practitioner), and the importance that online/blended students award to their educators who ensure the course content is relevant, current, delivered equitably and unique teaching styles of individual educators are outlined (clear and structured delivery, provided extra resources, material relevancy and currency and equity of class time and meta-teaching). A final unique finding was the importance that online/blended students award to educators who will not let failing technology impede their learning and maintain objectivity for students (flexibility of technology and online objectivity).

In summary, the current study has successfully replicated the importance of online support, immediacy and approachableness on behalf of online/blended educators for a strong online learning alliance, which was also stressed by Murphy et al. (2012). However, the current study also elucidated unique findings hinted at also contributing to a strong online learning alliance, including content relevancy, currency and validity, as well as a transparent and structured course delivery style, coupled with flexibility when technology fails. Finally, the importance of online objectivity was highlighted.

Limitations of the current study include a less than adequate sample size in order to achieve minimum statistical power to analyse the quantitative data using SEM techniques. A further limitation includes that the blended student populations were all from the same tertiary provider. An over-representation of female students compared to male students should also be taken into consideration in the interpretation of the current results. Finally, the mean age of students in this study was 43.8 years, compared to the mean age in the Rogers (2014) study, which was 22.9 years, and these results could also be a reflection of age differences in the student populations.

It is recommended that a survey, designed specifically for the online/blended student learning environment, to measure online learning alliance, be constructed using factors identified by both Murphy et al. (2012) and the current study, to guide item generation. Although the findings of the current study can only be generalised to blended/online tertiary counselling students, future studies should also attempt to generalise these findings of online/blended learning alliance to other disciplines, investigating if learning alliance is a uniform construct to learning in general, or differs between disciplines.

The understanding of what enhances the online/blended student/teacher alliance will have the effects of not only increasing student outcomes and success in the tertiary educational sphere but will also improve student retention rates, a statistic that is regarded in Australia as a measure of success for private and public tertiary providers. In the current climate of governmental attention on private tertiary providers, in particular, a keen understanding of what improves student retention is imperative.

Declaration of conflicting interests

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