Pro-Vice Chancellor (Education)

# myExperience Question validation

Review of myExperience questions

**Student Surveys, Educational Intelligence & Analytics; Portfolio of the Pro Vice-Chancellor Education**

**November 2018**

## Executive Summary

The UNSW Student Survey Reference Group (SRG), chaired by PVCE Geoff Crisp requested a review of the myExperience questions administered by the Student Surveys & Engagement Team. The main reason for the review was to investigate the appropriateness and relevance of the questions.

An initial summary review of the myExperience course questions was discussed at the most recent SRG. The SRG proposed that the myExperience survey adopts some changes to the existing items to enhance the measurement of student satisfaction, make the questions more relevant and provide more flexibility for faculties to select questions that are more meaningful to their individual strategic objectives. The purpose of this report is to explain the rationale for the changes to myExperience course items. Statistical analyses were conducted to determine the validity and reliability of the current myExperience survey and investigate the impact of changes in the questions used in the survey.

## Recommendations for discussion

The SRG recommended the following changes to course questions; this report provides a background to the analysis conducted in support of the reccomendations

1. Change wording of Q3. *The digital resources helped me learn*; change the word 'digital' to 'learning' or 'course'
2. Remove Q5. *The amount of assessment was appropriate*
3. Reword Q4. *The assessment tasks were appropriate* to: *The assessment tasks were relevant to the course content*

4. Remove item Q6. *Overall I was satisfied with the quality of the teachin*g
5. Allow faculties to propose 2 questions to only be applied to myExperience surveys for their faculty that consistent 'focus areas' are selected to allow for benchmarking; a set of questions will be made available to choose from and/or will need approval from SRG. Qs to be reviewed and validated after two terms.

**Introduction**

At a meeting of the SRG on 13 July, myExperience core course questions were discussed. Given it's been over a year since myExperience was implemented in S1 2017, the group suggested that it's time to reflect and re-test the relevance and alignment of the course questions with our key strategic objectives.

Faculty consultations began soon after and feedback was formally received from four faculties: Medicine, Engineering, Canberra and Law, which was tabled and discussed at a meeting of the SRG meeting on 14 September. A follow up meeting was scheduled for 25 October for a more detailed discussion and recommendations. At this meeting, a summary exploratory analysis of the key drivers of overall satisfaction in both Student Experience Survey (SES) and myExperience was presented along with observed patterns in the data (APPENDIX 1). An overview of the questions used in similar course evaluation instruments at all Go8 universities was also presented (APPENDIX 2).

After a first examination of the data presented, the SRG recommended to further investigate the patterns of responses to the assessment items: Q4. *The assessment tasks were appropriat*e and Q5. *The amount of assessment was appropriate*; the overall teaching question Q6 *Overall, I was satisfied with the quality of the teaching.* The SRG also suggested that more control should be given to Faculties to determine areas of interest by enabling them to manage 2 additional questions, but without increasing the overall number of questions. This report presents the findings.

The current myExperience survey has two separate components to measure the perceived quality of the course (7 questions + 1 optional) and teaching (3 questions + 1) from the students' perspective. All items are measured on a six-point Likert scale: strongly disagree, disagree, moderately disagree, moderately agree, agree; and strongly agree.

**Analysis**

Data from S1 2018 was used for the analysis as it provides the largest dataset and highest response rate overall. In cases where students evaluated multiple tutors in a course, their responses were averaged to create an overall teacher score.

Multiple techniques were employed to analyse the data via correlations, multiple regressions, confirmatory factor analysis and structural equation modelling. The descriptive statistics of the myExperience questions are presented in Table 1 below. The means and standard deviations suggest a uniform pattern in responses. As expected, the skew of the distributions shows a largely positive response.

*Table 1 myExperience items and summary descriptive statistics for S1 2018 (N Students surveyed = 51547)*

| Code | Item | n | mean | sd | min | max | skew | kurtosis |
|---|---|---|---|---|---|---|---|---|
| t_enco | This teacher encouraged student participation | 75019 | 5.3 | 0.9 | 1 | 6 | -2 | 5.61 |
| t_help | This teacher provided helpful feedback | 73896 | 5.16 | 1.01 | 1 | 6 | -1.75 | 3.79 |
| t_qual | Overall, I was satisfied with the quality of this person's teaching | 75777 | 5.2 | 0.98 | 1 | 6 | -1.86 | 4.35 |
| csat | Overall, I was satisfied with the quality of the course | 77237 | 4.82 | 1.13 | 1 | 6 | -1.32 | 1.96 |
| tsat | Overall, I was satisfied with the quality of the teaching | 77238 | 4.9 | 1.12 | 1 | 6 | -1.39 | 2.2 |
| comm | I felt part of a learning community | 77239 | 4.84 | 1.07 | 1 | 6 | -1.24 | 1.93 |
| feed | The feedback helped me learn | 77239 | 4.74 | 1.18 | 1 | 6 | -1.17 | 1.31 |
| digi | The digital resources helped me learn | 77239 | 4.85 | 1.12 | 1 | 6 | -1.26 | 1.76 |
| aamt | The amount of assessment was appropriate | 77238 | 4.93 | 1.05 | 1 | 6 | -1.43 | 2.63 |
| asst | The assessment tasks were appropriate | 77238 | 4.85 | 1.11 | 1 | 6 | -1.34 | 2.06 |

**Correlation analysis**

The correlation between myExperience items for S1 2018 was examined and presented in a correlation matrix shown in Figures 1 and 2 below. myExperience core set of questions is applied to all courses in the institution. It should be noted that faculty level correlation patterns vary slightly.

*Figure 1 A Correlation Matrix showing a heatmap of the strength of the relationship between myExperience items in S1 2018*

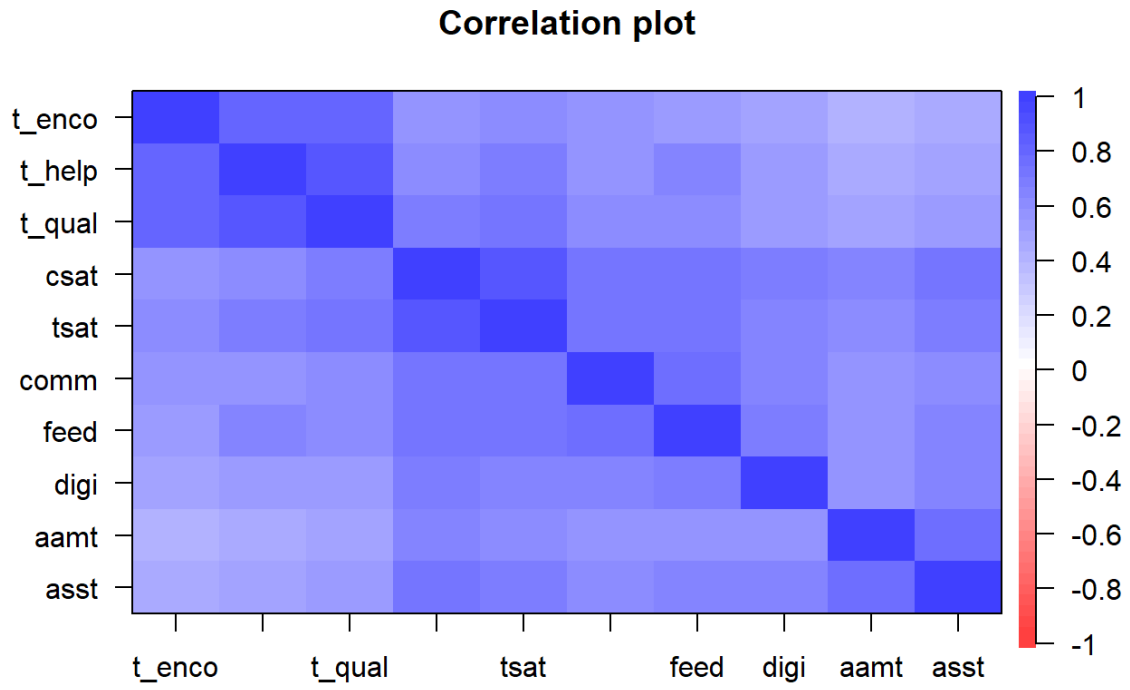
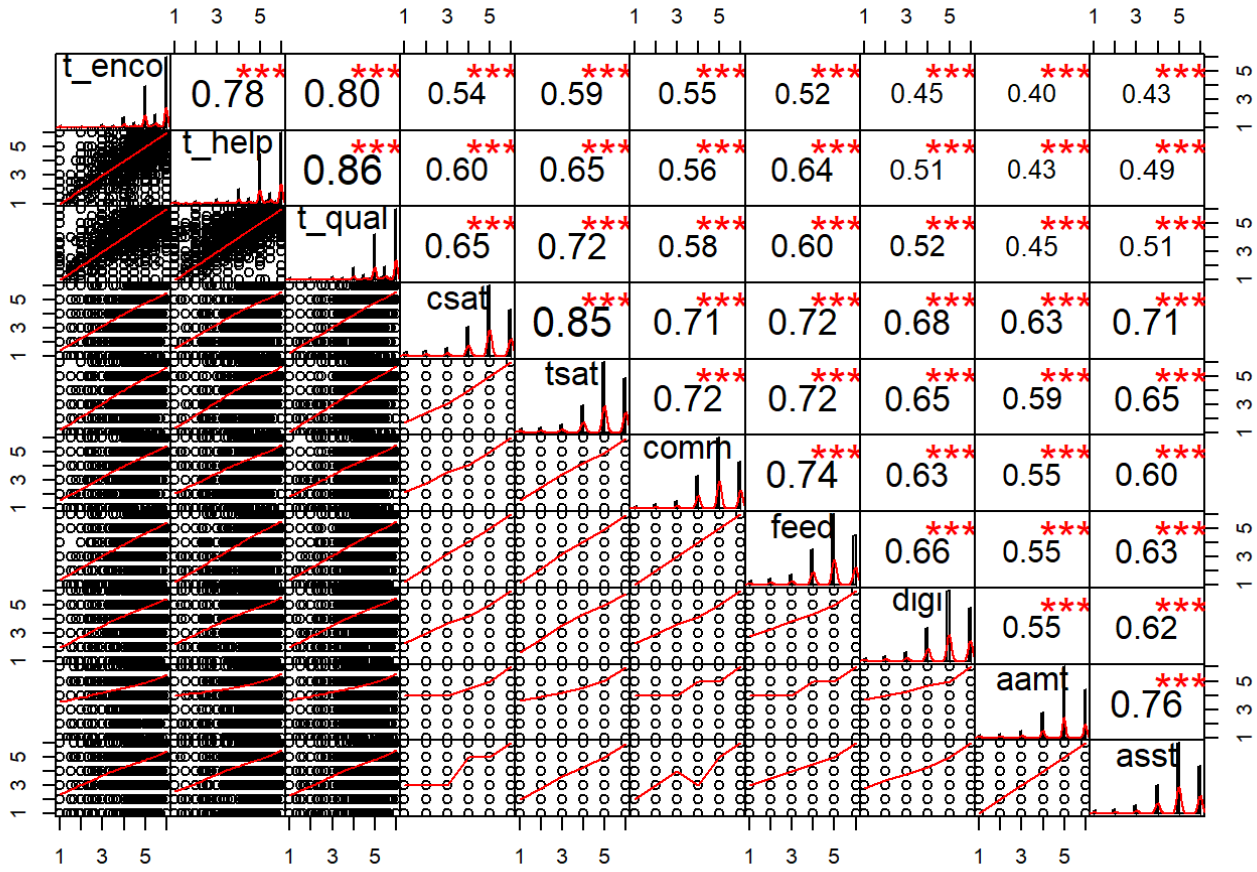


*Figure 2 A Correlation Matrix showing a grid of individual scatterplots; each scatterplot shows the relationship between question items and shows whether the relationships are linear; r values are included to show the strength of the relationship; histograms show the distribution of the responses for each item.*




All myExperience items are positively correlated and generally present a linear relation. The strongest relationships are between Q6. *Overall, I was satisfied with the quality of the teaching* (tsat); and Q7. *Overall, I was satisfied with the quality of the course (*csat) r = .85; and between Q4. *The assessment tasks were appropriate* (asst) and Q5. *The amount of assessment was appropriate* (aamt) r = .76. Further, the two questions related to student satisfaction of teaching (t_qual and tsat) are strongly correlated r = .72.

These correlation patterns indicate that there may be several different aspects that the myExperience questions are measuring in addition to teaching and course satisfaction.

**Multiple regression analysis**

A multiple regression was performed to investigate which questions have greater weight relative to other questions when predicting course (table 2) and teacher (table 3) satisfaction. The zero-order correlations indicate that the items are all highly correlated with course and teacher satisfaction. However, the partial

correlations show that some question in the myExperience survey (i.e., t_qual, comm, feed) are consistently better at predicting course and teaching satisfaction than other questions (aamt, t_enco, t_help).

*Table 2 Items in the myExperience survey predicting **course satisfaction***

| Items | Zero-order | Partial |
|---|---|---|
| comm | .74 | **.23** |
| feed | .73 | **.18** |
| digi | .67 | .13 |
| asst | .68 | .12 |
| aamt | .64 | .10 |
| t_enco | .65 | -.01 |
| t_help | .68 | -.04 |
| t_qual | .74 | **.31** |

*Table 3. Items in the myExperience survey predicting **teaching satisfaction***

| Items | Zero-order | Partial |
|---|---|---|
| comm | .69 | **.20** |
| feed | .70 | .16 |
| digi | .66 | .19 |
| asst | .70 | **.24** |
| aamt | .63 | .09 |
| t_enco | .53 | -.04 |
| t_help | .58 | -.03 |
| t_qual | .64 | **.24** |

In order to test whether items are measuring the same underlying dimensions, we carried out Confirmatory Factor Analysis (CFA) to determine the existence of sub-dimensions of experience and examine the overall measurement model via Structural Equation Modelling (SEM). Whilst the hypothesised model relied on the two-factor (i.e. course + teacher satisfaction). The analysis showed that a 4-factors model may be more appropriate with the existing survey questions. These factors may relate to how much support or resources students have received (hlp), how satisfied they are with the course (sts), whether they are happy with the amount and types of assessments given, and whether they satisfied with the overall quality of the teaching (tch). One factor and three factor models were also tested. However, the 4-factor model provided the best model fit compared to all other models.

*Figure 3. A 4-factors hierarchical model. The "global" factor is measured by four latent variables (dimensions): Support (hlp), Satisfaction (sts), Assessment, (asss) and Teaching (tch). The four latent variables are measured by inter-related items from the survey.*

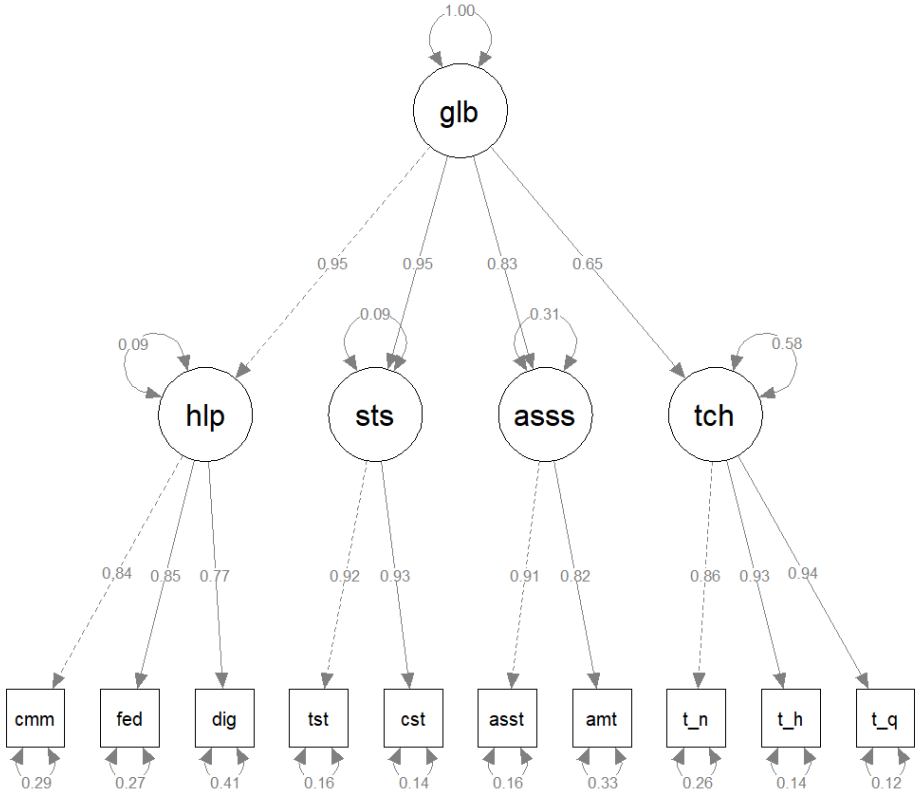



*Table 4 Goodness of fit indices for different factor models*

| No. of factors | Chi-square | Cfi | Tli | RMSEA |
|---|---|---|---|---|
| 1 | 132272.69 | 0.80 | 0.74 | 0.23 |
| 2 | 69051.87 | 0.94 | 0.92 | 0.13 |
| 3 | 24928.91 | 0.96 | 0.95 | 0.10 |
| 4 | 19724.21 | 0.98 | 0.98 | 0.07 |

*Note: CFI = Comparative Fit Index, TLI = Tucker Lewis Index, RMSEA = Root Means Squared Error of Approximation. Higher values for CFI and TLI and lower values for Chi-square and RMSEA indicate better model fit.*

**Conclusion**

The analysis provided a broad set of interesting findings about the distributions of responses and the patterns of relations between the questions asked and the dimensioned measured via the myExperience survey. Based on the findings of this report we can conclude from the results of the confirmatory factor analysis that the instrument measures several dimensions of student satisfaction. These are useful to inform decisions about variations in the items used as well as the interpretations of the results from the survey. Here we focus on two specific aspects:

1. Out of the five myExperience course items, **aamt (The amount of assessment was appropriate)** has the least predictive power in explaining course and teacher satisfaction; and of the two strongly correlated assessment variables may be the best choice to remove.
2. **Tsat (*Overall, I was satisfied with the quality of the teaching*)** and **t_qual (Overall, I was satisfied with the quality of this person's teaching)** are strongly correlated. These are also strongly correlated to **csat (*Overall, I was satisfied with the quality of the course*)** which suggests that the repetition is not necessary. In addition, the weights from the regression models are similar, indicating that these items may be measuring the same underlying concept.

The analysis provides support for removing **tsat** from the course survey and one of the two assessment items (**aamt**) providing room for Faculties to manage two additional questions.

Based on best practices in Quality Enhancement, it is also recommended that faculties use manage a periodic review of 'focus areas' to allow for benchmarking across time periods; a set of questions will be made available to choose from and/or will need approval from SRG. Questions proposed should be reviewed and validated after two terms.

**Appendix 1**
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**Appendix 2**
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