

2020

Making a Difference to the Student Experience Through Purposeful Course Design

Lucia Zundans-Fraser

Charles Sturt University, lzundans@csu.edu.au

Alan Bain

Charles Sturt University, abain@csu.edu.au

Follow this and additional works at: <https://ro.ecu.edu.au/ajte>



Part of the [Curriculum and Instruction Commons](#), [Scholarship of Teaching and Learning Commons](#), and the [Special Education and Teaching Commons](#)

Recommended Citation

Zundans-Fraser, L., & Bain, A. (2020). Making a Difference to the Student Experience Through Purposeful Course Design. *Australian Journal of Teacher Education*, 45(8).
<http://dx.doi.org/10.14221/ajte.2020v45n8.4>

This Journal Article is posted at Research Online.
<https://ro.ecu.edu.au/ajte/vol45/iss8/4>

Making a Difference to the Student Experience Through Purposeful Course Design

Lucia Zundans-Fraser
Alan Bain Associate
Charles Sturt University

Abstract: The study described examines the student experience in a graduate inclusive education course purposefully designed to address areas of need identified. These include the need for theory to underpin course design, the need for collaborative practice, and the need to reduce the theory-to-practice gap. Throughout their enrolment and after course completion, feedback from students is presented and examined in order to determine whether these needs have been met through the design of the course. Findings suggest that the organisation of learning materials, embedded capacity-building skills, and the practical applicability of course content was highly regarded by students and contributed to their learning. Additionally, the design process used addressed the areas of need identified in an authentic way.

Introduction

The knowledge acquired by students enrolled in teacher education courses has a bearing on their inclusive practices (Hansen, 2012), so what is taught and the principles that underpin a course are critical. The opportunity to design a new graduate course to prepare specialists in the inclusive education field was a unique chance to purposefully consider the design of a course. While acknowledging that the broader scope and meaning of the term *inclusion* now often incorporates notions of social justice and equity, this study focuses on understandings and teaching practices specifically relating to individuals with disabilities.

Successful inclusive practice is reliant on a commitment to inclusion through leadership in organisations, including schools and institutions of higher education (Ainscow & Sandill, 2010; Lewis et al., 2019). From an inclusive perspective any barriers to learning should be viewed in relation to the organisation in which course content is developed and delivered. Foreman (2014) suggests that inclusive education and the principles that support its practice need to be central to curriculum design and that educators need to be challenged to reshape their curricula, teaching, learning and assessment processes with the values and principles that embody inclusive education. Success could be judged by the way an educator is able to respond to difference through the curriculum and how instructional practices convey values of inclusivity. In light of current moves for accountability, these elements of practice could be further considered in the debate about what constitutes teacher quality (Keamy & Selkrig, 2013; Low et al., 2012). All of these aspects need to be treated as an integrated holistic understanding of teaching rather than in isolation and are central to course design.

Key issues identified in relation to teacher preparation are magnified in the inclusive environment possibly due to the multidimensional nature of this particular field, the various stakeholders involved and the demands associated with successfully meeting the needs of

children with diverse learning needs. It has emerged that many classroom teachers have been expressing concern about the fact that they are now more fully responsible for catering for the needs of all children in their classes (Bourke, 2010). This concern was the impetus for the design of the course discussed.

The broader study examined the course design process, experiences of the design team, stakeholder input, student experiences of the course and the creation of design principles and a model for higher education course design. The intent of this article is to focus on the student experience dimension and what information this provided the design team throughout the process and considerations for subsequent iterations of course delivery.

Review of Literature

Expectations and demands on inclusive educators have increased. As these changes are evident in practice, serious consideration needs to be given to the design of higher education courses preparing inclusive educators.

Sayeski and Higgins (2014) report on the redesign of a special education (*inclusive education*) teacher preparation program in the United States. Key drivers for this redesign included changes to legislation, accountability expectations and ‘highly qualified teacher’ standard requirements. The course design process undertaken by the faculty team was driven by the key question “Upon graduation, what should our graduates know and be able to do?” (p. 91). The final work completed noted three key changes had been made – to subject offerings, to subject content and faculty engagement. Two new subjects were written to allow for a more diverse range of curriculum offerings, evidence-based practices were embedded in all subject content and with a shift to using a collaborative process the redesign of the program was more productive and ensured shared ownership by all faculty members. The greatest obstruction to the process was institutional habit with faculty advocating to continue the status quo and wanting to use an ‘additive’ model of teacher preparation where more content was simply added to the existing framework. By working in a collaborative manner, the team were able to break these habits.

Education faculties have moved slowly to adjust their courses to prepare students for the inclusive environment (Allday et al., 2013; Author, 2019). Some institutions have utilised the introduction of professional teaching standards and licensing requirements as the catalyst to redesign inclusive education courses (Fuchs et al., 2014; Sayeski & Higgins, 2014). Modifications made to inclusive education teacher preparation will inevitably lead to changes in the expectations and roles of inclusive educators in both special and mainstream schools (Forlin & Lian, 2008; Sayeski & Higgins, 2014). Any changes will not be lasting if educators are placed in settings that are resistant to the idea and practice of inclusion. However, regardless of any potential negativity, educators are responsible for the inclusion of all in their daily practice (Florian, 2009; Foreman, 2014).

There have been moves both internationally and in Australia to shift inclusion from being positioned as the responsibility of a specialist in inclusive (*special*) education to the responsibility of all educators (Berry, 2011; Zhang, 2011). The success of this shift has been varied, with educators often supporting the notion of inclusion but being unsure of what it means and what to do in practice (Anderson & Boyle, 2019). The field of inclusive education incorporates complex skills including the ability to cater for varying student needs, knowledge of evidence-based practices, curriculum differentiation, collaboration, working with various professionals, advocacy, and leadership and organisational ability (Ashman, 2010; Friend et al., 2010; Lewis et al., 2019; Author, 2016). The study discussed here is focused on a graduate inclusive education course where these skills were actively embedded,

although these skills also need to be incorporated in generalist education courses to ensure that all students have been exposed to them (Author, 2019; Nevin et al., 2009).

Areas of need for course design were determined through points of convergence in the inclusive education, higher education and teacher education literature as these were the three educational contexts within which the course design process was situated. The areas of need were: the need for a theoretical basis informing course design and educational practice (Biesta et al., 2011; Kezar & Lester, 2009; Levin, 2010); the need to better utilise collaborative practice, including the way groups of people work together to achieve common goals (Chao et al., 2010; Furlonger et al., 2010; Leko et al., 2015); and the need to close the theory to practice gap (Allen & Wright, 2014; Carter et al., 2011; Grima-Farrell et al., 2014). The higher education and teacher education literature continually highlights the gap between research and practice (Grossman, Hammerness & McDonald, 2009; Norton, Sonnemann & Cherastidham, 2013; Van den Bos & Brouwer, 2014). The research to practice gap is commonly positioned as the work done within a research context and the extent it then has an impact on the field and every day practices. The three areas of need identified have been further explored and discussed in detail as part of previous publications (Author, 2016; Author, 2016a; Author, 2016b). They are also evident in the online learning literature (the subjects described in this study were delivered online) where the need for a theoretical basis for online learning design (Castro & Tumibay, 2019), the importance of collaborative process (Clark, 2001; Sobko et al., 2020; Stevenson & Hedberg, 2013) and the role of research as a term of reference to guide instructional design and delivery (Means et al., 2010; Yang et al., 2018) are frequently identified as important directions for online learning.

Design of the course utilised complexity theory (Gell-Mann, 1994; Merry, 1995; Waldrop, 1992), and more specifically principles of self-organisation (Author, 2007; Griffin et al., 2006; Laroche et al., 2007), as a framework to build the course and content. As an area of need identified in the literature was the need for a theoretical base for course and curriculum design, the intent of the design team was to use theory as a basis for the course design process as well as infuse the principles throughout the delivery of the course. A detailed examination of the theoretical underpinnings of the design is beyond the scope of this article, however numerous publications by design team members explore these principles and their application in inclusive education subject and course design (Author, 2009; Author, 2010; Author, 2014; Author, 2016b; Author, 2012).

The key research question for this study was:
Did the student experience of the course align with the intent of the design and respond to the areas of need identified?

Methodology

The following section describes the study participants, setting and provides an overview of the research design.

Participants

All the students enrolled were practising teachers wishing to upgrade their skills and specialise in inclusive education. The total number of students enrolled in the cohort was 18, all female. Within this cohort the spread of ages ranged from 36 to early 50s. Ethics approval was obtained from the institutional ethics committee to undertake this research and participants provided informed written consent with additional verbal consent given at residential schools. The inability to identify individual responses on institutional

questionnaires, due to this data being provided anonymously, was not an issue for the purposes of this study.

Setting

Regional University (RU – a pseudonym used throughout the study) was approached by a key educational stakeholder regarding interest in designing and delivering a 2 year, part-time distance education course at Masters level in inclusive education. Once interest in doing so was determined by leaders in the Faculty of Education at RU, a design team was formed. A group of six inclusive educators plus a faculty educational designer became the *design team* referred to throughout the study.

Research Design

The broad study used design-based research as the focus approach for the design process. The use of design-based research in educational contexts allows researchers to closely examine the design and impact of their work with the ultimate aim of improving practice. Further, as Anderson & Shattuck (2012) note “...it stresses the need for theory building and the development of design principles that guide, inform, and improve both practice and research in educational contexts” (p. 16). The process and results discussed focus on the second phase of the three-phased approach typically used in design-based research (Johnson et al., 2015). The concept of iterative cycles in design-based research was used to guide the design of the course and focus on the incorporation of feedback from students. Interviews were also undertaken with design team members and although these are not reported in detail in this article, the findings of these are referred to at times as an additional data source and triangulation point.

This article focuses on the student experience and reports the findings from a single student cohort as they progressed through a course. It is a small part of a larger study that looked at the experiences of multiple stakeholders in a course design process including participant-researchers, students, design team members, institutional leaders and industry stakeholders. The student feedback was provided through the completion of questionnaires. As the student cohort size reported here was relatively small, all comments provided in the questionnaire free text box have been included while extended quotes were selected based on a thematic analysis undertaken to support conclusions being made.

Three key pieces of data were used: RU student questionnaire feedback from the first cohort to complete Subject A, the first subject in the course (8 student responses); design team created questionnaires sent to students after completion of Subject A (11 student responses) and RU student questionnaire feedback from the same cohort at the midpoint of their course having completed four of the eight subjects - Subject A, Subject B, Subject C, Subject D (16 student responses).

The institutional questionnaires (Table 1 and Table 3) used a combination of quantitative data on a likert scale and sought qualitative responses to two open ended questions – *what was helpful* and *what would you change*. To maintain some element of consistency, the same format was used by the design team when creating an additional questionnaire (Table 2), although the qualitative response section allowed for more detailed and extended responses due to student feedback provided about the limitations of the previous questionnaire. The quantitative findings have been reported in the tables as frequencies. All narrative responses provided by students have been reported here with

particular quotes then highlighted to illustrate conclusions made by the authors as part of their thematic analysis.

The following section presents the feedback results, a brief discussion after each piece of feedback outlining key findings, and a summary of the actions taken by the design team in response to feedback. The overall intent is not to evaluate the course but to provide a student perspective on the design.

Initial Subject Feedback Results

The first piece of data used by the team was the standard RU *Student Distance Education Subject Questionnaire* that provided feedback about the first subject in the course, Subject A. Data from this subject were used as it was the first student-based feedback source for the course and because two different sources of information were available on the same subject – the standard institutional questionnaire (Table 1) and a questionnaire created by the design team based on the institutional one (Table 2), allowing for more extensive qualitative feedback.

For the RU *Student Distance Education Subject Questionnaire*, quantitative feedback was gathered using a Likert scale with a range from Very Strongly Agree (with the statement) to Very Strongly Disagree and an Unsure option. There was also a N/A (not applicable) option available, although this was not selected by any students in this instance. Students could not be individually identified through these responses. At the time these questionnaires were completed the questions were standardised across the institution, with no opportunity to modify them for a particular subject or to drill down on particular subject design aspects. Items relating to library services and divisional support were removed as they were not aspects for which the design team had responsibility.

Overall, students rated items with aspects such as learning tasks, content, readings and alignment between assessment and objectives highly as determined through responses in the Very Strongly Agree, Strongly Agree and Agree range. Aspects where students responded in the Unsure or Disagree categories included the scheduling to allow adequate preparation and timely feedback. Table 1 provides a summary of the questionnaire responses provided by eight students.

Feedback criteria	Very Strongly Agree	Strongly Agree	Agree	Disagree	Strongly Disagree	Very Strongly Disagree	Unsure
The production quality of the study material was high (e.g. printing, layout).	1	2	5				
The learning tasks suggested in the study material were helpful.	1	3	4				
The objectives of the subject were clearly outlined.	4		3	1			
Subject content was clearly related to the stated subject objectives.	3	2	3				

The recommended readings helped in understanding the subject.	3	4	1	
The assessment tasks in the subject were consistent with the stated objectives of the subject.	3	1	4	
The assignments were scheduled to allow adequate time for preparation.	2		2	3 1
My understanding of the subject has improved as a result of feedback from assignments.	3	1	3	1
Feedback from assignments was timely.	2	0	4	2
The residential school was well organised.	4	1	3	
The teaching support provided was adequate.	3	1	3	1
As a result of doing the subject, I have improved my ability to communicate about its various aspects.	4	2	2	
The overall quality of teaching in this subject was good.	3	1	3	1
I would recommend the subject to another student.	3	1	3	1

N = 8 students

Table 1: The RU Student Distance Education Subject Questionnaire for Subject A First Cohort

The final section of the questionnaire allowed qualitative feedback and required students to respond to two framing phrases: *Comment on two aspects of the subject which you found helpful, useful or particularly good* and *Comment on two aspects of the subject which you would like to see changed*. Responses in this section varied between two comments in each section, one comment, no comment or a combination of these. The student responses are compiled below.

Helpful/particularly good:

Assignment 2 – lesson plans were able to be transferred to real classroom situations (SES1-01)

Generally, readings were informative and helpful (SES1-05)

The layout of each unit giving a step by step approach was useful (SES1-02)

Use of the forum for feedback was challenging but very useful in the learning process (SES1-04)

The residential (SES1-06)

The format of the resource materials (SES1-03)

Rich combination of materials presented in booklet form (SES1-04)

Classroom relevance (SES1-06)

All the readings together in one booklet (SES1-01)

Peer feedback process was good (SES1-07)

Enthused me again for teaching (SES1-04)

I enjoyed the second assignment and found it a great learning tool
(SES1-08)

The workshop – opportunity to pool together, share expertise, collective intelligence (SES1-05)

Aspects to see changed:

Workload and assignment expectations was extremely heavy, review is necessary to make it more equitable (SES1-05)

Mailout and information regarding dates needs to be sent in time for adequate response. Even this survey, dated June 3, arrived June 30th making it impossible to return by the due date (SES1-04)

Assignment One – peer assessment made completion of assignments on time difficult (SES1-02)

Some of the reading material was not legible (SES1-01)

Materials arrive earlier (SES1-06)

The amount of work required in assignments (SES1-03)

I only received this survey 30/6 and it was due back 1/7 (SES1-08)

Huge workload (SES1-07)

Even within the confines of responses permitted through the structure of this questionnaire, students targeted the design and content of the course through comments such as *The layout of each unit giving a step by step approach was useful* (SES1-02) and *The workshop – opportunity to pool together, share expertise, collective intelligence* (SES1-05). Students also referred to the benefits of the various collaborative process elements embedded in the subject through comments such as *peer feedback process was good* (SES1-07) and *Use of the forum for feedback was challenging but very useful in the learning process* (SES1-04). One student indicated that the peer feedback requirement made completion of assignments on time difficult, although no particular details were provided that expanded on this response. A primary motivation for embedding collaboration throughout the course was to enhance the learning process and reflect good practice in the field.

Throughout the design process there was an emphasis on practical and authentic assessment and bridging the theory-to-practice gap. This also covered specific areas of need identified by stakeholders and the literature. In their responses, students noted the practicality of the assessments, learning design, presentation of materials and the benefits of the workshop. In their written feedback, students noted the *classroom relevance* (SES1-06) and that *Assignment 2...lesson plans were able to be transferred to real classroom situations* (SES1-01). The practical application of assessments was central to the work of the design team throughout the design process and had been embedded from the beginning.

The second piece of feedback utilized was the questionnaire designed by the design team that incorporated a combination of quantitative (Table 2) and qualitative feedback about the student experience in Subject A. This questionnaire was used as a cross-check with the institutional questionnaire completed on the same subject. This questionnaire was sent to students by the course design team, its structure loosely modelled on the institutional questionnaire used to collect information, *Student Distance Education Subject Questionnaire*, to ensure some consistency with other data sources available to the design team. The quantitative feedback was gathered using a Likert scale with a range from Very Strongly Agree (with the statement) to Very Strongly Disagree, with an Unsure option included. A *Did Not Respond* (DNR) column has been added to indicate statements where students did not indicate a response preference. Students could not be identified through their responses. Eleven students in the initial cohort provided feedback.

Feedback criteria	Very Strongly Agree	Strongly Agree	Agree	Disagree	Strongly Disagree	Very Strongly Disagree	Unsure	DNR
The peer feedback component of the subject (i.e., sharing and critiquing peers' work) contributed significantly to my learning	1	4	4				1	1
The peer feedback component was worth the time I expended upon it	1	4	4	1			1	
The workshop component of this subject made a significant contribution to my learning	7	2	2					
The assignments in this subject were highly applicable to my classroom practice	4	5	1				1	
The assignments in the course will help me as I support other teachers	3	8						
The course outline helped me to understand the overall course design	2	4	2	1			2	
The organisation of the learning materials made a significant contribution to my learning	5	4	1				1	
The reflection component made a significant contribution to my learning	2	3	3	1			1	1

	Very Good	Good	Average	Poor	Very Poor
Overall, how would you rate the quality of the learning experience in this subject?	9	2			

N = 11 students

Table 2: Design Team Subject Questionnaire for Subject A First Cohort

All students rated the fifth item *The assignments in the course will help me as I support other teachers* as Very Strongly Agree or Strongly Agree. From a design team perspective, this meant that the capacity-building aspect of the course design was already evident at this early stage of the course in the students' responses. The comments section that followed allowed responses beyond those permitted by the formal institutional questionnaire presented in Table 1. As students were able to provide extended responses in this section of the questionnaire, it was interesting to note that the use of the language of self-organising principles had become evident in a manner that mirrored the embedded way this had been done in the subject materials:

The course provided excellent readings and I feel that the learning was very significant... The embedding of the learning theory with the teaching practices was an example... I found the work-load to be heavy, it required substantial blocks of time to be dedicated to each tasks (SES2-03).

I found the critiquing exceptionally draining time-wise and mentally. However, the pooling of the collective intelligence and being able to see others' responses helped affirm and clarify one's thinking (SES2-09).

The value of the feedback and reflection processes could be seen in the quantitative component of the feedback. As with the previous questionnaire, the workshop was also identified as contributing to student learning. Due to the opportunity of providing more detail in their responses, it could be seen that students found the workshops particularly beneficial due to the collaborative and supportive atmosphere created:

The workshop was wonderful and a great forum for so much learning and sharing of ideas (SES2-05).

I enjoyed the workshops I believe these are essential to help eliminate the number of hours spent trying to work out what has to be done.

The workshop component is an excellent support for distance students (SES2-02).

Students rated highly the relevance of the subject to their context, with the statement *The assignments in the course will help me as I support other teachers* scored as Very Strongly Agree or Strongly Agree. What resonated with the design team was the fact that the design of the assignments in the first subject of the course already made students feel that they would be able to support their peers in practice. The capacity-building aspect of the course was important to the design team and had been purposefully embedded throughout.

When focusing on the usefulness to practice, students mentioned the readings as a sound information source, the clarity of tasks, and the application of work completed to their teaching practice. The design team met fortnightly to review independent design work to ensure clarity and consistency across subjects, considered practical application and provided feedback to each other throughout the design process.

The task requirements were on the whole clearly stated (SES2-01).

I found the assignments useful to my teaching practice. It has been a very long time since I had to do a formal lesson plan (for someone to view) (SES2-06).

I have enjoyed the readings immensely...I have enjoyed each assignment as I have learnt so much and I am using everything I have learnt daily (SES2-10). I thoroughly enjoyed module 1 and have really boosted my professional development as a result of doing the [subject] (SES2-08).

The most consistent criticism was of the workload as well as the late delivery of the subject materials. The workload issue was highlighted in both this questionnaire and the formal RU one (Table 1) completed by students. This was also a matter that design team members had anecdotally picked up from students during the teaching session, so it was a high priority aspect when reflecting on feedback:

I found this semester extremely worthwhile, I have learnt a lot. But the workload for me was huge and I kept thinking if this is one subject how will I manage working through two next semester (SES2-04).

Congratulations to the team who has always been responsive to guidance and direction. I am, however, fearing the coming semester and managing the balance between school, study and household (SES2-11).

I am thoroughly enjoying the course however I do fear that the workload of the 2 units next semester is humanly impossible when working full time (SES2-07).

One of the students succinctly incorporated all the positive and challenging aspects identified by peers in their responses. The student mentioned the benefits of the workshop, collaboration, and thoughtfully designed course material. Challenges included the workload and timely arrival of study materials:

It has been very relevant to my teaching. This is the first time I have completed a course through Distance Education and was expecting to be working by myself for the duration of the course. I have however found the workshops to be most beneficial and enjoy the group collaboration... The course material is designed in order that there is a thorough examination of it. I do spend many hours reading the materials and working on assignments but I did expect the workload to be fairly heavy. I am hoping that we receive the next subject materials in ample time so that we can digest it well before commencing assignments (SES2-01).

In summary, the feedback provided by students aligned with three of the areas of need identified – considered design and content of the course, collaboration and reducing the theory-to-practice gap through the practical application of knowledge. Students expressed high levels of satisfaction with the learning experience overall. The workshop component was considered highly valuable as students could engage with the collaborative process face-to-face, establish relationships and then continue this engagement via the subject forum. There was more variability in feedback relating to the reflective components of the subject. Not all respondents felt that this was as valuable as the design team did. A number of students found the subject to be demanding and in excess of their expectations and previous experience with graduate study. The content of the course and the workshops were seen as highly applicable to their practice and overall, students responded favorably to the new design. Based on this feedback, the design team undertook another cycle of refinement, reduced the assignment load, and threaded the study schedule for the next two subjects together, reviewing the narrative of the new design to increase accessibility, reviewing the length requirements for assignments and reviewing the scope of content.

Results of Course Feedback on the First Four Subjects

The third piece of feedback used by the design team was the standard RU *Student Distance Education Subject Questionnaire* that covered the first year of the course (Subject A, Subject B, Subject C, Subject D). This gave an overview of the course-to-date and the student experience with 16 out of the 18 enrolled students providing feedback. As with the previous RU questionnaire, quantitative feedback was gathered using a Likert scale with a range from Very Strongly Agree (with the statement) to Very Strongly Disagree and an Unsure option. There was also a N/A (not applicable) option available, although it was not selected by any students. The quantitative feedback responses have been provided in Table 3.

Feedback criteria	Very Strongly Agree	Strongly Agree	Agree	Disagree	Strongly Disagree	Very Strongly Disagree	Unsure
The workshop components of the course made a significant contribution to my learning	14	2					
The assignments in the course were highly applicable to my classroom practice	5	6	5				
The assignments in the course will help me as I support other teachers	10	3	3				
The course outline helped me to understand the overall course design	6	5	4	1			
The organisation of the learning materials made a significant contribution to my learning	5	7	4				
The reflection component made a significant contribution to my learning	3	3	3		1		6
		Very Good	Good	Average	Poor	Very Poor	
Overall, how would you rate the quality of the learning experience in this course?	14	2					

N = 16

Table 3: The RU Student Distance Education Subject Questionnaire of First Year Subjects

The final section of the questionnaire allowed qualitative feedback and required students to respond to two framing phrases: *Comment on two aspects of the course which you found helpful, useful or particularly good* and *Comment on two aspects of the course which you would like to see changed*. Responses in this section varied between two comments in each section, one comment, no comment or a combination of these. The student responses are compiled below:

I liked the workshops. I have learnt so much. Thank you. It is a lot of work (SES3-14).

I love the workshops and the flexibility of the lecturers. You are all wonderful and helpful. I feel better equipped [sic] to participate in professional discussion and cater for a wide variety of student needs, thanks (SES3-08).

I have found the readings and support to be outstanding, thank you (SES3-03).

Very helpful, down to earth! Thankyou (SES3-06).

I found that even though breaking down assignments into components is beneficial their [sic] were to [sic] many sections (SES3-07).

Some assignments had many sections – lost momentum by part H!! (SES3-11).

I can now drill down, walk the walk, talk the talk and appreciate collective intelligence!! (SES3-09).

Thank-you I have learnt a lot (SES3-02).

This was the first questionnaire completed by students that provided the design team with information about the course-to-date, as the questions and responses pertained to the first four subjects of the course – Subject A, Subject B, Subject C and Subject D. Twice as many students responded than on the prior formal RU feedback occasion, with 16 students completing this particular questionnaire.

Aspects of the course that related to the design and content were all positively evaluated with responses in the Very Strongly Agree, Strongly Agree and Agree categories. This included understanding the overall course design and the organisation of learning materials contributing to learning. These responses supported a number of aspects highlighted by the design team, including the embedded nature of the design and skills throughout the course, particularly the application of a common subject development framework, and the self-similarity of subject design to support the development of a schema. When asked about the quality of the learning experience, students were overwhelmingly positive with 14 of the 16 students giving the highest rating of Very Good and the other two students rating their experience as Good. Additionally, the research-based language used by the design team in the subject materials such as *collective intelligence* and *components* was reflected in student responses.

Both the quantitative and qualitative data available showed that students continued to be very positive about the workshops. The quantitative responses to the statement *The workshop components of the course made a significant contribution to my learning* indicated 14 students Very Strongly Agreed and 2 students Strongly Agreed with this statement. This statement had the strongest positive response in the questionnaire. Further, two students explicitly noted the benefits of the workshops in their comments. By the time students were completing this feedback, the amount of reflection expected during the completion of subjects had been reduced due to workload issues shared with the design team after the first subject. Interestingly, the statement that received the most diverse responses was *The reflection component made a significant contribution to my learning*, with more than one-third of students choosing *Unsure* as their response choice. This result contrasted with prior feedback where just one student had provided an *Unsure* response.

Responses ranging from Very Strongly Agree to Agree were evident when focusing on statements that considered the practical application of the course. These included statements about the applicability of assignments to classroom practice and identifying that assignments would help the student to support other teachers. The high student confidence in supporting others meant that capacity-building of students in the field of inclusive education was occurring. The design team had taken on earlier feedback regarding the workload expectations and volume of content in the first subject (Subject A), so that by the time students completed this questionnaire that reflected their experiences of the first four

subjects, workload was not an issue. It had been at the forefront for the design team as the subsequent subjects went into production this issue appears to have been resolved.

Discussion

Similarly to Sayeski and Higgins (2014), the design team had been driven by a key consideration of what should students know and be able to do by the time they complete the course? Through the student questionnaire data and feedback, it was apparent that many of the aspects that the design team had endeavoured to embed throughout the course were evident to students and had contributed to their course experience. This included the use of collaboration, alignment between theory and practice, and the practicality of workshops. These were all aspects that the design team had conscientiously worked on throughout the design process. The design process had constituted the majority of energy and focus for the design team for a significant period of time, so unsurprisingly student responses focused on specific design elements, the incorporation of theory and pedagogical aspects.

Although the time taken by the design team when beginning the design process to establish a common schema (Merriam et al., 2007) would not have been known to students, the result was evident in their feedback. Students referred to learning tasks, alignment between assignment and objectives, relevance to their context, peer support and collaboration as aspects that influenced their experience of the course. The embedded design within and across subjects, which had been purposefully considered by the design team, also resonated with students. As students worked through the course, the development of their professional language and understanding of design principle terms such as *embedded design*, *collective intelligence* and *schema* also became evident (Lancaster & Auhl, 2013). There was an obvious progression of the use of this language from the two questionnaires done after students completed Subject A to the following one at the mid-point of the course. Embedding evidence-based practices, collaboration and capacity building were core elements in the design and delivery of the course.

Areas for improvement noted by students included workload issues and the timing of material distribution. Based on this feedback, the design team undertook another cycle of refinement, reduced the assignment load, reviewed the word count requirements for assignments and the volume of content. The material distribution timing was also discussed with the Division of Learning and Teaching who at the time were responsible for material distribution. Since completion of this study all subject content is delivered fully online where the release of content is automated, so this element is no longer an issue.

The fact that this study was limited to a single case can be seen as a limitation, however there was never an intention to present this case as representative. Rather, one of the main goals of the study was to implement a theoretically driven course design process and to seek feedback on the student experience and determine whether areas of need identified were addressed. As noted in the following section, there are numerous ways the findings of this study may lead to future research.

Conclusion

The design process created by the design team addressed issues of need identified in the literature – the need for a theory base for course design and reform; the need for, and utilisation of, collaborative practice; and the need to address the theory-to-practice gap. The embedding of a theory base, collaborative practice and alignment between theory and

practice were explicitly addressed by the design and in student feedback. The enactment of the principles of self-organisation that underpinned the course design (Author, 2014) meant concepts such as *embedded design*, *collective intelligence* and *feedback* were familiar to, and used by, students due to their exposure to the course design rather than any formal study of the theory. Students emphasised the benefits of collaboration in all feedback provided. They worked collaboratively in residential schools, completed assessments that required collaborative practice and collaborated online to complete subject content. The theory to practice gap was reduced through the application of content to practice by students in their school settings and the practical nature of most of the course assessments. The initial findings discussed in this article suggest that the purposeful design of a course allows for areas of need to be addressed in an authentic manner. Future studies could compare the experiences of multiple student cohorts to see whether these findings remain consistent through subsequent course offerings.

References

- Ainscow, M., & Sandill, A. (2010). Developing inclusive education systems: the role of organisational cultures and leadership. *International Journal of Inclusive Education*, 14(4), 401-416 <https://doi.org/10.1080/13603110802504903>
- Allday, R. A., Neilsen-Gatti, S., & Hudson, T. M. (2013). Preparation for inclusion in teacher education pre-service curricula. *Teacher Education and Special Education*, 36, 298-311. <https://doi.org/10.1177/0888406413497485>
- Allen, J. M., & Wright, S. E. (2014). Integrating theory and practice in the pre-service teacher education practicum *Teachers and Teaching: Theory and Practice*, 20(2), 136-151. <https://doi.org/10.1080/13540602.2013.848568>
- Anderson, J., & Boyle, C. (2019). Looking in the mirror: Reflecting on 25 years of inclusive education in Australia. *International Journal of Inclusive Education*, 23(7-8), 796-810. <https://doi.org/10.1080/13603116.2019.1622802>
- Anderson, T., & Shattuck, J. (2012). Design-based research: A decade of progress in education research? *Educational Researcher*, 41, 16-25. <https://doi.org/10.3102/0013189X11428813>
- Ashman, A. (2010). Modelling inclusive practices in postgraduate tertiary education courses. *International Journal of Inclusive Education*, 14(7), 667-680. <https://doi.org/10.1080/13603111003778429>
- Bain, A. (2007). *The self-organizing school: Next-generation comprehensive school reforms*. Rowman & Littlefield Education.
- Bain, A., Lancaster, J., & Zundans, L. (2009). Pattern language development in the preparation of inclusive educators. *International Journal of Teaching and Learning in Higher Education*, 20(3), 336-349.
- Berry, R. A. W. (2011). Voices of experience: general education teachers on teaching students with disabilities. *International Journal of Inclusive Education*, 15(6), 627-648. <https://doi.org/10.1080/13603110903278035>
- Biesta, G., Allan, J., & Edwards, R. (2011). The theory question in research capacity building in education: Towards an agenda for research and practice. *British Journal of Educational Studies* 59(3), 225-239. <https://doi.org/10.1080/00071005.2011.599793>
- Bourke, P. E. (2010). Inclusive education reform in Queensland: Implications for policy and practice. *International Journal of Inclusive Education*, 14(2), 183-193. <https://doi.org/10.1080/13603110802504200>

- Carter, M., Stephenson, J., & Strnadova, I. (2011). Reported prevalence by Australian special educators of evidence-based instructional practices. *Australasian Journal of Special Education*, 35(1), 47-60. <https://doi.org/10.1375/ajse.35.1.47>
- Castro, M. D., & Tumibay, G. M. (2019). A literature review: Efficacy of online learning courses for higher education institution using meta-analysis. *Education and Information Technologies*. <https://doi.org/10.1007/s10639-019-10027-z>
- Chao, I. T., Saj, T., & Hamilton, D. (2010). Using collaborative course development to achieve online course quality standards. *The International Review of Research in Open and Distance Learning*, 11(3), 106-126. <https://doi.org/10.19173/irrodl.v11i3.912>
- Clark, J. (2001). Stimulating collaboration and discussion in online learning environments. *Internet and Higher Education*, 4(2), 119-124. [https://doi.org/10.1016/S1096-7516\(01\)00054-9](https://doi.org/10.1016/S1096-7516(01)00054-9)
- Florian, L. (2009). Preparing teachers to work in 'schools for all'. *Teaching and Teacher Education*, 25, 533-534. <https://doi.org/10.1177/0022487112447112>
- Foreman, P. (2014). Introducing inclusion in education. In P. Foreman & M. Arthur-Kelly (Eds.), *Inclusion in action* (4th ed., pp. 2-46). Cengage Learning.
- Forlin, C., & Lian, M.-G. J. (2008). Contemporary trends and issues in education reform for special and inclusive education in the Asia-Pacific region. In C. Forlin & M.-G. J. Lian (Eds.), *Reform, inclusion and teacher education: Towards a new era of special education in the Asia-Pacific region*. Routledge. <https://doi.org/10.4324/9780203895313>
- Friend, M., Cook, L., Hurley-Chamberlain, D., & Shamberger, C. (2010). Co-Teaching: An illustration of the complexity of collaboration in special education. *Journal of Educational and Psychological Consultation*, 20, 9-27. <https://doi.org/10.1080/10474410903535380>
- Fuchs, W. W., Fahsl, A. J., & James, S. M. (2014). Redesigning a special education teacher-preparation program: The rationale, process and outcomes. *The New Educator*, 10(2), 145-152. <https://doi.org/10.1080/1547688X.2014.898493>
- Furlonger, B. E., Sharma, U., Moore, D. W., & King, B. S. (2010). A new approach to training teachers to meet the diverse learning needs of deaf and hard-of-hearing children within inclusive Australian schools. *International Journal of Inclusive Education*, 14(3), 289-308. <https://doi.org/10.1080/13603110802504549>
- Gell-Mann, M. (1994). *The quark and the jaguar: Adventures in the simple and the complex*. Freeman. <https://doi.org/10.1063/1.2808634>
- Griffin, D., Shaw, P., & Stacey, R. (2006). Speaking of complexity in management theory and practice. In R. MacIntosh, D. MacLean, R. Stacey & D. Griffin (Eds.), *Complexity and organization: Readings and conversations* (pp. 162-184). Routledge.
- Grima-Farrell, C. R., Long, J., Bentley-Williams, R., & Laws, C. (2014). A school system and university approach to reducing the research to practice gap in teacher education: A collaborative special education immersion project. *Australian Journal of Teacher Education*, 39(5), 89-98. <https://doi.org/10.14221/ajte.2014v39n5.2>
- Grossman, P., Hammerness, K. M., & McDonald, M. (2009). Redefining teaching, re-imagining teacher education. *Teachers and Teaching: Theory and Practice*, 15(2), 273-289. <https://doi.org/10.1080/13540600902875340>
- Hansen, J. H. (2012). Limits to inclusion. *International Journal of Inclusive Education*, 16(1), 89-98. <https://doi.org/10.1080/13603111003671632>
- Johnson, S., Veitch, S., & Dewiyanti, S. (2015). A framework to embed communication skills across the curriculum: A design-based research approach *Journal of University Teaching & Learning Practice*, 12(4). <http://ro.uow.edu.au/jutlp/vol12/iss4/6>

- Keamy, R. K., & Selkrig, M. (2013). The effectiveness of protocols when pre-service teachers engage in online collaborations: An exploration. *Australian Journal of Teacher Education*, 38(2), 102-117. <https://doi.org/10.14221/ajte.2013v38n2.4>
- Kezar, A. J., & Lester, J. (2009). *Organizing Higher Education for Collaboration: A Guide for Campus Leaders*. John Wiley & Sons.
- Lancaster, J., & Auhl, G. (2013). Encouraging pattern language development in a pre-service inclusive education course: A comparative study. *International Journal of Disability, Development and Education*, 60(4), 363-381. <https://doi.org/10.1080/1034912X.2013.846466>
- Lancaster, J., & Bain, A. (2019). Designing university courses to improve pre-service teachers' pedagogical content knowledge of evidence-based inclusive practice. *Australian Journal of Teacher Education*, 44(2), 51-65 <https://doi.org/10.14221/ajte.2018v44n2.4>
- Lancaster, J., & Bain, A. (2010). The design of pre-service inclusive education courses and their effects on self-efficacy: A comparative study. *Asia-Pacific Journal of Teacher Education*, 38(2), 117-128. <https://doi.org/10.1080/13598661003678950>
- Laroche, L., Nicol, C., & Mayer-Smith, J. (2007). New venues for science teacher education: Self-organizational pedagogy on the edge of chaos. *Complicity: An International Journal of Complexity and Education*, 4(1), 69-83. <https://doi.org/10.29173/cmplct8761>
- Leko, M. M., Kiely, M. T., Brownell, M. T., Osipova, A., Dingle, M. P., & Mundy, C. A. (2015). Understanding special educators' learning opportunities in collaborative groups: The role of discourse *Teacher Education and Special Education*, 38(2), 138-157. <https://doi.org/10.1177/0888406414557283>
- Levin, B. (2010). Governments and education reform: some lessons from the last 50 years. *Journal of Education Policy*, 25(6), 739-747. <https://doi.org/10.1080/02680939.2010.523793>
- Lewis, I., Corcoran, S. L., Juma, S., Kaplan, I., Little, D., & Pinnock, H. (2019). Time to stop polishing the brass on the Titanic: Moving beyond 'quick-and-dirty' teacher education for inclusion, towards sustainable theories of change. *International Journal of Inclusive Education*, 23(7-8), 722-739. <https://doi.org/10.1080/13603116.2019.1624847>
- Low, E. L., Hui, C., Taylor, P. G., & Ng, P. T. (2012). Towards evidence-based initial teacher education in Singapore: A review of current literature. *Australian Journal of Teacher Education*, 37(5), 65-77. <https://doi.org/10.14221/ajte.2012v37n5.3>
- Means, B., Toyama, Y., Murphy, R., Bakia, M., & Jones, K. (2009). *Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies*. U.S. Department of Education.
- Merriam, S. B., Caffarella, R. S., & Baumgartner, L. M. (2007). *Learning in adulthood: A comprehensive guide*. Jossey-Bass.
- Merry, U. (1995). *Coping with uncertainty: Insights from the new sciences of chaos, self-organization and complexity*. Praeger.
- Nevin, A. I., Thousand, J. S., & Villa, R. A. (2009). Collaborative teaching for teacher educators - what does the research say? *Teaching and Teacher Education*, 25, 569-574. <https://doi.org/10.1016/j.tate.2009.02.009>
- Norton, A., Sonnemann, J., & Cherastidham, I. (2013). *Taking university teaching seriously*. Grattan Institute.
- Sayeski, K. L., & Higgins, K. (2014). Redesigning special education teacher preparation programs with a focus on outcomes. *Teacher Education and Special Education*, 37(2), 91-105 <https://doi.org/10.1177/0888406413513274>

- Sobko, S., Unadkat, D., Adams, J., & Hull, G. (2020). Learning through collaboration: A networked approach to online pedagogy. *E-Learning and Digital Media*, 17(1), 36-55. <https://doi.org/10.1177/2042753019882562>
- Stevenson, M., & Hedberg, J. G. (2013). Learning and design with online real-time collaboration. *Educational Media International*, 50(2), 120-134. <https://doi.org/10.1080/09523987.2013.795352>
- Van den Bos, P., & Brouwer, J. (2014). Learning to teach in higher education: How to link theory and practice. *Teaching in Higher Education*, 19(7), 772-786. <https://doi.org/10.1080/13562517.2014.901952>
- Waldrop, M. M. (1992). *Complexity: The emerging science at the edge of order and chaos*. Viking. <https://doi.org/10.1063/1.2809917>
- Yang, D., Lavonen, J. M., & Niemi, H. (2018). Online learning engagement: Critical factors and research evidence from the literature. *Themes in ELearning*, 11(1), 1-22.
- Zhang, K. C. (2011). Early childhood education and special education: How well do they mix? An examination of inclusive practices in early childhood educational settings in Hong Kong. *International Journal of Inclusive Education*, 15(6), 683-697. <https://doi.org/10.1080/13603110903317676>
- Zundans-Fraser, L. (2014). *Self-organisation in course design: A collaborative, theory-based approach to course development in inclusive education*. Unpublished doctoral dissertation, Charles Sturt University, Bathurst.
- Zundans-Fraser, L., & Auhl, G. (2016). A theory-driven approach to course design in inclusive education. *Australian Journal of Teacher Education*, 41(3), 140-157. <https://doi.org/10.14221/ajte.2016v41n3.9>
- Zundans-Fraser, L., & Bain, A. (2016a). How do institutional practices for course design and review address areas of need in higher education. *Higher Education Research & Development*. <https://doi.org/10.1080/07294360.2015.1137883>
- Zundans-Fraser, L., & Bain, A. (2016b). The role of collaboration in a comprehensive programme design process in inclusive education. *International Journal of Inclusive Education*, 20(2), 136-148. <https://doi.org/10.1080/13603116.2015.1075610>
- Zundans-Fraser, L., & Lancaster, J. (2012). Enhancing the inclusive self-efficacy of preservice teachers through embedded course design. *Education Research International*, 2012. <https://doi.org/10.1155/2012/581352>