

How first year occupational therapy students rate the degree to which anxiety negatively impacts on their performance in skills assessments: A pilot study at the University of South Australia.

ABSTRACT

'Skills assessments' are a form of assessment in the University of South Australia occupational therapy program. Both teaching staff and students have reported concerns around the use of skills assessments with regard to the level of anxiety evoked as a result of the live performance and confrontational aspects of the assessment format. This pilot study involved a cohort of 76 occupational therapy students. Feedback was sought around a specific skills assessment piece, with reference to student perceptions of their related anxiety; the impact of this anxiety on their learning; and subsequently, the 'fairness' of this assessment format. In addition, the study explored student perceptions of their anxiety resulting from the skills assessments as compared with that of written assessments. Results suggested that whilst skills assessments evoked heightened levels of anxiety prior to the commencement of the assessment, these symptoms abated during the assessment and did not have a significant negative impact on student ability to meet learning objectives. The results also suggested that the evoked anxiety did not result in an unfair assessment of their abilities. In addition, the majority of students indicated the anxiety resulting from skills assessments was not dissimilar from the anxiety experienced during written assessments.

AUTHORS

Prue Welsh

Lecturer, Occupational Therapy Program, University of South Australia

Keywords

Test anxiety;
performance anxiety;
skills assessments;
fairness of assessment formats.

Introduction

In the context of this study, skills assessments in occupational therapy education relate to an assessment format in which a student performs an occupational therapy skill live in front of an assessor. This is often accompanied by a role play and direct involvement with a simulated client.

For example, the assessed skill might involve the occupational therapist (student) teaching a client adapted dressing techniques following a stroke. The format requires students to demonstrate a sound understanding of the underlying theory, a safe and effective use of a particular therapy skill and appropriate communication with the client.

The research question for this study was 'how do occupational therapy students rate their anxiety in skills assessments and what impact does anxiety have on assessment outcome?'. This question resulted from anecdotal discussion with academic staff and informal feedback from students. Academic staff members involved in assessing the students in skills assessments reported incidences in which they were concerned about student anxiety in the assessment. Staff queried the potential impact of this anxiety on a student's confidence, overall performance and consequently their learning. Concerns were raised around skills assessment being potentially counterproductive to learning through evoking negative anxiety states. This in turn raised questions around the 'fairness' of the assessment format and if skills assessments were the most appropriate way to assess the course learning objectives.

Informal discussion with students before and after these assessments also identified similar sentiments and attitudes. In the interest of developing the most effective teaching strategies, a pilot study was commenced to research these questions. Before addressing the issue of fairness and relevance, it was seen as prudent to identify student perceptions of negative anxiety related to the skills assessments. Students were also asked to compare the performance based skills assessments to written assessments in an attempt to determine the comparative levels of negative anxiety evoked. The research focussed on individual student's perception of their own anxiety, the notion of 'fairness' in

the assessment format and perspectives around assessment anxiety in general.

This study was intended to serve as a pilot, with results directly informing teaching and learning activities within the occupational therapy program at the University of South Australia (UniSA). The sample population was the 2010 first year cohort of students undertaking a particular skills assessment as part of their study. As such, the results directly inform future development of the specific course. In addition, the results will be considered with regard to the use of the skill demonstration assessment in other UniSA courses and programs.

BACKGROUND

The skills assessment in this study constitutes one of three assessment pieces of a first year occupational therapy course. This course is the first of six that form a specific stream of courses in the occupational therapy program. In this stream the level of complexity is scaffolded over the four year occupational therapy program to increase the expectations of students. In this particular course, the skills assessment is the second assessment piece and scheduled midway through the 13 week study period.

The stated learning objective related to this assessment piece is '*students will be able to demonstrate and apply knowledge of stress management and relaxation training techniques*'. In achieving this, this particular assessment requires students to:

- Learn about the application of stress management techniques for people who experience stress and anxiety
- Demonstrate skill in the selection and application of a stress management technique
- Practise skills of critiquing own performance.

Each assessment consisted of a 15 minute performance of the skill, followed by a 15 minute self-reflection completed by the student. The performance component requires students to pair up and simulate a therapy session through role play. In this assessment, students demonstrate competence in the practice a particular therapy skill and their ability to communicate effectively. Students were able to choose the context of their role play, the exact skill that was to be demonstrated, and were able to take scripts and props into the session. The use of the skill assessment format is subsequently repeated throughout the UniSA occupational therapy program with the complexity scaffolded over time through the reduction of tutor support, student choice of assessment is eliminated, and the complexity of the assessment requirement is increased.

There are various reasons to support the use of the skills assessment. Biggs (2007) and Biggs & Tang (2007) promote the idea of constructive alignment suggesting that assessment should be aligned with course learning outcomes, such that student learning is directly aimed at achieving the latter. Biggs and Tang (2007) highlight the need to use appropriate verbs, such as those proposed in Bloom's taxonomy to verbalise learning objectives, in order to support alignment occurring. The course learning objective with which this skills assessment is aligned requires the 'demonstration and application' of a specific therapeutic skill. In completing the skills assessment the student performs the therapeutic skill in front of an assessor, aligning with the verb 'demonstrate'.

This skills assessment piece has three distinct requirements of students, thus it could be argued that it requires a higher level of learning and understanding. The format and structure of the assessment then must support development of this level of learning. Through the SOLO taxonomy, Biggs and Collis (1982) provide a framework to facilitate varying levels of learning complexity. The tiered framework suggests five successive levels of student learning. With the inherent complexity, skills assessments aims to achieve learning at levels four to five of the SOLO taxonomy (Biggs and Collis 1982). Level four or the 'relational level' states that the student is able to appreciate the significance of their understanding as part of a 'whole', and level five, or the 'extended abstract level', states that the student can also generalise principles and their understanding to broader domains. Being a first year course, the complexity of this particular assessment piece is more aligned with the fourth level. The skills assessments that feature in subsequent courses of the four years of the program gradually increase in

complexity, with later assessment pieces requiring learning at the fifth level of the SOLO taxonomy (Biggs and Collis 1982).

In 2008, Brown suggested that teaching staff can use assessment to direct students towards meaningful learning activity and convey a sense of what learning is valued as important. In addition, Brown (2008) proposed that assessment design should be in-built into learning rather than be added as a supplementary activity. Skills assessments evaluate skills that are taught and practiced across the course and also require students to spend time developing skills which will be replicated in their professional lives. An 'authentic' experience that may parallel future clinical practice, skills assessments provide students with an opportunity to hone and practice their skills. Orell (2008) likens this to providing students with multiple 'low jump' learning experiences and building up capacity before expecting them to be able to attempt the 'high jump' assessments.

Brown (2008) suggested that assessment should be authentic through being realistic, meaningful and relevant to learning, encouraging students to see the link between their learning and their chosen vocation; therefore, promoting a sense of meaningfulness and relevance in their studies. As the program of occupational therapy prepares the student for clinical practice it can be argued that opportunities for experiences that are realistic and directly related to the 'doing' of clinical practice, such as skills assessments, would assist in the development of sound clinical competency.

Ramsden (2003) states that in designing assessments the student experience should be varied through changing the characteristics of the assessment piece to decreasing familiarisation, predictability and routine nature of the task. Skills assessments offer students an alternative to written assessments, and an opportunity to employ knowledge and creativity; thus, accommodating a wider range of student needs and abilities.

Link to Occupational Therapy

To further support the use of skills assessments in occupational therapy education, it can also be suggested assessments also align with the ideals of the occupational therapy profession, and assists to build capacity in the clinical skills required to be an effective therapist.

Occupational therapy is an allied health profession that involves working directly with health consumers to achieve targeted goals related to health and wellbeing. With a focus on the role of meaningful

occupation as key to 'wellbeing', the definition of the word occupation includes any task that a person may 'do to occupy themselves' (Law *et al.* 2002). The occupation, or task itself, must hold inherent meaning for the client, contribute to their general health and wellbeing and have 'purpose' (Christiansen & Baum, 2005). This might include self care tasks, leisure tasks or productivity tasks. In supporting and facilitating safe occupation, the profession works towards supporting and facilitating wellbeing through minimising 'occupational deprivation'.

In clinical practice, occupational therapists use occupation as both the means and the end. As such, the occupation is the goal towards which efforts are made, and also the vehicle by which this goal is achieved. Skills assessments may assist in preparing students for clinical practice through the clinical reasoning process and subsequent implementation or 'doing' of an occupational therapy based intervention.

Furthermore, the occupational therapy profession has theoretical bases in the concepts of client centred and collaborative practices. Recognising that therapeutic goals need to be meaningful and purposive for the client, the therapist work collaboratively to involve the client at every step of the in decision making processes to negotiate goals and intervention plans (Law *et al.*, 2002; Christiansen & Baum, 2005). In order to achieve this, occupational therapists must possess sound communication skills - a requirement of skills assessments. Skills assessments provide a platform for demonstration and assessment of clinical and communication skills. Through the prepared role play, skills in collaborative work, client centeredness and therapeutic rapport building can be practiced and evidenced.

LITERATURE REVIEW

In the context of this project, the term 'anxiety' refers not to a clinical diagnosis or condition but a perception of the normal feelings of nervousness, trepidation and/or anxiety that might be related to the performance and evaluation of one's ability. Whilst normal in everyday life, and justifiable in relation to an assessment piece, it is the magnitude of these feelings and the impact of this on the student's ability to demonstrate their skills that will be explored.

In researching 'test anxiety', Huberty (2010) discussed the normal feelings of anxiety that may exist in relation to academic evaluation before stating that for approximately 30% of the population test anxiety is severe enough to result in irrational catastrophic reactions and have 'significant negative

effects on the student ability to perform at an optimal level' with some students failing the assessment despite knowing the material (Huberty 2010, p.12). Brand & Schoonheim-Klein (2009) researched test anxiety in dentistry students, and stated that high levels of test anxiety may interfere with the learning process and result in lower assessment results. Sarid *et al* (2004, p.292) also discussed test anxiety, in the field of medical, nursing and paramedical education, suggesting that in a small number of students, the heightened level of anxiety can sometimes manifest into a 'phenomenology of psychological and physiological symptoms'.

Little evidence regarding the use of *skills assessments* in any capacity. In addition, there was paucity in the evidence discussing the use of any type of 'live' assessment within occupational therapy education. This is supported by Wellington (2010) who in discussing the use of vivas, another type of 'live' assessment, identified that very minimal literature has been published around the student perception of this assessment format. As such, literature for similar assessment types was considered and reviewed, including viva voce oral presentations and objective structured clinical examination (OSCE) a combination of oral presentation and assessment of mainly laboratory based clinical skills. In addition, the review of discipline specific information was expanded to include literature pertaining to other disciplines, with the evidence found pertaining to medical, nursing and dental higher education.

Whilst varying in structure, intent and context, viva assessments are live assessments of student ability. Arndt *et al* (2009) suggest that viva assessments can evoke concerning levels of anxiety, and if so, may not be beneficial to the processes of either learning or evaluation. Discussing viva use in the medical education, Shallaly & Ali (2004) reported that many students find that the stress of the confrontational aspect to be distressing, with the inclusion of an OSCE eliciting even greater anxiety.

Discussing vivas in British doctorate education, Carter and Whittaker (2009, p. 169), reported that students reflected on vivas as 'dispiriting, negative experiences analogous to train crashes'. They also suggested that the viva experience may cause a great 'loss of confidence, regardless of the examination outcome'. The authors supported increased guidance of students through the challenging format of viva assessments. This was reiterated by Wellington (2010) who stated that the viva assessment is an affective experience requiring

adequate support and preparation of students. Conversely, Carter and Whittaker (2009) note that the physiological and psychological stress of the viva could be justified if it promotes a constructive, developmental opportunity for the student.

Studying the use of vivas in undergraduate marketing education, Pearce and Lee (2003) noted validity and reliability concerns due to, amongst other reasons, student anxiety. They reported that the experience induces unexpected feelings of significant nervousness and suggested that students would benefit from more preparatory support from teaching staff. Sarid *et al* (2004) reported statistically significant greater anxiety symptoms related to oral presentations, than for written assessment, however students reported that their symptoms began to abate towards the cessation of the assessment piece. This sentiment was also reported by Marshall *et al* (2003) who, in a similar study to Sarid *et al* (2004), compared medical student anxiety levels in varying assessment methods. The study found that the OSCE was the second most anxiety provoking assessment method, after the 'seminar' format, with the 'written' assessment resulting in the least student anxiety. In discussing test anxiety, Marshall (2003) proposed that assessment, including the written assessment, 'provoked more anxiety than elective surgery' (Marshall *et al* 2003, p. 190.)

On the basis of the reviewed literature, it is possible to argue the merit of the educational rationale supporting the use of skills assessments in higher education; however, evidence also suggests that the live assessment formats may result in heightened levels of student anxiety and may result in a detrimental impact on learning and assessment outcomes. Due to a lack of literature around the use of skills assessments in particular, it is not possible to either consider the effectiveness of the use of these assessments or the use of such assessments in the specific area of occupational therapy education. As a result, the study seeks to complete the first step in both lines of enquiry. First year occupational therapy students were consulted and asked to identify their perceptions of their own negative anxiety related to the skills assessments, and the subsequent fairness of the assessment format.

It is anticipated that as a pilot study, the outcomes of this study may be used to inform future research involving the wider occupational therapy student population. As such, the primary motivation for this study is course and program development, as well as potentially informing subsequent research activities.

METHODOLOGY

The 2010 first year occupational therapy cohort at the University of UniSA consisted of 86 students, all of whom participated in the skills assessment that was the focus of this study.

The timeframe for this study was limited to approximately six months. 'TellUs2' is an online survey software and was used to create a voluntary, anonymous, online survey. In doing so, a large number of students were reached with relative ease, reducing both cost and time. The TellUs2 software survey fits with a non-experimental approach to the study in that can measure more than one type of variable through the one instrument and permits multiple uses of the data set (Depoy & Gitlin, 2005).

As per the UniSA 'Guidelines for evaluation activities involving UniSA students and staff' (2012), online survey data can be used for 'external publication without the need for ethics approval, provided that the data was gathered online, the responses were provided voluntarily and anonymously, and the respondents were advised of the possibility of data use for publication'. In addition, the guidelines required that respondents be informed that results may be published. These criteria were satisfied and as such ethics approval was not required for this study, as per the institutional ethics guidelines.

An invitation to participate in the TellUs2 survey was emailed to students after their completion of the skills assessment in order to eliminate any potential impact on the assessment. This was considered important in order to avoid the possibility of the survey itself heightening student anxiety, which could then have a detrimental impact on assessment performance. The survey was open for two weeks to maximise responses but with consideration given to the limited timeframe.

The survey consisted of 17 questions allowing single responses through the use of Likert scales. The first section focussed on students' perception of their anxiety 'prior to' and 'during' assessment. The questions, and answer options in this section were based on a modified version of Spielberger's 'State-Trait Anxiety Inventory' (1983). Lazarus (1991), defines 'state anxiety as an unpleasant threat in the face of threatening demands or dangers' (Brand & Schoonheim-Klein, 2009), which is congruent with the definition of anxiety within the scope of this study. Spielberger's inventory was selected as it is considered seminal work in psychological state anxiety testing, provides normative data for interpretation of scoring (including data for the tertiary

student population), is suitable for use in an online survey and has previously been successfully used in a similar capacity (Brand & Schoonheim-Klein, 2009; Arndt *et al.*, 2004; Marshall & Jones, 2003).

Section 2 of the study used three questions to explore student perception regarding the negative impact of anxiety on their assessment performance, and subsequently how 'fairly' they believed the skills assessment format evaluated the related learning objective. In addition to these questions, the second section also questioned the level of anxiety evoked by the skills assessment as compared to a written assessment. To support familiarity, Section 2 continued to use a Likert scale and questions were worded similarly to those in Section 1. The survey was not piloted with the students, but peer feedback was sought from academic teaching staff.

Spielberger's 'State Anxiety-Trait Inventory' normative data requires an individual cumulative score for a respondent. Thus for Section 1, data responses for each question were analysed to produce an expected population score, which was totalled to produce an aggregate score that could be compared with normative data. Section 2 of the survey, is viewed as a percentage of responses for comparison.

In light of the literature reviewed and anecdotal discussions arising from previous skills assessments, it was expected that respondents would associate heightened anxiety prior to and during skills assessments, which would consequently impact negatively on the student's ability to meet the assessment expectations. It was also expected that this would raise question around the fairness of the assessment and suggest a consequential decreased congruence between the assessments and stated learning objective. It was further hypothesised that the level of anxiety experienced by skills assessments would be higher than anxiety evoked by written assessments.

RESULTS

The response rate to the survey was 20% (n=17). The answers for Section 1 were analysed using Spielberger's State-Trait Anxiety Scale (1983) normative data, in which Spielberger considers anxiety in terms of 'emotional distress'. Questions 1 through 7 addressed student anxiety prior to the assessment. The aggregate scores were totalled for a score of 16.96, and in comparison with the normative data, indicated that *prior* to entering the skills assessment students were experiencing more emotional distress than 75% of the general population.

Questions 8 through 14 pertained to student anxiety *during* the assessment. The results indicated that during the assessment students were experiencing more emotional distress than 32.5% of the general population.

Question 15 asked respondents to consider the extent to which they believed their feelings of anxiety negatively impacted on their ability to perform in the skills assessment. The majority of students (53%) identified that their feelings of anxiety 'somewhat' impacted on their ability to perform in the skills assessment; 24% of students indicated that their feelings of anxiety did 'not at all' impact on their ability to perform in the skills assessment.

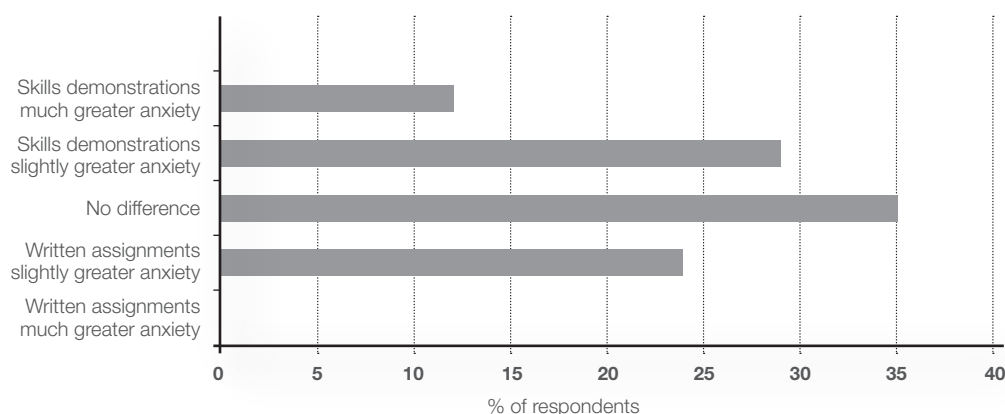
Question 16 asked students to consider both their answer to the immediately previous question regarding the impact of negative anxiety on their performance, along with the stated learning objective for the assessment. With this in mind, they were then asked to indicate how 'fair' they believed the use of the live format of skills assessment was in assessing their ability to fulfil the assessment requirements. The vast majority of students (76%) indicated that they believed the live format of skills assessments was 'moderately' fair in allowing fair assessment, whilst 12% indicated they believed it 'very much' allowed for fair assessment.

The final question asked students to consider both the skills assessments and written assessments, and compare the relative resultant anxiety evoked by each. The highest response (35%) indicated that there was no difference between the anxiety levels evoked by written assessments and skills demonstrations. 29% of students indicated that skills demonstrations result in a slightly greater level of negative anxiety than written assessments, and 24% indicated that written assessments resulted in a slightly greater level of anxiety than skills assessments. The remaining 12% of students indicated that the skills assessments resulted in a 'much higher' level of anxiety than the written assessment (Figure 1).

DISCUSSION

The first set of questions explored the student's perception of their anxiety prior to entering the skills assessment. The resulting data was concordant with the author's expectation. The expected score for an individual in this section indicated that *prior* to the assessment the student was experiencing more emotional distress than 75% of the general population. However, the data for the following

Figure 1



set of questions indicated that anxiety *during* the assessment was considerably lower (33%), suggesting that whilst the student experienced relatively very high levels of state anxiety before the assessment, this anxiety abated considerably as the assessment progressed. This is congruent with Sarid *et al* (2004), in which students reported that their symptoms began to abate during the assessment itself.

In the Section 2 of the survey, students reflected on their perceived negative anxiety and the impact of these feelings on their ability to complete the skills assessment. A very small proportion of students (6%) reported that their anxiety had a significant impact on their assessment, whilst the majority (53%) reported that anxiety 'somewhat' impacted on their assessment and the remainder (24%) reported a moderate impact. This suggests that the majority of students perceived that any negative anxiety evoked by the skills assessments did not have a large impact on their performance. This is not in line with the reviewed literature, which reports vivas and OSCE assessments result in unproductive and potentially detrimental levels of student anxiety.

The majority of students (76%) reported that they believed that the live format of skills assessment allowed for a moderately fair assessment of the stated learning objective. Students were given the option of indicating that they believed the skills assessment 'very much' allowed for fair assessment of the stated learning objective. As such, whilst the majority of students reported a belief that skills assessments allowed for a moderately fair assessment, further consideration of the assessment format and structure may enhance this experience

and further improve fairness and congruence between the assessment and the course learning objective. This sentiment is supported by literature suggestions that teaching staff should ensure adequate provision for the preparation of students in live assessment (Pearce & Lee 2003, Wellington 2010, Carter & Whittaker 2009).

The final question was worded to explore a comparison of anxiety evoked in both skills assessments with written assessments. In light of the literature review, particularly Sarid *et al* (2004) and Marshall *et al* (2003) it was expected that students would indicate that the skills assessment would result in greater levels of negative anxiety that that associated with written assessments. Interestingly, this wasn't the case. Student responses were quite evenly distributed, such that the majority did not feel one format was more evocative than the other (35%), with remaining responses comparable in the distribution from this neutral position.

There were various limitations in this study. There was a limited understanding of the source of student anxiety and the degree to which anxiety could be considered 'test anxiety' versus the degree to which this is a heightened type of test anxiety specific to skills assessment. In addition, results indicate 23% of students reported they believed that their anxiety symptoms did impact negatively on their performance. Further research could aim to understand and quantify this to minimise anxiety and best support students in skills assessments.

The response rate was low (20%) which may have impacted on the data validity. In addition, responses were voluntary which raises concerns around external

validity and respondents' motivations to be involved and therefore the impact of this on the results. For example, there is potential that a student volunteered as a result of experiencing strong feelings of anxiety and the want to be able to quantify and report this, thus creating a bias in the results.

In future research, it might be prudent to compare the data pertaining to student perception of the impact of anxiety on their assessment result with their actual assessment results. Doing so would allow correlation of the student experience with a quantifiable outcome, thus further informing the teaching team regarding the appropriateness of skills assessment.

No other data was collected about participants and this could also be considered a limitation of the study. Collection of other variables such as age and gender, may be collected to allowing testing of any significant effect

CONCLUSION

In conclusion, it is suggested that whilst skills assessments result in relatively higher levels of anxiety symptoms abate during the assessment. To best support students completing skills assessments, further research is needed to explore the source of the initial heightened anxiety state particularly pre-assessment. In addition, research may also seek to better understand factors that assist to decrease anxiety during skills assessments to appropriate support of students through the assessment process.

Feelings of negative anxiety did not appear to have a major impact on the student's ability to complete the assessment and/or to meet the assessment criteria. This supports the notion that the live format of skills assessments does fairly evaluate stated course learning objectives. In addition, the majority of students reported that the level of anxiety they experienced when completing skills assessments, was comparable as the levels of anxiety experienced when completing written assessments.

Being a pilot project, the results have limited generalisability and further studies should be conducted to consider a greater cohort of students, across various courses and programs. Other skills assessment pieces should also be considered. This pilot study has assist the teaching team at the University of South Australia to review and develop the use of skills assessments in the course featured in the study, and more generally across the occupational therapy program.

References

- Arndt, C, Guly, U & McManus, I 2009, 'Preclinical anxiety: the stress associated with a viva voce examination', *Medical Education*, vol. 20, no. 4, pp 274–280.
- Biggs, J & Collis, K 1982, *Evaluating the Quality of Learning: the SOLO Taxonomy*, Academic Press, New York.
- Biggs, J & Tang, C 2007, *Teaching for quality learning at university*, 3rd edn, Open University Press/McGraw-Hill Education, Berkshire.
- Bloom, B & Krathwohl, D 1956, *Taxonomy of educational objectives: The classification of educational goals, by a committee of college and university examiners. Handbook 1: Cognitive domain*, Longmans, New York.
- Brand, H & Schoonheim-Klein, M 2009, 'Is the OSCE more stressful? Examination anxiety and its consequences in different assessment methods in dental education', *European Journal of Dental Education*, vol. 13, pp. 147– 153.
- Brown, S 2008, "Fit for Purpose Assessment", *Refereed proceedings of the 2008 ATN Assessment Conference: Engaging Students in Assessment*, University of South Australia, viewed Dec 18 2008, < <http://www.unisanet.unisa.edu.au/resources/pd-ot/ATN%20Assessment%20conference> > .
- Carter, B & Whittaker, K 2009, 'Examining the British PhD viva: Opening new doors or scarring for life?', *Contemporary Nurse*, vol. 32, no. 1, pp. 169 – 178.
- Christiansen, C & Baum, C 2005, *Occupational Therapy: Performance, Participation and Wellbeing*, 3rd edn, SLACK Incorporated, New Jersey.
- Depoy, E & Gitlin, L 2005, *Introduction to Research: Understanding and Applying Multiple Strategies*, 3rd edn, Elsevier Mosby, Missouri, USA.
- Huberty, T 2010, 'Test Performance and Anxiety', *Principal leadership*, vol. 10, no. 1, pp. 12–16.
- CAOT 2002, *Enabling Occupation: An Occupational Therapy Perspective*, 2nd edn, CAOT Publications ACE, Ottawa.
- Marshall, G & Jones, N 2003, 'A pilot study into anxiety induced by various assessment methods', *Radiography*, vol. 9, pp. 185–191.
- University of South Australia 2012, *Guidelines for evaluation activities involving UniSA students and staff*, University South Australia, viewed 6 July 2013, < <http://w3.unisa.edu.au/res/forms/docs/evaluation-activities-involving-unisa-students-and-staff.pdf> >
- Pearce, G & Lee, G 2010, 'Viva Voce (Oral Examination) as an Assessment Method: Insights from Marketing Students', *Journal of Marketing Education*, vol. 31, no. 2, pp. 120–130.
- Phillips, A 1998, 'Reducing nursing students' anxiety level and increasing retention of materials', *Journal of Nursing Education*, vol. 27, pp. 35–41.
- Prosser, M & Trigwell, K 1999. *Understanding Learning and Teaching: the experience in higher education*. SRHE, Buckingham/ Philadelphia.
- Ramsden, R 2003, *Learning to Teach in Higher Education: 2 edn*, RoutledgeFalmer, London/ New York.
- Shallaly, G & Ali, E 2004, 'Use of a Video-Projected Structured Clinical Examination (VIPSC) Instead of the Traditional Oral (Viva) Examination in the Assessment of Final Year Medical Students', *Education for Health*, vol. 17, no. 1, pp. 17–26.
- Spielberger, C, et al. 1983, 'Assessment of anxiety: the State-Trait Anxiety Scale', *Advances in Personality Assessment*, vol. 2, pp. 159–187.
- Wellington, J 2010, 'Supporting students' preparation for the viva: their pre-conceptions and implications for practice', *Teaching in Higher Education*, vol. 15, no. 1, pp. 71–84.
- Sarid, O, Anson, A & Bentov, A 2005, 'Students' Reactions to Three Typical Examinations in Health Sciences', *Advances in Health Sciences Education*, vol. 10, pp. 291–302.