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Improving student-centered feedback through self-assessment

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ABSTRACT

Background: Traditionally, feedback on written work is unidirectional, with academics feeding back to students. This project aimed to establish bi-directional feedback between the student and academics through a process of self-assessment.
Objectives: To improve the process of student-centered feedback by including a self-assessment component to an assessment task.
Design: A two-phased, mixed methods explanatory sequential approach was used.
Settings: Students were enrolled across two campuses at a large university in Victoria, Australia.
Participants: The Phase One sample consisted of all students enrolled in Year One and Year Three of the Bachelor of Nursing. There were 484 students enrolled in Year One, and 419 students enrolled in Year Three. Some students elected not to complete the self-assessment rubric, and those students were removed from the sample. This left 430 Year One, and 324 Year Three assessments in the sample. Convenience sampling was used in Phase Two to collect qualitative data via semi-structured focus groups from students in years One and Three.
Methods: Quantitative data of student-assessed and academic-assessed marks were entered by a research assistant and then analysed using SPSS. Qualitative data were collected from a semi-structured interview and focus group with Year One and Year Three students. Qualitative data were then thematically analysed.
Results and conclusions: Year One students were closer at estimating their own grade (M = 3.60; SD = 11.94) than Year Three students (M = 6.47; SD = 12.81). Students often underestimated their grade to see if the marker would match it or provide them with a higher grade. Year One students have trouble finding and utilising evidence while Year Three students cite this as a strength.

When students engaged with the process, their self-review of work enabled them to improve the work prior to submission, and academic feedback was more meaningful. However, many students lacked trust in the process, and instead opted to 'game the system', hoping to hide flaws in their work, or draw extra marks from an academic by marking their own work down.

1. Background

Self-assessment has a positive role in learning and on the development of professional competence. It is associated with enhanced student responsibility and self-regulation of learning (Lew et al., 2010). Self-regulated learning can support students to direct and regulate their actions towards goals, therefore developing expertise and self-improvement strategies (Lew et al., 2010). Self-regulated students actively engage with their environment and use resources effectively (Iwamoto et al., 2017). According to Zimmerman (2002), the final phase of self-regulated learning is self-reflection, a critical skill for all health professionals. Additionally, the transformation from novice student to lifelong learner requires self-regulatory skills, a desirable attribute for health professional graduates who are constantly required to adapt to a dynamic work environment.

Feedback is an important component of learning in the tertiary environment and it requires increasing resources as student numbers continue to grow. The challenge is to develop and sustain efficient and meaningful feedback processes that enable self-improvement. Self-assessment provides the opportunity for feedback to begin with the student. This process of feedback is encouraged because it provides students with the opportunity to engage in feedback dialogue with academics (Iwamoto et al., 2017).

Students' lack of power in the assessment process is considered detrimental to their learning (Tan, 2004). Reducing the unilateral power of academics in the assessment process may serve as a basis for incorporating student self-assessment, to empower students in the assessment process by encouraging them to start the feedback process by identifying their strengths, weaknesses and feedback needs.

This study explored the effects of a self-assessment process for undergraduate nursing students. The intervention (student self-assessment) was intended to support students in critiquing and improving their work, to regulate their own learning and start the feedback process (Orsmond et al., 2013; Pereira et al., 2016). The academic staff intended to focus their feedback on the student's self-identified strengths and weaknesses, to produce student centered feedback (Flores et al., 2015). Year One and Three students were included in the study, to explore and compare the self-assessment experiences of novice to

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more experienced students.

2. Design

A two-phased, mixed methods explanatory sequential approach was used in this study. In Phase One, quantitative data were collected from written assessment rubrics completed by students and academics. In Phase Two, qualitative data were collected via a semi-structured interview and focus group with students in Years One and Three of the Bachelor of Nursing program. The qualitative data were collected to give context and meaning to the quantitative results (Creswell, 2009; Fetters et al., 2013).

2.1. Sample

The Phase One sample consisted of written assessment rubrics completed by both students and academics for students enrolled in Years One and Year Three of the Bachelor of Nursing program in a large university in Victoria, Australia. Students were enrolled across two campuses. There were 484 students enrolled in Year One, and 419 students enrolled in Year Three.

The written assessments were case-based, and focused on patient assessment and management, for an increasing complexity of patient presentation. Students in both year levels were encouraged to complete a self-assessment rubric, which was submitted with their assessment. The academic staff then used the same rubric to allocate their marks and provide individualised feedback based on areas of significant discrepancy in marks.

Some students elected not to complete the assessment rubric, and those students were removed from the sample. This left 430 Year One, and 324 Year Three assessments in the sample. Each assessment had two completed rubrics; one completed by the student, and one completed by the academic.

Convenience sampling was used in Phase Two to collect qualitative data via a semi-structured interview and focus group. Students in Years One and Three were invited to participate in either an interview or focus group. One interview was conducted with a single Year One student and one focus group was conducted for Year Three students.

2.2. Ethical approval

Ethics approval was obtained from the relevant university Human Research Ethics Committee prior to data collection. The participant recruitment, interview and focus group were undertaken by members of the research team who were not involved in teaching or assessing the students.

2.3. Data collection

Academic rubric data were entered directly into the university's learning management system (LMS) when the assessment tasks were marked. The data were largely numerical (marks) but free text 'feedback' data were also collected. These data were downloaded directly into an Excel spreadsheet. The student self-assessed rubric data had been scanned and uploaded into the LMS by students. These data were manually retrieved (each document downloaded) and numerical and free-text data entered into the Excel spreadsheet by the research assistant (DVR). Random checks of 10% of data were undertaken by members of the research team to ensure data accuracy. No errors were identified. The student and academic data were matched in Excel by student identification number, and then the student identification number was removed, making the data anonymous.

The interview and focus group explored the student experience of using a self-assessment rubric prior to submission of their assessment, and after receipt of their grade and feedback. The interview and focus group were undertaken by members of the research team who were not involved in teaching or assessing the students. The interview and focus group were held in a private room on each campus, at times convenient to the participants. These were digitally recorded and transcribed verbatim.

2.4. Data analysis

Quantitative data were analysed using Statistical Package for Social Sciences (SPSS) V.23 (IBM Corporation, 2012). Prior to commencing data analysis, the data were assessed for normality. The Kolmogorov-Smirnov test revealed a p value of 0.084 (Year One) and 0.200 (Year Three) indicating that the data, when evaluated by academic grade, were normally distributed. As a result, parametric tests were used to evaluate the data (Pallant, 2013).

Descriptive statistics were used to describe the student results. Paired-samples *t*-tests were used to compare the student self-assessment in each year level, with the academic assessment (Polit and Beck, 2014). Quantitative content analysis was used to analyse the free-text data in the student and academic rubrics (Hsieh and Shannon, 2005). Qualitative data were analysed using thematic analysis (Braun and Clarke, 2006). Reported student and academic expectations and behaviours informed the themes developed. Interview participants were allocated codes to distinguish between participants. For example, FG P2 refers to the second participant in the focus group.

2.5. Integration of data

The data collected in this study were integrated at several points. The sequential design allowed the quantitative data to guide qualitative data collection. The sample used in the interview and focus group were derived from the student self-assessment sample (Teddlie and Tashakkori, 2009). These helped to clarify quantitative results and provided context and meaning (Creswell, 2009; Fetters et al., 2013).

3. Results

There were 430 Year One student results, and 324 Year Three student results, which summed to 1508 result files (two sets of results per student). Students in both cohorts allocated higher scores than the academics. Year One students were closer at estimating their own grade (M = 3.60; SD = 11.94) than Year Three students (M = 6.47; SD = 12.81) (Fig. 1). Although the mean difference between student-assessed scores and academic-assessed scores appears to be reasonably small in Fig. 1, this is influenced by the fact that some students overestimated their grade, while others underestimated, which appears to have balanced the average grades. As such, a paired samples *T*-Test showed there was a significant difference between student and academic results (Table 1).

The allocation of higher scores may be explained by students trying to 'game the system' and avoid negatively influencing the marker by pointing out errors in their work. Gaming the system is discussed later in the paper.

Closer examination of the quantitative data showed that many students under-estimated their grade, by as much as 25 marks in some cases (Fig. 2). Again, explanations about this linked to gaming the system, with students hoping that a low grade might encourage academics to boost their grade. In the free-text comments, students in Year One described a lack of confidence and skill in searching for, analysing and applying evidence. Year Three students identified this as a strength, and this was supported by the grades awarded in Year Three for citing and referencing. There were 10 marks available to students to reflect the quality of the sources they used, and students in Year Three awarded themselves 8.34 (SD 1.35) and the academics awarded the Year Three students 7.91 (SD 1.47).

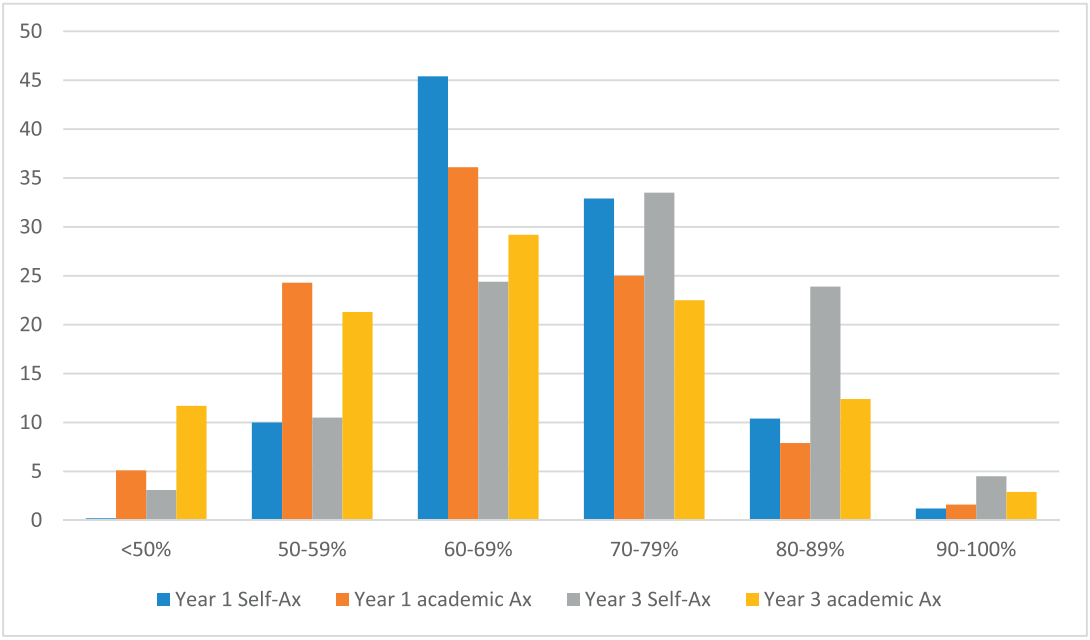

Fig. 1. Total grades awarded by student and academic; by year level.

Table 1
Difference between self-assessed and academic assessed scores.

	Self-assessed score mean (SD)	Academic assessed score mean (SD)	Difference in scores mean (SD)	p
Year One	68.77 (7.85)	65.43 (10.56)	3.34 (11.35)	< 0.001
Year Three	72.84 (10.23)	66.54 (12.59)	6.31 (12.99)	< 0.001

3.1. Adopting a new lens

Students in the semi-structured interview and focus group described creating distance between themselves and their work, adopting a new objective lens when reviewing their work prior to submitting it for marking. A Year One student described having to "really look at" their assessment prior to submission and being "forced to read everything" they had written again, before being satisfied that it was ready for submission (I1). A Year Three student "found it really good to be able to reflect and… take a step back" prior to submitting their work (FG P1). The same student found it a "meaningful" process to stop and thoughtfully re-read their work prior to submission.

This was reported to empower the students in the feedback process. Some students used this opportunity to improve their work before submission:

> I was able to see what I could have improved on, and the wording of such things, and I was able to go back and, like break it down and

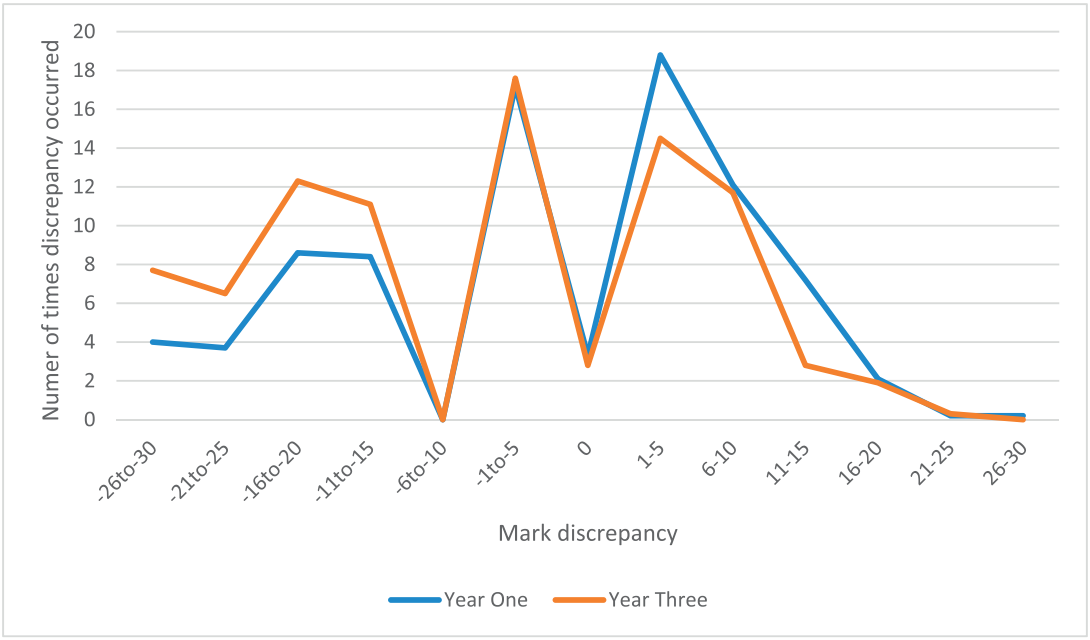

Fig. 2. Discrepancy in results, Year One and Year Three
Note. Positive number means academic awarded higher grade than student.

see how I could improve that and reiterate more phrases and words into it to make more sense to the assessor, so kind of building it all up again.

(FG, P1)

Other students were simply pleased that the feedback matched their own assessment of their work:

…she liked the parts that I picked up on in my self-assessment, because when she was looking at it, she picked up on those parts too and it was nice to see that I had picked up on that and I knew where I could improve. And she said, "I don't need to tell you where you need to improve on because you already picked up in that". So, I thought it was really reflective in terms of my self-assessment.

(FG, P1)

Not all students took the self-assessment task as seriously. One Year Three student acknowledged that during the self-assessment, she identified that the work could be improved, but did not attempt to address this: "There was definitely one section where I missed a couple of bits, but I sort of just put that to the back of my mind" (FG P1). Failure to address issues in the paper was attributed to the students simply seeing this as just "another thing I need to do" rather than a "learning tool" designed to start the feedback process (FG P3). The student said "I could have taken it more seriously" (FG P3).

The inability to create distance between the student and their work was described by another Year Three student who found that the self-reflection was nothing more than an activity to "fill it out, attach it and submit it" for marking (FG P2).

3.2. Trust in the process and the marker

When completing the self-reflection, honesty was affected by whether students' trusted and believed in the marking process, the academic marking the work and the markers intentions. A Year One student who participated in an interview was concerned about whether the "markers really look at our own self-assessments" (I1). The same student was uncertain as to the effect the self-assessment would have on their grade for the assessment and whether it "is useful for the examiner" to have the self-assessment prior to marking the students work.

A Year Three student believed the process of feedback was strictly the job of the academic team: "Isn't that their job to mark our work?" (FG P3). The same student was suspicious as to why the marker wanted the student to mark their own work prior to submission: "If I point out a bad point, are they going to go looking for more bad points?" The same student described either accepting or rejecting the mark they were subsequently given based on whether they had a "good relationship with the academic" rather than how it compared to their own self-assessment of their work. This student reported that they would be upset if their work was marked by an academic they did not know and trust. Another Year Three student shared a similar perception, highlighting that they would "just cop the mark" allocated to them if they had "very high respect" for the academic (FG P2).

3.3. Gaming the system for better marks

Some of the students involved, described gaming the system to hide mistakes in their work and improve their chances of achieving higher marks. A Year One student described trying to balance the grade they thought the marker would provide and what they self-allocated (I1). The student stated that they "put pass to credit" for their self-assessment so that the marker will "think it's better than that" and provide them with a higher mark. A Year Three student described avoiding highlighting problems in their assessment task so that they were not "telling the marker what to go and find" (FG P2). Another Year Three student was concerned about giving the marker "bad points for them to go and find" (FG P3). This student said "I didn't take it seriously" because they were concerned that the marker would use their self-assessment to justify allocating them a lower grade.

4. Discussion

The focus group data revealed a significant variation in the quality of the learning experience in the self-assessment process. Some students had a meaningful experience; they were immersed in the process and took it seriously. They saw it as an opportunity to initiate and take some ownership in assessment feedback dialogue. These students actively used the process to make changes to their work and when assessor feedback was reflected in their own self-assessment there was a sense of empowerment and increased confidence in self-regulation of learning. Conversely, some students didn't embrace the process and as a result, the quality of the experience was affected. The process became a task (ticking the boxes) and students didn't look back at their work to make improvements as anticipated.

These variations in the student self-assessment experience are explained by a complex interplay of student and academic expectations and behaviours, as described in the results. Student behaviour and approach to learning are contingent on their experience and interaction with the learning environment (Ning and Downing, 2012). Factors influencing learning experience include teaching quality, clear goals and standards, appropriate workload and assessment and generic skills development (Ning and Downing, 2012). Students with previous self-assessment experience had confidence in the process and a clearer understanding of its purpose as a teaching and learning tool, which enhanced the quality of their learning experience. These students also had a more positive attitude to self-assessment. The literature indicates that effective learning and academic achievement not only requires effective study skills, but a positive attitude, motivation and self-regulation (Ning and Downing, 2012).

Workload was a learning experience factor identified in the focus group data. Some students discussed getting the task done quickly or at the last minute so they could move forward with the next assessment. Whereas other students were able to manage their workload effectively and allowed sufficient time for a more meaningful learning experience. This indicates a disparity in student's self-regulatory skills, because self-regulation incorporates the ability to plan and organise (Ning and Downing, 2012). Khusainova and Ivutina (2016) discuss the differences in development of self-regulatory skills between students and Iwamoto et al. (2017) state that low self-regulation can lead to counterproductive learner behaviour, such as disengagement. The literature suggests that a workload that is perceived as too heavy is associated with surface approaches to learning (Ramsden, 1991). Adopting a student-centered approach to planning assessment and enhancing student's self-regulatory skills may assist in mitigating this problem.

The student relationship with the assessor was a prominent factor in the focus group data across both year levels. The quality of the relationship was important in determining student's attitude, behaviour and motivations towards the self-assessment process. Students preferred a trustful relationship with the marker, with rapport and meaningful connection. This was a determining factor in how seriously students took the experience and how they received their feedback. A respectful relationship with the marker equated to increased feedback credibility. This has implications for the use of casual teachers who are unknown to the students whose work they are marking.

The quantitative data revealed academic numerical scores were lower than the students' scores, previous studies have found similar trends (Brown et al., 2015). This highlights the need to ensure the purpose of self-assessment is clear to students. It's important for academics to question their motivations for the use of self-assessment (Tan, 2004). It is suggested that self-assessment should not be utilised as assessment, but as a tool for reflection and building competence in self-regulation (Brown et al., 2015).

Focus group data also exposed the tendency for some students to

anticipate assessors marking preferences, leading to 'gaming' in their own self-assessment. Student's motivations for doing this included trying to 'game the system' by underplaying deficits and playing it safe. This behaviour was apparent across both student groups. This was reflected in the quantitative data analysis where many students significantly underestimated their marks. Tan (2004) discusses the inward tendencies of students to self-assess according to teacher preferences. Self-assessment can also be affected by the social environment of the learning facility or classroom, student's unrealistic expectations of themselves and students wanting to protect their own self-worth (Brown et al., 2015). This issue can also be linked to trust and student's appreciation of self-assessment as a tool for learning. Previous learning experiences may have been dominated by unilateral assessment processes, which indicates students need more support to become autonomous in the self-assessment process for it to be used as a meaningful tool (Tan, 2004).

Self-doubt and self-consciousness were a feature in the focus group data, particularly reflected by Year One students. This can be correlated with trust and previous experiences with self-assessment. This also indicates self-assessment isn't necessarily an empowering experience for all students. This a reflected in the literature, where Tan (2004) states, there is the assumption that student participation in the assessment process enhances empowerment. Tan (2004) suggests focusing on the learning experience and motivations for self-assessment, rather than student autonomy as an end goal.

The students' role in the self-assessment process was another important variable revealed by the focus group data. Some students reported being able to see their work through an objective lens, the distance providing a reflective advantage in being able to view their work as an assessor. Other students were confused by their role as an assessor and couldn't identify with it, this was coupled with some suspicion and mistrust in the process. Research by Siles-Gonzalez and Solano-Ruiz (2016) supports the notion that self-assessment is a novel concept for students and requires them to reinterpret their role. The development of critical thinking and reflective skills occurs over a longer period, building slowly towards self-assessment by first involving students in the development of assessment may contribute to more effective and meaningful student participation.

4.1. Limitations

A limitation of this research was the small sample size of students from both year levels in the focus groups. A single Year One student participated in an interview and three Year Three students participated in a focus group. The attitudes towards self-assessment of these students may not reflect that of the larger cohort of students or adequately explain the quantitative results.

In addition to the above limitation, the research was limited by the fact that the participants were all recruited from a single Bachelor of nursing program. Results may not be generalizable to all nursing students.

While the participants in the interviews and focus groups seemed to respond honestly, knowing the academics from previous units of study may have influenced some participant's responses or lack of responses to questions.

4.2. Recommendations

To improve student engagement in the self-assessment process, the purpose of self-assessment needs to be made explicit to the students which it was not in this study. The interviews and focus group revealed that students were cautious in participating in the process as they were unsure of the intentions of the academics. It would be prudent that time is spent in-class explaining the purpose of self-assessment, providing examples of previous student self-assessments and supporting students to self-assess their work.

Many schools of nursing enrol large numbers of students and rely on casual teaching staff to assess student work. We recommend that casual teaching staff are formally introduced to students either in-person or through online forum posts or videos to enable a connection between the student and the markers to further build trust in the feedback process.

5. Conclusion

The findings from this study (1) supports findings from research into student self-assessment that demonstrates that students over-estimate the quality of their work (2) supports previous findings that students take into account factors such as teacher preferences when assessing their own work, and (3) supports research into self-assessment that demonstrates that not all students appreciate being involved in the feedback process.

In addition, the findings provide guidance for schools of nursing regarding how they may integrate self-assessment into their curriculum including some of the pitfalls. Through examining student results, combined with their experiences of self-assessment we have demonstrated that self-assessment can be a useful process for students, however the intentions of the process need to be made clear to ensure meaningful engagement and accurate reflection on submitted work.

Declaration of competing interest

There are no conflicts of interest to declare for any of the authors.

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Ethical approval

Ethical approval was provided by the University Human Research Ethics Committee (project number 8055 - expiry 10/07/2022).

References

Braun, V., Clarke, V., 2006. Using thematic analysis in psychology. Qual. Res. Psychol. 3 (2), 77–101. https://doi.org/10.1191/1478088706qp063oa.

Brown, G.T.L., Andrade, H.L., Chen, F., 2015. Accuracy in student self-assessment: directions and cautions for research. Assessment in Education: Princples, Policy and Practice 22 (4), 4444–4457. https://doi.org/10.1080/0969594X.2014.996523.

Creswell, J., 2009. Research Design; Qualitative, Quantitative and Mixed Methods Approaches. Sage Publications, Singapore.

Fetters, M.D., Curry, L.A., Creswell, J., 2013. Achieving integration in mixed methods designs: principles and practices. Health Serv. Res. 48 (6 part 2), 2134–2156. https://doi.org/10.1111/1475-6773.12117.

Flores, M.A., Veiga Simão, A.M., Barros, A., Pereira, D., 2015. Perceptions of effectiveness, fairness and feedback of assessment methods: a study in higher education. Stud. High. Educ. 40 (9), 1523–1534. https://doi.org/10.1080/03075079.2014.881348.

Hsieh, H.F., Shannon, S.E., 2005. Three approaches to qualitative content analysis. Qual. Health Res. 15 (9), 1277–1288. https://doi.org/10.1177/1049732305276687.

IBM Corporation. (2012). Statistical Package for the Social Sciences (SPSS) (Version 23). Armonk, New York, USA.

Iwamoto, D., Hargis, J., Bordner, R., & Chandler, P. (2017). Self-regulated learning as a critical attribute for succesful teaching and learning, International Journal of Scholarship of Teaching and Learning, 11 (2). 1–10. https://doi.org/10.20429/ijsotl.2017.110207

Khusainova, R.M., & Ivutina, H.P. (2016). Style of self-regulation of learning activities of university students. International Journal of Environmental and Science Education, 11 (13). 5980–5992.

Lew, M.D.N., Alwis, W.A.M., Schmidt, H.G., 2010. Accuracy of students' self-assessment in their beliefs about its utility. Assess. Eval. High. Educ. 35 (2), 135–156. https://doi.org/10.1080/02602930802687737.

Ning, H.K., Downing, K., 2012. Influence of student learning experience on academic performance: the mediator and moderator effects of self-regulation and motivation.

Br. Educ. Res. J. 38 (2), 219–237. https://doi.org/10.1080/01411926.2010.538468.
Orsmond, P., Maw, S.J., Park, J.R., Gomez, S., Crook, A.C., 2013. Moving feedback forward: theory to practice. Assess. Eval. High. Educ. 38 (2), 240–252. https://doi.org/10.1080/02602938.2011.625472.
Pallant, J., 2013. SPSS Survival Manual, 5th ed. Allen & Unwin, Sydney, Australia.
Pereira, D., Flores, M.A., Simão, A.M.V., Barros, A., 2016. Effectiveness and relevance of feedback in Higher Education: a study of undergraduate students. Stud. Educ. Eval. 49, 7–14. https://doi.org/10.1016/j.stueduc.2016.03.004.
Polit, D., Beck, C. (Eds.), 2014. Essentials of Nursing Research; Appraising Evidence for Nursing Practice, 4th ed. Lippincott Williams & Wilkins, Sydney, Australia.
Ramsden, P., 1991. Learning to teach in higher education. Routledge Falmer ProQuest EbookCentral 18 (1), 105–111. https://ebookcentral-proquest.com.ezproxy.lib.monash.edu.au/lib/monash/detail.action?docID=170018.
Siles-Gonzalez, J., Solano-Ruiz, C., 2016. Self-assessment, relfection on practice and critical thinking in nursing students. Nurse Educ. Today 45, 132–137. https://doi.org/10.1016/j.nedt.2016.07.005.
Tan, K.H.K., 2004. Does student self-assessment empower or discipline students? Assess. Eval. High. Educ. 29 (6), 651–662. https://doi.org/10.1080/0260293042000227209.
Teddlie, C., Tashakkori, A., 2009. Foundations of Mixed Methods Research: Integrating Quantitative and Qualitative Approaches in the Social and Behavioural Sciences. SAGE Publications, London.
Zimmerman, B.J. (2002). Becoming a self-regulated learner: an overview. Theory into Practice, 41 (2), 64–70. DOI: https://doi.org/10.1207/s15430421tip4102_2