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The Learning Thermometer: Closing the loop between teaching, learning, wellbeing and support in universities

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Keywords

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The increasing awareness and impact of mental health problems in university students in addition to a need for objective measures of teaching quality provide the impetus for a new approach to supporting students. There is a need for more effective tools that integrate the institutional silos of teaching, learning, support, and wellbeing to help students maximise their educational outcomes. This paper provides an overview of an innovative student-centred tool, *The Learning Thermometer*, as an efficient and effective way to integrate the institutional silos and embedding student support within the mainstream curriculum. The Learning Thermometer comprises four web-based surveys that are completed by students during the semester. After each survey students are provided with relevant feedback, and if necessary, suggestions of strategies, resources and people who can help them with their learning and/or wellbeing. The Learning Thermometer has the potential to ensure every student has access to support, if and when they need it during their studies. Recommendations are made on how the tool can be used to enhance teaching, learning and student health and wellbeing.

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Introduction

While universities attend to teaching, learning, support and student wellbeing, they are often addressed independently of each other. Teaching is most frequently measured using student evaluations of teaching (SETs), offering lecturers limited feedback on their entire performance each semester. Learning is something students generally do on their own, and which is assessed formatively or summatively throughout the semester. Support services are often offered as an adjunct, requiring students to find out about the services available to them, self-identify as having a problem, make time to use the services and actually access the services to benefit from them. Despite being important for lifelong success, wellbeing is not highlighted as an essential element of student engagement and learning. It obtains prominence only when students have mental-health problems significant enough to negatively affect themselves, other students or the university. There is a need for more effective tools that integrate the often-isolated institutional areas of teaching, learning, support and wellbeing to help students maximise their educational outcomes (Stallman 2011; Stallman & Duffy 2016). This paper introduces The Learning Thermometer, an innovative, student-centred, web-based tool that can effectively and efficiently address these issues. The Learning Thermometer breaks down areas of institutional isolation and integrates the components of teaching, learning, wellbeing and support, embedding them within the mainstream curriculum to make them accessible to all students.

Learning

Academic learning is influenced by a myriad of features of the student, their learning environment, and their learning activities (Kahu 2013). Individual student characteristics, however, form the foundation from which learning occurs. These include cognitive ability, pre-requisite knowledge and skills, perceptions of the content's importance and relevance, attention and, for most students, motivation and sustained effort (Macaskill & Denovan 2013). Teaching alone is unable to overcome a fundamental inability to process content or an absence of motivation to learn.

Student expectations of their university experience may also affect their subsequent learning (Brinkworth et al. 2013; Scutter et al. 2010). In their longitudinal meta-analysis of college students' personality and mental health between 1938 and 2007, Twenge et al. (2010) suggested that a cultural shift toward extrinsic goals, such as materialism and status, and away from intrinsic goals, such as meaning, community and connectedness, are contributing to the increase in psychopathology found in college students in recent years. Their research found that five times as many current college students report psychopathology than have done so previously; specifically, they score about a standard deviation higher on depression, hypomania, psychopathic deviation and paranoia. Problems with emotional self-regulation associated with these factors affects students' ability to self-regulate their learning, and consequently influence their expectations of how the learning environment should meet their needs.

In addition, students increasingly have extracurricular commitments that can negatively affect their overall learning (Garrett, Wrench & King 2012; Krause et al. 2005; Moreau & Leathwood 2006). While a moderate amount of paid employment during study periods is associated with positive mental health, some students try to balance a full-time course load with full-time work commitments (Stallman 2010b), while others prioritise the social freedom of adulthood and partake in excessive drinking and recreational activities at the expense of study (Hallett et al. 2012; Wrench, Garrett & King 2014). A majority of students report getting insufficient sleep (Appleton 2012), despite it being an essential factor in concentration, memory and learning consolidation (Curcio, Ferrara & De Gennaro 2006; Lund et al. 2010; Trockel, Barnes & Egget

2000). Many universities also fail to promote healthy sleep hygiene, instead offering 24-hour facilities such as libraries, thus advocating the notion that sleep is an optional luxury rather than a core component of learning.

Student mental health also affects learning. Mental-health problems are highly prevalent in university students, and are associated with lower grade point averages (Eisenberg, Golberstein & Hunt 2009; Stallman 2010b). These high levels of distress in university students suggest that many students have not yet achieved the appropriate developmental competencies necessary to cope with the demands of adulthood. These competencies include social and language skills, emotional self-regulation skills, independence skills and problem-solving skills – all requisite for good mental health (Sanders & Ralph 2002) and resilience in the face of adversity (Stallman 2010a). Resilience enables students to successfully manage the inherent stressors that accompany learning in a higher-education setting. However, it is not only student characteristics that influence learning: teaching effectiveness also has a significant impact on student learning outcomes.

Teaching effectiveness and evaluation

Teaching effectiveness is the extent to which teaching contributes to learning, over and above student and environmental characteristics. Effective teaching necessarily involves well-defined intended learning outcomes (ILOs), assessment tasks that accurately measure how well ILOs are achieved and the appropriate use of evidenced-based learning activities for each ILO. An inherent limitation in mass tertiary teaching is the need to use learning activities that are "generally" effective in the teaching of specific types of ILOs. There is, however, no perfect association between learning activities and learning; individual students may acquire knowledge differently, and individualised instruction is impractical in large teaching settings.

Learning can be measured objectively by final marks, assuming that ILOs strongly align with assessment tasks, and subjectively by students' perceived achievement of ILOs. The experience of the learner (student satisfaction) may be of additional interest, but it should not be confused with actual learning, nor should there exist the assumption that students have the knowledge and expertise to evaluate the efficacy of learning activities for each learning outcome. SETs are widely misused in practice as a measure of teaching quality (Emery, Kramer & Tian 2003). A review of studies by Clayson (2009) showed that, at best, correlations between learning and SETs are either small or non-significant, particularly as shown in studies using objective measures and statistical controls. SETs also prove problematic in several other ways: they are typically only administered at a single point towards the end of a semester; they are optional, thus open to sampling bias; and they do not account for statistical issues, such as sample size. Furthermore, it is difficult to attribute what a significant relationship between SETs and student outcomes (i.e. grades) actually represents. Students' opinions, and therefore their satisfaction ratings, are susceptible to a broad range of variables including teacher characteristics, class characteristics and individual student characteristics, irrespective of whether these factors are related to learning (Palmer, Walker & Sullivan 2011). Teacher characteristics that influence student ratings include personality (Clayson & Sheffet 2006) and grading leniency (Gillmore & Greenwald 1999; Greenwald & Gillmore 1997). Similar to grading leniency is the reciprocity effect, whereby students will reward teachers who give good grades and, correspondingly, negatively rate teachers who give poor grades (Clayson 2004; Clayson, Frost & Sheffet 2005). If teaching evaluations are not implemented as a compulsory measure, student characteristics may also contribute to self-selection bias. With so many uncontrolled factors at play, the validity and reliability of SETs as a measure of teaching

quality is questionable, at best. To be valid, teaching evaluations need to assess factors that: 1) contribute to student learning; and 2) are within the control of the teacher to modify.

The Learning Thermometer

Technology enables a more sophisticated synthesis of subjective and objective data to evaluate student learning, monitor and improve teaching and support students in a way that is inclusive and respectful of student autonomy. The Learning Thermometer is a web-based tool that not only provides grounded, relevant feedback to teaching staff, but also encourages students to proactively reflect on their own learning and wellbeing, and consider implementing changes to be more successful. Unlike SETs, it uses learning outcomes, both objective and subjective, as the measure. The Learning Thermometer does not provide static, opinion-focussed data at the end of semester, but instead actively seeks to enhance learning throughout the duration of the course. It also recognises that learning is not a consequence of teaching alone.

Figure 1 shows the process of using The Learning Thermometer for students and teachers. Students complete short, online surveys at four evenly spaced times during each semester. The surveys encourage them to reflect on both their learning (progress towards learning outcomes, usefulness of learning resources and the learning environment) and their wellbeing. Based on this information, each student receives feedback specifically tailored to their progress, including, if necessary, strategies and links to resources and support people relevant to the areas in which they are struggling. Teachers are provided with class-group data after each survey, as well as additional summary data at the end of the course.

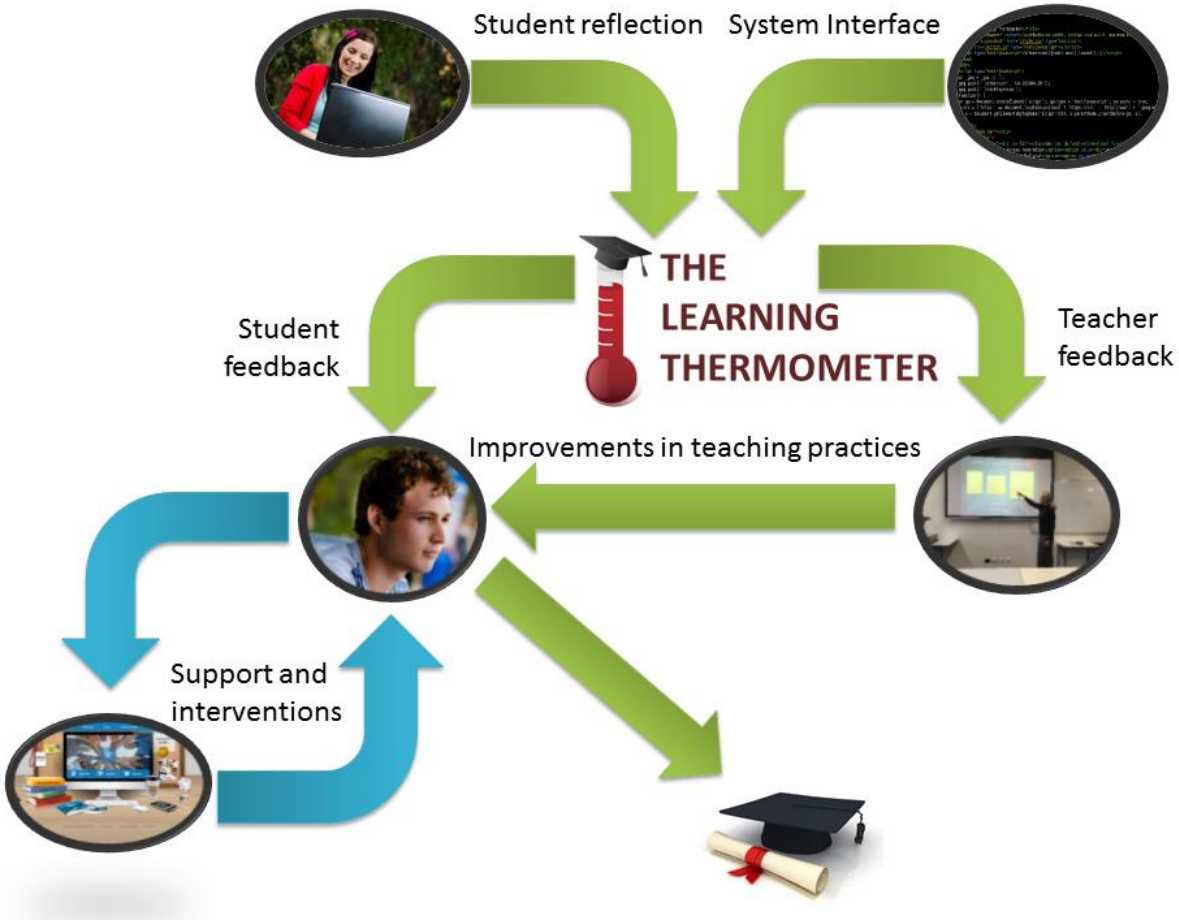

Figure 1. Components of the process of using The Learning Thermometer for students and teachers

The Learning Thermometer is low-cost and minimally intrusive, and provides support to all students in a given course. The Learning Thermometer negates the need to classify – or misclassify – students as "at risk" for mental health problems or poor academic outcomes; not all students who are labelled "at risk" require additional support and, similarly, many students who do not belong to an at-risk group will require support. The Learning Thermometer ensures that all students have access to at least the minimum level of support appropriate for their needs, thereby eradicating wasteful expenditure on costly and intrusive services that undermine student autonomy or those that are focused on a single, heterogeneous at-risk group. By encouraging student reflection throughout the semester, use of the program ensures that every student is aware of appropriate support services and resources if, and when, that individual student requires them. Furthermore, the tailored support offered to students, whether personal or academic, ensures that students receive relevant help and eliminates the need for students to independently establish the

relevance of services from a generic list. These features of the program minimise many of the barriers to student help-seeking.

The Learning Thermometer encourages a developmentally appropriate level of self-sufficiency and helps minimise the stigma that often accompanies help-seeking and labelling. The framework respects students' autonomy by allowing them to manage their own lives independently. Embedded within a hierarchical presentation of support, students are first provided with strategies they can enact themselves to improve their learning and wellbeing. Second, the program lists relevant resources that they can access (e.g. online tip sheets, online programs). Finally, the program lists people and services who can assist them (e.g. lecturers, learning support services, international student services). This ensures that students with high-level needs are appropriately linked to high-intensity services, whilst students who are able to use self-help resources can do so independently. By normalising the process of self-reflection, problem-solving and help-seeking within the curriculum, The Learning Thermometer reduces the stigma that results from being labelled as a "student at risk" or "student requiring support", and encourages appropriate help-seeking behaviours.

Theoretical underpinning

The central tenet of The Learning Thermometer is to develop students' capacity for self-regulation. Self-regulation is defined as a student's ability to "guide his/her goal directed activities over time and across changing circumstances…. The processes of self-regulation are initiated when routine activity is impeded or when goal directedness is otherwise made salient (e.g. the appearance of a challenge, the failure of a habitual pattern)" (Karoly 1993 p.25). Self-regulation is an important graduate attribute, not only for students' success in the workplace, but also for their personal lives. The self-regulatory framework in The Learning Thermometer includes:

Self-sufficiency. Students must become independent problem solvers so they can trust their own judgement and become less reliant on others (including parents and university staff) in carrying out basic personal and academic responsibilities. Self-sufficient students have the resilience, resourcefulness, knowledge and skills to study and work with confidence. When confronted with a new problem or challenge, they use their knowledge, skills and personal resources to meet the demands of the situation. As a web-based intervention centred on personal reflection, The Learning Thermometer is minimally intrusive and helps students to manage their learning and wellbeing independently.

Self-efficacy. Self-efficacy refers to students' belief that they can overcome or solve problems when they arise. Students with high self-efficacy have more confidence and positive expectations of the possibility of change, and of the outcomes likely to result from changes.

Self-management. Self-management involves self-monitoring, determining their own goals and performance standards, self-selection of change strategies and self-evaluation of their own performance against a performance criterion. The self-regulatory format of The Learning Thermometer enables these skills to be modelled and practiced repeatedly. Students are prompted to reflect on their performance, identify goals for change and implement their plan. Individual data in The Learning Thermometer is accessible only to the individual student, further promoting student autonomy and independence.

Personal agency. When using The Learning Thermometer, students increasingly learn to attribute changes or improvements to their own efforts rather than to chance, the university, or other external factors. This is achieved by having students reflect on their progress in subsequent questionnaires throughout the semester, and monitor the implementation of their personal plans. This process generates a link between the

performance of these activities and the student's own outcomes, making students more likely to later seek out appropriate support, when necessary, and become more active in planning how to achieve their academic goals.

Problem-solving. A final aspect of self-regulation is students' ability to generalise their knowledge and skills to future issues and challenges they will experience. Graduates need to flexibly adapt and apply what they have learned to new problems in the workplace and their personal lives. The repetition of the self-regulatory process, within and across semesters throughout an entire program of study, aims not only to increase students' ability to resolve temporal issues, but to increase their overall capacity to address a diverse range of challenges over time and with relative autonomy.

Teaching and learning

Objective teaching evaluation first necessitates the evaluation of how well the course ILOs align with both: (a) the teaching/learning activities and (b) the assessment tasks (Biggs & Tang 2007). The end-of-semester summary provided by The Learning Thermometer uses the correlation between final marks (objective learning) and students' perceived achievement of learning outcomes (subjective learning) to indicate the degree of alignment between the ILOs and assessment items. This can inform teaching through the strength of the association as well as the relative strength across all ILOs. The Learning Thermometer establishes a framework of reciprocal feedback between students and lecturers. Class-group data from students' learning reflections throughout the semester can then inform teaching practices for the remainder of the course. Thus, through continued evaluation, The Learning Thermometer allows teachers to maximise the learning experiences of the current cohort, as well as those of future students. Data can also be collated across several semesters in courses with small class sizes to provide more reliable data with which to assess effectiveness.

Other summary data provided by The Learning Thermometer includes the relationship between self-reported class attendance in each survey and learning (final mark), the traditional, non-evidenced-based measures of teaching quality (student perceptions of teaching and student satisfaction) and the Teaching Value Index, a measure of the contribution teaching makes to changes in student motivation during the semester. Pilot testing of The Learning Thermometer in large cohorts of health-sciences and arts students (unpublished) revealed that the change in students' motivation over the course of the semester was significantly correlated with learning, as measured by final grade. Motivation is a modifiable teaching factor: teachers can explicitly increase motivation by engaging students' interest, for example by highlighting the relevance of the content and learning activities to graduate employment and students' future aspirations. The Teaching Value Index therefore represents the percentage of students who reported significant improvements in motivation throughout the semester.

Teaching data from The Learning Thermometer is significantly more objective and useful than the feedback found in traditional SETs, as it allows greater consideration within a cohort to properly inform teaching improvements. The Learning Thermometer promotes caution and direction in interpreting data, acknowledging limitations where there may be sampling bias, such as poor completion rates and small class sizes, as sample sizes can result in extremely low or high statistics. In these cases, teachers are advised to use caution when making changes and to combine data from small samples across multiple semesters. This will increase the reliability of the data and, subsequently, the inferences drawn from them.

The Learning Thermometer also helps teachers use group data to inform teaching improvements, encouraging the interpretation of the data within the context of each course. The Teaching Value

Index, for example, depends on the initial motivation of students. A Teaching Value Index of 0 (representing no significant change in student motivation across the semester) needs to be considered within the context of the class's initial motivation levels. A course with initial ceiling effects for motivation will need to interpret a Teaching Value Index of 0 differently to a course that began with a normal or low distribution on motivation, where there was significant scope for student motivation to improve. Similarly, there is no "correct" correlation between class attendance and learning. Practical courses may exhibit a high correlation between attendance and final marks, while attendance may have no effect on learning in some lecture-based courses. The advantage of this data is that, while it is not generalisable across courses, it provides detailed and valuable information that teachers can use to guide their curriculum development and improve specific aspects of their teaching.

The Learning Thermometer moves away from the notion of "good teachers" (Clayson 2009) and towards "effective teaching practices". Rather than labelling a teacher's individual worth, this approach creates the opportunity for within-department discussions about the applicability of ILOs, the usefulness of aspects of the learning environment, the relevance of learning activities and the assessment of the ILOs. The Learning Thermometer promotes a "community" approach to improving learning at program and departmental levels.

Wellbeing and mental health

Psychological distress is a significant predictor of learning outcomes, as measured by final marks (Eisenberg, Golberstein & Hunt 2009; Stallman 2010b). In the pilot study of The Learning Thermometer, student distress, combined with changes in student motivation, accounted for 85-95% of the variance in students' final marks (Stallman 2012). These findings further highlight the need to effectively address mental health within the broader context of student success. The Learning Thermometer promotes mental health and wellbeing in two ways: 1) the overall problem-solving framework provides active skills training in self-regulation, and 2) the students' self-reflection on their wellbeing allows them to be linked with strategies, resources and people to assist them if they are experiencing elevated levels of distress. As individual students' levels of distress can vary (Stallman & Shochet 2009), the regular surveys that comprise The Learning Thermometer provide the opportunity for periods of distress to be identified early. From this, students are appropriately supported to learn coping strategies that may prevent the development of psychiatric disorders and/or limit the duration of the current episode of anxiety or depressive symptoms, thereby minimising the disabling effects of poor mental health.

Pilot testing of The Learning Thermometer found that students who completed the program had significantly higher final marks than those who did not (Stallman 2012). As the program was offered as an optional activity, these results suggest that students who already have good self-regulation skills take advantage of further opportunities, such as The Learning Thermometer, presented to them within their courses. The students who would benefit the most from this additional structure and support, however, may not be sufficiently engaged in their learning to use these recommended programs of their own volition. This highlights the need to use The Learning Thermometer as a compulsory piece of formative or summative assessment. This would ensure that all students have the opportunity to further engage in their own learning; be linked with appropriate strategies, resources and services if and when they need them; and improve their self-regulation skills.

While student satisfaction ratings of courses were associated neither with learning outcomes, as measured by final marks, nor with the perceived achievement of learning outcomes in the pilot study, they were significantly associated with student wellbeing (Stallman 2012). This suggests

that students who have a high sense of wellbeing are generally more satisfied with the activities in which they partake than students who do not, irrespective of the learning situation.

Structure and responsibility

Universities' internal structures typically take the form of isolated administrative areas, where responsibilities and activities are created by and limited to individual organisational units (Kift 2008). The Learning Thermometer promotes a student-centred approach to learning in which structures that support and encourage learning are built around the student, rather than the organisation (Kift, Nelson & Clarke 2010). A student-centred approach integrates the independent pillars of learning, teaching, wellbeing and support to facilitate academic success. It is this integration that allows students to understand the relationships between self-reflection, mental health, problem-solving and learning. The current challenge for universities, therefore, is to eliminate relatively independent organisational units and effectively combine the skills and knowledge of each to best meet the requirements for student success. When a department enrols in The Learning Thermometer, the program requires input from and coordination with: 1) student services staff, to provide information about the resources and services available at the institution; 2) teaching staff, to add their course details and then use the data; 3) students, to be aware of the program and its purpose; and 4) the university as a whole, to appropriately assess teaching quality and to use the data to inform overall improvements to teaching.

It is recommended, therefore, that universities use The Learning Thermometer in core courses across a range of degree programs. Not only will this improve the reliability of the data, but it will ensure that students do not fall through the cracks at any point in their university career. Using the tool across multiple programs would have minimal resource implications, as the licence is for institution-wide use and lecturers can customise it for their course in less than 15 minutes at the beginning of each teaching period. The challenge for some programs would be related to how to incorporate it as a compulsory assessment activity. A university-wide adoption of The Learning Thermometer promotes a holistic approach to student success that acknowledges the contribution of both teaching and support staff.

Conclusion

The Learning Thermometer is an innovative, web-based approach to integrating learning, teaching, wellbeing and support to maximise both the personal and professional attributes of university graduates. It uses a developmentally appropriate approach that focuses on student self-regulation and autonomy. It minimises financial and human costs associated with interventions by being web-based. As a compulsory learning activity, The Learning Thermometer ensures that every student is linked with relevant and timely academic and mental-health support, if and when they need it during their time at university. Its student-centred framework means that teaching evaluation, wellbeing and support wrap around the student experience, rather than being optional add-ons that students must seek out and overcome barriers to access.

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References

Appleton, S 2012. Psychological distress and mental health problems in tertiary students . School of Psychology and Counselling, Queensland University of Technology, Brisbane.

Biggs, J & Tang, C 2007. *Teaching for quality learning at university*. Society for Research into Higher Education, Berkshire, UK.

Brinkworth, R, McCann, B, King, S, Burke da Silva, K, Luzeckyj, A, Scutter, S, Palmer, E, Hill, J, Wright, V & McCann, J 2013. *Student and staff expectations and experiences: Office for Learning and Teaching Final report*.

Clayson, D E 2004. A test of the reciprocity effect in the student evaluation of instructors in marketing classes. *Marketing Education Review,* 14(2), pp. 11-21.

Clayson, D E, Frost, T F & Sheffet, M J 2005. Grades and the student evaluation of instruction: A test of the reciprocity effect. *Academy of Management Learning & Education,* 5(1), pp. 52-65.

Clayson, D E & Sheffet, M J 2006. Personality and the student evaluation of teaching. *Journal of Marketing Education,* 28, pp. 149-160.

Clayson, D E 2009. Student evaluations of teaching: Are they related to what students learn? A meta-analysis and review of the literature. *Journal of Marketing Education,* 31(1), pp. 16-30.

Curcio, G, Ferrara, M & De Gennaro, L 2006. Sleep loss, learning capacity and academic performance. *Sleep Medicine Reviews,* 10(5), pp. 323-337.

Eisenberg, D, Golberstein, E & Hunt, J B 2009. Mental health and academic success in college. *The B.E. Journal of Economic Analysis & Policy*, 9(1), Article 40.

Emery, C R, Kramer, T R & Tian, R G 2003. Return to academic standards: A critque of student evaluations of teaching effectiveness. *Quality Assurance in Education,* 11(1), pp. 37-46.

Garrett, R, Wrench, A & King, S 2012. Guessing where the goal posts are: managing health and well-being during the transition to university studies. *Journal of Youth Studies,* 16(6), pp. 730-746.

Gillmore, G M & Greenwald, A G 1999. Using statistical adjustment to reduce biases in student ratings. *American Psychologist,* 54, pp. 518-519.

Greenwald, A G & Gillmore, G M 1997. No pain, no gain? The importance of measuring course workload in student ratings of instruction. *Journal of Educational Psychology,* 89, pp. 743-751.

Hallett, J D, Howat, P M, Maycock, B R, McManus, A, Kypri, K & Dhaliwal, S S 2012. Undergraduate student drinking and related harms at an Australian university: Web-based survey of a large random sample. *BMC Public Health,* 12, p. 37.

Kahu, E R 2013. Framing student engagement in higher education. *Studies in Higher Education,* 38(5), pp. 758-773.

Karoly, P 1993. Mechanisms of self-regulation: A systems view. *Annual Review of Psychology,* 44(1), pp. 23-52.

Kift, S, Nelson, K & Clarke, J 2010. Transition pedagogy: A third generation approach to FYE – A case study of policy and practice for the higher education sector. *The International Journal of the First Year of Higher Education,* 1(1), pp. 1-20.

Krause, K-L, Hartley, R, James, R & McInnis, C 2005. *The first year experience in Australian universities: Findings from a decade of national studies*. Centre for the Study of Higher Education, University of Melbourne, Melbourne.

Lund, H G, Reider, B D, Whiting, A B & Prichard, J R 2010. Sleep patterns and predictors of disturbed sleep in a large population of college students. *Journal of Adolescent Health,* 46(2), pp. 124-132.

Macaskill, A & Denovan, A 2013. Developing autonomous learning in first year university students using perspectives from positive psychology. *Studies in Higher Education,* 38(1), pp. 124-142.

Moreau, M-P & Leathwood, C 2006. Balancing paid work and studies: Working (-class) students in higher education. *Studies in Higher Education,* 31(1), pp. 23-42.

Palmer, E, Walker, D & Sullivan, T 2011. Student Profiles and Their Role in the Evaluation of Learning and Teaching. *Australasian Journal of Engineering Education,* 17(2), pp. 119-128.

Sanders, M R & Ralph, A 2002. *Facilitator's Manual for Group TeenTriple P*. Triple P International Pty. Ltd, Milton, QLD.

Scutter, S D, Palmer, E, Luzeckyj, A, Burke Da Silva, K & Brinkworth, R 2010. What do commencing undergraduate students expect from first year university. *International Journal of First Year in Higher Education,* 2(1), pp. 8-20.

Stallman, H M & Shochet, I M 2009. Prevalence of mental health problems in Australian university health services. *Australian Psychologist,* 44(2), pp. 122-127.

Stallman, H M 2010a. *Staying on Track.* University of Queensland, Brisbane.. Viewed at *https://www.youtube.com/watch?v=gEdMKH5zXuw*.

Stallman, H M 2010b. Psychological distress in university students: A comparison with general population data. *Australian Psychologist,* 45(4), pp. 286-294.

Stallman, H M 2011. Embedding resilience within the tertiary curriculum: A feasibility study. *Higher Education Research & Development,* 30(2), nopp. 121-133.

Stallman, H M 2012. The Learning Thermometer: Engage, Link, Learn. *Creating Excellence in Scholarship of Teaching and Learning (CESoTL) eZine*.

Stallman, H M & Duffy, J 2016. Beyond the curriculum: The well-being of law students within their broader environment. In Field, R, Duffy, J & James, C (eds.), *Promoting law student and lawyer well-being in Australia and beyond*. Routledge, Farnham, UK.

Trockel, M T, Barnes, M D & Egget, D L 2000. Health-related variables and academic performance among first-year college students: Implications for sleep and other behaviors. *Journal of American College Health,* 49(3), pp. 125-131.

Twenge, J M, Gentile, B, DeWall, C N, Ma, D, Lacefield, K & Schurtz, D R 2010. Birth cohort increases in psychopathology among young Americans, 1938-2007: A cross-temporal meta-analysis of the MMPI. *Clinical Psychology Review*, 30(2), pp. 145-154.

Wrench, A, Garrett, R & King, S 2014. Managing health and wellbeing: Student experiences in transitioning to higher education. *Asia Pacific Journal of Health, Sport and Physical Education*, 5(2), pp. 151-166.