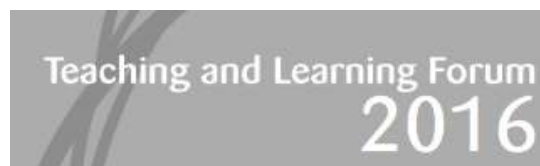


# Teaching teamwork skills in Australian higher education business disciplines



Category: Research

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Australian employers continue to indicate that the development of teamwork skills in graduates is as important as mastering technical skills required for a particular career. In Australia, the reporting on the teaching of teamwork skills has emanated across a range of disciplines including health and engineering, with less of a focus on business related disciplines. Although Australian university business schools appear to value the importance and relevance of developing teamwork skills, implementation of the teaching, learning and assessment of teamwork skills remains somewhat of a pedagogical conundrum. The aim of this paper is to present a systematic literature review so as to better understand the salient issues associated with teaching teamwork skills in Australian higher education business disciplines.

## Teamwork teaching and learning practices in higher education

Teamwork continues to rate in the top three skills required by Australian employers, ranking second behind cultural fit, with oral communication skills ranked third (Australian Association of Graduate Employers [AAGE], 2014). Teamwork is further noted as being a very important competency in the recruitment and selection process (Australian Association of Graduate Employers [AAGE], 2012, 2014). Studies of most frequently mentioned skill requirements, such as teamwork and communication, in graduate job advertisements (Bennett, 2002) bear witness to the rationale that developing graduate teamwork skills is an important process in higher education (HE).

A 2014 desktop analysis of the then 39 Australian university websites indicates that around 70% of these universities overtly mention teamwork, or the ability to work effectively with others, in their list of graduate attributes or graduate qualities. Despite this importance, reports continue to emerge expressing employer dissatisfaction with the deficiency of new graduates in skills such as teamwork (Australian Industry Group and Deloitte, 2009; Harder, Lane, & Jackson, 2014).

Given the competitiveness in the HE market and calls from employers to improve those behaviours associated with teamwork, how such development is being advanced through focussed research on the teaching, learning and assessment of teamwork should be investigated. Much of the international research focussing on the teaching of teamwork skills has emanated from the United States. In Australia, the reporting on the teaching of teamwork skills has been across a range of disciplines including health and engineering, with less of a focus on business related fields. This lack of attention on the teaching of teamwork skills specifically in business disciplines requires greater attention from teaching scholars.

The aim of this systematic literature review is to provide an overview of recent literature emanating from Australia on teamwork teaching and learning practices in HE business disciplines. For the purposes of this review, we define teamwork as two or more students formally working together toward a common goal through interdependent behaviour and personal accountability. Although we use the terms 'team' and 'teamwork', we acknowledge that others use the terms 'group' and 'group work' when discussing HE student teams. There is a subtle difference in meaning between the two

terms; however, as the literature in this review has used both, we have considered them as interchangeable to maintain the integrity of the original research.

## The approach

The systematic review process relies less on the potentially biased expertise and authority of the researcher(s) evident in traditional narrative style reviews, and more on an explicable and replicable method. The approach allows for the review of quantitative and qualitative literature and the resultant database can be used to develop and document the breadth, depth and type of published literature in the field. It thus reflects on salient theoretical, geographic and methodological gaps of the extant literature which is important for the identification of future research agendas. This study followed Pickering and Byrne's (2014) method for conducting systematic reviews.

Following an initial search of the literature using the key words *student; teamwork; group work; and business*, tens of thousands of articles were found. Advanced search parameters were then used in selected databases, to narrow the selection to 203 peer-reviewed journal articles. In conducting the search, a number of inclusion and exclusion criteria were developed in line with the aims of the review. Initially, the literature search focused on undergraduate business students. However, although this focus narrowed the results of the search, it was found to be too limiting in terms of research produced in Australia, therefore, research related to teamwork and postgraduate business students was also included.

### Inclusion criteria

In selecting literature the following criteria were observed. The studies must:

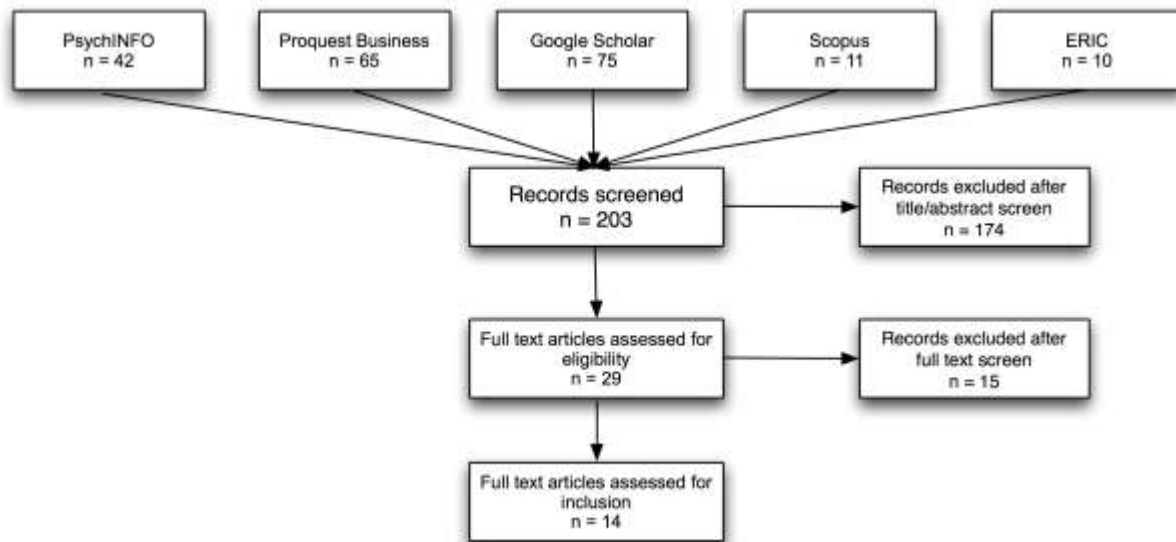
- apply to undergraduate and/or postgraduate study in higher education business disciplines in Australia
- be published in English, in peer-reviewed journals, between September 2009 and September 2014
- be of an applied nature, using teamwork skills as the primary facet of interest
- clearly refer to application in HE courses conducted in face-to-face modes demonstrating a range of processes to engage HE learners' in working toward effective team performance in a HE classroom setting.

### Exclusion criteria

The aims of this review focus clearly on the development of teamwork with HE business students. Therefore, studies from the secondary education, vocational education or workplace sectors are excluded. Further, studies that are not related to teamwork in HE business courses (for example, health, the arts) are excluded, as are any studies relating to teamwork research related to HE online students. Studies which report on teamwork skills as a by-product of teaching and learning interventions are also excluded.

### Literature search and selection procedure

The material included in this review derives from a keyword-based search in the databases PsychINFO, Proquest Business, Google Scholar, ERIC and Scopus. Search terms included: *team, student teams, teamwork, group work, student group work, collaborative group learning, group projects, team-based learning, generic skills, employability skills, generic attributes, Australia, and Australian*. A process of searching terms in various combinations and combing databases was undertaken. Figure 1 presents a flowchart of the selection process.



**Figure 1: Flowchart of the literature selection process**

## Coding

As recommended by Pickering and Byrne (2014), articles found in the initial search were screened and then placed in an Excel database with the following headings: authors' name(s); year of publication; title of article; journal; research design (including sample information), theme (pedagogy/assessment); and findings. The database allowed for the filtering of data into the various headings. The first filter removed all non-Australian university affiliated authors. Full text articles (n=29) were then filtered by the relevant inclusion criteria noted for the study, leaving 14 articles. Coding of 14 journal articles by Australian university affiliated authors was conducted in preparation for the analysis. Table 1 identifies the studies selected for systematic review. Each paper has been allocated a number, which is used to identify the paper in the following sections.

It is recognised that there may have been some journal articles meeting the review criteria that were published about teamwork in the specified time period by Australian authors, but not located. These may not have been locatable using online database searching or included in the databases selected for searching. Due to the sheer volume of research across the many variables related to teamwork development in Australian HE business disciplines, only those meeting the strict criteria could be included. Advanced statistical analysis to generate results and make comparisons was not employed in this paper.

## Results and discussion

Most articles focused on a variety of university business course majors including: accounting; marketing; management; management information systems; and human resources; as well as business courses where a major was not specified.

## Geographical spread

Thirteen universities across the six states and two territories of Australia are represented in the final 14 articles chosen. The majority of articles emanated from authors affiliated with universities in New South Wales. Two of the papers (3 and 13) included authors from more than one state and/or organisational affiliations and as such, were not aggregated in state/territory totals, but nominated as 'other' as can be seen in Table 2.

**Table 1: Studies identified from the review (lead author alphabetical order)**

Paper No.	Author(s)	Year	Article title	Research Design/ Size/Discipline	Theme	Findings
1	Burdett, J. & Hastie, B.	2009	Predicting satisfaction with group work assignments	Mixed method/ 344 undergraduate final year business students	Pedagogy/ Student perceptions	Student workload issues are the major contributor to dissatisfaction with group work assessment. Authors note it is critical for faculty to support and explain how distributive justice will be addressed through workload and assessment procedures.
2	Chad, P.	2012	The use of team-based learning as an approach to increased engagement and learning for marketing students	Case study/ 50 postgraduate final year marketing students	Pedagogy	TBL is an effective teaching process enabling educators to offer students enhanced and stimulating learning experiences. Belief by students that they learned more via TBL relative to traditional teaching delivery previously experienced.
3	D'Alessandro, S. & Volet, S.	2012	Balancing work with study: Impact on marketing students experience of group work	Quantitative/ 222 undergraduate marketing students	Pedagogy/ Student perceptions	Student learning in groups is adversely affected by hours of part time employment.
4	Delaney, D. Fletcher, M. Cameron, C. & Bodle, K.	2013	Online self and peer assessment of team work in accounting education	Mixed method/ 93 second year undergraduate accounting students	Assessment/ Student perceptions	Understanding of the implementation and impact of an online self and peer assessment (SPA) model to assess teamwork.
5	Freeman, M.	2012	To adopt or not to adopt an innovation: A case study of team-based learning	Qualitative	Pedagogy/ Educator perceptions	Up-front time commitment for academics using TBL. Crucial factor affecting adoption is the pedagogical compatibility of the adopter.
6	Hunter, J., Vickery, J. & Smyth, R.	2010	Enhancing learning outcomes through group work in an internationalized undergraduate business education context	Action research/ Focus groups, business undergraduate students: Time 1 n = 108 Time 2 n = 28	Pedagogy/ Student perceptions & Educator diary reflections	As undergraduate students with minimal life experience, many lack the necessary skills to confront issues faced with group process. Problem-based learning (PBL) and active learning activities appear to offer students a sound framework from which deep learning can be pursued.
7	Jackling, B., Natoli, R. Siddique, S. & Sciulli, N.	2014	Student attitudes to blogs: a case study of reflective and collaborative learning	Quantitative/ 111 2 <sup>nd</sup> year undergraduate accounting students	Assessment/ Student perceptions	Composition of a group has a significant effect on perception of the group work activity.
8	Jackson, D., Sibson, S. & Riebe, L.	2013	Undergraduate perceptions of the development of team-working skills	Mixed method/ 799 undergraduate business students	Pedagogy/ Student perceptions	Importance of constructive alignment and scaffolded development of the skill. Skills of teamwork can be fostered in the university classroom through reflection.

Paper No.	Author(s)	Year	Article title	Research Design/ Size/Discipline	Theme	Findings
9	Lambert, S., Carter, A. & Lightbody, M.	2014	Taking the guesswork out of assessing individual contributions to group work assignments	Qualitative 232 postgraduate & 325 undergraduate accounting students	Assessment/Educator perspective	Wiki-based assessment provided benefits to both students and instructors, with students able to receive a more just outcome in terms of final grades awarded and instructors using less guesswork, and thus experiencing less stress, in the grade review process.
10	Riebe, L., Roepen, D., Santarelli, B. & Marchioro, G.	2010	Teamwork: Effectively teaching an employability skill	Qualitative 160 second year undergraduate business students	Pedagogy/ Case study	The most important factor for engaging students in teamwork is having a clear conceptual framework. A three-phase approach to teaching teamwork skills provided the vehicle for student teams to both experience and understand the generic skills and behaviours required for effective teamwork.
11	Sargent, L. Allen, B. Frahm, J. & Morris, G.	2009	Enhancing the experience of student teams in large classes	Mixed method Control n = 101 Experimental n = 564	Pedagogy	A teacher assistant (TA) training intervention was used to build team-coaching skills in TAs working in a large business course. Application of the process was assessed as a positive experience for both teaching assistants and student teams. TAs learned new and transferable skills and student teams were exposed to coaching relationships.
12	Seethamraju, R. & Borman, M.	2009	Influence of group formation choices on academic performance	Mixed method 141 postgraduate business information systems students	Pedagogy	Students who take account of the skills and knowledge of individual students, their ability to contribute to the management of the task at hand and the potential social cohesion of the members in the group are likely to perform better as a group.
13	Teo, S. Segal, N. Morgan, A. Kandlbinder, P. Wang, K. & Hingorani, A.	2012	Generic skills development and satisfaction with group work among business students	Quantitative 389 postgraduate and undergraduate students	Pedagogy/ Student perceptions	The study reported on key variables that influenced the development of group work skills. It found that lack of prior training in group work tended to produce a more negative group work experience, with Australian residents reporting more reluctance to conduct peer evaluation and a more negative response to group work than international students.
14	Troth, A., Jordan, P. & Lawrence, S.	2012	Emotional intelligence, communication competence, and student perceptions of team social cohesion	Quantitative Final sample n = 273 university business students	Pedagogy	Communication skills training early in a university degree could result in students better able to engage in teamwork and have a more positive experience. Development of EI and communication skills should become an important part of team building to ensure maximum opportunity for optimising performance.

**Table 2: Comparison of author(s) location and number of universities represented in review**

	WA	SA	VIC	NSW	QLD	TAS	ACT	NT	Other	Totals
No of papers	2	2	2	4	2	0	0	0	2	14
No of Universities	5	3	9	11	8	1	1	1	0	39

A comparison of the percentage of articles per state against the percentage of universities per state in this review revealed that authors affiliated with universities located in New South Wales produced the majority of the articles (28.6%). This figure correlates with the number of universities in New South Wales with eleven of the 39 Australian universities (28.2%) located in that state. Publications on teamwork are underrepresented in Victoria with nine universities (23%) producing 14.3% of articles and in Queensland, with eight universities (20.5%) also producing 14.3% of articles. Two articles in this study (14.3%) emanated from authors in Western Australia, which has five universities (12.8%). South Australia, with three universities (7.7%), produced 14.3% of articles in this study. Articles with cross-institutional author affiliations contributed a further 14.3% of articles in this study.

Over the five-year period covered by this review, 14 articles were located that met the specific search criteria. Given that 70% of Australian universities overtly state teamwork or working effectively with others as a graduate attribute, research on the application of teamwork teaching and learning is considered minimal. However, the role of collaborative partnerships in academia is clearly evident from the types of publications reported in this review. All the papers (minus one) are in fact co-authored and evidence of teamwork in practice.

### Types of methods used

Papers included in the review used a variety of methods (noted in Table 3) to approach their research. Each paper was reviewed for dominant content and the type of method applied.

**Table 3: Method and focus**

Focus	Quantitative	Qualitative	Mixed method	Other	Focus totals
Pedagogy	3	2	4	2	11
Assessment	1	1	1	0	3
Method Totals	4	3	5	2	14

The primary foci of research in the articles were pedagogy and assessment. Of the 14 articles included in this review, 11 were primarily related to teamwork pedagogy and papers 4, 7 and 9 were predominantly linked to assessment.

Across the 14 articles, there was a fairly even spread of research methods used to explore the pedagogy and assessment of teamwork. The mixed method approach was favoured slightly more than others, with five papers (1,4,8,11,12) using this method. A quantitative approach was adopted in four papers (3,7,13,14); and three papers used a qualitative approach (5,9,10). Two of the papers are noted as 'other' as they did not fit neatly into one of the other methods. Paper 6 used an action research approach and paper 2 was a case study.

### Themes around the teaching and learning of teamwork

Although each research paper had a particular focus, similarities were noticed between various papers in relation to the mention of some common variables with regard to the teaching and learning of teamwork in HE business disciplines. Table 4 outlines commonalities found in research papers, further categorised into three inter-related themes: team formation and management; teaching and learning approaches; and challenges influencing teaching and learning practices.

**Table 4: Similarities and overlaps in HE teamwork research papers**

Theme	Variables	Mentioned in paper(s)
Team formation and management	Team formation	6, 7, 8, 9, 10, 12, 14
	Team cohesion	6, 12, 14
Teaching and learning approaches	Teaching and learning strategies/processes	6, 9, 10, 11,14
	Constructive alignment	4, 6, 8, 10
	Assessment/marks/grading	1, 4, 7, 9, 13, 14
	Active/collaborative/student-centred learning	5, 8
	Team-based learning (TBL)	2, 5
Challenges affecting teaching and learning practices	Cultural diversity/mix	5, 6, 13
	Workload	1, 2, 3, 4, 6, 13
	Assessment/marks/grading	1, 4, 7, 9, 13, 14

### *Team formation and management*

Team formation/composition is a somewhat contentious issue for both students and educators in terms of size and the way in which teams are structured. Where the size of groups was mentioned in the papers reviewed, groups of between three and five team members was recommended. Research by Jackling et al., (2014) was based on dyads. The rationale for the smaller group size was to mitigate anxiety associated with lecturer formed groups. Their findings suggest that group composition has a significant impact on student perceptions of group work; however, the authors acknowledge that these findings may be limited and not transferable to larger groups. Information on the structuring of teams for team projects at university was varied, with some research (Hunter, Vickery, & Smith, 2010; Jackson, Sibson, & Riebe, 2014; Troth, Jordan, & Lawrence, 2012) advocating for educator allocation of students to teams to promote diversity of culture, gender, age, team role profiles and level of emotional intelligence. Seethamjura and Borman's (2009) research with postgraduate students suggest that heterogeneity of team members is a contributing factor to team success, but concludes that students should self-select team membership.

There is also evidence in this literature that Australian researchers are concerned with team cohesion. Hunter et al., (2010) posit that meetings between the facilitator and individual teams to discuss issues assist with the development of group cohesion. Troth et al., (2012) discuss the implications of emotional intelligence training as a way of improving team social cohesion. They further suggest that emotional intelligence could be a factor in determining the allocation of students to teams. Seethamjura and Borman (2009) implicate social cohesion as a latent variable in the construct of groups, finding that there is potential for a group to perform better where there is social cohesion.

### *Teaching and learning approaches*

A minority of the research presents specific innovative teaching practices to teach teamwork skills. For example team-based learning (TBL) was presented by two researchers (Chad, 2012; Freeman, 2012). TBL includes four elements: strategically formed teams; a readiness assurance process, questions initially undertaken by individuals and then followed up in the group through a consensus decision-making process; peer evaluation; and, small group activities. Freeman (2012) provides a description of three main phases associated with TBL activities (see p. 156). The authors note that whilst the introduction of TBL offers students an enhanced team learning experience, it also adds to the workload commitment of the academic adopter. Sargent, Allen, Frahm and Morris (2009) outline a strategy to develop necessary team-coaching skills in teaching assistants in order to provide relevant coaching and feedback on team skills to student teams in a large management course. The findings of this study indicate that the outcomes of this applied process approach was a positive experience for both student teams and the teaching assistants.

Design of team project assessments is a factor that is of concern to HE educators, particularly in how to address individual grading (Lambert, Carter, & Lightbody, 2014) and the use of self and peer assessment (Delaney, Fletcher, Cameron, & Bodle, 2013). Peer assessment is presented most often as a strategy to ensure accountability of individual team members (Burdett & Hastie, 2009; D'Alessandro & Volet, 2012; Delaney et al., 2013); to discourage social loafing and non-co-operation; and to

increase distributive justice. By contrast, Lambert et al., (2014) place less reliance on peer evaluation as a strategy to deal with individual accountability and instead argue for team member accountability through contributions to a team wiki. Riebe et al., (2010) also advocated use of a team wiki to promote individual team member accountability; and in addition implement peer evaluation checkpoints throughout the team project. Burdett and Hastie (2009) suggested interventions to overcome student perceptions of inequity of workload distribution by providing a mechanism to adjust individual team member grades. Other strategies for applying grading mechanisms were outlined by Delaney et al. (2013), who used a self and peer assessment (SPA) model. The authors further outline the implementation of the online tool, SPARK<sup>PLUS</sup> (Self and Peer Assessment Resource Kit) in an undergraduate accounting course.

Constructive alignment (see Biggs, 2012) of assessments and activities with intended learning outcomes was mentioned as a basis from which to ensure team-working skill development (Delaney et al., 2013; Jackson et al., 2014; Riebe et al., 2010). Riebe et al., (2010) propose that constructive alignment supports students' understanding of the development of behaviours associated with the process of teamwork and subsequent application in the team assessment. Further, Jackson et al., (2013) promulgate the notion that teaching staff must "explicitly articulate the connections between the constructive alignment of the unit's activities and assessments with learning outcomes" (p. 15), so that students are able to self-report on the outcome of the development of team working skills.

#### *Challenges affecting teaching and learning practices*

The influence of organisational culture on teaching practices in HE, as well as the cultural background of HE business students, was mentioned in the reviewed literature as influencing teaching teamwork. Freeman (2012) refers to a change in culture of educators moving from lecture-based pedagogy to that of active learning. Freeman explains that "some academics may resent the extra investment of time and effort required of them in implementing a change (to TBL) or they may prefer to transmit information through traditional lectures and tutorials" (2012, p. 157). Hunter, Vickery and Smith, (2010) outline the need for time to develop cultural sensitivity so that undergraduate students learn to cope with group diversity through proactive teaching and learning strategies. Teo et al., (2012) concur, stating that "developing intercultural competence in students and academics is a clear priority" (p. 482) in the development of teamwork skills.

Workload and assessment practices were also discussed as variables impacting student satisfaction with teamwork. Social loafing related to workload sharing is noted as a burden, with a variety of viewpoints raised by the researchers (Chad, 2012; Hunter et al., 2010; Troth et al., 2012). D'Alessandro and Volet (2012) discuss the impact of external part-time work hours on student attitudes to group work at university, finding that "student learning in groups is adversely affected by substantial hours of part-time employment" (p. 103).

## **Implications and conclusions**

Current research suggests that undergraduate business students still do not receive adequate training and instruction in teamwork prior to being assigned large, multi-outcome team assignments (Jassawalla, Markulis, & Sashittal, 2011). The aim of this systematic literature review was to provide an overview of recent literature emanating from Australia on teamwork teaching and learning practices in HE business disciplines in order to understand how teamwork is situated as a learned employability skill.

The 14 studies have suggested or operationalised certain strategies to deal with specific concerns including team development. Factors that influence student engagement with teamwork have also been presented. Concerns about teamwork assessment practices were highlighted by many studies. Student perceptions of (dis)satisfaction with teamwork assessment have been attributed to considerations of social loafing, workload of individual team members (both within the HE team and external employment hours), and the distributive justice related to grading team assignments. Of the literature



reviewed, little attention appears to have been paid to training students in the process of teamwork as an employability skill.

It has been suggested that HE educators – dealing with the competing interests of teaching an already crowded curriculum – may be deterred from adopting a process over product approach to teaching teamwork. Understanding the ways educators conceive curriculum and the application of constructive alignment for example could assist to design program activities to ensure teamwork skill development outcomes are articulated (see Frazer & Bosqanquet, 2006; Trigwell & Prosser, 2014). Many business academics are discipline scholars and may not have had any formal training in teaching methods (Fleming, 2008), or training in how to develop students' teamwork skills (Albon & Jewels, 2014; Lawson, Fallshaw, Papadopoulos, Taylor, & Zanko, 2011), especially if they had not experienced adequate training in developing teamwork skills while completing their own business degree. Training resources for educators has been noted as a way to improve academics' understanding of pedagogical strategies associated with professional learning (Lawson et al., 2011). A lack of resources may inhibit the ability of HE institutions to respond to the changing needs of employers and hence the redesign of curricula to incorporate skill development in courses. The type of institutional support needed for academics to teach of teamwork skills in HE is an area in need of further exploration.

This review has also identified that fundamental to HE students satisfaction with teamwork is the need to address perceived negative aspects associated with completing team assignments. The broader literature identifies many factors for consideration. Students are primarily motivated by assessment (Ramsden, 1992) and therefore, when it comes to developing teamwork skills, curriculum design that incorporates both process and product outcomes in the assessment will engage students with deep learning (Delaney et al., 2013). Linked to assessment are students' negative perceptions associated with marks and grading (Burdett & Hastie, 2009; Pfaff & Huddleston, 2003; Schultz, Wilson, & Hess, 2010), particularly individual grades being affected by the multicultural nature of teamwork at university (Curşeu & Pluut, 2013; De Vita, 2002; Teo et al., 2012; Volet & Ang, 1998), and fears associated with social loafing of peers in team assessments (Kouliavtsev, 2012; Maiden & Perry, 2011). Further, student workload has been reported as an issue in terms of individuals carrying more than a perceived fair share of the workload within a team project (Burdett & Hastie, 2009), or for students who hold down part-time employment. Where the majority of students in a group are employed more than two days a week, they “displayed significantly more negative appraisals of their experience at the end of the project than their peers in groups where few students were working” (D'Alessandro & Volet, 2012, p. 97).

This paper presents a review of teamwork literature emanating from Australia which meets particular criteria. That is, how teamwork teaching and learning in Australian HE business disciplines is being applied. This review forms part of a larger research project leading to an international systematic review of HE business discipline teamwork teaching and learning. In employability terms, teamwork remains a continuously sought after skill by employers. If one of the aims of a university education is to produce employable graduates – and working in the 21st century global economy requires the capacity to work effectively with others – then it is important to understand the interaction of the 'student', 'institutional' and 'educator' factors identified in this review which afford and constrain the teaching of teamwork skills in higher education (HE) business disciplines.

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