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What do communication skills mean in the Construction discipline?

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Communication has emerged as one of the key threshold learning outcomes in the Australian Learning and Teaching Council (ALTC)-funded project (2010-2011) which established academic standards in a number of disciplines in Australian higher education institutions. However, it is far from clear what is meant by the term "communication" in any of the disciplines, including the Construction discipline. This study examines the different understandings of communication skills in the Construction discipline that have emerged through thematic and concordance analysis of focus group discussions with the three major stakeholders in the discipline: faculty staff at several Australian universities, industry representatives, and students/recent graduates from Building & Construction degree programs. The findings show that each of the stakeholders has a different understanding of what communication encompasses, and that there are clear differences between the various higher education providers as to what communication is and how it can be developed in a degree program. The findings then beg the question: how are such skills to be taught and assessed in the context of the discipline?

Key Words: communication skills, academic standards, Construction discipline, threshold learning outcomes.

1. Introduction

1.1. Background/context

This paper reports on research conducted within the Construction discipline as part of a project conducted by the Australian Learning and Teaching Council (ALTC), the Learning and Teaching Academic Standards (LTAS) project. The LTAS project provided discipline communities in the Australian higher education sector with the opportunity to define academic standards, in preparation for the establishment of the Tertiary Education Quality and Standards Agency (TEQSA) and a new regulatory environment in the sector (ALTC, 2011). Discipline scholars were appointed for a number of disciplines including Construction, and were set the task of identifying and establishing threshold learning outcomes (TLOs) for their respective disciplines. A threshold learning outcome can be defined as a clear statement of the set of knowledge, skills and the application of the knowledge and skills a person has acquired and is able to demonstrate as a result of a particular program of study in a given discipline, at the point of graduation (Australian Qualifications Framework Council, 2010, p. 82).

In order to identify and establish TLOs for the Construction discipline Bachelor's degree, a broadly consultative approach was adopted, to involve stakeholders in the Building discipline community as much as possible within the constraints of time and other logistics, such as distance and availability. After the discipline scholar conducted a number of presentations to

stimulate community engagement, a series of 14 half-day workshops across Australia was held in 2010 to identify a set of draft threshold learning outcomes for Bachelor level awards in Building/Construction Management. These workshops were conducted as focus groups in order to provide the opportunity for stakeholders to communicate their perspectives with specific and detailed responses (Bender & Ewbank, 1994); separate workshops were held for academics, industry representatives, and students and recent graduates. The workshop discussions were recorded with permission from the participants, as outlined in more detail in the Methodology section of this paper. Following the first round of workshops and a quantitative analysis of the selection of TLOs, a second round of workshops was held which combined the three stakeholder groups.

In addition to providing a forum for discussion, the workshops also gave participants the opportunity to select what they saw to be the five most important learning outcomes for graduates in the Building discipline from 64 statements on learning outcomes (see Newton & Goldsmith, 2011b for a more detailed description of the process and results). The broad themes of threshold learning outcomes for the Building discipline are as follows: Knowledge; Judgement; Self-Development; Communication; Innovation; and Engagement. This paper focuses the discussion around "communication" in the context of the Building discipline: how it is understood within the discipline; how it is interpreted in the construction sector; what it appears to mean (and to embrace) to the three main stakeholder groups; and what the implications of these understandings and expectations might have for the teaching and learning of communication skills in this context. Firstly we will discuss communication and communication skills from both a theoretical linguistic and a construction sector perspective. We will then outline the methodology used to analyse the transcripts of the workshop discussions before presenting the key findings from the analysis.

1.2. Theoretical perspectives of communication skills: Construction discipline and linguistic/communication discipline understandings

Overall, there are several significant differences between the two perspectives. The most obvious is in terms of what communication is, with the perspective from the construction sector being that communication is about the transfer of information from sender to receiver, whereas the linguistic/communication discipline perspective sees communication as encompassing two-way communication and the shared construction of meaning.

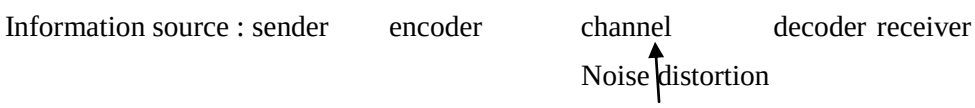
1.2.1. Theoretical perspectives of communication skills: Construction discipline

In their book titled, *Communication in construction: Theory and practice*, Dainty, Murray and Moore (2006) explore a number of theories about communication, and contrast communication theory as a process with that of the semiotic method (with which many learning advisers would be more familiar). However, the authors seem to have a preference for theories which focus on transmission of information rather than an emphasis on transmitting and understanding meaning, as indicated by their use of sub-headings such as *encoding and transmission*; *communication media and channels in construction; impact of "noise"*. This perspective comes from organisational behaviour and organisational theories, especially around Human Resource Management (HRM) within the Construction discipline, reflecting the authors' academic backgrounds. The following quotation provides some context for this:

> communication is essentially about the transfer of information between people ... As such, communication can be viewed as a professional practice where appropriate rules and tools can be applied in order enhance [sic] the utility of the information communicated, as much as it can a social process of interaction between people. (Dainty, Moore, & Murray 2006, pp. 5-6)

The authors are anchoring communication within the construction sector with their mention of professional practice. When they refer to communication skills, it is specifically the skills that project managers need to deal with individuals, small groups, large groups and with organisations. Dainty, Murray, and Moore (2006) present a range of models that illustrate the communication *process*, such as the linear model (Shannon & Weaver, 1949), a more complex

two-way model (Baguley, 1994), and a model that includes context (Thompson & McHugh, 2002). Also see Cigén & Sardén (2004) for a modified version of Schoderbek (1990); they refer to a model of the communication process which has the following (linear) elements:



The sender encodes the message and sends it via a channel (similar to the Mode in Systemic Functional Linguistics); the channel may suffer from some kind of noise distortion (actual background noise, particularly on a construction site, but other kinds of "noise distortion" as well, such as misunderstanding or misinterpretation); it is then decoded by the receiver. It demonstrates a uni-directional conception of communication, with no opportunity for negotiated meaning between sender and receiver. It is perhaps a useful model of how sound is transmitted, but not so useful for explaining active two-way communication between participants.

This model, or variations of it, occurs in a number of scholarly articles on issues of communication in the construction sector. However, the transmission or informational model is strongly critiqued by theorists in the field of communication, and has been described as "philosophically flawed" and "ideologically backward" (Craig, 1999, p. 125). A number of models are advanced as preferable, such as the constitutive model which looks at emphasising communication as a process of creating shared meaning, such as Deetz's (1994, as cited in Craig, 1999) "'communication perspective' that focuses on describing how the inner world, outer world, social relations, and means of expression are reciprocally constituted with the interactional process as its own best explanation'" (p. 126).

1.2.2. Theoretical perspectives of communication skills: linguistic/communication discipline understandings

Within the field of linguistics, communication skills are defined, not surprisingly, in terms much closer to those used by communication theorists than by writers in the Construction discipline. Widdowson (1978, p. 67), for example, gives a useful working definition of communication skills, although he refers to them as communicative abilities, distinguishing these abilities from linguistic skills, where the latter refer to the medium in which the language system is used (speaking, writing, etc.), while the former refer to the mode in which the system is realised. Widdowson (1978) makes the following point:

> communicative abilities ... are ways of creating or re-creating discourse in different modes ... in brief, [this activity] involves an understanding of the communicative value of linguistic elements in context and this is based on a knowledge of how these elements may serve as clues which can be interpreted by reference to shared conventions of communication. (p. 68) [Mode is used here in a similar sense to that in systemic functional linguistics.]

As can be seen, both the communication and the linguistic disciplines identify shared meaning as critical to communication, in addition to the creation and reproduction of meaning, and as such have a richer and more complex understanding of the nature and purpose of communication than that reflected in the various transmission models. As Palmer (1981) notes: "information in the technical sense is not meaning ... The human speaker, unlike the communication system, does not merely transmit the message, he [sic] also creates it ..." (p. 16). And perhaps it is this difference in understanding that may have an impact on how, or whether, communication skills (or abilities) are taught within the context of the Construction discipline.

Moving from the theoretical to the practice-based perspective of communication skills in the Construction discipline, the following typical problems have been identified as associated with communication specifically in the construction sector (not in construction education, but the wider industry sector) (Dainty, Murray, & Moore, 2006; Cigén & Sardén, 2004). The emphasis

is that the context of the industry is very much "people" based, where face-to-face exchanges between stakeholders are preferred, despite rapid improvements in ICT.

- Construction is a project-based industry: people are brought together for short periods to work on a temporary endeavour before moving on to other ventures – the communication structures need to evolve rapidly, and are based on norms that centre on human interaction, despite the large number of people and many organisational interfaces.
- The industry is volatile, dynamic and subject to rapid change and fluctuation; the larger organisations' finances are closely linked to prevailing economic circumstances. Due to such volatility, the majority of firms tend to outsource much of their labour; this has created unfamiliarity and poor communication within and between organisations. (Dainty, Murray, & Moore, 2006, pp. 220-221)
- Due to the high intensity (the intensity refers both to the volume of communication and the time pressure under which the communication takes place) of communication in the construction process caused by the number of participants, the exchange of different types of information and the frequency of interactions between organisations (both suppliers and contractors), there is an implied level of complexity in the communication process and thus a great risk of misunderstandings, or "coding and decoding information". (Cigén & Sardén, 2004, p. 39)

From these observations it is apparent that there is a strong awareness within the sector that communication is both important and problematic. This is borne out in a number of studies within construction education (Smallwood, n.d.; Williams, Sher, Simmons, Dosen, & Pitt, 2009), where communication skills are seen as both highly desirable in construction management practitioners and as lacking in many graduates who are currently entering the sector. However, definitions of communication skills are difficult to locate. What is of possibly more concern is that, while there are acknowledged gaps in communication skills, neither the construction education discipline nor the wider construction sector see that these skills need to be taught within the context of the degree program. Smallwood's study from the 1990s is of particular interest (despite the lack of publication details), as it reports on surveys that identify the most important skills for construction practitioners and most important subject areas for construction degree programs. Despite the identification of oral communication as the most important skill for a construction manager (Smallwood, n.d.,Table 5 Part A, p. 7), with written communication ranked as ninth most important (out of 23), nowhere in the list of recommended subject areas is there mention of communication as a subject to be taught. This absence of the need for specific teaching of communication skills is echoed in the current research being reported on, indicating perhaps a lack of awareness of how such skills are to be taught, or perhaps a belief that exposure to the appropriate circumstances and contexts will allow these skills to be acquired. Unfortunately, the scope of the current project did not allow for the exploration of these beliefs and attitudes.

This leads us to the current research, which examines what communication skills mean to the Construction discipline, both overall and to the key stakeholder groups.

2. Methodology

The consultation process began with a round of presentations by the discipline scholar and was followed by a series of 14 half-day workshops, including eight specific to the academic staff of Construction Management programs, three specific to industry practitioners and employers, two specific to current students and recent graduates, and one a mix of academic staff and students. The workshops involved a total of 108 participants at locations across Australia.

The structure of the first round of TLO workshops was intended to elicit from the participants what they regarded to be the key TLOs from their particular perspective, and then to arrive at some level of consensus as to what the national TLOs for the discipline might comprise (Wilkinson, 2007). Each workshop was conducted by the discipline scholar (Construction) and commenced with a short presentation about the background and broad aims of the LTAS project. Participants were then invited to volunteer their key learning outcome proposals (the

pre-activity discussion) and were asked a series of open-ended questions to refine further the statements that were generated from this process. Following this discussion, a prepared set of 64 candidate TLO statements printed on individual cards was randomly distributed to pairs of participants. Each pair was asked to select only their five most preferred expressions of TLOs from the cards allocated to them, using a pyramid form of discussion (Jordan, 1990). This was followed by a discussion about the process. The discipline scholar also asked for comments about any other wordings or learning outcomes that were not included in the selection. A quantitative analysis of the choice of TLOs was also conducted, and has been reported on extensively (Newton & Goldsmith, 2011a; Newton & Goldsmith, 2011b). A summary of the quantitative analysis is included below.

The candidate TLO selections by category overall (expressed as a percentage of the overall vote) were:

- Coherent Knowledge (27.4%)
- Self-Development (23.0%)
- Process Management (19.1%)
- Cognitive Skills (17.8%)
- Effective Communication (12.7%)

These over-arching TLOs have undergone substantial revision through feedback from online surveys and a second round of workshops that combined stakeholder groups and sought to refine the wording of the TLOs and of their descriptors. At the time of writing, the final draft TLO for communication in the Building discipline is: *TLO_4: Communication. Interpret and negotiate building and construction information, instructions and ideas with various project stakeholders* (Academic Standards for the Building Discipline Booklet, ALTC July 2011).

In order to have evidence for the types of issues that were raised in the discussion, as well as to discover hitherto unidentified themes that underlie these issues, the workshops were recorded using an audio device and were later transcribed. Permission to record was obtained prior to the commencement of the discussion, and ethics approval for the project was granted both by the ALTC and by the University of New South Wales. All participants and institutions were de-identified, and each transcript was assigned a name and letter to distinguish it (*University A; Industry B).*The transcription was verbatim but excluded paralinguistic features (*Umm, Ah, you know*). There were 111 pages of transcription in total.

The transcribed text from each workshop was then put through Concordance (Watt, 2011) separately in order to identify the most frequently occurring words and their contexts, collocations, key themes and when the themes emerged in the discussion. The transcripts were then combined to identify total word frequencies and themes. When identifying word frequency, certain word types were excluded, such as determiners, pronouns, prepositions and relational processes. Once these elements were identified by Concordance, they were then checked by the first researcher for thematic relevance, context and for word forms. Context was important, as often participants would use a key theme-related term such as *talking* or *speaking* in the context of discussing the workshop ideas, not in the context of communication as a TLO or as an important requirement for graduates.

The qualitative analysis examined the most frequently occurring terms in each workshop, using the key themes identified through Concordance and also undertaking a thematic analysis (Smith & Osborn, 2007) through several readings of the transcriptions, and then compared the themes between the three main stakeholders (academics, industry, and students and recent graduates) to identify significant commonalities and differences. These themes were then checked by the second researcher and refined to reflect a shared understanding of the key themes, which included *communication, judgement* and *self-development*. The transcripts were then analysed again to focus specifically on the understanding of communication and communication skills as they emerged in the discussions, with an examination of how each stakeholder group defined or explained communication skills. A Systemic Functional Linguistics analysis of the transcripts was also planned, to develop an understanding of agency and ergativity in the context of the

workshop discussions (Halliday, 1985; Kress 1985), but there was insufficient time to do so. This is still intended to be undertaken when time and resources permit.

3. Findings

The following table provides a summary, by workshop group, of the first-mentioned topic or theme of the discussion and of the most frequently occurring words. It is interesting to note the differences between the stakeholder groups in terms of topics, and also within the stakeholders; the range of topics raised by the various universities is quite broad, but the differences between Industry A and Industry B are quite pronounced.

Table 1. First mentioned topic and word frequency by workshop.

Group	Topic/theme	Word frequency
University A	communication; interpreting drawings; ability to work independently	thinking/thought; able/ability; construction
University B	creative and innovative thinking; critical problem-solving; cost measurement	thinking/thought; know/knowledge; can
University C	content-level-knowledge; difference between university & TAFE; group work	level/s; RICS; outcome/s
University D	cost/time/quality; drawing up a schedule; conducting your profession in the workplace	think/ing/thought; level/s; profession/al/s
University E	problem-solving; knowledge of current legislation; professional outlook	think; know/ledge; build/ing/s
University F	ability to communicate knowledge; collaboration; critical analysis	able/ability; communicate/communication; student/s
University G	culturally appropriate communication skills; graphic & drawing skills; ability to self-learn	student/s; know/knowledge; need/s
Industry forum A	quantity surveying; structures; ability to read drawings	thinking/thought; can; outcome/s
Industry forum B	interpersonal skills; conflict resolution & negotiation capabilities; frontline management	industry/'s; think/ing; work/ed/er/s/ing/workforce
Students A	reading a plan; connection between theory and practice (concrete slab); structures	management; construction; build/ing
Students B	project finance; OH&S; applied knowledge (industry experience)	think/thought; know/s; can

This analysis came from the transcription of the pre-activity discussion at the workshops. As can be seen, the topics discussed and themes that emerged from the various workshops are fairly diverse among and between the stakeholders.

Universities: wide array of first-mentioned topics, which perhaps reflects the differences between Building discipline programs offered by these institutions. Most universities had a mix of professional skills and technical knowledge (e.g., communication & interpreting drawings; creative thinking & cost measurement), with the exception of University F which mentioned three professional skill areas (ability to communicate knowledge; collaboration; critical analysis).

Industry representatives: reflected the tension between placing emphasis on professional skills/practices (as identified by various accrediting bodies) such as interpersonal skills, especially communication, and on technical knowledge (industry forum A mentioned interpersonal skills, conflict resolution and frontline management, whereas industry forum B raised quantity surveying, structures [knowledge of] and ability to read drawings).

Students/recent graduates: both groups were very focused on the practical knowledge required in the workplace (reflecting their current/recent industry experience). Students A mentioned reading a plan and structures (knowledge of), while students B noted project finance and OH&S. Importantly, both groups made reference to the need for applied knowledge (connection between theory and practice).

3.1. Word frequency

As previously stated, this analysis used Concordance software to identify the most frequently used terms. It is interesting to note that, despite the variation in topics in the discussions, there is remarkable commonality with the word frequencies: *think/thought* was the most frequently occurring term in six of the eleven discussions; *able/ability/can* occurs very frequently in five of the discussions; *knows/knowledge* occurs frequently in four of the discussions. Other frequently occurring terms are *building, construction, level/s, manage/ment* and *outcomes*. The terms *communication/communications/communicate/communicating/communicator* occurred 127 times in total during all of the workshops. The most frequent collocations with these terms were *skills, written, oral/verbal, ability/able, client, health, important,* and *formal.*

3.2. Communication (communication skills) as defined in LTAS workshops

The following are the definitions of communication/communication skills that were provided by the participants in all the workshops.

> *the ability to communicate verbally, in writing, professionally, with confidence (University A)*
>
> *I think it's mostly written, but also being able to stand up and talk to people (University E)*
>
> *I think in construction it's primarily a socialisation of knowledge, and within the construction industry it's verbal skills and professionalism (University F)*

The definition from University F is probably closest to how communication skills are understood, or what they are expected to be, both within the degree programs and within the construction sector. None of the industry or student groups gave a definition of communication/skills.

Throughout the analysis of the workshop discussions, a number of points of interest emerged, especially around the nature and importance of communication skills and other interpersonal skills. As will be discussed later, the understanding of what comprises communication skills varied greatly; often the discussion about the ability to communicate would move into explanations about the importance of negotiation skills, conflict resolution, confidence, content knowledge, command of English, the apparent short attention span of GenY/Millennials *("if it's longer than a YouTube clip, forget it"),* personal grooming, presentation skills, graphical communication, the ability to read plans, and communicating with a range of experts, contractors and clients.

Table 2. Types of communication or communication skills:

Type of communication	**Workshop comments (comments separated by semi-colons)**
Communication as presentation skills	*presenting the capstone project to a client; being able to stand up and talk to people; formal presentations*
Communication as talking to people	*talking to subbies [sub-contractors]; talking to a client; the ability to communicate with an architect at the same time as a lawyer at the same time as an accountant, a tradesperson; you have to talk with everyone... the communication is so important, pretty much as soon as you go into the industry, much like other professions.*
Communication as negotiation skills	*you need to be able to sit at a table with 5 or 6 people and know how to facilitate a general discussion and come up with an outcome; conflict resolution and negotiation capabilities are pretty central, and having an understanding of the brief they're getting from various parties and translating that to what they're actually doing ...*
Communication as reading skills	*for example they should all be able to read specifications, and understand most of what they read in a typical specification; I want them to be able to read a drawing for example and a lot of them can't; The first question that [industry] are ever going to ask you is: can you read a plan?*
Communication as writing skills	*writing skills for example, multilayered; technical report writing, writing up meetings; the ability to put together more than two syllables and a couple of verbs in a sentence is quite useful; it's not just being able to write a good report, it's writing a good report for our type of clients and organisations that are going to consume it.*
Communication as critical thinking	*that would be what differentiates say the degree from the diploma would be my suggestion, that critical thinking, that ability to actually process information in a high level way so for me reading a financial statement...*
Communication as command of English	*some of the challenges we have faced, going through our recruit-ment process, is around the verbal skills, and the written English skills; the use of the English language is one of those issues.*
Communication as team work	*I think it's realistic to expect a graduate to have the communication skills to be able to work in a group, and to look at diverse disciplines ... so if you're going to work for a company as an assistant planning manager you need to be able to work within a project team, go to site meetings, and deal with tradies all the way up to financiers from day one ... But you've got to teach the theory.*
Communication as generic skills	*for me and our graduate cadet program, I assume an instant but base knowledge of construction but I also do expect them to be able to present themselves, to be able to communicate, to write well and to present themselves in a professional manner; so we've all gone for decision making, problem solving, communicating, because we're at that level. We may put the word construction in there so we can say it's for construction, solving construction problems or whatever, but if you want to fine tune – you're forced to go to that generic, all-encompassing type of attribute...*

As previously noted, the range of what communication encompasses is quite broad, but also reflects some of the key concerns of the Construction discipline community about the important role that verbal communication plays, especially in the context of a construction site. The following quotation illustrates this quite clearly:

> *That was a point that was made by the students: the main people they're communicating with is the subbies [sub-contractors], and that's a very different kind of communication from talking to a client, and yet that's what they're having to learn the process of. So it comes back to: is it reasonable for us to include that kind of training or that kind of outcome in our degree program? (University F)*

Command of English was raised as an area of concern by both industry workshops, but not by any of the other workshops. There could be a number of explanations for this: as the graduates are entering the industry, they are on the front line and expectations of a construction management graduate may be high; there may also be gaps in the kind of command of language that is expected, as several participants expressed concern about the appropriateness of the language used by new graduates in various forms of written communication. With the degree providers, it might be a case of the elephant in the room, in terms of overall language skills of their students. Communication skills are also seen by the workshop participants to span a range of interpersonal capabilities, such as teamwork and conflict resolution skills, in addition to writing, reading and verbal communication.

One of the themes of the discussion in all the workshops was the overcrowded syllabus in the construction degree program, and the unwillingness on the part of the degree providers and the industry representatives to add any more content to what is seen as a program that is already too broad. At the same time, there is recognition that interpersonal attributes such as communication skills are critical for graduates, but that these skills need to be contextualised; internship or mentoring programs are often cited as a very workable solution to this, but are not available to all students: "*Exposure to the industry itself is really important for this communication"* (University G). While capstone units can often be seen as a way of integrating professional and technical knowledge, they are usually offered in the final year of a degree and thus do not provide for scaffolded development of skills such as communication, teamwork and conflict resolution.

Overall, the range of understandings of communication skills may make it difficult to teach all of these aspects within a degree program; certainly, clarification of expectations of what is meant by communication skills would need to be established before designing a teaching program. Perhaps a more fraught question is whether the teaching could be integrated into the syllabus, given it is already content heavy, and also given that there appears to be a lack of preparedness by faculty staff to take on the teaching of communication. However, as neither this question, nor questions about the use of academic advisers in such teaching, were raised, no conclusions can be drawn on this.

Several points emerge from this analysis, apart from the obvious one that it will be a challenge to obtain a shared understanding between the stakeholders of what communication skills mean in the Construction discipline. Firstly, all the stakeholders recognise that communication skills are important, if not critical, in the construction sector. Secondly, the specific teaching of these skills was not raised in the workshops, although it was generally acknowledged by the degree providers that communication was one of the graduate attributes at all universities. Thirdly, if communication skills are to be taught within a building and construction degree program, what skills should be taught and in what context will be a critical consideration. Communication skills as described in Clanchy and Ballard (1995) encompass "coherent structuring of the ideas and information that are the subject of discourse, accurate and relevant use of sources and evidence, judicious use of data via verbal, graphical, statistical and other means, appropriateness of tone, control of standard English usage, and so on" (p. 163). These skills are not necessarily those that are understood as desirable for the Construction discipline, although they may not be rejected out of hand. Clanchy and Ballard go on to emphasise the importance of context when developing these skills: "as with thinking and research, a tight congruence needs to be

established between course objectives, teaching and learning processes, and assessment" (p. 163). This point is critical in any consideration of teaching communication skills within a degree program, but is especially important within a professional degree such as construction management or engineering, where links between theory and practice are not always clearly established (King, 2008; Goldsmith, Reidsema, & Campbell, 2010) and where "generic skills" can be undervalued unless they are contextualised within the program.

4. Conclusions

This paper has presented research into the different perspectives and understandings of what communication skills mean to the stakeholders in the Construction discipline and the wider construction community. While the workshops were held in most of the mainland capital cities and involved the three major stakeholders in the construction community, they may not have been representative of all the perspectives. Students and recent graduates were particularly under-represented, due to the difficulty in holding workshops at times when students/graduates were available and not studying or working.

Despite the limitations of the study, it has indicated several areas where further research can be undertaken, such as discovering a consensus of what are the key elements of communication skills to be developed within the Construction discipline. Another potential area of research is how communication skills can be more meaningfully integrated into professional degree programs such as Construction so as to ensure the "tight congruence between course objectives, teaching and learning processes, and assessment" referred to by Ballard and Clanchy (1995). There is also the question of how language and learning advisers can be involved in this process, without being seen as "remedial" instructors, or left to shoulder the burden of teaching communication skills that should be seen as the responsibility of all faculty staff.

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