

Action Learning in Higher Education: an investigation of its potential to develop professional capability

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This study investigated the extent to which a course, designed using peer and action learning principles to function as an 'on campus practicum', can develop the professional capabilities of students. As part of their formal coursework, third year behavioural science students, functioning as 'student consultants', entered into a 'client–consultant' relationship with first and second year 'student client' groups. Both groups of students reported positive learning outcomes. Third year student consultants reported using less surface and more deep approaches to their learning in this course design than in concurrent courses taught along more conventional (i.e. lecture and tutorial) lines. Students also reported significantly greater development of meta-adaptive skills (e.g. learning to learn) than in conventional teaching designs.

Introduction

This article reports an evaluation of a course based on action learning principles that aimed to develop the professional capability of psychology and behavioural science students. We first outline the notion of professional capability. We then consider how, if we take it seriously, such an idea can challenge our thinking regarding the design of higher education learning environments.

To a considerable degree the course or subject designs we use are informed by the learning outcomes we wish students to achieve, which, in turn, are informed by our conceptions of competence and capability. How we think about 'capable professionals' (i.e. what makes them effective) is the higher order premise, implicitly or explicitly, that drives our teaching efforts. Thus, in this sense, conceptions of capability inform learning outcomes, which in turn inform teaching and learning methods.

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The concept of professional capability

There would seem to be a fair degree of consensus that professional capability, in its fullest sense, is much more than simply 'being competent' in designated tasks and the routine application of previously acquired knowledge and skill. The higher order notion of 'adaptive flexibility' seems to characterize current notions of being capable. Klemp and McClelland's (1986) field studies of the functioning of senior managers identifies the construct of 'successful adaptation' as key. Adaptability, in this sense, is seen as being the capacity to enact specific combinations of competencies in appropriate contexts. In an extension of this, Boyatzis (1995) argues that 'superior performance' not only requires adaptive management of contexts of complexity, interdependency and innovation, but also a self-directed focus on developing further capability. Thus, the two facets of professional capability appear to be: being effective in coping with unpredictable circumstances, and being able to develop further capability (*viz.* learning to learn).

Writers in the higher education literature also reflect similar conceptions of capability. Thus, Barnett (1994) poses 'creative responses to the unpredictable', and Stephenson and Weil (1992) 'confidently taking appropriate action in unfamiliar and changing circumstances' as defining features of the capable professional. Thus, consistent with Stephenson's (1998) comparative analysis, while 'being competent' involves a process of adaptive (Senge, 1990) or single loop learning (Argyris & Schön, 1978), 'being capable' involves generative or double loop learning whereby practitioners are able to question the assumptions that inform their current practice, and envision and enact new responses to familiar situations, or effective responses to new situations. Importantly, much professional or workplace relevant learning is rarely developed through formal or didactic means, but in informal, reflective and interactive episodic contexts (Marsick & Watkins, 1996; Sternberg & Horvath, 1999). In Gorard *et al.*'s (1999) terms, it is learning that is usually 'caught not taught'. It is often knowledge created in action in the solution of problems (Gibbons *et al.*, 1994).

Transition to professional roles

There is also an affective and experiential aspect of the capable practitioner; in particular, the notion of the resilient learner who can function in the 'swampy lowlands' of practice (Schön, 1983), adapt to 'environmental jolts' (Meyer, 1982) and who has 'graduated from the school of hard knocks' (Snell, 1988).

Not surprisingly, there is some evidence that a proportion of new graduates experience a considerable degree of 'reality shock' (Kramer, 1974; Pena, 1997), or at least surprise, when entering the workforce and undertaking professional roles. Reality shock is a process where newcomers have their assumptions about work and work life challenged, and in large part disconfirmed. Depending on a range of personal (e.g. self-efficacy) and contextual (e.g. available support) factors, this then can lead to higher rates of job-related stress (Dollard *et al.*, 2000) and burnout (Cherniss, 1995). An argument can be made that a strong contributor to the reality

shock of new graduates is their unrealistic and untested expectations (i.e. they don't really know what they are getting into) about work and work roles. The not easily answered question is, of course, what is the role of universities in contributing to professional socialization? Some would argue (e.g. Candy & Crebert, 1991) that the norms and rewarded behaviours of an academic setting (e.g. competitive individualism) are not just a poor, but a misleading, preparation for working life.

Implications for professional education

Such holistic conceptions of the capable practitioner present a number of challenges for the way we prepare our students to 'become professionals'. Traditional educational practices offer little 'hot action' (Beckett, 1996) opportunities to students: that is, few opportunities to integratively perform across thinking, feeling and doing domains, to prepare them to learn from future challenging or distressing experiences. Consequently, such transmissive processes add little value to students' capacity for applied metacognition: that is, developing their practical knowledge of the interaction of people, tasks and strategies and the practical self-consciousness (learning to attend to and interpret one's experiences) aspect of professional expertise (Flavell, 1987; Van der Heijden, 2000). As Veenman *et al.* (1997) argue, the key challenge for novice learners is developing an effective self-regulated 'working method' for managing problem solving. The component repertoire of metacognitive skills is developed through the practice of reflecting on one's performance in context. However, the scientist-practitioner model (Nixon, 1990), as an organizing framework for professional training, is often implemented with the limiting assumption that professional effectiveness is almost exclusively the result of applying science and scientific findings to practice. As O'Gorman (2001) argues, this approach undervalues the importance of the practitioner's tacit knowledge and the foundational nature of relationship and ethical judgement competencies to successful performance. This is consistent with Reynolds's (1997) general criticism of the level of communication and interpersonal skills demonstrated by psychology graduates.

One approach to meeting the challenge of preparing capable professionals is to involve students in processes that enable them to develop their abilities to adaptively and robustly learn from experience. Enhancing the ability to learn from experience can be thought of as a higher order genuinely transferable skill. Hager (1998), in a review of major theoretical accounts of workplace learning, derived two common and mutually reinforcing principles: learning from experience is fundamental to individual development; and adaptive competence, in the form of broad generic capabilities, is the primary requirement organizations have of professionals in a rapidly changing world.

In summary then, the challenge we sought to address was to design a learning experience that not only enhanced students' broader adaptive capabilities (such as learning to learn and critical reflection on practice), but also, towards the goal of empowering socialization, offered students a realistic preview of future professional roles.

Traditionally these types of learning outcomes and experience have been undertaken in external practicums or work experience programs, often in the latter or even postgraduate stages of study. While this is of obvious value, three limitations are evident. Firstly, as Arnold *et al.* (1999) argue, while students on placement report considerable levels of development, it is questionable whether issues of theory–practice integration are systematically addressed. Related to this, the experience component often becomes an end in itself, rather than being a point of departure to the more challenging goal of systematically learning from experience. Secondly, there can be a level of safe superficiality in the types of work experiences (e.g. work shadowing) available to undergraduates. For reasons of both competence and ethics, there are limited opportunities to involve undergraduates in responsible roles that require ‘real time’ decisions with actual consequences. As a result, the learning processes can often be more vicarious than genuinely experiential. Finally, practical considerations severely limit the availability of quality, professionally relevant field experiences. Consequently, in the context of large undergraduate classes (100 or more students), traditional field experience is a learning vehicle that is often neither feasible nor readily available.

Design of the action learning environment

Using the organizing construct of an ‘on campus practicum’, we sought to design a learning environment that combined the experiential learning and personal development available to students in quality field experiences with the systematic curriculum and reflective processes possible in a structured on-campus environment. We sought to implement the key insight, articulated by Ryan *et al.* (1996), that successful outcomes are achieved in such designs when students are able to perceive a close and reinforcing relationship between the theoretical and practical aspects of the course. The design of this on-campus practicum was informed by principles from three theoretical sources: action learning, project-based learning, and peer-group learning. Action learning (Revens, 1980; McGill *et al.*, 1989) or action inquiry (Brooks & Watkins, 1994) is based on a process of people learning by attempting to design and implement solutions to their problems. Project-based learning similarly uses a realistic problem or challenge as a stimulus, and input on relevant competencies required for successful implementation is provided progressively (Barrows & Tamblyn, 1980).

We also sought to utilize the learning opportunities available from interactions between peers when they are positioned in relation to each other as resources or in structured roles. The systematic use of peers is considered to be particularly important to achieving the meta-learning goals of critical reflection and learning from experience. As Wilson and Pirrie (1999) note, colleagues play a key role in the process of learning from experience in the workplace. Furthermore, as Wildermeersch (1989) cautions, the learning goals of self-directedness and independence should not be taken as endorsement of the necessity of learning processes that reinforce competitive individualism.

We used these theoretical frameworks to design a peer-based action learning system

that linked behavioural science students from all three years of the degree in a cross-cohort professional practice project. The organizing framework for the project was the 'client-consultant relationship'. Third year students, enrolled in a subject teaching group process and facilitation, worked in self-selected consulting teams (usually of two members). Each consulting team was allocated a client group (usually 4-6 members) of first or second year students. Client groups, as part of their course assessment, had the allocated task of designing, presenting and evaluating a skill training workshop to their first or second year peers. Consulting teams had the brief of negotiating entry into their client group and contracting to provide services in relation to their group task (e.g. facilitating the planning of their project) and their effective functioning as a team (e.g. team building). Consulting teams were required to keep factual and reflective logs of their work and to collect both peer and client feedback on their functioning. It was stressed that this was a realistic exercise and not a simulated role-play or pretend experience (i.e. we expected people to enter into an actual client-consultant relationship and contract for the achievement of practical outcomes. The extent to which the 'on-campus practicum' is isomorphic or equivalent to the 'real thing', in terms of its affective and behavioural demands, is a key factor influencing future transferability of learning (Greeno, 1997). The ecological validity of the learning task is also proposed as a key design principle for encouraging metacognitive learning (Simons, 1994).

Relevant assessment for the first and second year client groups was an end of semester evaluation of their own workshop design and presentation, and an analysis of their individual learning. Assessment for the third year consulting teams was a mid-semester consultancy proposal evaluating their entry, contracting, group diagnosis and early intervention processes; and an end of semester consulting process review relating their experiences to relevant theory.

In addition to the action learning project, students attended lectures and workshops relevant to the content of their particular subjects. Consulting teams and client groups were required to have a minimum of four meetings over the semester. Consulting teams had access to staff consultation and supervision, and were required to have at least one meeting with a staff member over the semester. At the end of semester each consulting and client team conducted a joint review and closure exercise.

The third-level course was structured to specifically support the action learning project. A number of enabling activities were conducted over the lifecycle of the consulting project (namely, building of consulting teams, structured reflection tasks) to facilitate both implementation of the task and learning from the process. Workshops (focusing on skill building and reflection of critical incidents) and lectures (focusing on theoretical input) were also coordinated with the stages (namely, entry, contracting, diagnosis, intervention and closure/evaluation) of the project.

Approach to evaluation

A key challenge we faced was assessing the effectiveness of this learning design. Consistent with Kember's (2000) invitation to combine multiple methods, voices and

perspectives in the evaluation of educational designs, we attempted to address a number of considerations. We sought to evaluate the program from the point of view of all stakeholders—primarily the perceptions of staff and students in both the client and consultant roles. We also sought to collect a range of data using both open and closed questionnaires. Where possible, we attempted to incorporate data collection as part of the implementation process (e.g. students keeping reflective journals or learning diaries). Finally, given that the effectiveness of a learning design can be thought of as a comparative question (i.e. effective compared to what?—Kember *et al.*, 1997), we also collected data on the same students' perceptions of outcomes and approaches to learning in other courses in which they were concurrently enrolled. This comparative evaluation of students' 'approaches in context' (Biggs *et al.*, 2001) enables a clearer understanding of the relative direction (surface or deep) in which this particular design encourages students' learning.

In summary then, our focal evaluation questions were:

- Does this action learning design achieve its proposed aim of contributing to the development of students' professional capability?
- Which particular features of the design contribute to student learning processes and outcomes?
- What are the specific challenges in applying or generalizing this type of learning design in other settings?

Method

Participants

Participants were 106 third year behavioural science students (84 women with an average age of 25.2 years, and 22 men with an average age of 26.9 years), and 155 first and second year students (110 women with an average age of 23.1 years, and 45 men with an average age of 25.4 years). Students were enrolled in subjects that formed part of the compulsory core of the degree program. As previously described, third year students functioned as process consultants to client groups of first and second years. Client groups met on an average of 14.2 occasions over the semester (range 2 to 25 meetings). Full attendance (i.e. all members present) was achieved for 74% of meetings. Consulting teams had an average of 6 meetings (range 2 to 12) with their client group.

Procedure

Evaluation data on the process and outcomes of the exercise were obtained from a number of sources. Students kept a brief reflective log of their meetings. Staff members kept notes of issues raised in student consultation and supervision sessions. These were collated and organized into thematic groupings. At the beginning and end of the semester, students completed anonymous questionnaires regarding their

perceptions of the experience, their evaluations of the various components of the design (e.g. working in a learning group) and perceived learning outcomes. A small sample of randomly selected students was also interviewed at the end of semester. Third year students (student consultants) also rated their approaches to study (using the Study Process Questionnaire: Biggs, 1987) in both the action learning environment and in other conventionally taught (i.e. lecture and tutorial) subjects undertaken that semester.

Results and discussion

Given the previously reported challenges in changing established expectations of course structure (i.e. what students are used to) and the student resistance that may ensue (Gibbs, 1992), we asked students to assess their attitude to the action learning exercise both at the beginning and end of semester. The initial attitude of students (1 'not at all' to 9 'very positive') in both the client (mean=7.18, sd.=1.41) and consultant (mean=6.20, sd.=2.02) roles were at least moderately positive. This was generally maintained to the end of semester for both client (mean=8.04, sd. =1.82) and consultant (mean=6.01, sd.=2.18) groups. Within group differences over time were not statistically significant. This provides a degree of assurance that students' initial and continuing perceptions of the face validity of this type of design were sufficiently positive to allow it to at least 'get off the ground'.

The perceptions of students in the client role

Evaluation of design aspects. We asked student clients to assess (on a 9-point scale) the contribution that each of four design aspects of the action learning component of their courses had made to their learning (the results were: working in a team [m.=7.10, sd. =1.44], undertaking a project [m.=6.65, sd.=1.37], being in the role of a client [m.= 5.53, sd.=2.39] and learning directly from their peer consultants [m.=4.51, sd. =2.54]). It is clear that while students' mean ratings on all design aspects are, at least, in the moderate range (indicating a degree of perceived learning value), the relatively high standard deviations for the cross-year functions (i.e. being a client, learning from peer consultants) suggests that students had quite variable perceptions of their value. A repeated-measures MANOVA (a statistical test of differences at two points of measurement) comparing these ratings showed that students, at the end of semester, perceived significantly greater value in the teamwork and project management than the client–consultant aspects of the design. This should not be surprising given the relatively small skill gap between year cohorts, and that the first and second year clients learnt from their third year student consultants primarily through observational or vicarious means.

Learning derived from each design aspect. We asked first and second year students to provide written reflections on the unique learning that they gained from each of

these design aspects (e.g. what was learnt from working in a team that was not available or much less pronounced from other design aspects).

In terms of *working in a team*, students reported learning in areas of collaboration and cooperation (61%, e.g. sharing influence, building on each others' ideas), managing differences (34%, e.g. working through conflicts), equity (24%, e.g. sharing contributions, workloads), self management (34%, e.g. taking responsibility) and process learning (38%, e.g. learning how groups work).

In terms of *undertaking a project*, students reported learning in areas of planning (71%, e.g. working with goals and a plan), organizing (58%, e.g. managing times/priorities to get a result) and integration (32%, e.g. applying theories to action).

In terms of *being in the client role*, students described learning around themes of client empowerment (46%, e.g. clients need to be in charge), and active involvement (41%, e.g. clients need to be proactive/speak up and not passively depend on experts) in the helping process as preconditions for success. A number of students (52%) also reported that they learnt the importance of interpersonal openness (as opposed to defensiveness and self-protective cynicism) to the success of the helping relationship, both in terms of giving personal information (e.g. self-disclosure about feelings, agendas) and receiving feedback (e.g. need to accept criticism/feedback). A strong theme in the comments was the dynamic of self-fulfilling processes (e.g. 'you get out what you put in', 'the way you start out shapes the way you end up'), and the way their investment influenced what was possible in a helping relationship.

In terms of *learning from their third year peer consultants*, a number of students (52%) commented that they learnt from observing their efforts in 'trying to be professional' (e.g. trying to clarify their role, make a useful intervention), from things that they felt their peer consultants had 'done badly,' or to which they had an uncomfortable reaction (22%), or from feedback they were given on process issues (46%).

Predicting future engagement. Because this was, in part, an exercise in anticipatory socialization (i.e. a process of vicarious yet realistic role preview for students in the client role), we asked these students to rate the extent to which they positively anticipated being in the student consultant's role themselves in future years. While average ratings were in the moderately positive range ($m.=6.22$, $sd.=2.33$), once again a high standard deviation suggests a fair degree of variability in students' anticipations.

We were interested to better understand the factors that might influence students' positive anticipations of taking up the helping role. After all, we didn't want to be designing learning experiences that, paradoxically or unethically, discouraged appropriate professional socialization. We conducted a standard multiple regression analysis with first and second year student clients' level of positive anticipation of being in the student consultant role themselves as the criterion. The predictors were their ratings of the task effectiveness of their consultants (i.e. a source of vicarious learning), their enthusiasm in relating to their consultants (i.e. their current involvement in the exercise), the level of conflict between clients and consultants

(i.e. the extent to which the current experience is aversive), and their level of learning in the client role (i.e. the current value of the experience). Importantly, the only significant predictor of positive anticipation was students' felt level of learning as clients ($F(5,155)=7.97$, $p < .00001$, $R=0.45$, $R^2=.21$). Whether their peer consultants were seen as skilful, or whether they got on with them, did not affect their future motivation. This is good news, given the level of unpredictability of interactive designs.

It is also important to note that conflict between client and consultant did not affect students' learning in the client role. The low correlation between ratings of learning and conflict ($R=-0.07$) suggests students were learning irrespective of whether 'things were progressing smoothly' or not. This may, of course, be a function of reported levels of conflict being in the low to moderate range ($m.=3.42$, $sd.=2.55$, on a 9-point scale).

The perceptions of students in the consultant's role

Changes in attitude over time. To assess third year students' sense of 'development over time' in the consultant's role we compared their ratings, at the beginning and end of semester, of felt anxiety and perceived competence working as consultants. Students reported a significant decrease ($t(1,110)=8.02$, $p < .0001$) in their level of anxiety in the role from the beginning ($m.=5.75$, $sd.=1.93$) to the end ($m.=4.17$, $sd.=1.99$) of the semester; and a significant increase ($t(1,110)=9.21$, $p < .0001$) in how capable they felt in the role ($m.=4.4$, $sd.=1.68$ v $m.=6.19$, $sd.=1.28$) over the same period. Student consultants described the source of their anxieties at the beginning of semester in terms of a general lack of self-confidence (e.g. shyness, working with people/strangers I haven't met before), concerns at not being able to meet clients' expectations, and being seen as incompetent.

Types of learning in the consultant's role. Overall, students reported that working in the consultant's role had been a moderately useful learning experience ($m.=6.54$, $sd.=2.1$). Students identified a range of learning from the consulting project. About half (51%) nominated the value of engaging with open-ended practice situations (e.g. learning about the unpredictability of practice, managing ambiguity), and an associated sense of demanding, yet safe, realism (38%, e.g. learning about resistance, differences and difficulties) as being valuable. About a third (31%) identified that there had been some personal benefit or development from the consultant's role (e.g. insight into my triggers/blind spots, increase in self-confidence). Similarly, about one-third of students identified that the chance 'to try things out' earlier than they expected affirmed their competence (e.g. I found I actually knew something) or made them aware of their limitations or areas of need (e.g. I have a better idea now of the areas that I need to work on). Some also saw the experience as giving them a sense of challenge (24%) or a welcome chance to be useful or helpful to others (12%).

Table 1. Third-year students' perceptions of design elements in action learning and conventional teaching designs

Design Element	Action learning design		Conventional design	
	Mean	SD	Mean	SD
Staff consultation and negotiation	6.16	1.98	4.41	1.65
Student activity and involvement	6.47	2.04	4.42	1.65
Peer (student to student) interaction	6.85	1.87	4.49	1.80
Staff–student interaction	6.58	2.15	4.33	1.80
Integration of assessment into the learning process	6.13	2.18	5.37	1.90
Content knowledge taught as an integrated whole	5.39	2.27	5.50	1.93

One of the important outcomes of this design is that most students, in both client and consultant roles, reported feeling more confident about future work as a result of this experience. Self-confidence is a key aspect of capability. As Stephenson and Weil (1992) argue, is it not just being skilful that is important, but being confident that one can put this into action when it counts.

It also seems evident from students' responses that this action learning design, as well as contributing to expected learning outcomes, also performed professional socializing and ritualizing functions. For students in the client role, the design reinforced the importance of learning to be sensitive to the perceptions of those who receive professional services. In this sense, it may have contributed to their future capacity to develop empathic partnerships. For most of the third year 'student consultants', the design appeared to affirm that staff took their developing capability and professional identity sufficiently seriously to trust them with the responsibility inherent in the role. We were particularly conscious of the need to use language (e.g. no longer referring to them as 'third year students', but rather, 'student consultants' or 'professionals in training') to mark transitions in identity. In a very real sense, graduating (or becoming a professional) is not so much a culminating event, but more a progressive process that is facilitated by such 'identity marking' experiences, roles and language.

Comparative evaluation between action learning and conventional designs

Design aspects. In order to establish that we had designed a learning environment that was distinct from other courses, we asked the third year student consultants to rate the action learning course, and other courses in which they were concurrently enrolled, on a number of theoretical dimensions (See Table 1). We analysed students' responses using a 2 (teaching format: action learning vs. conventional [lecture/ tutorial]) \times 6 (design dimensions: staff consultation and negotiation, student activity and involvement, peer interaction, staff–student interaction, integration of assessment into the learning processes, and content knowledge taught as an integrated whole) repeated measures MANOVA. The overall F was

Table 2. Third-year students' reported approaches to learning in action learning and conventional teaching designs

Approaches to learning	Action learning design		Conventional design		Difference	
	Mean	SD	Mean	SD	Alpha	Eta ²
Surface motive	2.98	1.07	3.24	0.86	$p < .0002$.08
Surface strategy	2.61	1.08	3.00	0.97	$p < .001$.27
Deep motive	3.00	0.79	2.61	0.89	$p < .001$.14
Deep strategy	3.37	0.83	3.09	1.09	$p < .003$.07

significant ($F(6,104)=317.29$, $p < .0001$, $\eta^2=.95$) and students perceived all but one of the nominated design dimensions to be significantly more characteristic of the action learning subject. Students perceived that both course designs were similar in their level of integration of the content curriculum. Statistical significance (p) is a measure of the reliability of a finding and effect size (η^2) is a measure of the strength of association between variables (Tabachnick & Fidell, 2001). That is, the larger the effect size (ranging from 0 to 1) the more practically meaningful or useful an observed difference is likely to be.

Controlling for good teaching effects. Given the caution that the evaluation of educational innovations can be readily confounded by 'good teacher effects' (viz. that apparent differences between designs often disappear when the same teacher delivers both conditions: Kember, 2000), we also sought students' perceptions of the teaching effectiveness in both the present design and other subjects being concurrently undertaken. Students evaluated teaching effectiveness in their other subjects ($m.=5.7$, $sd.=1.83$) as similar to the present design ($m.=6.0$, $sd. =1.89$). This suggests that comparison between this and conventional subject designs is less likely to be confounded by issues of teacher personality or skill.

Comparing approaches to learning. We were interested to establish if there was a difference in the levels of deep and surface approaches to learning that students reported employing in the two learning environments. The third year student consultants at the end of semester retrospectively rated their approaches to learning, using the surface and deep learning scales of the Study Process Questionnaire, in the action learning and other conventionally taught (lecture and tutorial) designs. We conducted a 2×4 repeated measures MANOVA with the factors of teaching design (action learning and conventional) and approaches to learning (surface motive, surface strategy, deep motive, and deep strategy). The overall F was significant ($F(4,107)=13.48$, $p < .001$, $\eta^2= .34$) and univariate F tests revealed significant differences in both deep and surface approaches (See Table 2). Students reported that in the action learning environment, they were more motivated to personally understand the subject matter (higher levels of deep

motive and lower levels of surface motive), and to integrate and relate this to other areas (higher levels of deep strategy and lower levels of surface strategy). While this pattern of findings may be encouraging, we would not wish to overstate their practical significance. The differences between the action learning and conventional designs in deep motive and surface strategy processing were moderate in effect size using Cohen's (1988) criteria, and those for deep strategy and surface motive were smaller.

There are a number of factors that may have mitigated the impact of this action learning design on students adopting deeper approaches to learning. While students generally regarded this subject as 'more engaging', they also indicated, from interview and written data, that it was 'more work' and 'less clear' than they were used to. It is well established that a perceived heavy workload will influence students, as a coping mechanism, to adopt more surface learning processes (Kember & Leung, 1998; Lizzio *et al.*, 2002). Similarly, deep approaches are facilitated by learning environments with clear goals and structures (Ramsden, 1992; Crawford *et al.*, 1998). The paradox may be that some of the aspects of this design that facilitate deep learning (e.g. active engagement) may function, in a curvilinear sense, to also inhibit this. That is, more is not necessarily better. For example, increasing the challenge or realism of a design may, up to a certain point, increase learning, but beyond this may, for reasons of the added stress or effort involved, actually decrease the quality of learning outcomes. It may well be that more sensitive monitoring of the design aspects of workload and clarity of expectations may have facilitated students to employ even deeper approaches to learning.

Certainly, at a more general theoretical level, these differences in students' self-perceptions provide further confirmation of the 'relational conception' of learning approaches (i.e. that the type of learning environment influences the approach to learning that students adopt: Prosser & Trigwell, 1999). That differences in surface strategy produced the largest effect size ($\eta^2=0.27$) confirms previous findings that surface processing may be more amenable to environmental influences than deep processing (Lizzio *et al.*, 2002). A strength of the current within-subjects design is that it compares the perceptions of the same students in two different learning environments, rather than the often used between-subjects strategy of comparing the perceptions of groups of students undertaking different programs (e.g. Newble & Clarke, 1986). This enables greater confidence that observed differences are a function of the educational designs themselves, rather than variations in the characteristics of groups of students.

Predicting approaches to learning. We were interested to further elaborate this pattern of results by identifying which aspects of the action learning design influenced students' reported utilization of deep approaches to learning and their perceptions of the overall effectiveness of the subject. We conducted two standard multiple regression analyses with students' global ratings of the subject effectiveness and their deep approach scores (motive and strategy combined) on the Study Process

Table 3. The contribution of learning design elements to third year students' perceptions of deep learning approaches and overall subject effectiveness

Learning design	Learning process (deep approach)			Learning outcome (overall effectiveness)		
	B	Beta	<i>t</i>	B	Beta	<i>t</i>
Staff consultation and negotiation	—	—	ns	—	—	ns
Student activity and involvement	0.36	0.35	2.28**	0.45	0.47	4.17*
Peer (student to student) interaction	—	—	ns	—	—	ns
Staff–student interaction	0.41	0.43	2.63**	0.25	0.28	1.90***
Assessment integrated into learning	—	—	ns	0.22	0.24	2.16
Content taught as an integrated whole	0.41	0.44	3.60*	0.19	0.21	1.96***

* $p < .001$; ** $p < .01$; *** $p < .05$.

Questionnaire as criterion measures, and aspects of the subjects design (e.g. staff consultation) as the predictors (see Table 3). In both analyses, R for regression was significantly different from zero: for deep approaches to learning ($F(6, 103)=9.95$, $p < .00001$, $R=0.63$, $R^2=0.40$) and for overall effectiveness ($F(6, 103)=15.89$, $p < .00001$, $R=0.72$, $R^2=0.51$) (see Table 3). Findings appear to confirm the relevance of the design factors previously proposed to foster a deep approach to learning (namely, intrinsic motivation, learner activity, interaction with staff, and a well-structured knowledge base: Gibbs, 1992). In the present study, these types of factors accounted for a significant proportion (40%) of the variance in students' deep approaches to learning. Given that students evaluated the two designs as having equally well-structured knowledge bases (i.e. content knowledge taught as an integrated whole), but the action learning design as providing significantly higher levels of learner activity and staff–student interaction, it seems reasonable to propose that these may be key features contributing to the higher levels of deep learning in the action learning design.

Interestingly, interaction with student peers was not a significant predictor of either deep approach or overall effectiveness. This perhaps poses questions regarding the comparative value undergraduate students place on interaction with their peers compared to more apparently 'authoritative' sources of learning. This may reflect underlying student conceptions of learning that are more transmissive than facilitative.

An important point to note here is that a deep approach was facilitated by a combination of mutually enhancing design features. As proponents of problem-based and experiential learning have come to better understand, learner activity by itself is a necessary, but by no means a sufficient, enabler of deep learning. Opportunities for interactive reflection, within the context of an integrated and coherent knowledge base, enable learning to be better derived from experience. This reinforces the importance in action learning designs of sensitively balancing the relative emphasis

Table 4. Third year students' perceptions of learning outcomes in action learning and conventional teaching designs

Learning outcome	Action learning		Conventional		Difference	
	Mean	SD	Mean	SD	Alpha	Eta ²
Ability to work as a team member	3.95	0.89	2.64	1.02	$p < .0001$.32
Confidence in tackling unfamiliar problems	3.56	1.08	2.82	0.89	$p < .0001$.12
Integration of theory and practice	3.48	1.16	3.17	1.07	$p < .05$.02
Learning how to learn	3.27	1.11	2.81	1.15	$p < .01$.04
Oral communication skills	3.15	1.11	3.14	1.01	ns	—
Ability to plan own work	3.00	1.04	3.16	1.05	ns	—
Independent judgement	3.30	1.00	3.14	1.07	ns	—
Conceptual understanding	3.29	1.03	3.46	1.13	ns	—
Analytic skills	3.29	0.93	3.09	0.97	ns	—
Problem solving skills	3.12	0.97	2.83	0.9	ns	—
Written communication	2.63	0.99	3.15	1.21	$p < .001$.05

between, firstly, learner activity and critical reflection on that experience; and secondly, personally relevant reflection and theoretically framed analysis of experience.

Comparing perceived learning outcomes. We asked student consultants to rate (on a 5-point scale) their perceptions of the extent to which this action learning design, and subjects taught in a more conventional format (lecture and tutorial), contributed to their development of a range of capabilities. We compared students' ratings between the two conditions using a 2 (teaching format) \times 11 (learning outcomes) repeated measures MANOVA design. The overall F was significant ($F(2,109)=16.79, p < .001, \eta^2=.52$) and specific differences were found in students' perceptions in five learning outcomes (See Table 4). Students perceived greater skill development in the specific areas theoretically expected to be enhanced by this type of design (namely, teamwork, confidence in tackling unfamiliar problems, integration of theory and practice, and learning how to learn). Importantly, these are the meta-adaptive skills proposed as central to contemporary notions of capability (Stephenson, 1998), and seem particularly relevant to enhancing the adaptive competence of future professionals. Interestingly, written communication was seen as better developed in conventional subject designs, which emphasized reading, rather than experience as the primary source of knowledge. Auburn *et al.* (1993) found, similarly, that students saw placement work as better developing their adaptive skills (e.g. persuasion, quick thinking), and coursework to better develop written communication skills. Students saw no differences in the extent to which the two teaching designs developed general problem-solving and conceptual and analytical skills.

Table 5. Types and percentages of challenges presented by third-year student consultants in project supervision sessions

Consultants' challenges	Percentage*
Building and maintaining relationships with clients (e.g. how to get clients to trust us, dealing with their perceptions of hidden agendas)	20
Dealing with your own and other's sense of your competence in the role (e.g. age-based attributions from older clients to younger consultants, feeling like you're not being effective)	13
Collaborating with co-consultants (e.g. who's in charge)	8
Managing client disorganization (e.g. having to get them together)	7
Responding to overly deferential or compliant clients (e.g. we will do whatever you want)	6
Managing limits and boundaries to helping (e.g. clients wanting more than we are prepared to give or beyond our role brief)	10
Responding to perceived 'resistance', lack of motivation or disagreement (e.g. we don't have any needs, rejecting help, we don't want to do that)	15
Judging the appropriate type or level of intervention (e.g. what to say, when to say it)	13
Dealing with a sense of confusion (e.g. what's really going on here)	9

* *Note.* Percentages rounded to nearest whole number.

Clearly, it is not a case of one learning design being more effective than the other. Reaching for such general conclusions does little to advance our understanding. Rather, it is a case of 'fitness for purpose'—determining whether a particular learning environment achieves the outcomes for which it is designed. From the students' perspective, at least, both the action learning and conventional designs have strengths in contributing to the development of capability. Importantly, the variability in the direction of students' evaluations suggests they were making thoughtful discriminations regarding the learning outcomes of the two designs.

The challenges faced by students and staff

In this section we discuss a number of meta-themes that emerged from staff members helping the third year student consultants engage with their role. Table 5 outlines some of the challenges faced by student consultants that were processed in supervision and debriefing sessions. The range and professionally relevant nature of the issues raised by student consultants attests to the level of useful realism generated by the design.

Perhaps the area most frequently discussed between staff and students in the implementation of the design was the level of ambiguity in the roles of clients and consultants (e.g. what exactly do you want us to do? How are they supposed to behave toward us? What are your expectations of a good result?) These are valid concerns from a student's perspective. We know that clarity of goals and standards is a key

dimension in students' perceptions of learning environments (Ramsden, 1992), and problem-based learning environments, typically, are seen by students as being less clear (Wilson *et al.*, 1997). However, it is this very 'fuzziness' of expectations and roles (an isomorph of the messy and unpredictable 'real world') that generates the demand to think and appropriately respond, and, in a real sense, is the incubator for the 'hot learning' in this design. Of course, once again, it is a matter of balance: too much ambiguity and complexity and the task becomes overwhelming, too much clarity and prescription and the task becomes more procedural than adaptive in its demands on the learner.

However, from the relatively comfortable vantage-point of teacher or facilitator we should be careful not to unempathically underestimate the demands that interactive learning processes place on students, and the implications this has for active management and support. Hunt (1998) has, only partly humorously, suggested that such designs should carry the student health caution: 'Warning, reflective practice does not proceed in an orderly fashion'. An alternative to providing more prescriptive role and duty statements for students is perhaps to intervene at the level of the culture and norms of the learning environment. For example, successfully implementing such a design requires the 'legitimation of imperfection'. We invested considerable effort in giving student consultants permission to 'make mistakes', and to discuss their uncertainty about possible interventions and responses to their student clients. Cribb and Bignold (1999) appropriately caution as to the consequences of professional personas of 'authoritative self-reliance', and of learning processes that require students to prematurely engage in symbolic self-presentations of themselves as confident and competent.

Another topic that was the subject of staff–student discussion concerned managing the acting out or resistance behaviours of a small number of students whose active disinterest in learning was an issue in a design that was founded on interdependency. Such issues are, not surprisingly, well documented in the literature on the use of group learning in educational settings (Linden *et al.*, 1986; Kantambu-Latting & Raffoul, 1991). As Gibbs (1992) has noted, students who adopt a strongly surface approach are often unaware of the real demands of their courses. However, in the present design, such students, by structural necessity, had to publicly engage with their peers and the focal task. It is interesting that the small number of students who reported a comparatively lower surface learning strategy score, but no change or an increase in their motivation for surface learning, in the action learning design (i.e. their behaviour changed but not their intention) were generally negative in their comments. Perhaps these students were, to some extent, resentful at the extent to which the action learning design required them to engage.

Without wishing to gloss over the ethical and pedagogical challenges of interactive designs, the primary approach we took in helping students respond to their disappointments with themselves and each other was to help them see these as 'gristful' opportunities for learning. There are multitudes of 'teachable moments' in such designs that enable staff to begin the process of inoculation against processes of depersonalization and loss of idealism that are key contributors to the burnout of

young professionals (Evers *et al.*, 2002). Key themes in our learning conversations were: the complexity of influence processes and the professional futility of conveniently describing others' choices (e.g. not to comply with one's interventions or requests) as 'resistance'; and of self managing our reactions so that we are not distracted into states of judgement (rather than understanding) and rationalized reciprocal disengagement (e.g. if they won't, then I won't). Opportunities to process people's reactions in a safe and reflective environment enables students to begin the process of building more robust schemas about the so-called 'real world', and to develop insight into the functionality of their responses to dynamics such as asymmetric status relationships.

This experience has reinforced for us the position that teachers do not do students any favours by making things too easy and manageable for them. To paraphrase Barnett (1999), 'learning is embedded in work and work is embedded in learning'. It could be argued, particularly in the domain of professional capability, that how students acquire knowledge (i.e. their level of personal investment) will, to some extent, influence how much they value and how deeply they understand it. There are continuing challenges here for us as teachers to find more skilful ways of encouraging students to 'work at their learning' and accepting the personal challenges and costs that go with that territory.

Conclusions and future research

This study has presented preliminary evidence, based on student perceptions at least, that action learning designs in a higher education context can make significant contributions to the development of student capability. Although these types of course design can produce implementation challenges for both staff and students, differences in approaches to learning and student learning outcomes are particularly encouraging.

A number of methodological issues are worthy of mention. In terms of measurement, the original form of the SPQ (Biggs, 1987) was used to assess students' approaches to learning. There has been some criticism of the sensitivity and structure of some items, and the surface motive scale in particular. The most recent form of this instrument (R-SPQ-2F) (Biggs *et al.*, 2001), designed specifically for monitoring teaching contexts, may have provided a more stable measure of differences in students' perceptions. In terms of evidence, the present study was based primarily on students' perceptions of the value of this learning experience. While this is a worthwhile beginning, there is a clear need for harder measures of learning outcomes. (e.g. specific tests of students' reflective competence before and following the design). Perhaps the most stringent, and yet most relevant, test of such a design is whether it makes a contribution to the functioning of professionals (post graduation) in the workplace. Some of the learning resulting from experiential designs can often be delayed or tacit and will only become evident in the light of subsequent experience. As Fenwick (2001) notes, significant outcomes may not be evident within the context of a single teaching semester, and it may be necessary for course evaluations to better

account for more extended trajectories of learning. This would involve evaluation questions and strategies that take us beyond the current institutional boundaries of higher education.

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