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Abstract

The Australian higher education and vocational training framework is different than North America, mainly that the Australian Quality Training Framework was totally re-designed from a 1997 reform, which now places a great emphasis on competencies rather than subject matter learning outcomes. Businesses are capitalizing on this opportunity to recruit employees that have been independently assessed/certified, from Registered Training Organizations and Accredited Higher Education Institutions. In Australia the skills, abilities, and knowledge are clearly defined starting from the high school level to post-graduate. This case study illustrates a unique combination of adult-learning model aligned with the needs of industry and life-long learners by integrating andragogy teaching with competency assessment into a blended (face-to-face and online) delivery model. A useful approach is the learning development plan (competency gap assessment) that allows students to apply goal-setting theory to customize their own educational path. Additionally, problem-based and experiential learning techniques are used to give professional/corporate staff and life-long individual learners realistic course work that builds competencies that are readily transferable to business, government, and non-profit sectors.

Article type: Case study of online education model aligning academic with industry goals.

Keywords: learning competencies, online andragogical education models, vocational training.

Introduction

This is an industry case study discussing how adult learning principles were applied towards meeting industry training needs. A traditional university graduate program was transformed from an academic to a business oriented soft-skills format to develop managerial skills, abilities, knowledge and attitude.

The impetus for this project of transforming academic programs to better meet industry professional continuous learning needs was grounded on the 1992-2005 work from the Australian National Training Authority (ANTA) in creating a nationally consistent vocational education and training approach to develop skills and improve industry competitiveness in a global business environment. From experience the Australian Quality Training Framework (AQTF) was effective in aligning learning management systems with industry, community and individual development needs (Strang, 2007), and was globally recognized for successful performance: "…128 delegates visited ANTA from 13 countries to study Australia's industry-led system and integrated form of competency-based training" (ANTA, 2002a, p 3).

The project began as a spin-off venture from investors associated with a University in Sydney Australia. One question which arose early on was: why create a separate entity instead of another faculty division? In part, a recent study of 6,000 management professionals (measuring the organizational climate factors for innovation), revealed being small is a competitive advantage for business innovation: "the message is clear; in order to build innovative companies with strong cultures, create smaller sized organization with senior management committed to leading the initiative" (Sarros et al 2005, p 76). Secondly, the rationale was to improve professional soft-skills development (transform traditional graduate-level theoretical subject matter), using andragogical delivery methods linked to Australian 'workplace' competency needs.

Project management (PM) was the professional discipline 'generic label' chosen for the training, but in reality, the intended competency focus was management, leadership and people-skills. Nevertheless a point can be claimed supporting the value of PM as a cross-disciplinary training competency program.

> Why it is so critical to improve professional learning, or for that matter, why is project management (PM) itself so important to the world? "Why? Because it works" (Kernel 2000, p. 13). PM is important for organizational growth and environmental sustainability (Labuschagne and Brent 2005). PM is used everywhere because the principles can be applied formally and informally to organize work, manage stakeholders, and guide teams, to get high quality work

done on time, under budget, and exactly within scope (Cleland 1999; Turner 1999; Cooke-Davies 2002; White and Fortune 2002; Pennybacker and Grant 2003; PMI 2004) - (c.f. Strang 2006, p 6).

Literature Review

The genesis for building a professional development program linked to industry needs arose from global empirical research that identified "gaps" between existing learning programs and industry requirements. The focus of this research was the theoretical linkages between professional learning and workplace needs. As Figure 1 implies, leadership, project management and other soft-skills were identified in studies as needed for professional training beyond what was traditionally offered in many graduate programs (Briggs 2004; Arbaugh 2005; Edgington 2005; Partington, Pellegrinelli & Young 2005; Sarros et al 2005). The "shortfall in current project management theory and best-practice guidelines involve the critical 'soft skills', such as multicultural leadership, human resource/stakeholder management, knowledge creation, and continuous improvement through learning" (Strang 2006, p 8).

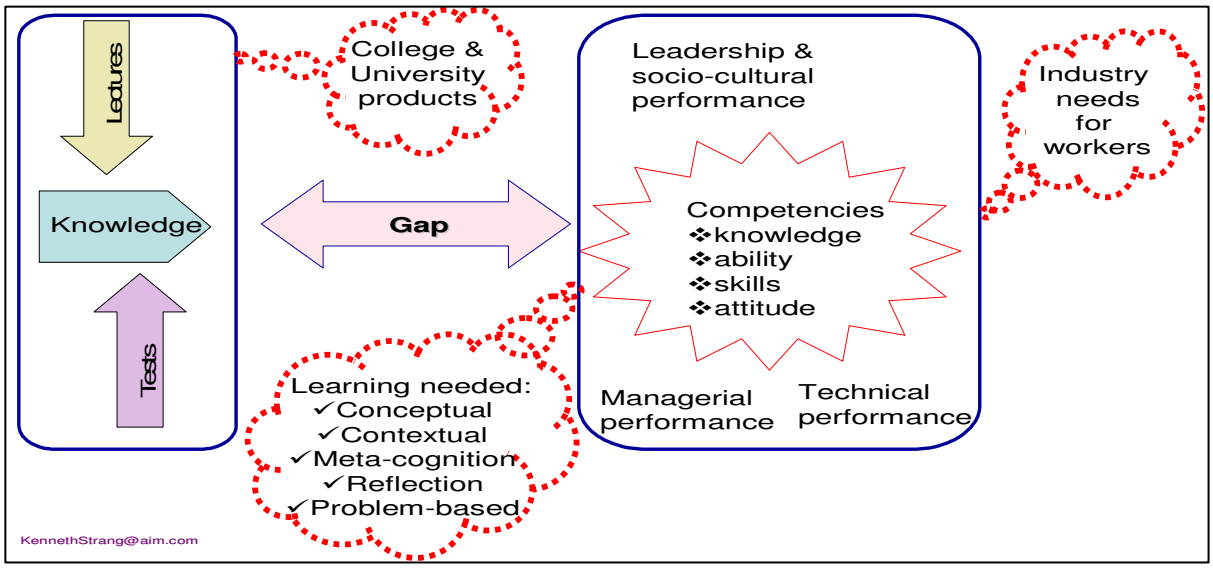


Figure 1: Gap Between Traditional Training and Industry Professional Competencies

More specific studies of Australian organizations (the case study target market) confirmed that broad soft-skill competencies such as project / general management, leadership / socio-cultural skills, personal / professional ethics, as well as technical (functional, job-role specific) abilities, were lacking yet wanted most by industry (Sarros et al 2005; Mulcahy & James 2000). One study of industry-based training schemes across Australia (n=195) confirmed the lack of workplace soft-skills competency and distinguished functional versus professional level training needs: "the competency required of operational, technical and trade staff is commonly conceived as 'specific skills for specific jobs'…the

competency required of managerial and professional staff is commonly conceived more broadly" (Mulcahy & James, 2000, p10). A comprehensive empirical study of the Australian Institute of Management members (in fact a confirmatory replication of the 2001 edition), confirmed the need for leadership, positive corporate culture, and managerial soft skill development – the survey was a stratified random sample of over 6,000 (actual response n=2,376), using the self-report instrument Transformational Leadership Scale (Podsakoff et al, 1990), to examine relationships between organizational structure, climate, innovation, and staff competencies such as transactional-transformational leadership (Sarros et al, 2005). A further revelation from earlier research was "…one real problem is that project managers first need to learn how to learn (to overcome busy schedules and faulty 'personal theories'), and then they need to learn soft-skills, as well as how to apply theory to practice context." (Strang 2006, p 7). A related empirical finding is that professionals need positive attitude to motivate learning, while in parallel employers must have corporate culture fostering innovation and learning (Sarros et al, 2005; Stoica & Schindchutte 1999; Bass 1998; Kotter& Heskett, 1992).

The citations above assert the need for more soft-skills training in business, so the next imperative is: can this be learned? "These 'soft-skills' are difficult to learn. They cannot be cognitively memorized, mnemonically associated with acronyms, or furnished purely from knowledge taxonomies – they must be conceptually and socially practiced by professionals while being motivated to learn." (Strang 2006, p 8). There is clear evidence that managerial soft-skills can be learned (Strang 2003a), especially in-demand industry competencies such as situational and transformational leadership (Strang 2005, 200b4; Mumford, Scott, Gaddis & Strange 2002; Kelloway, Barling & Helleur, 2000; Barling, Weber & Kelloway, 1996).

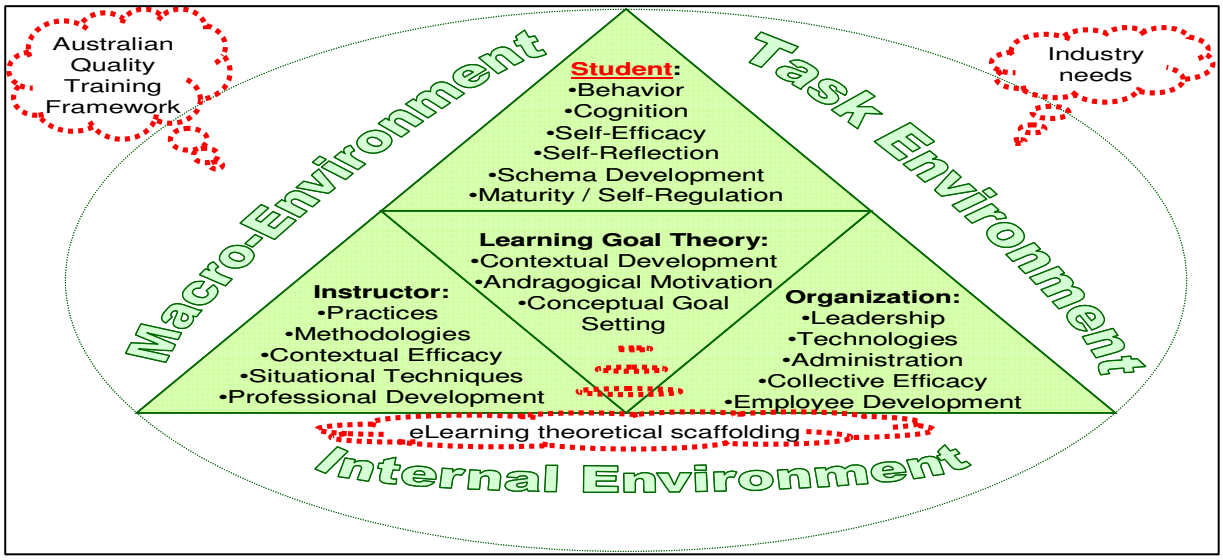


Figure 2: Model for Designing & Teaching Soft-Skills to Industry (adapted from: Strang, 2006)

Now, with clear evidence of industry need for leadership, meta-learning, project management, and other soft-skills (in the target market), along with evidence this can be learned, the research focus turns to identifying how this can be organized and delivered as a product. Figure 2 is adapted from earlier research (Strang 2006, p 41) illustrating a learning knowledge framework encompassing both soft-skills as well as the adult-level teaching components needed to design and deliver a professional training program. In brief, Figure 2 is a training design and delivery guideline showing the student as the key value-chain stakeholder, along with advocating educational psychology theories that improve adult learning (Strang 2006, 2004a). At the center are the critical teaching methods, especially goal setting which go hand-in-hand with industry professional training/appraisal systems. These 'critical' methods are "andragogical" (adult-centered) approaches that were referenced as types of "Learning needed" linked to Figure 1.

The learning design and delivery techniques are shown on the left (under "Instructor"), with the industry organizational culture categories suggested at the far right of the model. The environmental factors are identified at the boundary of the diagram, namely the macro-environment (legal, political, AQF), task (competition, resource supply), and internal organization dimensions (resource capability, competitive advantage – and the target zone of this: need for employee professional development). eLearning (distance education) is promoted in the model due to empirically-evidenced frequent physical resource travel and desire to train at home after hours/weekends in a family context (Strang, 2006). Recent target market literature confirms industry need and educational context support for innovative adult-focused training design and delivery methods, namely: " ..innovation requires a vision, is customer-driven, requires innovative thinking and a holistic view, and is risk-tolerant. It is also an ongoing process and requires a learning orientation" (Ballantyne, McLean & Macpherson 2003, p 1, see also: pp 11-13). Paradoxically and related to reasons stated earlier for launching a small venture here, despite the effective AQF and industry demand for soft-skills training, a better method of designing and delivering learning was needed, as expressed by colleagues: "[our] strong assertion, based on extensive experience in teacher education, is that such reform is extremely difficult given the present state of Australia's universities, their organizational structure, the dominant pedagogy and assessment regimes" (Smith et al 2003, p 22).

ANTA developed an elaborate standard for use in designing, delivering, and assessing industry training for all sectors and levels - the AQF – which addresses education after high-school all the way to university Doctoral level AQF12 (ANTA, 2002a, p31). Traditionally, the higher levels in the AQF (e.g. AQF7 and upwards) have been the domain of universities and targeted at individuals rather than organizations or industry. The approach here was to develop a product for industry at AQF11 (although

the exact level was not crucial except for formal accreditation). The critical differentiator of this product (in terms of industry-oriented AQF11 level), was the emphasis on conceptual, contextual, applied problem based, reflective learning and meta-cognition to meet the industry leadership and other soft-skill training needs – these were the "Learning needed" in Figure 1. Also, a unique value-add feature applied in targeting the AQF11 level was designing the learning context to promote andragogical motivation, self-efficacy, self-regulation, and self-schema (from Figure 2) to meet the socio-cultural leadership, managerial and positive attitude/corporate culture requirements of industry training. In considering these dualist goals (AQF accreditation standards and industry soft-skills needs), a model was created (shown in Figure 3), which superimposed the higher-order industry 'soft-skills' needs assessment (right side), linked back to the AQF (left side). This became our 'product cover story' as we communicated my ideas to New South Wales Department of Education & Training during the preliminary stage of the accreditation process whilst in parallel I finished the courses.

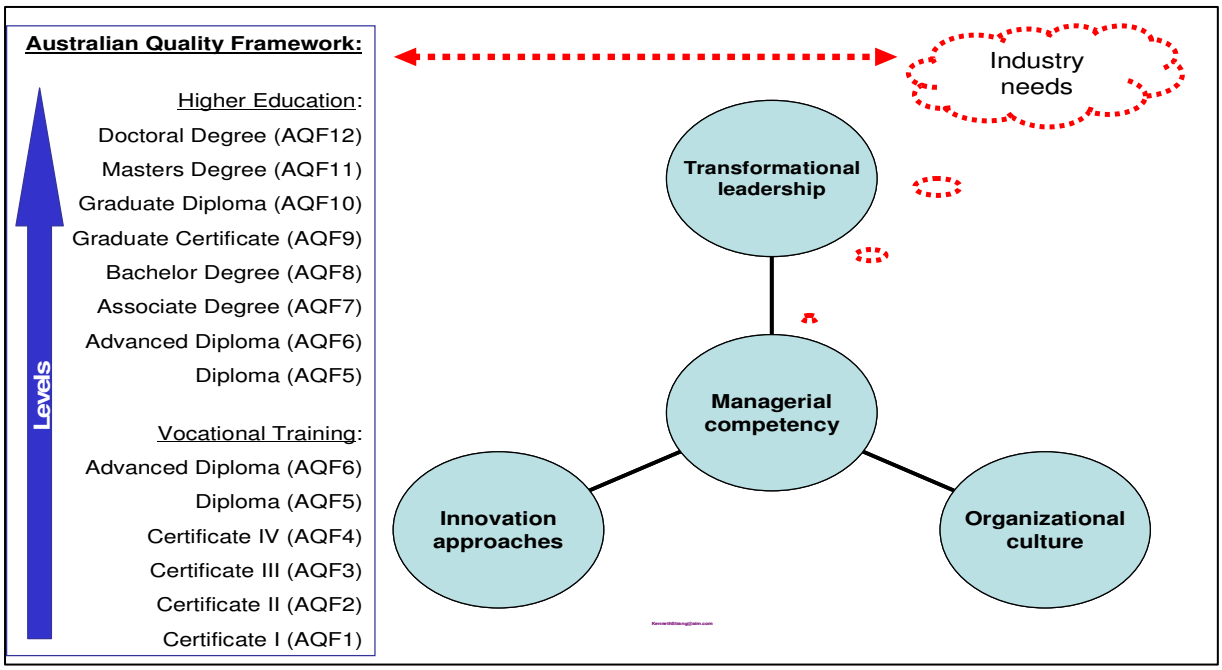


Figure 3: Australian Quality Framework Linked to Higher-Order Industry Soft-Skill Training Needs

In terms of 'soft-skills training' product design, a requisite was a definition, prioritization and assessment rubric of professional competencies. Relevant contemporary definitions of competency address both the individual and the organizational contexts – the traits (desired attributes linked to corporate culture), and the outcomes (linked to business goals) that can be measured for performance appraisals. The best-practice competency definition adapted here was from Hendry and Maggio (1996) that require individual competencies to be linked to the broader goals of the organization, producing an outcomes model of:

- Identification of characteristics and behaviors that differentiate top performers from others in relation to their contribution to strategic objectives;
- Clarification, communication, assessment, and development of characteristics that focus individuals on core organization goals;
- Practical observations prescribe & validate behavioral descriptions to achieve desired results;
- Description of skills, attitudes, traits, and behaviors that can be attached to pay, performance measurement, hiring criteria, training, organizational staffing, career development, and succession planning - [our focus for soft-skills training design was on: skills, traits, attitudes and behaviors].

There were a few challenges concerning academic learning theory versus vocational industry training traditions. Upon examining management science literature, it was clear the resource-based economic focus of industry training programs often advocate leadership traits such as charisma (Strang, 2004b, 2005) that are hard to replicate and/or critical competencies that favor a specific industry (e.g. manufacturing versus public administration) as well as job role (e.g. executive-level versus scientist), thus making it difficult to develop generic content and assessment schemes (Pfeffer 1996; Antonacopoulou et al 1996; Austin et al 1996; Lado & Wilson 1994; Austin et al 1992). The organizational view of this can be expressed as: "Effectiveness is a measure of how well the outputs of a service achieve the stated objective of that service. Efficiency relates to how well organizations use their resources to produce services and convert inputs (resources) into outputs." (ANTA, 2003, p2). Another challenge between learning theory and professional industry needs was the well-known debate between the competency movement of organizational behavior (assessing soft-skills) and the standardized testing movement of industrial psychology (e.g. measuring intelligence), which essentially is a values issue of prioritizing the competency metrics for all stakeholders (Cowan 1994; McClelland, 1994; Barrett, 1994; Boyatzis, 1994). The level of competency analysis (individual versus organizational) was also an issue: "…KPMs [key performance measures] are not to be considered in isolation as individually they only measure one aspect of performance. It is only when they are considered as a suite that a valid, holistic pictures of performance can be seen." (ANTA, 2003, p2). In summary, even when the soft-skill competency needs are known (as subjects like transformational leadership, meta-cognition, reflective learning, and project management), transforming typical academic grading approach into the industry outcomes-oriented metrics is difficult.

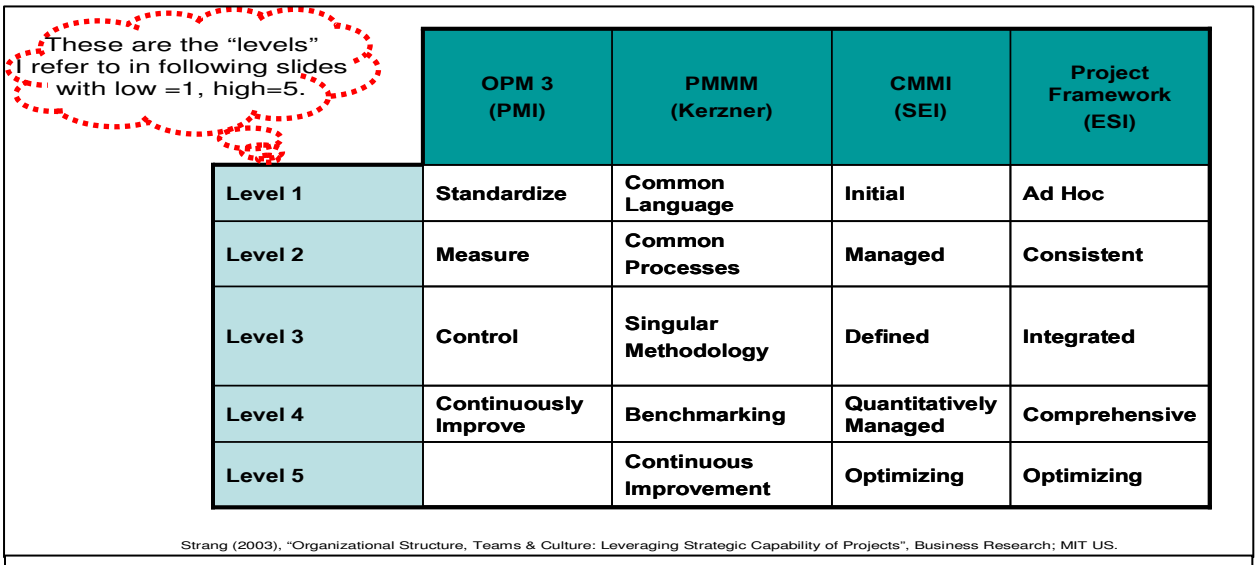
The customer-value-chain-focus answer to the above theoretical challenge was to reconsider the AQF/AQTF (from the macro-environment model in Figure 2) to leverage the wealth of empirical research on vocational competencies and assessment needs by industry (target market). In particular, the *Public Services Training Package* (PSTP) provides a relevant taxonomy of professional soft-skill training needs

because the process involved "a cooperative national approach … enabling Australian industries to identify the competency requirements of their workplaces, to provide benchmarks for training and development, and qualifications which are nationally consistent and nationally recognized." (ANTA, 2002b, p 20). The scope of the PSTP was to provide competency based training and assessment along with the recognition of people's existing competencies as key components. "Competency based training emphasizes what a person can do, rather than the time spent in a training program. Competency based training relates the industry's national competencies and helps make sure that people are trained in the skills and knowledge they need to function effectively in the workplace." (ibid, p 21). Another useful process identified by ANTA was competency assessment – "recognising an individual's skills and knowledge is known as the recognition of current competencies (RCC) [and] the recognition of prior learning (RPL)." (ibid, p 21) – which reduces the need to repeat training in areas where a professional is already competent – thus an economic incentive to all stakeholders (industry and professionals).

The next challenge in the project was to analyze and design a mechanism for the assessment of soft-skills competencies, using scales (like low, medium, high or percents), along with specific criteria. In terms of levels, we debated whether it would be an organizational (system, operational, capability) or individual level. "Performance measures can be developed at multiple levels, for example at the system and the operations level. At the system level, the measures are broad and provide an indication of the performance of the entire system. At the operations level the measures are more specific and relate to subsystem or organizational performance. It is generally the measures which assess performance at the system level which are referred to as key performance measures." (ANTA, 2003, p1). Here the existing ISO quality frameworks provided some clues. We researched leading 'Capability Maturity Models' (CMM) that were used frequently within global industries (management science) for organizational competency assessment frameworks (results are synthesized in Figure 4). The rationale for this was they were already familiar to industry, based on experience, they were simple to understand and apply (Strang 2003b). Various CMM models use different terms to identify levels, but we found all essentially mirror SEI CMM or OPM3/PMBOK (from PMI), and use 4-5 levels (1=lowest, 5=highest). Traditional organizational maturity consists of these levels:

- Level 1: Initial - success depends upon individual heroics, few stable processes exist or used;
- Level 2: Repeatable - success depends on mgt system support, individual project planning;
- Level 3: Defined - project groups work together, training planned, integrated management;
- Level 4: Managed - strong teamwork sense, processes quantitative, org level data gathering;
- Level 5: Optimized - processes continuously/systematically improved using org data feeds.

Essentially, the assessment still needed to be at the individual competency level, albeit the 'holistic' team-picture of soft-skill competency metric was also needed by industry. The CMM literature is very rich with volumes of detailed descriptions of each level, for specific job/team role, competency criteria, and so on.



	OPM 3 (PMI)	PMMM (Kerzner)	CMMI (SEI)	Project Framework (ESI)
Level 1	Standardize	Common Language	Initial	Ad Hoc
Level 2	Measure	Common Processes	Managed	Consistent
Level 3	Control	Singular Methodology	Defined	Integrated
Level 4	Continuously Improve	Benchmarking	Quantitatively Managed	Comprehensive
Level 5		Continuous Improvement	Optimizing	Optimizing

Strang (2003), "Organizational Structure, Teams & Culture: Leveraging Strategic Capability of Projects", Business Research; MIT US.

Figure 4: Competency Level Scales Synthesized from Industry Capability Maturity Models

Although we felt any Likert or integer scale would suffice equally well, the decision to adopt a CMM five-level assessment scale provided a 'credibility' advantage for an industry-oriented training product:

1. Provides a common roadmap and measurement system for strategic improvement;
2. Allows management to objectively look at organization's competitive strengths and weaknesses;
3. Assesses organization's project management against agreed industry benchmark criteria;
4. Sets realistic targets for improvement based on production output and employee learning goals;
5. Measures progress towards enhanced performance capability;
6. Identifies the links between needs and practical education requirements;
7. Assesses if the business processes within the organization are repeatable enterprise-wide;
8. Asks if any project methodology is understood and is being followed across programs;
9. Checks to see if project data is captured, hopefully using software tools (integrated to a database);
10. Reflectively asks how are projects are initiated, planned executed, monitored, and closed;
11. Looks into team roles and combined competencies for project roles;
12. Examines how project information is communicated within and between all stakeholders;
13. Ensures executives in the organization are kept informed on the projects;
14. Plus numerous detailed level competency performance metrics with measurable criteria.

A critical theoretical dimension to the competency assessment levels for an AQF11 type soft-skills training product was the distinction between knowledge acquisition and higher-order conceptual mastery (going back to the original 'gap' issue shown in Figure 1 – and this was also required for the AQF accreditation). Here we borrowed from the British research to demarcate basic learning of knowledge (the 'what' has been learned), as compared with meta-cognition and conceptual learning that can be applied to industry practice for continuous improvement as well as mentoring other staff. In terms of the soft-skills assessment model, a key adaptation made for measuring professional skills, traits, abilities, and attitudes in training programs, is the gradual transformation from the assessing 'of learning' to focusing on 'for learning', based on the research of Stiggins (2002) and Black & Wiliam (1998). Higher-order conceptual and reflective learning occurs in levels 4-5, as summarized in Table 1.

Table 1: Professional Assessment For Industry-Competency Reflective Learning

Assessment of Learning (Levels 1-3, 3=pass)	**Assessment for Learning (Levels 4-5, higher=better)**
Checks what has been learned to date	Checks learning to decide what to do next
Is designed for those not directly involved in daily learning and teaching	Is designed to assist professors and professional students
Is presented in a formal report (e.g. summative)	Is used in 'reflective' conversation about learning
Usually gathers information into easily digestible numbers, scores and grades	Usually detailed, specific and descriptive feedback in words (instead of numbers, scores and grades)
Usually compares the student's learning with either other students or the 'standard' for a grade level	Usually focused on improvement, compared with the student's 'previous best' and progress toward a standard
Does not need to involve the student	Needs to involve the student – and industry mentor - the stakeholder most able to improve learning
Knowledge creation, analysis, synthesis, sharing	Knowledge evaluation, reflection, adaptation
Proof of knowledge memorization, skill development, able to apply in existing situations, and in group/team environments (level 3).	Evidence of conceptual learning, able to reflect on what and how, able to transform to new contexts (level 5), able to mentor others (level 5).

Methodology

In this section the discussion of the case study describes the individual and organizational methodologies for applying the learning goal and competency assessment scheme. It closes with a brief explanation of the instrument and process used to both survey and apply the soft-skills training product in the workplace.

At the individual level, the industry-oriented soft-skills training process begins with goal setting. This is usually driven by the student's workplace needs (even for self-employed consultants). The course begins

by briefing and preliminary competency-testing of students using eLearning or other convenient methods (determined by the organization, or in the case of self-employed professionals, eLearning Management System via the Web site is predominately used). The outcomes of the preliminary competency assessment will identify knowledge and soft-skills gaps. In the organizational setting, teams are encouraged to work together in this goal setting process, but the outcomes are all individually accountable and like-wise submitted personally. Each student or team thoroughly evaluates the information and resources offered in each module, which is compared to employer-set (and/or personal) goals, along with the identified gaps. Each student develops a work plan (which can span multiple modules/courses if desired). The list of competencies and performance criteria are used to build a 'learning plan' that should include deliverables to produce evidence for upcoming assessments (e.g. documents, presentations, peer reports, and in some cases, tests). At this point, recognition of prior learning can be applied for – the same assessment process is used with the provided evidence (professor will assess just as with actual course work). Often professional students will integrate their course work with industry projects, and this is encouraged. Professors provide guidance during the process (including lectures, assessments and so on) as well as andragogical motivation and other methods identified earlier. This individual model is shown in Figure 5.

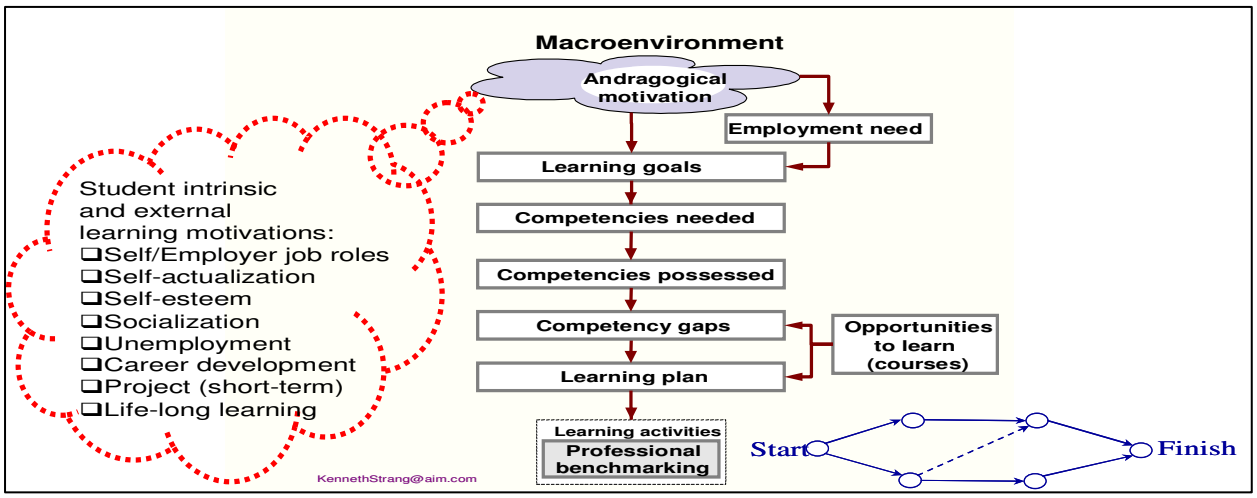


Figure 5: Workflow of Individual Competency-Driven Learning Goal Setting

From the organizational point of view, the model is balanced between the individual learning goals and the job role requirements, as illustrated in Figure 6. This model operates from right to left in the sense that industry needs are first defined by professional soft-skills competencies areas, such as the examples noted at the rightmost of Figure 6 (e.g. "transformative leadership"). Each specific competency area will be further decomposed with elements along with measurable performance criteria (not included here as it is proprietary intellectual property). There are distinct performance criteria in each competency area

linked each of the five CMM performance levels (e.g. at level 1 basic knowledge is tested for an element of transformative leadership, such as "knows the basic motivational processes".. to level 5, "able to apply situational leadership and mentor other team members"). This information is provided by the AQF11 product and is intended to match the industry soft-skills needed in most professional job roles. It is assumed the organization (or self-employed individual) has a pre-defined job description which will list the skills, behaviors, and other attributes needed (if not then one must be developed). The university / RTO and employer (or self-employer) work together using the LMS to quickly match the job role description with the types of courses needed, and most importantly, the CMM levels desired for each competency area (e.g. should the "transformational leadership" competencies for job XYZ be level 3… or higher at maybe level 4?). In parallel with this, the individual goes through the process of preliminary competency assessment and goal-setting (shown at the leftmost of Figure 6 which is also the model defined in Figure 5). The courses are taken, facilitated by professors using the assessment methods shown at the center of Figure 6 (e.g. formative rubric/feedback, summative test/scoring, peer feedback, employer feedback, and self-reflection) – this is the most critical and difficult aspect of andragogical teaching. The process repeats for other courses allowing individuals to set learning goals (driven by industry competency needs), then attain them, with an AQF-accredited award degree as a terminal outcome.

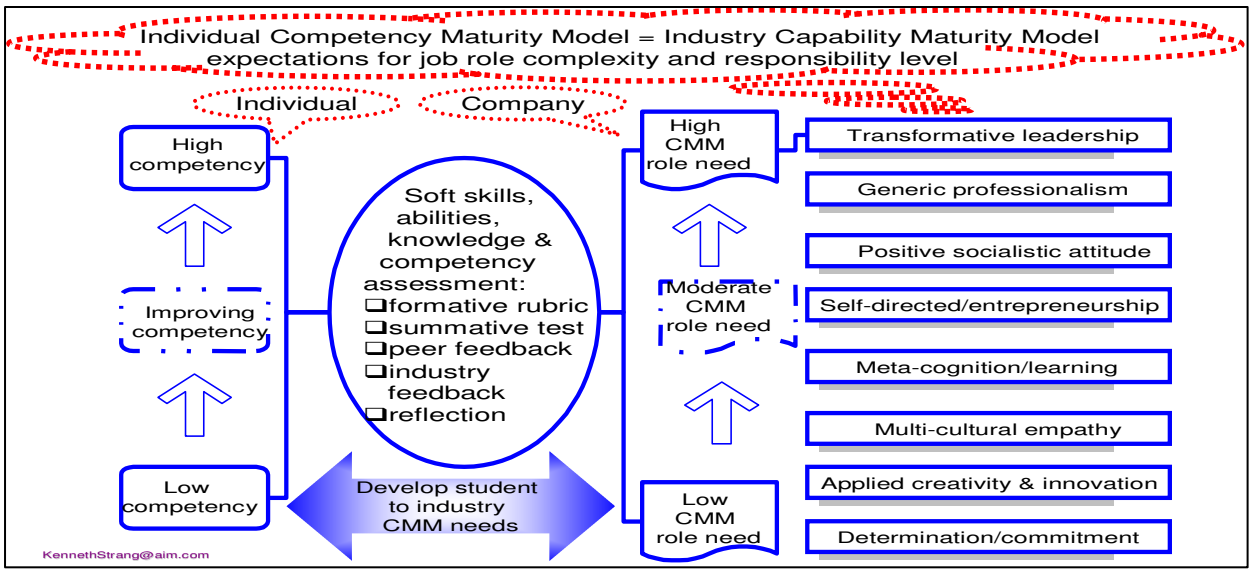


Figure 6: Industry & Individual Goal Setting, for Business Needs & Competency Assessment

We turn now to the describing the methodology for actually assessing the industry soft-skill training needs. Many details are left out in this case study, such as the leveraging of computer software to automate much of the assessment and information management. In particular, software is used for the individual competency assessment. This is based on the competency areas (e.g. "transformative

leadership"), and the performance criteria distinguished for each CMM level 1-5 (which 5 being highest). As described above and in Figure 6, the assessment process used a 360-degree triangulated methodology, to measure competency from the individual's perspective (reflection), peers (team members), professor (formative/summative tests including a second taking of the online competency assessment at the end of the course), as well as the employer (project deliverable metrics such as on time, on budget).

The approach used for assessing the industry soft-skill needs was to have the prospective employers (or self-employed) examine the courses and competencies, select those of relevance/interest for that particular industry, then randomly (if possible) designate individuals as well as whole teams to take the online preliminary competency assessment (which would take approximately 1-2 hours per course). The employer is asked to set desired CMM competency levels (1-5) for each major area, for each job role or individual tested, such as maybe "level 4" in "transformational leadership" for all supervisors and project directors. The results of the online competency assessment can then be summarized using various accepted statistical techniques and measures. Figure 7 is an example of an industry assessment case – it shows both role-based, and course-defined descriptions on the left, with desired CMM competency levels unanimously set to level 4 at the right. This was mapped to one soft-skills course. This diagram also shows the aggregated preliminary results identified by the tag "existing competencies."

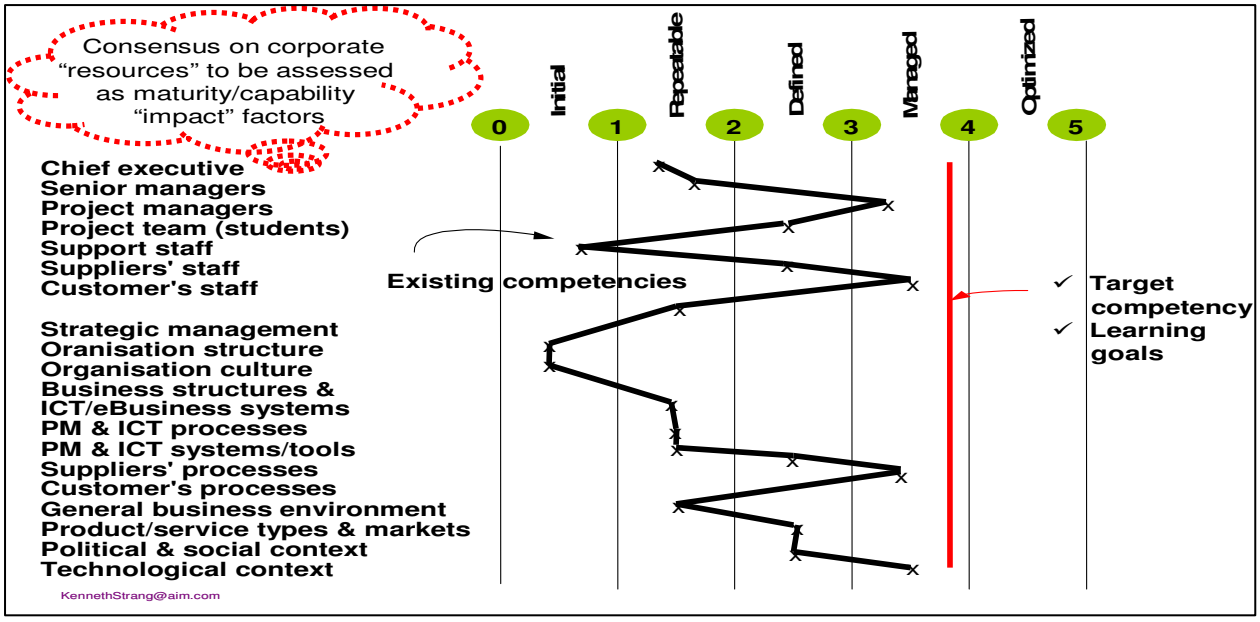


Figure 7: Industry Needs Target & Actual using CMM Levels

Results and Discussion

Whilst an industry needs survey underpins this research (n=3972, forthcoming), the previous example shows some of the actual results from a pilot in one particular industry. Figure 8 is a draft of the actual industry survey result, depicting an aggregate result of all employees tested across over 70 organizations, grouped by course level categories (shown on the left). The first three purple bars in Figure 8 do not contain actual results (no blue bars) because these were advanced courses and the results were incomplete so all data (for these three categories) were dropped from the assessment sample frame. For the remainder of the data, in most courses (except two) we found that the employee soft-skills were lower than desired, in terms of what industry requested (and in this case CMM level 4 was set as the target level for most - but not all - competency areas/courses). There were a few interesting results in that two competency area groups returned actual higher scores as compared with the employer-set targets (see "Project leadership…" and "Project ICT…" where the light blue bars go beyond the purple target markers).

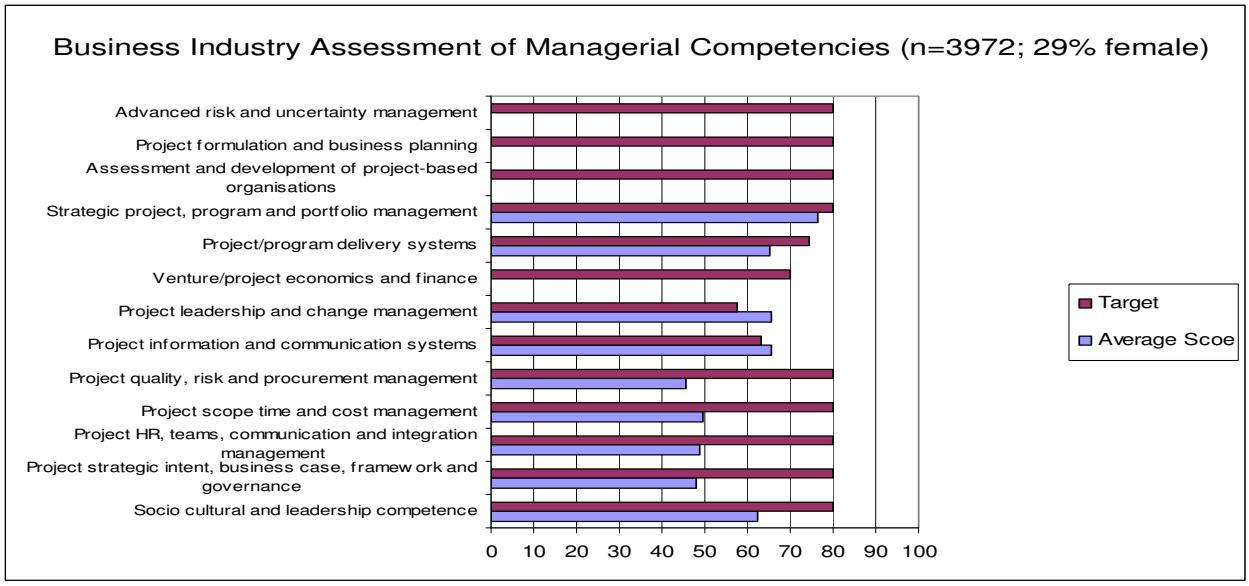


Figure 8: Business Needs Survey Draft Result (Strang, forthcoming)

The strategic implication of this was that employers, employees/students, and the university all realized that this process was valuable as it was empirically driven from start to end, yet holistically focused on helping all stakeholders improve (economically and cognitively). Now academic has caught up with vocational education and can leverage the AQF.

The final step was to review the risk management required by AQF Standard 1.8, as summarized below:

1. Systems for quality training and assessment - risk in this area relates to potentially inadequate governance processes around the delivery of industry training,
   a) The major risk issues addressed were:
      • Possible lack of appropriate documentation
      • Possible lack of understanding of roles and responsibilities
      • Potential lack of ownership of the processes
2. Compliance with Commonwealth & Territory legislation and regulatory requirements - major risk issues addressed (mitigated) were:
   • Lack of identification of key requirements
   • Lack of identification of key owner of compliance systems for each major piece of legislation/regulation.
3. Effective financial management procedures - major risk issues addressed were:
   • Lack of identification of financial management responsibilities (included GST tax issues)
   • Qualified statutory accounts
4. Effective administrative and records management procedures - major risk issues addressed were:
   • Breakdowns in systems backup and recovery controls
   • Lack of quality control over course and assessment documentation.
5. Recognition of qualifications issued by other RTO's - risk relates to potential lack of client service by contracted lecturers - major risk issues resolved were:
   • Communication breakdown (using written contracts)
   • Client service deficiencies.
6. Access and equity and client service - relates to potential lack of client service - major risk issues addressed were:
   • Client service deficiencies.
7. The competence of RTO staff - risk relates to potential lack of quantity or quality of staff - major risk issues are identified and mitigated were:
   • Failure to attract or retain staff
   • Failure to adequately induct and further train staff.
8. RTO assessments - relates to potential lack of attention to requirements by staff - risk issues resolved were:
   • Failure to adequately induct and further train staff.
9. Learning and assessment strategies - risk relates to potential lack of attention to requirements by staff – this was critical for our project - major risk issues resolved were:
   • Failure to adequately induct and further train staff.
10. Issuing AQF qualifications and Statements of Attainment - relates to potential lack of client service - major risk issues addressed were:

- Client service deficiencies
- Student system deficiencies.

11. Use of national and Territory logos - relates to potential inaccurate or misleading material – the major risk issues addressed were:
    - Lack of overall corporate control.
12. Ethical marketing and advertising - relates to potentially inaccurate or misleading information on courses and services - major risk issues resolved were:
    - Lack of signoff
    - Lack of overall corporate control.

To close the results and discussion section, we take a brief reflective look at the implications of this whole process, and to do this, we again leverage a graphical model of the overall process, as shown in Figure 9. Basically, as part of the AQF submission and representative of the true process, the model shows the systemic loop of students at the left, going through assessments and learning activities, building higher-order soft-skills competencies (and subject-matter, procedural knowledge), and then being assessed against pre-defined industry job role CMM levels for each competency area. The types of problem-based learning include both individual as well as group. Throughout the process, feedback triangulated from the four sources (self, peer, professor, employer) provide realistic constructive information relating to actual versus espoused competencies. Of course the model works very well in pure academic environments (when the industry-set CMM levels are determined by faculty), and we have successfully tested it (Strang, 2006), but extending this into the industry for soft-skills development will certainly provide more benefits to organizations and their future employees (not to mention improve competitive advantage).

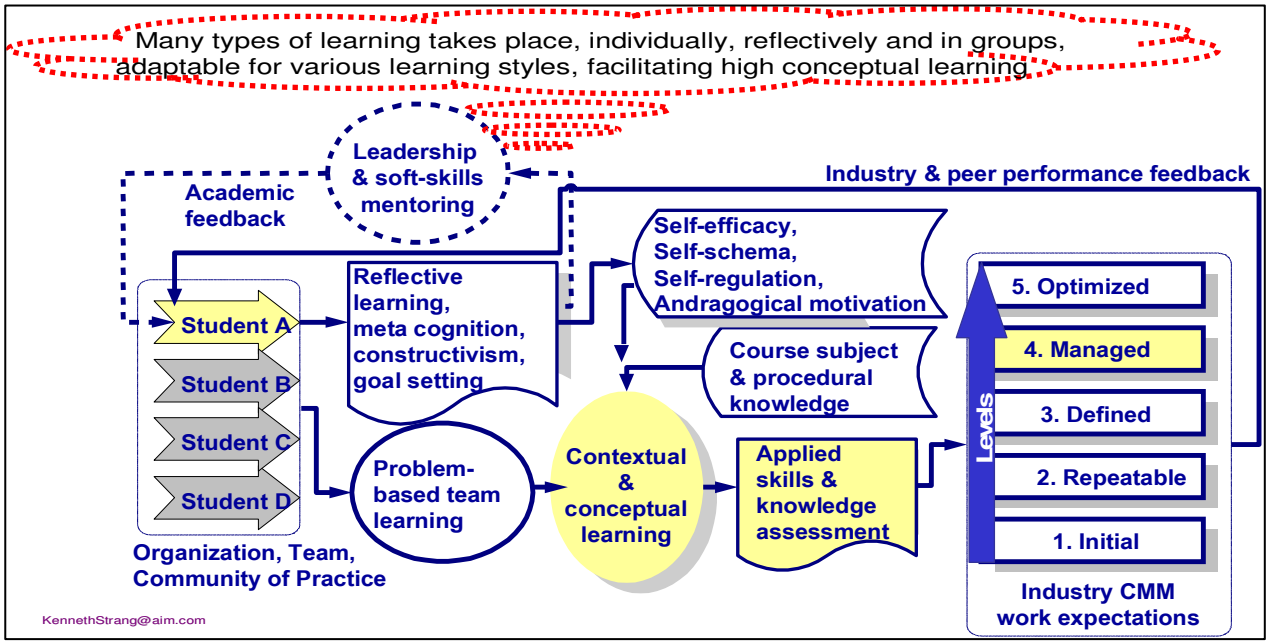


Figure 9: Conceptual Soft-Skills Competency Delivery Model

Conclusions

This paper discussed critical challenges and applied solutions in the case study of building a training program focused on industry needs to improve professional soft-skills. The beginning point was explaining the rationale for the project, in terms of soft-skill training needs identified through empirical research, as well as the strategic justification for creating an agile corporate structure to lead the venture.

A large part of the literature review examined the empirical research defining what sort of soft-skills were needed most by professionals in the Australian target market, specifically meta-cognition, transformational leadership, reflective learning, as well as general/project management skills. Equal attention was given to evaluating the theoretical research underpinning competency development and measurement, especially the differences and integration needed for the industry versus academic chasm.

Throughout the case study, several models were used to graphically summarize key aspects and relationships at critical phases in the project. Much of the research was brought forward from previous studies, such as the application of andragogical (adult-centered) motivation, and other methodologies, for professional training program design and delivery. The AQF work by ANTA provided a significant foundation to both the learning content and assessment development, as well as the highlighting the categorical linkages to industry vocational training needs, which in turn were transformed into higher-level soft-skills competencies comparable to university masters programs.

The methodology concentrated on how to create and assess the soft-skills competencies at the individual and organizational levels of analysis, and it introduced the approach for surveying the industry needs. The remaining sections discussed the outcome of the industry needs analysis (preliminary results), and since the AQF played such a significant role in the project, the results of the risk assessment for accreditation and maintenance was briefly enumerated.

The paper closed with a finalized industry-driven learning model (Figure 9) that was implemented to guide the final ‘soft-skills’ product development, as well as to leverage as a marketing tool with partners and potential corporate customers. This model worked well in both industry and pure-academic contexts.

Of course the project was presented as a simplified model (leaving out details), and this was purposeful to emphasize the ‘how’ and ‘why’ aspects that explained the theoretical and applied concepts as well as challenges of designing professional soft-skills training programs to meet contemporary industry needs.

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