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Developing and Assessing Generic and Vocational Skills in Distance Education

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Abstract

This paper explores the challenges of developing and assessing generic and vocational skills in distance learning. It is argued that distance learning is a somewhat neglected issue in the literature of generic and transferable skills, as most discussions assume a classroom context, where many key skills are able to be modelled, practiced and assessed with the observation and oversight of a teacher. How do we know our distance learners are developing skills in areas such as collaboration and teamwork when they work largely in isolation from their peers? Can we be assured that students have gained vital information retrieval and management skills, when all their core learning materials are pre-packaged and supplied to them? What can we say of their oral communication skills when all assessments and communications have been conducted by pen and paper or with computer mediation?

Other contributions to this edition have dealt extensively with the theoretical underpinnings and current practice of embedding generic skills into the curricula. It is not intended to replicate those discussions here. Rather, it is the author's intention to focus on the particular issues and concerns as they relate to distance education. The appropriate development and assessment of generic and vocational skills in distance learning, it is argued, requires considerable planning and forethought. The first part of this paper explores the skills agenda in distance learning and the traditional barriers that have tended to inhibit the development of a broad repertoire of skills in learners. New opportunities, particularly those created by the Internet and web-based delivery of programs, are also considered. The second part of this paper explores how learners acquire generic skills at a distance, and the kind of features and strategies in distance programs that can promote the development of a broad range of skills. The third and final section of the paper focuses on assessment of generic skills, the particular difficulties that distance educators commonly experience and offers suggestions of how these might be overcome.

The skills referred to in this paper include both generic and vocational skills. Generic skills are those broad academic and lifelong learning skills expected of any graduating learner in higher education, including thinking, research and communication skills. Vocational skills refer to the variety of skills specific to one's discipline, profession or vocation that enable students to make the transition to and function competently in the workplace.

Traditional barriers to skills development in distance learning

Over the past twenty years, distance learning has become an increasingly important vehicle for the delivery of both higher education and technical and vocational education across the globe. In its traditional form of correspondence education, educators relied heavily on printed materials, pen-and-paper assessments and a 'self-study' approach. Of more recent times, the philosophy of open learning, supporting wider participation in all forms of education, together with new

educational technologies such as teleconferencing, video, CD-ROMs, and particularly e-learning, have combined to transform the landscape of distance learning. Distance education now provides the possibility of a more interactive, vibrant, accessible and contemporary learning experience. Its delivery methods and pedagogies are now profoundly influencing mainstream face-to-face education and creating new hybrids of mixed or flexible modes of delivery (Thorpe and Grugeon, 1993; Wade *et al*, 1994).

However, in relation to skills development, old paradigms and pedagogies are still apparent. Evans and Nation (1989) and Morgan (1993), for example, have roundly criticised those distance education arrangements that package large volumes of content in a way that is not negotiable by students, and leading to the adoption by students of survival or reproducing strategies rather than a deep engagement with material. These kinds of programs tend to neglect the development of key skills such as problem solving and critical and reflective thinking. Gibbs *et al* (1994) point to the many programs in higher education that are overburdened with content driven by the requirements of accrediting bodies. In such programs it is unrealistic to expect any systematic embedding of generic skills unless some considerable components of content coverage are able to be traded for process-oriented activities that actively develop skills.

Traditional assessment practices in distance education have also militated against the development of a broad repertoire of skills. In the interests of equity and parity, given the geographic dispersal and differing circumstances of students, educators have tended to opt for standard, 'respectable' assessment tasks such as essays (Morgan and O'Reilly, 1999). Although essays may provide excellent vehicles for skills development in critical thinking and written communication, there are a variety of other skills that the essay does not commonly address, such as planning, problem solving, collaborative work, oral communication, disciplinary procedures and techniques, self-directed learning abilities, and so forth. Distance learners' commonly-expressed concerns that they are turned, during their studies, into 'essay processing machines' (Morgan and O'Reilly, 1999) reflect a certain malaise in assessment at a distance – particularly so, given the variety of new assessment opportunities available to us through the Internet, which are briefly considered later.

A further barrier to skills development in distance education lies in the effective transfer of skills into the workplace – indeed the whole purpose of generic skills is that they are able to transfer from academic and study contexts to work contexts and from one work context to the next. As Gibbs *et al* (1994) outline, skills are acquired through an experiential cycle that entails practicing, reflecting, forming an understanding of the principles of proficiency, and then further practice. It is also necessary that conditions for practice of skills are as lifelike as possible, to enable transfer to take place. It is not likely that students become proficient in the use of a skill simply by having it explained, discussing it, or thinking about it. Without the kinds of regular supervised practice in simulated environments available in educational institutions, distance students are often profoundly disadvantaged in the acquisition of skills. The next section of this paper considers the variety of arrangements such as work-based learning, mentoring and other schemes that help to overcome these problems for distance learners.

Developing Generic Skills in Distance Learning

Given the kinds of barriers to skills development in distance education discussed above, it is argued that distance programs must be planned and delivered explicitly for the purpose of generic skills development, alongside – but not subservient to - the academic content of the program. Conventional content-led subjects, where skills development is tacked on as an afterthought, or is implicit and unexplained, or where students are left to practise skills in isolation without feedback, are highly unlikely to succeed in meaningful skills development.

A study by Morgan, Dingsdag and Saenger (1998) found that many distance learners gained confidence in key academic skills such as critical thinking and developing arguments through a tedious process of trial and error. Rarely were these skills actively and explicitly taught to students – rather, they were gleaned in a piecemeal fashion from feedback to essays and other assignments. Students also experienced confusion relating to the differing expectations and idiosyncracies of individual markers, which rendered skills development even more problematic. Efforts to develop generic skills in distance learners, it was found, must be purposeful, consistent and commence early in a student's pathway through a program of study.

Attention is now directed towards a range of key features in the delivery and pedagogy of distance education programs that allows for the successful development of a broad range of generic and vocational skills, including delivery models, appropriate pedagogy and use of media, effective student support networks, authentic assessment and purposeful evaluation.

1. ***Delivery models***

As discussed earlier, traditional distance education delivery methods have rarely been conducive to the development of a wide repertoire of skills in learners. Over the past decade, new delivery models have emerged which are providing increased opportunity to teach and assess skills. These new models are particularly important in that they provide the opportunity for learners to practice and develop skills with the benefit of oversight and feedback. Some of these models also provide relatively authentic conditions for skills development and assessment, enabling students to be able to transfer these skills more effectively to new situations.

(a) work-based learning schemes,

Distance education programs linked to workplace learning and skills development are gaining widespread acceptance in universities and vocational training institutes. These programs entail integrated and complex skills development, often using authentic work-based issues and problems as the trigger for learning cycles. Skills are actively developed in areas such as planning, problem solving, information management, and a variety of communication skills relative to the discipline or professional field of practice (Hampton and Bartram, 2002). The development of skills is usually supported by workplace educators and assessors, or are managed by supervisors, while relevant support materials and assessment processes are overseen by the educational provider. These arrangements usually require explicit partnerships between the employer and the educational provider.

(b) regional learning centres

Skills can be often developed through the use of regional learning centres which provide local tutorial support combined with IT infrastructure and extended hours of access. Hampton and Bartram (2002) report on the success of joint educational facilities that combine the resources of school, vocational and university sectors with additional local government support in regional and isolated communities. Such centres can support a wide variety of skills development initiatives with the appropriate supply of facilities, interactions, feedback on tasks, and the opportunity for students to learn with their peers.

(c) distance mentoring schemes

Mentoring can provide useful ways of teaching and assessing generic and disciplinary skills at a distance. Morgan and Smit (2001) elaborate on two distance mentoring schemes which enable students to appoint an appropriately skilled mentor from their local community or workplace, with whom they can practice and develop key skills. In some instances the mentor may also act as a summative assessor, certifying to the educational institution that their learner has acquired certain skills to the specified level. These schemes operate in fields of practice as diverse as nursing, teaching, counselling and acupuncture.

(d) other flexible learning initiatives

A variety of other initiatives, broadly grouped within the 'flexible learning' category, may be employed to support skills development in distance learning. These include well-recognised distance learning models such as the residential school, where learners travel to the institution for intensive contact sessions; travelling workshops where teachers travel to major regional centres for intensive sessions with students; and mixed mode delivery, where distance students may selectively join their on-campus counterparts for some components of a program. There are many different combinations of flexible learning methods that are employed for similar purposes, depending on location of students, the nature of the skills being taught, and the delivery culture of the educational institution.

2. *Appropriate pedagogy and use of media*

The design of distance learning materials to promote skills development entails three key features:

(a) explicit goals and strategies

For skills development to be effective, it is imperative that the teacher's values and expectations are made explicit to students, so that students have a clear target and a sound basis for making decisions about their approach. While much of this may occur in induction sessions in face-to-face teaching, it may often be overlooked in distance education. Skills to be developed should not be a hidden agenda, or simply a by-product of an activity - they should be articulated in the objectives, and embedded congruently within the program content, the learning activities, the assessment tasks and the marking criteria within a subject.

(b) active learning designs

As discussed, competence in a skill is acquired by incremental steps of practice and reflection on outcomes. Similarly, learning materials should encourage active

learning, rather than the passive absorption of content. Course materials, in concert with other local support, should step the student through a gradual process of achieving competence, anticipating likely difficulties and common responses, providing prompts to encourage practice, reflection and further consolidation. As Lockwood's work (1992, 1995) on student activities in distance education has established, students become highly strategic over time in determining which formative activities are to be undertaken, based upon perceived return for effort. If formative activities in a study module are supporting the incremental development of skills towards a summative assessment item in that same module, it is far more likely that students will undertake them and benefit from them.

(c) appropriate combinations of media

The teaching and modelling of many kinds of skills, both vocational and generic, to distance students requires an informed and appropriate use of media. Over the past ten years we have seen an expansion of technologies in distance education teaching, such as audio, video, CD-ROM, and more recently, the Internet. While each new technology is adopted with great enthusiasm and promise, the reality is the most educational technologies have their strengths and weaknesses and should be used selectively according to the nature of the learning context, the skills to be developed, and the affordability and accessibility of the particular technology by students.

More commonly, new technologies are blended with older forms such as print, according to the particular strengths of each. Thus a distance learning package may contains elements of print and video, or CD-ROM, with e-learning components added for communications and web-links. For example, foundation knowledge underpinning the skill can be outlined in print, the skills modelled through video, students' efforts and reflections discussed via web-based communications, and assessed with the oversight of a local tutor. There are many variations, of course, depending on particular circumstances, but the appropriate combinations of media are vital if students are to successfully acquire skills.

3. Effective student support networks

Student support services are integral to the success of distance education programs, particularly when generic and vocational skills development and assessment are involved. Among a series of other key characteristics, Leach (2000) identifies the importance of student support in the provision of professional experiences and an orientation towards practical skills development in authentic environments. Student support, by its nature, should be developmental and exploratory. Goel (2002) outlines the role of the external tutor in supporting students to develop key skills, such as critical thinking, information retrieval and research, and communication in a variety of forms. These skills enable students to negotiate the course materials and to use them to their best advantage in undertaking assessment items. Simpson (2000) argues that the external tutor has a more complex and sophisticated role than that of conventional universities, balancing a range of functions, including defining the scope of and explaining the course, developing study skills, assessment of students, monitoring progress, and organising and supervising the development of practical and vocational skills. Another role of the external tutor is to facilitate contact between students, enabling them to network, learn from each other, and benchmark their progress.

Without the opportunity for distance students to access study centres, and to have contact with external tutors, it is hard to imagine how many key generic and vocational skills are acquired by students. Yet many distance education programs do not offer this kind of extended support and allow their students to 'go it alone' in the mistaken belief that they are encouraging independent learning. As Morgan, Dingsdag and Saenger (1996) have discussed, the idea that students should develop such important skills as critical thinking and argument building in an *ad hoc*, trial-and-error basis is not only unsatisfactory, it may well go some way to explaining the much higher attrition rates experienced in distance education, and particularly by students who are demoralised by consistently poor results.

4. Authentic assessment

At the heart of developing generic skills in distance education is the issue of assessment. Since Rowntree (1977) described assessment as the '*de facto* curriculum', much attention has been given to the ways in which assessment drives and shapes student learning (for example, Ramsden, 1992). This is particularly the case in distance education, where students' course materials and assessments are laid out before them at the commencement of semester. They are free to structure their learning solely around assessment requirements, and can strategically by-pass the myriad of suggestions and prompts that may appear in the study guide. Thus although distance educators may insist that they have taught key skills to learners, if they are not assessed - and assessed in the most authentic manner possible - it is often the case that they are overlooked by students (Morgan and O'Reilly, 1999).

Some of the traditional problems of facilitating authentic skills assessment at a distance have already been discussed. Principally, efforts to assess skills by pen and paper methods are limiting and unsatisfactory if we are interested in assessing a broad repertoire of skills. There is little point, for example, in assessing oral communication or collaboration skills by seeking students' understanding of what they entail via an essay. In such instances, it is necessary for us to oversee actual performance of those skills. And if we are wanting to ensure that students are developing skills that will transfer to the workplace, then we must ensure that we can create conditions for performance that are as lifelike as possible. The following discussion explores authentic assessment types in distance education, using Nightingale's (1996) framework of eight key learning outcomes in higher education, and also drawing from the work of Morgan and O'Reilly (1999):

(a) thinking critically and making judgements

The ability to think critically is a key outcome of any graduate in higher education. According to Norris and Ennis (1990) critical thinking includes elements such as:

- reasonable thinking (sound evidence and judgements),
- reflective thinking (ability to reflect on the reasonableness of one's own and other's arguments)
- focused thinking (purposefully and consciously directed towards an end goal)
- decision orientation (ability to make judgements based on evidence)

Success in developing and assessing these skills by distance education is well established through traditional methods such as evaluative essays, reports and journals, where students have been able to demonstrate their ability to plan, research, develop and communicate a sustained and supported argument. More recently online communications have enabled the facilitation of debates and discussion that have also promoted critical thinking activity. The challenge for

distance educators is to address the inclination of many students to adopt surface or reproducing strategies, and to encourage students to make their own judgement through their own disciplined thought. A further challenge is to help students distinguish between critical thinking and subjective reaction, by thinking and evaluating on the basis of firm evidence (Morgan *et al* 2004). Assessment tasks should incrementally assess these skills in an orchestrated way during foundation subjects, so that the building blocks of critical thinking are gradually developed.

(b) solving problems and developing plans

The ability to tackle and solve problems is an important professional and vocational skill, entailing a familiar sequence of events, including:

- recognizing that a problem exists
- understanding the nature of the problem and how it might be addressed
- developing a plan to address the problem
- acting upon the plan
- evaluating the outcome of the action
- reflecting upon the result – could it have been handled better?
  (Hayes, in Ryan, 1996)

Problem solving methodology varies considerably between disciplines so it needs to be developed and assessed firmly in its disciplinary context. The stimulus of authentic, ill-structured problems are also essential if it is to be hoped that problem solving abilities will transfer to new situations. This provides particular challenges for distance educators in facilitating tasks such as unfolding problem scenarios, role plays and simulations, oral examinations, rich case studies and other assessment methods with authentic work contexts. However, as many distance learners are already immersed in their vocations or professions, their own real life work-based problems may provide fertile ground for problem solving activity. In the absence of this, there is an important role for regional learning centres, local tutorial support, and practicum arrangements to help facilitate active problem solving events that simulate the work environment. Virtual work environments, with the support of online communications and unfolding problem scenarios, have also been used successfully to develop and assess these skills.

(c) performing procedures and demonstrating techniques

There are various elements to the competent performance of procedures and techniques that include prior knowledge of the procedure, psychomotor skills, and appropriate attitudinal factors, such as due diligence and concern for safety. Teaching and assessing procedures has often been problematic, unless residential schools or other kinds of flexible contact sessions are arranged. Videos have often been employed as a means of demonstrating skills at a distance, and also assessing student achievement, however, they can be cumbersome for students and unreliable for the assessor's perspective (Morgan and O'Reilly, 1999). However distance mentoring schemes, or professional placements, as discussed earlier, provide excellent opportunities for learners to gain competence in procedures in lifelike conditions. Competence in procedures and techniques requires practice – the principal challenge for distance educators is to ensure students have the opportunity for sufficient practice with individualized feedback to guide progress. Once again, transferability is a key issue: if the conditions for practice and assessment are not particularly lifelike, the likelihood of transfer is much reduced.

(d) managing and developing oneself

Self-management and development, in this context, includes important lifelong learning skills such as self-directed learning, ethical practice, the ability to be reflective and the ability to work collaboratively. These are all skills that are highly valued by employers and yet generally tend to be poorly addressed in higher education and vocational programs. Self-directed and autonomous learning are often cited as a central aim of open and distance learning, yet in practice it often is neglected due to the prominence of packaged, content-heavy course materials, which tend to have the reverse effect on learning.

Assessment methods at a distance are diverse and can also be very interesting and creative. They include learning contracts, portfolios, online discussions and collaborations, scenarios, ethical dilemmas and vignettes, autobiographical pieces, group work, and so forth. All these kinds of tasks can be facilitated readily at a distance, ideally with the support of online discussion and debate. However, as these skills are largely attitudinal in nature, assessment is problematic, as indeed is transfer of the skills. How do we know, for example, that a student will behave ethically in the workplace? Of course, we don't, however we can ensure that at least they have an understanding of the importance of ethics and can demonstrate the kind of thinking skills and concerns that characterise an ethical person (Morgan *et al* 2004).

(e) accessing and managing information

In today's world, information literacy, in all its forms, is a foundation skill in any profession or vocation. Information literacy means being able to recognize what information is required, how to access and manage it, and to apply it to particular circumstances, problems or decisions. A common form of assessment requires students to 'research a topic', and may include various phases such as exploring multiple sources, evaluating the usefulness and credibility of sources, developing an annotated bibliography, mapping concepts and differing strands of thought. With guidance and feedback students learn to become critical consumers of information with an awareness of how information is produced and disseminated.

Traditionally, distance students' ability to develop these skills was often curtailed by geographical constraints such as access to libraries. However, with the rapid development of the Internet, along with its various search engines and online databases, these kinds of skills are now readily developed and assessed at a distance. They are often taught as foundation skills early in the student's pathway, providing the foundation to higher-order activities such as case studies, presentations, research reports, essays, and so forth.

(f) designing, creating, performing

These skills are employed in ways that bring innovation, imagination and creativity into play in a variety of professional, artistic and vocational settings. They are assessed in disciplines such as the humanities, performing arts, as well as architecture and engineering. Typically they are assessed by portfolios and projects, which bring together elements of aesthetics, creativity, theory, problem solving and technical skills, and performances and presentations, which are often accompanied by an oral or written rationale, and which might also involve theoretical issues, reflection and self-evaluation.

These abilities are not always easy to teach and assess at a distance, but distance educators often make good use of support people in students' own learning environments or workplaces, combined with residential schools, travelling workshops and other flexible delivery methods, as well as encouraging dialogue and networking between students and with their broader professional communities. (Morgan and O'Reilly, 1999).

(g) communicating

This category includes core skills in written, oral, visual and technical communication. They are generic skills that would be expected to a significant degree in any graduating student, and are highly regarded by employers. Written communication skills have been traditionally assessed at a distance through essays, reports and journals, where students try their hand at a variety of different written genres. More problematic, however, are the development of students' oral communications skills, represented by assessment tasks such as presentations, debates, group facilitation, and so forth. Although audio and videotapes have been employed to both teach and assess these skills, with varying degrees of success, it is more practical and authentic for students to be assessed in their workplaces, or through residential schools, local study centres and other flexible delivery means where groups of students are gathered for the purpose. Visual communication abilities, such as the design of a poster or visual display, can similarly be achieved by flexible delivery means.

The Internet has provided new ways of assessing communications skills at a distance, including online discussions and debates, presentations in both written and visual forms, role plays, and negotiations. Morgan and O'Reilly (1999) point to the new challenges in communication provided by this medium, as they are neither the same as oral exchanges or written communications. Rather, the Intenet creates new kinds of synchronous and asynchronous communications which are emerging as a communication skill in its own right, as students are required to demonstrate expertise in applying the appropriate conventions and norms of email, discussion lists, synchronous chat, and so forth. Moreover, as students become members of international forums, awareness and sensitivity to cultural diversity is another key skill to be addressed.

5. Purposeful evaluation

A final key feature of distance education programs that successfully develop and assess skills is effective and purposeful evaluation. How do we know that we are developing the appropriate skills in learners? To what degree are they being transferred to other environments such as workplaces? It is not intended to delve too deeply into the evaluation of assessment practices here, as this is covered thoroughly in Morgan *et al* (2004). Key evaluative practices to ascertain whether assessments are achieving appropriate skills development include:

- Obtaining student feedback – students' own perceptions and reflections on their developing expertise in key skills areas. Longitudinal studies which track student perceptions of their skills over time, and particularly as they enter the workplace, are also very informative.

- Input from other stakeholders – employers, accrediting bodies and professional associations are important sources of feedback on the relevance and timeliness of skills, and also how effectively skills taught and assessed within the academy are transferring to the workplace.

- Benchmarking with peers and other institutions – it is important to keep abreast of standards and assessment activities in other institutions embedding similar skills. It is not only a quality assurance activity, but also allows for an exchange of ideas, innovations, successes and pitfalls.

Conclusion

Mishra (2002) outlines the principal challenge for distance education in the twenty first century: the support and promotion of social and economic development, both in the developing and developed countries. The challenge for distance education is to reach the many millions of previously unserviced people who are under-skilled and under-prepared for the changing demands in the workplace of the twenty first century. A key part of this role is the development of generic and vocational skills that form the basis of a workforce that is equipped to be internationally competitive and self-renewing. It is argued here that skills development will not effectively occur if we rely on traditional methods of distance education delivery and assessment. Rather we need to actively target key skills and develop the delivery mechanisms, appropriate pedagogies, student support structures and assessment methods that are explicit, congruent and purposeful in the development of skills.

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