In 2002, Auckland University of Technology (www.aut.ac.nz) appointed me (Andrew) as director of flexible learning to join the senior management team on a two-year contract. The university had recently acquired a learning-management system, Blackboard. The then–deputy vice chancellor said, “We’ve just bought Blackboard. It’s your job to make it work.”

We suggest that a technological development of this kind may be divided into the stages of initiation, deployment, engagement, and maintenance. Within the stages of initiation and maintenance are the elements of stability and security. Within the stage of engagement is legitimation. In this chapter, we will look first at initiation and then at deployment and engagement. As the new director, I (Andrew) wrote a university policy about flexible learning, much of which became absorbed into the institution’s learning and teaching framework. This work legitimated the use of a learning-management system as a tool to be used for teaching.

As change managers know, the strategic success of any substantial innovation will be determined by the politics of the process rather than by the inherent value of the innovation itself.

**INITIATION**

As devotees of Everett Rogers’ work on the diffusion of innovations (2003), we understood that we would face some large challenges. Our institution
had recently become a university whose main modus operandi had been small classes taught on campus, with a very small distance offering. AUT comprised four faculties operating somewhat independently with a limited central set of support services for staff and students. The staff development unit (SDU), where I (Mark) now reside, had recently subsumed the institutional multi-media unit and was deemed a logical central service from which to support flexible learning. A visit to the faculties revealed two learning-management systems in operation: one had been written by a close relative of a senior staff member and the other, a commercial system, was based on software not widely used at the university. Neither one had substantial uptake. Part of the system standardization also initially worked against those innovators who preferred to forge their own path. There is a fine balance between the contribution these innovators make to the evolution of technology application (always valued and never doubted) and the need to standardize systems and processes for large-scale support.

The SDU proposed a two-year trial of the newly acquired Blackboard product with three staff and some thirty students. The Deputy Vice Chancellor (Academic) proposed that I (Andrew) chair the university’s Learning Technology Advisory Committee (the nearest it had to a learning and teaching committee) and drive the flexible-learning agenda through it at a much faster rate than initially proposed. This move signalled a clear mandate to move in the flexible-learning direction, although there appeared to be little by way of knowledge, skill, or experience among the staff. It quickly became obvious that Blackboard could not be allowed to fail and that its first point of failure would be the easiest to address, that of technical hardware stability and software reliability.

The first part of the no-failure policy involved having a detailed plan, with costs calculated over three years, developed and presented to the senior management team so they could be fully informed of the human, physical, and financial costs involved. This project also needed the particular support of the chief financial officer, who, when she asked what the cost savings to AUT were, was given the honest reply of “nil.” However, the loss of reputation for being a technology university unable to use technology in teaching might be considerable over time if we did not adopt digital approaches to learning and teaching. A technical-service analysis
revealed that the university’s server room had no independent backup power supply, was prone to overheating, was located in a basement that could flood in the event of fire elsewhere in the building, and had no physical firewall. Additionally, the university had only one fibre optic inward cable, which could be easily destroyed by a construction machine in the event of rebuilding. The project became a catalyst to address such issues by acquiring an external generator, fireproofing and air conditioning the server room, and adding another fibre optic inlet at the opposite end of the university. Nothing could be done about the server room location until another nearby university created a purpose-built room that we could share.

Ensuring that all the software and server systems complied with the Blackboard specifications took some time because we needed to convince some IT staff of the need to do this. One or two trial startups soon convinced them of the need for compliance. The learning-management system required a single source of data about who was a student and who a staff member. The student-management system could not easily supply such information because the four faculties, still operating partially independently, supplied data in different formats. My (Andrew’s) meeting with faculty registrars convinced them of the benefits of consistent data sufficient to allow the automation of enrolling students into the learning-management system, although it took another two years to fully integrate the process.

After about eight months of planning and preparation, the project was sufficiently robust to begin its implementation. At this point, it became possible to close the existing incompatible learning-management systems. The most difficult and lengthy part of the Blackboard implementation process could now begin because the technology environment had sufficient backup and stability. This work concluded the initiation phase that set the direction for the next several years of development.

Meanwhile, those opposed to this significant change in how AUT undertook learning and teaching had managed to remove some key staff on whom I (Andrew) relied and had sought to deploy their own favourites in important positions. A quick decision to manage via a “flat” structure disarmed the opponents. Nevertheless, an important committee overseeing the implementation process became stacked with central office
personnel opposed to the new developments. Practicing faculty reduced their attendance as a consequence. The committee held up some new activities by seeking to conduct excessive consultations with indirectly related groups. The assistant vice chancellor dissolved the committee as a result. AUT appeared to have a subterranean set of networks; I knew that it would take me too long to find out where these were and who manipulated them, and I decided instead to do the preparatory work, as detailed below, and then wait and see where the opposition came from. Once that became clear, I could explore what and who lay behind the opposition. A close friend told me early in the task to look out for politics very close to “home.” A smiling face, apparent agreement with the process, an offer to help with some unrelated matters hid a deadly disagreement, often exhibited by a waver of the voice, a change in the tone of voice, and, expectedly, rumours relating to my competence and a lack of “fit” with the current ethos. Nothing could be clearly identified, but it was all enough to be unsettling.

DEPLOYMENT

Transforming teaching toward a more flexible or blended approach required major shifts in academic practice and belief, which proved to be the largest hurdle to overcome in introducing flexible learning to AUT. Rogers’ (1995) description of the psychological characteristics of innovators, early adopters, and leaders of the early majority proved to be very valuable. The university made sufficient funds available to appoint flexible-learning advisors (FLAS) to work with staff. At the same time a small specialist team was established to support the IT help desk personnel with Blackboard-related matters. The position descriptions for the FLAS included skill and experience as a tertiary-level teacher, preferably with some e-learning or distance-education background. There seemed to be little point in simply making standard face-to-face teaching electronic, which was a possibility arising through the use of staff developers skilled only in lecturing to small groups. The university established several computer laboratories around its campuses for those students who did not have computers. Flexibility in terms of time, place, and pace of teaching
became key concepts in seeking to transform teaching. It would be fair to say that some staff supporting older ways of teaching needed to rethink their approach or be prepared to find work elsewhere in the university or outside of it.

These actions and expectations around new teaching models alienated some staff, particularly those who saw themselves as guardians of the old ways. At about this time, the university renamed Blackboard as autoonline to give the product a more local flavour. The FLAS were pointed toward the early majority leaders in faculties because they had frequent contact with peers, held positions of leadership, and tended to deliberate carefully before adopting an innovation.

The actual employment of the FLAS heralded the start of the most significant phases of transforming learning and teaching, those of deployment and engagement. They developed and operationalized grant-supported work to provide resources to enhance learning and teaching, all of which became an important mechanism for funding teaching transformation. Although small in size, the grants gave successful applicants access to multi-media developers as well as cash to buy out teaching time to redevelop papers (subjects) and specific courses.

Within just a few months, it became clear that staff and students demonstrated substantial support for what we now termed blended learning, that is, a blend of the new digital technologies with older teaching strategies. The learning-management system catalyzed all the changes and so paved the way for the employment of more FLAS, a larger autoonline support team, and a Flexible Learning Services manager (Mark) to oversee the operational elements of the work. Operational management moved from me (Andrew) to Mark as I took on a permanent and wider role in the strategic advancement of digital technologies beyond the learning-management system.

Separating operation and strategic roles is not a new phenomenon and can have substantial advantages. In this case, those advantages were realized, largely because the vice chancellor and the deputy vice chancellor made it clear that the university would be moving forward in the flexible-learning mode in the near future.

The main lessons that I (Andrew) learned concerned the need for the university to allocate clearly defined roles and responsibilities to staff,
with enough *mana* (a Polynesian term for standing, respect, or personal qualities that serve to inspire or lead others) in the system to ensure that decisions were acted on, and the need for the university to hold fast to its vision and avoid distractions on the periphery that could have dissipated its resources. A sound theory (Rogers) and a competent operational arm ensured our success.

**Engagement**

In late 2003, I (Mark) started working as the Flexible Learning Services (FLS) manager at AUT, where we now have over 25,000 active users of our learning-management system (probably 90% of the entire student body). I consider the major success to have occurred not with those who were keen to use the Internet ten years ago, but with the other 90 percent of teaching staff—those who were reluctant to even start using email at that time. The early adopters would find a way to make it work regardless of its relevance, but the late majority needed to be convinced that there were sufficient benefits in the effort. It took AUT over five years to make that shift.

A key aspect of scalability has been the enrolment integration for students. When I started at AUT, each online-course lecturer had to fill out a paper form that was transcribed onto an Excel spreadsheet and was manually batch-run by a technician in IT Services. The “policy” at the time was “if the forms are not in two weeks before semester start, the students won’t be enrolled.” It was immediately obvious that this was not a workable solution in the long run. As inconsistent faculty processes gradually aligned with one another, I needed a technician who was part of the flexible-learning team, who would understand exactly what we wanted and needed in the system, and who could devote full attention to the learning-management system.

I also needed a technician I could talk to and who could talk back to me. For a while, we had technical support staff who would email in grunts. Here is one example. My message read, “I note that the AUTonline server was down overnight. Can you bring me up to date with how long the outage was, what caused it, what did you have to do to bring it back up, and what needs to be changed to ensure we avoid a repeat?” The
answer was “It’s fixed.” Not altogether helpful! Once, the nightly back-up process was suspended while the technician investigated more efficient processes. He was then side-tracked onto another task and never got back to the AutoOnline back-up. It was not until two months later that I found we simply didn’t have a back-up process in place! It was back later that day with profuse apologies from the IT team leader. That was a very narrow escape from a disastrous data loss. If staff and students had experienced such a loss, we would have had a much harder job building system confidence and encouraging staff to persist with online teaching. In fact, I am still convinced that system stability is of critical importance in gaining a large level of acceptance. I occasionally hear academics (faculty members) say, “I won’t put all my resources online because we can’t access them when the system’s down,” when in fact we now only have perhaps one or two unscheduled outages in a year, and they have all been very short. But the reality is not what’s important here—it’s people’s perceptions that make the difference.

It took a year to appoint a technical systems developer to a team outside IT Services, but this was surely one of the most important elements of what makes the flexible-learning team a success. Initially, the IT systems and interfaces were a black hole to me, but having our own technician now makes questions easier to ask and answers easier to understand. The technician works in the same open-plan office as the system-support team and knows exactly what the issues for teachers and students are—he deals with them every day. We now have access to on-demand reporting and building-block development as projects require. I’d love at least one more developer to be his support, but it’s working well at present.

We now provide a Web interface for lecturers to manage their own courses, other lecturers involved, and the students. This still creates issues for those staff who forget every six months how to manage the process, but we’re definitely making progress. An automated process now kicks in for all courses (subjects). Even with Blackboard providing the core functionality of AutoOnline, some lecturers have sought extra online functionality. Some found their own solutions in using external Web services, mainly for blog and wiki activities. We have met those extra needs by adding more secure third-party applications internally and, in a few cases, even building our own applications. These give blog and wiki capability, podcasting
options, voice tools for seamless recording and playback, and a synchronous online classroom. Our most recent toolset is an e-portfolio system, and uptake and reliance on this are steadily growing.

In fact, growth and penetration of e-portfolios have highlighted another systemic challenge. Students see the greatest value in the portfolio if it can be used beyond graduation as a professional accreditation tool. Current IT processes prevent access once an enrolled student’s credentials expire. The university is discussing ways of enabling alumni access, but some staff are slow to be convinced of the inherent value (e.g., in return business) of providing supported IT tools to alumni.

Additional tools carry the potential to overload our academic staff. Many are already struggling with the initial concepts of e-learning. As uptake grows, along with student expectations, a capability and confidence gap emerges. The concepts of Web 2.0 bring additional challenges to the technical capabilities of academics, especially for those who don’t embrace these technologies at a personal level. So we try, through the use of the flexible-learning support team, to keep them from being overwhelmed; a system with poor or inaccurate support would cause more problems than it would solve. Our bi-weekly flexible-learning team meetings devote a half-hour session to presenting or airing an issue of concern, a new technical development, a pedagogical approach, and so on.

The question of student wants and needs in technology-enhanced tertiary education is a vexing one. We have evaluated perceived student value of our flexible-learning system and we also receive much useful anecdotal student feedback. Much of the growth in uptake has been driven by student expectation, as the Web becomes the de facto medium for information access and communication.

However we develop the technology, the effective academic purpose of online activities can be debated. If these activities are not constructed and supported with clear and well-communicated purpose and with processes and milestones, students will not engage. In my opinion, the key is personal engagement with the technology from the lecturers themselves—if they have never used these tools themselves, it is most unlikely that they will promote good levels of engagement from their students. This, in my view, is the current digital divide—those lecturers who embrace and understand the technology and its social impact, and those who don’t. It
is a vital role of Flas to encourage those staff for whom it is daunting to use digitally mediated learning and teaching.

MAINTENANCE

At the Centre for Educational and Professional Development (recently renamed the Centre for Learning and Teaching), we rarely get involved in student orientations (in using the online learning system) or dealing directly with student help requests: we believe that this responsibility lies with the faculties and the it Services help desk. But we do provide information and user materials for students. In fact, reviewing the it help desk calls suggests that students have very few problems other than the standard technical questions related to log-in issues, computer setup, and so on.

We run a variety of options, such as scheduled workshops (often not well attended), just-in-time workshops for school or program groups (very popular at key times of the year), one-on-one consultancies (always hard to meet the demand), and phone support for staff. We also increasingly advertise drop-in sessions, during which a flexible-learning support person is on hand to deal with issues with which the lecturer needs assistance.

Phone and direct email support is undoubtedly the heaviest workload for both our academic and administrative support groups. It is also the most critical and, I believe, a key reason for the positive uptake of flexible learning. The most important need of teaching staff is to have an issue resolved or a question answered when it is relevant; some teachers might ring five or six times a day as they work through a complex issue, and at times this extent of need is very difficult and frustrating to support. I have often overheard a patient and supportive phone conversation conducted by one of my staff, followed by a private explosion of frustration in my office when the consultation is over. I am fine with this if it helps to grow the user’s confidence. If teachers do not feel supported, significant numbers of them will avoid engaging with the technology that the students want them to use.

As I imagine is true in most large institutions, our university tends to exist in silos, limited by faculties and schools. In an attempt to share
experiences and cross-fertilize ideas, we run an annual show-and-tell seminar called FlexIT (Flexible Learning Experiences in IT). Usually themed in some way, the seminar brings together presenters and audiences across all faculties. It is one of the few occasions when academics can say, “We thought we were doing well, but we never thought of doing it that way.”

LESSONS LEARNED

The most important lesson I (Mark) have learned is that of being of service. The entire flexible-learning team works on the basis that team members are there to help staff move toward a blended-learning model using digital teaching techniques. The mantra “How can I help?” is part of their daily lexicon. Another important lesson has been the value of a consolidated, centralized support team; having technical, administrative, and academic support all in one team allows for greater communication and more cohesive efforts.

CONCLUSION

AUT is one of the biggest users of any learning-management system in New Zealand, whether commercial or open source. Its use is on a par with the more successful institutions in Australia and in other parts of the Asia Pacific region. The university achieved this result because it had a strategic vision, it created a structure to enable the vision to be enacted, and it made sufficient human, physical, and financial resources available to build and support the structure. With all that said, both of us see some new challenges ahead that will test our innovation skills and courage. Those challenges include moving academic staff into a pragmatic blended mode of teaching that they believe in and providing technological solutions based on sound pedagogy that improve student engagement and learning. Incorporating more personalized learning, more active learning, and greater student independence are potential future ways forward. We envisage substantial changes in pedagogy and assessment practices.
REFERENCES AND SUGGESTED READING


ABOUT THE AUTHORS

Andrew Higgins lived and worked in remote outback Western Australia, where he studied by travelling long distances on dirt roads at night. Later, in another life, he taught kids in Mt. Isa and studied to complete his educational qualification by correspondence in the outback mining town. He concluded that there must be a better way. His thinking about distance education led him to the view that the Platonic model is based on the co-location of students, teachers, and resources in space and time. If we could break that fundamental paradigm and show that we can both learn and teach outside the paradigm, we have gone a long way toward showing that the world’s knowledge resources really are at everyone’s fingertips. E-learning is a step on that path. Andrew was Director of E-Learning and Director of Flexible Learning at the Auckland University of Technology in New Zealand and is now an independent consultant.

Mark Northover set out to be a doctor of medicine, but lifestyle choices caused an early rethink. Education seemed a convenient alternative that
fitted well with his future wife’s study and career. Since then, the combination of technology and good teaching that engages students has been a consuming and fascinating interest. While it’s not always easy to mix this with the wonderful New Zealand outdoors, bush and mountains, there are parallels with ecologies of learning—the blend of technologies and pedagogies for effective twenty-first-century higher education requires a certain degree of adaptability and “fit for purpose.” The challenges and rewards of recent educational evolution are enough to keep this old grey matter ticking over nicely. Mark is Manager of Learning Technologies and Associate Head of the Centre for Learning and Teaching at the Auckland University of Technology in New Zealand.