# COMMON FACTORS INFLUENCING SUCCESS IN THE ONLINE ENVIRONMENT

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## Abstract

In 2006, the Sydney Centre for Innovation in Learning — the research and development unit of Northern Beaches Christian School (NBCS), sought to develop a 'best practice' framework to help steer one of its new programs — the provision of fully distance-mode online courses for senior secondary students. As the first individual school to do so in New South Wales, NBCS looked to case-based exemplars from education systems in Scandinavia where this type of program had already been in operation for at least three years. The framework was created after analyzing common factors identified from consultation with a range of schools delivering senior courses via distributed learning modes in Iceland and Finland.

## Description of Project

Northern Beaches Christian School (NBCS) has been intentionally developing its ability to incorporate online methodologies into recurrent educational practice in order to enhance and transform classroom learning school-wide in a targeted project that commenced back in 2002. The school went through a process of establishing a learning management system and portal framework for progressive use in all courses. The first version was HTML based and this was replaced in 2004 with a more interactive environment, using the open source program, Moodle. Over the next two years, the uptake of the online environment as a component of class activity was sufficiently widespread across the school, that the project was ready to go one level further and make the jump to providing fully online course delivery as part of a distance learning mode.

Changes to school registration and course accreditation legislation within NSW from 2004 provided the immediate catalyst for the plan to commence delivery of three accredited online distance-mode courses for Year 11 students from 2006 in Ancient History, Legal Studies, and Software Design and Development. As one of the first Australian schools to offer distance-mode online courses to students both within the school and beyond, SCIL looked to the growing body of research, as well as existing online course programs, to create a starting framework for course development.

At the same time, being mindful of those encouraging caution when migrating whole courses into the online environment and with the desire to maintain high achievement levels, the observations of early research such as that undertaken by Marie Jasinski provided initial direction. Jasinski investigated issues relating to online pedagogy, documented in the report *Teaching and Learning Styles that Facilitate Online Learning*:

> What improves learning is well-designed instruction. Online learning environments have many capabilities and the potential to widen options and opportunities available to teachers and to learners. However, the key to changing conditions for improving learning is how these options and opportunities are utilised by teachers and learners. (1998, p. 1)

Another early study, carried out at the University of Illinois (1998–99), examined what constituted good teaching practice where online technology was used. The study posed the question: "How do I determine if online teaching is successful?" and drew the following general conclusion:

> High quality online teaching is not just a matter of transferring class notes or a videotaped lecture to the Internet; new paradigms of content delivery are needed. . .Evidence of academic maturity, such as critical thinking and synthesis of different areas of knowledge should be present in more extensive online programs. (University of Illinois 1999, p. 3)

Within this context, the Sydney Centre for Innovation in Learning (SCIL) was commissioned to develop a 'best practice' template to help steer the new program. SCIL wanted to ensure that as NBCS teachers took best advantage of new technologies, they matched that with a clear understanding of strong online pedagogy. The framework was based on case studies drawn from schools that met a range of criteria. Schools observed needed to:

- operate within a broader education system that was recognised internationally as attaining high outcomes in senior secondary school comparative data as measured by PISA (OECD);
- deliver their courses using a learning management system integrated into a student portal;
- come from similar socio-economic or education contexts as NBCS;
- demonstrate that their online course completion rates were at a comparable or stronger level than their face-to-face delivery modes;
- demonstrate that the student attainment levels in online courses were at a comparable or stronger level than their face-to-face delivery modes; and
- have been delivering distance-mode online courses for at least three years.

The study was undertaken as an experience-based process, using a series of questions directed to those immediately responsible for the online program oversight within a school or institution delivering distance-mode online courses to students aged 16–19. In addition to interviewing program leaders, senior school leadership was also interviewed in relation to the interface between any online course delivery and broader school vision and operation.

Interview questions covered aspects of oversight that promoted positive course completion rates and high attainment levels, as well as identifying frameworks for course preparation and delivery that kept specific course creation and moderation at sustainable levels within the school. Questions also covered recognised impediments to successful course delivery and any particular pedagogical paradigm used to steer the program.

## Participating Schools, Individuals and Institutions

- Asrun Matthiasdottir, Professor Computing Science, Reykjavik University, Iceland
- Verzlunarskóli Íslands, Reykjavik, Iceland
- Fjölbrautaskóli Suðurlands, Selfoss, Iceland
- Fjölbrautaskóli Snæfellinga, Grundarfjörður, Iceland
- Fjölbrautaskólinn vid Ármúla, Reykjavik, Iceland
- Tampere Polytechnic, University of Applied Sciences, Tampere, Finland
- Sotunki Distance Learning Centre, Sotunki Upper Secondary School, Vantaa, Finland
- Kotka High School for Adults, Kotka, Finland

### Supportive Research
Online technologies are still a new phenomenon in the continuum of education. In an early consolidation study, *All That Glitters is not Gold: Online Delivery of Education and Training* (NCVER, 2001), concentrating on the major questions about the effectiveness of online delivery of education and training in Australia, Brennan et al. observed that "online delivery is a significant educational innovation." Among a range of conclusions, they highlighted the need to:

- strenuously apply the lessons we have already learnt about good
- teaching and learning
- evaluate the effectiveness of online programs using a variety of
- methodologies and time frames
- prepare teachers/trainers to use new technologies flexibly and beyond
- minimum levels of competence (Brennan et al., 2001, p .8)

In the last decade, a number of educational institutions have sought to create user-friendly platforms for e-learning. Considering this context, Dinevski (2004) notes that:

> the didactics will have to be designed in a such a way that the learning process is motivating for the learner, that it supports the information age generation (constructivist learning) and that it improves transfer of acquired knowledge in a learning process into a practice.

Schools entering distance-mode online course programs need to be highly cognisant of the experiences of the tertiary sector and those schools already engaged in early implementation. In his paper, *Quality in E-Learning from a Learner's Perspective* (2004), Ehlers observed that:

> It is important to acknowledge that quality of a learning process is not something that is delivered to a learner by an e-learning provider but rather constitutes a process of co-production between the learner and the learning-environment. . .Quality therefore has to do with empowering and enabling the learner.

Clearly, the pedagogy guiding the provision of distance-mode online courses, along with an understanding of the opportunities of the rapid developments still occurring within new technologies, is highly significant when it comes to creating student confidence and success within the online course environment, as well as the ability of teachers to develop an interactive methodology that is suited to specific content.

## The Virtual Classroom in Practice:
## From Observation to Emergent Model

During the interview process, it quickly became evident that despite relatively little collaboration between educational systems or schools within systems, there were very clear similarities between distance-mode online course models. The most important similarities were connected to the pedagogical frameworks chosen and the strength of the school vision for online course delivery. This was especially well articulated by Asrun Matthíasdóttir, Reykjavik University, Iceland:

> Success in the distributed learning environment is reliant on the student as being at the centre of the educational paradigm, with flexible access to teachers and resources. (Matthíasdóttir, 2005).

An analysis of the cumulative observations made and interviews conducted during the SCIL study, led to an initial summative framework for use by NBCS in its own

online course delivery program. The predicted rapid uptake of online courses by students and the concurrent pressure to manage that growth with due diligence, meant that a clear framework was considered essential for success. The key observations from case-based exemplars were synthesized to create a sustainable framework to guide the growing program.

## Emergent Model

Selecting staff with an immediate aptitude for course preparation and moderation within a new educational setting was identified by all institutions as a critical prerequisite for any distance-mode online program. It was clear that schools needed to draw from the strengths of accomplished teachers, with an appreciation for the potential of ICT in the classroom, matched with strong competency in ICT and able to bring the strength of their real classroom into the virtual sphere.

Strong teacher aptitude needed to be supported by comprehensive, well-developed, web-based online content, delivered through a user-friendly, stable, learning management system located within a student-centred portal. It also emerged that 'success' in course delivery was more likely when courses ran asynchronously as opposed to video-conferencing models that were of necessity more heavily dependent on technical support and peripheral technologies. Other commonly identified components in online course delivery at a school level involved:

1) clearly articulated vision for online course delivery within the school
2) evidence of considered approaches to a specific online pedagogy
3) the strength of the wider school teaching & learning environment
4) clarity of, and standardizing within, online course formats
5) a clear understanding of the role of staff in successful course delivery
6) sustained commitment to recurrent staff training
7) evidence of student suitability to the online environment prior to course commencement
8) the strength of the online community surrounding a course
9) the technology and infrastructure used

Evidence suggested that all played a significant part in contributing to the success of the virtual teaching and learning environment at the secondary school level.

### 1. Clearly articulated vision for online course delivery within the school
*"The success of an online program depends largely on a clear and cohesive vision providing direction."* Sigurlaug Kristmannsdóttir, Verzlunarskóli Íslands, Reykjavik.

Clearly articulated and evident whole school vision in relation to the use of online education in the classroom (both real and virtual) appears to be a key pre-requisite for sustaining success in web-based learning. The success of online course delivery was evidently directly linked to the strength, purpose, clarity and direction of whole school vision in connection with managed online learning environments across the school. Specific program goals, linked to an overarching vision statement, seem to be highly significant in facilitating a number of important outcomes.

**Factors observed to be of significance:**

- Clearly articulated vision for online education within a school, matched with strong whole-school educational leadership.
- Passionate educators in key roles within the online program.
- Broad understanding and engagement by general staff in the vision.
- Ensuring that the online program is both manageable and well-managed.
- A willingness by individual staff to grow the vision.
- Student and parent understanding of the potential of online education.
- Preparedness to entertain flexible and innovative staffing structures to support online teaching.
- Effective financial strategies for the design, creation and delivery of online course material.

## 2. Evidence of considered approaches to a specific online pedagogy

Teachers working within the online environment need to have a clear understanding of the pedagogy underpinning all classroom practice and choices in both their real and virtual classrooms. Teachers need to become artists within the virtual classroom — using the creativity and flexibility of the online environment to create a sense of dynamic interaction. Only accomplished educators should be allocated classes in an online environment; those able to transfer their understanding of good practice in the real classroom into the virtual environment. Teachers should also be prepared for the additional initial effort required to develop exemplar online material, whether for blended or fully distance delivery.

**Factors observed to be of significance:**
- Pedagogy courses for staff: teacher development in understanding of genre; an emphasis on professionalism.
- Clear understanding of online pedagogies and a willingness to experiment within that medium.
- Teacher ability to assess how to use available online media elements in a way that supports the learning process: lesson preparation should include both technical and pedagogical questions.

- A clear teacher persona in the online class - the importance of being an identifiable and understood person within their web classroom.
- The online environment should retain a student-centred approach with a clear focus on the learning process prior to specific content preparation.
- Online methodologies used to create personalised learning pathways.
- Online course development is well-suited to team development approaches

## 3. The strength of the wider school teaching & learning environment

Once a teacher has understood the pedagogical framework associated with web-based learning, the targeted construction of the teaching and learning environment is a key consideration. The online teacher needs to replicate the dynamics and strength of the physical classroom in their virtual class environment. At its best, a web course is able to combine the advantages of independent learning and classroom teaching. The online teaching and learning environment should provide the possibility to learn, while at the same time allowing the students themselves to take responsibility for using the environment effectively. Given the availability of tracking tools within a LMS, there is an obvious potential for a teacher to have a far greater immediate understanding of specific student progress during a course.

## Factors observed to be of significance:

- The teacher needs to actively create an interactive student-centred online teaching and learning process.
- Learning should be sequential and based on identified student levels of understanding.
- The web-based environment should be constructed so that all students contribute to, and collaborate with, the rest of the online learning classroom community.
- Learning expectations and course instructions need to be conveyed very clearly in the virtual teaching and learning environment.
- Course development processes should include continual adjustment of course material.
- Group-based differentiation is possible in the virtual teaching and learning environment.

## 4. Clarity of, and standardizing within, online course formats

*"Teachers need to be able to bring the classroom into the computer."* Sigurlaug Kristmannsdóttir, Verzlunarskóli Íslands, Reykjavik.

Good instructional design is a pre-requisite to success in the online environment. Students will flounder if any online content is just a list of tasks to be progressively completed. There is a need for material to engage the student, through the diverse use of interactive media elements. Consistent use of embedded video and audio components in particular can significantly enhance the interaction

between teacher and student. Induction processes are also highly important in establishing an online community supporting a particular course. Additionally, the use of a common course interface, along with consistent templates and style guidelines within courses, will contribute to establishing familiarity for students in a virtual classroom. Students need to be proficient with the selected Learning Management System and any other course infrastructure supporting the delivery of an online course.

**Factors observed to be of significance:**
- Course instructional design is very important in the online environment.
- Standardized course templates, style sheets, outlines, overview and assessments all promote effective learning in the virtual environment.
- Using standardized instructions across courses can assist familiarity within an online environment.
- Clear identification of key learning content, delivered as distinct modules, is important in course design.
- Extensive feedback systems are very important (e.g. forums or email).
- Online courses should intentionally cater for different learning styles and a range of multiple intelligences.
- Course content should undergo recurrent updating.
- Teachers should focus on reaching specific objectives in lessons.

**5. A clear understanding of the role of staff in successful course delivery**
*"A web course without a teacher is like an empty classroom with a pile of handouts left on the desk for the students."* Marianna Leikomaa and Hanna Torp, Tampere Polytechnic, Finland

The selection of staff for teaching within an online program is closely linked to student success. Experience would suggest that while all staff can be expected to successfully incorporate blended learning methodologies into their classes, only highly accomplished classroom teachers should be allocated to fully online courses in the virtual environment. Highly accomplished teachers are better placed to understand the pedagogical shift required to move their active and dynamic real classroom into the virtual environment.

**Factors observed to be of significance:**
- Online teachers need to select into a program, rather than being allocated.
- Teacher resilience is highly important, especially when encountering unexpected challenges or time demands.
- Student retention in courses is strongly influenced by teacher attitude.
- Excellence and success in the online classroom is clearly linked to the strength of individual teachers.
- Staff support of a twenty four hour response time to any student question.

- Online teachers with a strong level of ownership of their individual online students will influence the level of success significantly.
- High expectations that all staff use diverse technology.
- It is important to predict or recognise teacher stress issues and then take steps to address them.
- Active strategies to avoid student isolation in the online environment, in order to minimize risk of withdrawal from course.
- Targeting specific management positions to support the online program is a significant factor for success.

## 6. Sustained commitment to recurrent staff training

The use of online content in both blended and distance-delivery modes requires a willingness among staff to engage in a significant and on-going level of professional development. Exemplar programs might include staff training delivered via online methodologies. Staff need to be aware that there will be an initial and significant additional preparation load when involved in specific online course delivery. This will be compensated in time by well-developed courses that need minimal adjusting from year to year.

## Factors observed to be of significance:
- Heavy emphasis on recurrent staff training and continual teacher improvement was a common factor in successful programs.
- Online teachers benefit from themselves being a member of an active online learning community in order to understand the environment, especially the use of a LMS.
- Professional courses for staff delivered online should use the same LMS as the students.
- Teachers need to be fully trained in using all the software available for use in the virtual environment.
- The availability of key staff to provide continuous professional development delivered at the point of work, not via in-service.
- Staff should have a constant focus on excellence and standards.

## 7. Evidence of student suitability to the online environment prior to course commencement

All students will benefit from a well-organised virtual environment. Students contemplating taking distance-mode online courses need to have a high individual level of resilience, diligence and commitment to independent learning, as well as a strong digital literacy. Some students are not suited to distance-mode online courses. Goal oriented students are significantly more suited to a fully distance-delivery online environment. The age of students is also clearly a significant factor in successful completion of courses. Students need to take clear ownership of their

learning and view active participation in the virtual class community as a significant part of any online course.

**Factors observed to be of significance:**
- Student ownership of their responsibility to learn.
- Regular student participation in the online class community.
- Student maturity as independent learners.
- Clear individual learning goals and motivation to complete the course.
- Student willingness to interact with their online teacher.
- Student access to virtual course advisers.

## 8. The strength of the online community surrounding a course

*"Teachers need to be very visible to the students in the virtual community."* Anne Rongas, Kotka High School for Adults, Kotka, Finland

Success in the online environment clearly requires a very visible class community. The time taken to induct students into the virtual classroom environment for a course, along with a recurrent focus on developing a distinct and positive class environment, would appear to significantly influence student learning outcomes and the retention rates of those studying fully online courses. Students need to feel secure, confident and not isolated within the online environment.

**Factors observed to be of significance:**
- Teacher attention should initially focus on establishing a clear and inter-active learning community surrounding each course.
- The strength of the online community surrounding a course is in itself a key factor to fostering success within that environment.
- Staff development should focus on successful ways to develop online learning communities, rather than teaching isolated students.
- Assessment methods should include a level of collaborative work from within the online class.
- A student's rapport with the teacher is critical to success.

## 9. The technology and infrastructure used
Teachers working in the virtual environment need to feel confident in the technical side of web-based learning. Online pedagogy requires a stable networked environment, where teachers have justifiable confidence in the ability of the technology to handle the requirements of online learning. The infrastructure needs to support a model that involves the teacher as the active developer of lesson specific content delivered via a student-centred portal within a stable learning management system.

**Factors observed to be of significance:**
- The reliability and ease of use of school IT infrastructure.
- The availability of technical support as and when needed.
- The simplicity of the IT infrastructure within a classroom, together with its capacity to incorporate multimedia elements.
- The capacity for any LMS to identify those students online at any time.
- Student understanding of the LMS infrastructure.
- Course induction processes that includes a focus on course infrastructure.

## Conclusion

While there has been considerable research in the last decade into different aspects of online course construction and delivery, much of that research has focused on either tertiary or vocational courses. There is now as critical a need to review the emergent online course frameworks operating at the secondary school level to ensure the quality of educational provision both existing and in the future.

The observation/reflection/synthesis process undertaken by SCIL significantly assisted NBCS in the process of creating a strong framework on which to build the NBCS online distance-mode courses. There has been a rapid uptake of online course enrolments necessitating careful management of the program:

2006: 15 students

2006:125 students

2007: 204 students

2009: 300 students (projected).

The framework that was established as a synthesis of case study exemplars to guide the foundational years of the online course program at NBCS has proven to be very suitable. Now into its third year of operation, the factors considered to be most critical to the long term sustainability of the program in NBCS experience include:

- providing sufficient time and support to online teachers as they develop new online courses;
- ensuring teachers have a very clear appreciation for sound pedagogy within the online environment;
- keeping the teacher presence in the online community very visible and active;

- conducting a workshop program for all online students once per term to support the coursework; and
- the targeted development of new technologies that can integrate into the Moodle environment, e.g., the creation of digital learning objects that can be uploaded into the Moodle environment or sent as flash animations to mobile devices.

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