Quality assurance in online education: The Universitas 21 Global approach

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Abstract
Despite the proliferation of online education, concerns remain about the quality of online programmes. Quality assurance (QA) has become a prominent issue, not only for educational institutions and accreditors, but also for students and employers alike. This paper describes some of the rather unique QA processes used at Universitas 21 Global (U21G), one of the new breed of online academic institutions, and its relation to U21pedagogica, the independent agency that approves U21G's programmes. These distinctive QA processes relate to five main areas, namely, content authoring, courseware development, adjunct faculty recruitment, pedagogy and delivery. The authors believe that these QA processes have contributed significantly to student satisfaction and student retention at U21G. Furthermore, these QA processes can also be adapted to suit more traditional 'brick-and-mortar' universities offering online programmes.

Introduction
Over the past decade, online education has become increasingly more commonplace at institutions of higher education (Schrum & Hong, 2002). In 2001, 1979 out of the 5655 higher education institutions accredited by accreditors recognised by the US Department of Education or Council for Higher Education Accreditation (CHEA) offered some form of distance learning, some of which leads to degree acquisition (CHEA, 2002).

Even as online programmes proliferate, many stakeholders remain apprehensive over the quality of online education in comparison with more traditional face-to-face forms of education (Barbera, 2004; Twigg, 2001). For instance, students are concerned about the richness of the learning experience and whether qualifications earned via online
programmes enjoy comparable recognition vis-à-vis those earned through face-to-face programmes. Employers are concerned about the effectiveness of learning and whether an online programme can truly prepare students for roles in the workplace. Academics are concerned about academic rigour and level of intellectual stimulation and challenge. Similarly, governments and accreditation agencies are concerned about quality standards and the integrity of the institution delivering online education. Quality assurance (QA) therefore plays a critical role in allaying stakeholder concerns regarding the quality of online education, and is becoming an increasingly important aspect that educators, administrators and policy makers are finding hard to ignore.

This paper examines the QA processes used at Universitas 21 Global (U21G), a newly established academic institution that delivers its academic programmes entirely online. Consistent with the practices in reputable academic institutions, U21G uses a variety of QA processes to ensure the quality of its programmes in areas such as curriculum review. More significantly, U21G has developed QA processes in a number of other academic areas germane to online education. The focus of this paper lies in the QA processes of five key areas, namely, content authoring, courseware development, adjunct faculty recruitment, pedagogy and delivery.

U21G

Background

U21G is a joint venture between Universitas 21 (U21) and Thomson Learning. U21 is a network of 18 international universities spanning four continents, which includes McGill University, University of British Columbia, University of Virginia, University of Birmingham, University of Edinburgh, University of Glasgow, University of Nottingham, Lund University, Korea University, University of Melbourne, University of New South Wales, University of Queensland, University of Auckland, National University of Singapore, University of Hong Kong and Fudan University. Established in 1997, the purpose of U21 is to ‘facilitate collaboration and cooperation between the member universities and to create entrepreneurial opportunities for them on a scale that none of them would be able to achieve operating independently or through traditional bilateral alliances’ (Universitas, 2006). With the rising trend in online education, the universities within U21 came to the conclusion that it would be too expensive and onerous for any single university to develop and manage a suite of high-quality online academic programmes. As such, they decided to collectively pool together their resources and sought out an appropriate industry partner in Thomson Learning to establish U21G. U21G has its headquarters in Singapore, and has regional offices in Malaysia, Hong Kong, India and Dubai.

U21 established U21pedagogica as a formal QA body to ensure that the academic standards in U21G are consistent with those in the U21 universities. Operating independently from U21G, U21pedagogica’s role is to review and approve U21G’s programmes, courseware and adjunct faculty appointment. At the core of U21pedagogica is the Academic Standards Council (ASC), which has representatives from all the U21G
member universities. The ASC utilizes a panel of academic experts, which includes senior faculty members from the U21 member universities.

The goal of U21G is to provide high-quality distance education. U21G began offering its first programme, the U21G Master of Business Administration (MBA), in July 2003. The MBA has, to date, attracted about 600 students (this excludes a further 300 non-degree students sponsored by corporate customers). The typical profile of a U21G MBA student includes individuals in their mid-30s holding a middle management position. About 80% of the MBA students are from Singapore, India and the Middle East regions, reflecting the current focus of U21G's marketing and business development efforts. A second major programme, the Master of Science in Information Systems Management, was launched in early 2006.

U21G utilizes a growing team of over 100 adjunct professors. Adjunct professors typically hold regular faculty positions at other universities, and are contracted by U21G to serve as online instructors (although the role here is more accurately described as facilitating student learning rather than delivering instruction in the form of lectures) for specific class sections. U21G also has a core team of experienced professors who serve as full-time faculty members, whose job is to oversee the adjunct professors and deal with the academic administration. The full-time faculty members at U21G are also involved in courseware maintenance, the development of U21G's forthcoming programmes, student recruitment and academic research.

Admission requirements
One of the criticisms often leveled at for-profit online academic institutions is the drive for revenue and enrolment numbers at the expense of the quality of student intake. To preserve its reputation, U21G maintains admission standards that are comparable with those found at the U21 member universities. For direct entry onto the MBA programme, all applicants are required to have a first degree from a recognised institution, demonstrated proficiency in English, at least 2 years relevant management work experience and a Graduate Management Admission Test (GMAT) score of at least 600. For applicants with 3 or more years of relevant management work experience, the GMAT requirement can be waived. As part of the MBA application form, the applicants are required to write an essay of at least 500 words on why they have decided to study for an MBA and what they hope to achieve from it. In addition, the applicants are required to provide two referee reports in support of their application. All applications are reviewed formally by the U21G admissions committee.

Learning approach
Programmes offered by U21G are delivered entirely online, i.e., there is no face-to-face classroom study. Class sections on the MBA programme are 12 weeks in duration, and class sizes are typically between 20 and 35 students. The students are provided with courseware specifically designed by U21G. The courseware contains all the necessary contents including textual material, graphics, interactive exercises, assignment questions, test questions, online library and links to other online resources. Each section is

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led by an adjunct professor who prepares a study schedule over the 12 weeks. During the 12 weeks, a student is asked to complete between four and six assessed assignments that involve analysis of business cases drawn from sources such as the Harvard Business School, the Ivey School of Business and the European Case Clearing House. About one half of these assignments are team assignments wherein students work in teams of between three and five students. Moreover, the students are assessed on their contribution to peer learning on the basis of their participation in the online discussion forum. In total, the students are expected to spend 10–12 hr of study per week per class section.

There are no web lectures. Because students may be geographically and temporally distributed, U21G adopts an asynchronous learning approach. Students interact among themselves and with instructors using a range of web-based communication tools, such as discussion forums and email, all of which are provided within U21G’s learning platform. However, students are given the option to use synchronous tools such as online chat and audio conferencing. At the end of the 12 weeks, students are required to take an open-book open-web (OBOW) exam (Williams, 2004). Students are given 24 hr to complete the OBOW exam, which is based around an authentic case with a number of open-ended questions presented.

QA in content authoring
Selection of content author and content reviewer
Content authoring refers to the writing of course content and materials. Unlike a brick-and-mortar university where content authoring is typically performed by a single faculty member, the content authoring process at U21G involves multiple stakeholders, namely, the content author, content reviewer, U21G programme director, U21G project manager and U21pedagogica.

The first stage of content authoring is the identification and selection of the content author by the U21G programme director. The content authors are selected primarily on the bases of their research publications, relevant teaching experience and academic standing in the subject area. Content authors are typically full and distinguished professors who do not necessarily need to be employed by one of the U21G member universities. At the same time, the U21G programme director also identifies a content reviewer who is usually an experienced professor of high academic standing. To maintain objectivity, the identities of the content authors and the content reviewers are always concealed from each other. The role of the content reviewer is to ensure that the content reflects the academic rigour befitting the level for which the subject is intended, analogous to the anonymous reviewers used to review papers submitted to a journal.

Scope document template and review
Following a template provided by the U21G programme director, the content author first writes a scope document that describes, among other things, the learning outcomes of the course, the topics to be covered, the major assignments and any case material to be used. This gives the U21G programme director a clear idea of what content to expect. The scope document is reviewed by the content author. Feedback
from the content reviewer is passed back to the content author via the U21G programme director, and the scope document is revised accordingly.

The scope document is then passed to U21pedagogica, which identifies two or three individuals on their expert panel with the relevant expertise to review the scope document. The feedback from the experts are collated by U21pedagogica’s ASC, which then makes a decision to either approve the scope document, approve the scope document subject to minor changes, request a resubmission of the scope document subject to major changes or reject the scope document completely. This decision is not always an easy one as contradictory feedback from individual experts may require further deliberation within the ASC. In this process, there may be several iterations between U21pedagogica and U21G before a scope document is approved by U21pedagogica.

Content standards and orientation
Once a scope document is approved, a U21G project manager is assigned to manage the project, which involves the actual writing of the content and subsequent courseware development (described in more detail in the next section). At U21G, the project managers are members of the Instructional Design (ID) team and are individuals who have had significant prior experience of ID methods and online courseware development. Before the content author begins writing the content, the content author undergoes an orientation session, typically via conference call, with the project manager. The purpose of the session is to explain the U21G content standards so that the content to be written can easily be translated into the online format. For example, U21G content standards require that every course comprises between five and eight segments, and that each segment contains between five and eight topics. The end of every segment has to conclude with an assignment that tests students’ understanding of the topics covered in that segment, and the end of every course concludes with a final summative assignment designed to test students’ understanding of the subject as a whole. During the orientation session, the project manager has to negotiate a schedule of content completion with the content author, which typically takes between 3 and 4 months. The schedule is drawn up with milestones for each segment, so that the content is written and delivered in stages by the content author.

Content peer review
After the content for each segment is written, the project manager passes the content to the content reviewer for review. Feedback from the content reviewer is returned to the content author, who then revises the content accordingly. During this double-blind review process, the content author may disagree or take issue with the feedback from the content reviewer. In such events, the U21G programme director will mediate between them and where necessary, seek the opinion of another expert in the subject area. Thus, the final outcomes of the content authoring process are materials written and peer reviewed by at least two experts.
QA in courseware development

ID standards

The aim of the courseware development process is to translate the subject content, which typically exists in the form of text-based documents, into engaging and interactive online courseware. This work takes between 4 and 6 months, and is performed by an ID team, managed by the project manager, comprising a lead instructional designer, content editor and media developers.

Part of this work is guided by the U21G content standards, which include ID standards that ensure all online courseware developed by U21G has a consistent 'look and feel'. The ID standards cover presentation aspects, such as design layout, courseware navigation and rendering. In addition, the ID standards describe pedagogical aspects of how the courseware is developed. For example, one standard guideline is that every topic is followed by at least three multiple-choice self-assessment questions that test a learner's understanding of the topic. Another standard guideline is that every topic contains at least one interactive exercise. The standards also cover various technical compliance standards. For example, all courseware must run effectively in Internet Explorer, Netscape, Firefox and Opera browsers over a 56K modem. In addition, U21G requires that all courseware must be shareable content object reference model and World Wide Web Consortium compliant. Conformance to these standards is checked by the technical standards manager at U21G.

Collaborative development

Although the U21G content standards define the 'look and feel' of the courseware, the role of the lead instructional designer is to 'bring the subject content to life' in the courseware through the use of multimedia, animations, exercises and other interactive activities. The content author often has little experience of online courseware design, and needs the lead instructional designer to provide creative input. The lead instructional designer does not possess domain expertise and needs the content author to provide content-specific input. Thus, during this process, the lead instructional designer consults closely with the content author to bounce ideas and to validate the appropriateness and correctness of various courseware elements.

As each segment of the courseware is completed, it is made accessible to the content reviewer for review. The content reviewer, who, like the content author, is not someone typically experienced in online courseware design, is also given an opportunity to comment on the courseware.

The role of the content editor is to edit all written content, and ensure clarity and readability. Given the international student base of U21G, it is important to eliminate the use of localised terms and to maintain a style of writing that is 'neutral' and consistent with the style used for other U21G courseware. In addition, the content editor reads the content from the point of view of a student, and so is in a position to make further suggestions about improving the structure and flow of the course content, or to indicate points in which more expansion or explanation would be helpful.
Once the courseware has been completely developed, access to the courseware is then given to U21pedagogica. Because the courseware will have been developed according to the scope document, there should not be any major issues raised by the reviewers in relation to the content of the courseware. Often, however, the reviewers will identify minor changes to the courseware. U21pedagogica will either approve the courseware as is, identifying the changes as optional or approve the courseware subject to the changes being made. Depending upon the seriousness of changes, U21pedagogica may ask U21G to resubmit the courseware to them for a further review. Although unlikely, U21pedagogica possibly will reject outright the courseware at this stage given their approval of the course’s scope document.

QA in adjunct faculty recruitment
Selection criteria
The adjunct professors who teach online classes at U21G are typically full-time faculty members at other universities. Adjunct professors are contracted by U21G to teach specific class sections. To qualify as an adjunct professor, candidates must meet certain requirements dictated by U21pedagogica, namely,

- to have a PhD related to the designated area of teaching;
- to have significant teaching experience, particularly at a graduate level, in the designated area of teaching;
- to have significant research experience related to the designated area of teaching, as evidenced by peer-reviewed publications;
- to have, ideally, a record of external consultancy and industrial experience.

U21G first reviews the curricula vitae (CVs) of the candidates to ensure that they meet the previously mentioned requirements. If so, they are invited to participate in the Faculty Training programme (FTP).

FTP
The FTP aims to familiarise participants with the online pedagogy and the learning platform used at U21G. The FTP is conducted as an online class over a 3-week period, with an experienced full-time faculty member of U21G as the ‘instructor’. The participants are expected to spend about 10 hr per week on the FTP. At the end of the FTP, the participants should have a good understanding of how to teach class sections. This is important, as the participants may not have had any prior experience of online teaching, or may have taught online elsewhere but follow a different pedagogy.

During the FTP, role playing is used to simulate a class section to afford participants the perspectives of both the instructor and the student. This is invaluable, because all participants who eventually become U21G adjunct professors would have gained a first-hand learning experience comparable to that of their students. In addition, the FTP instills good online teaching practices, such as communication etiquette in the online environment, awareness of cultural differences, collaborating effectively in virtual teams and facilitating discussion forums. The FTP also makes participants aware of
U21G's service levels, such as responding to email enquiries from students within a 24-hr period and providing feedback on assignments within 7 days after submission.

The performance of each participant is closely monitored by the instructor during the FTP. Good performance in the FTP is a strong indicator that the participant is likely to be a good online instructor. During the FTP, however, some participants struggle to master the learning technology platform, exhibit poor online manners or show little enthusiasm for online teaching. The FTP therefore provides U21G with an opportunity to evaluate each participant and to filter out those participants who do not appear suitable.

_U21pedagogica approval_

The CVs of the candidates who perform satisfactorily on the FTP are eventually submitted to U21pedagogica. In the submission, U21G explicitly identifies the subjects for which approval for the individual is being sought. These subjects must be in line with the candidate's teaching and scholarly experience. For example, a candidate with expertise in finance would not be approved to teach organisational behaviour. U21pedagogica refers each CV to its panel of experts who make recommendations on the candidate's approval.

_QA in pedagogy_

_Ensuring collaborative learning_

One of the claimed aspects of U21G's pedagogy, and no doubt that of many other providers of online education, is collaborative learning. In the real world, students will be required to work as part of a team, and, increasingly, much of this teamwork will take place electronically without face-to-face interaction. One of the ways in which U21G attempts to achieve collaborative learning is to design assignments in a way that explicitly encourages teamwork. An example of a team assignment, taken directly from the course MBA650 E-Business, is given in Figure 1.

The instructions clearly indicate that this is a team assignment. Teams typically comprise three to five students, and are normally self-formed. As well as email, each team has a workspace that includes an online discussion board and a file repository, which are accessible only by the members of that team. The adjunct professor will monitor email and discussion board activities within each team's workspace to ensure that all students are actively participating. If issues arise during a team assignment, the students are encouraged to contact the adjunct professor immediately for assistance and resolution. When the team submits their assignments, they do so through the assignment submission facility on the U21G learning platform. Teams that have not submitted their assignment are flagged by the learning platform to the adjunct professor who can then follow up directly with the team members.

On completion of a team assignment, each member of the team is also required to complete a self and peer assessment. The self and peer assessment allows students to rate their contribution to the team assignment and also the contribution of each team member.
Instructions
Read the following case and work with your team to answer the questions that follow. For the segment assignment, analyse the Eastman Chemical company case study and answer the following questions.

Title: Constructing an e-Supply Chain at Eastman Chemical Co.
Case No.: #HKU222
Date: 25 September 2002
Authors: Yen, B., Farhoomand, A.F. and P. Ng.
Publisher: Harvard Business School case (Field) study
To view this case, go to the private Harvard website. If you are a new user, click here for instructions on how to enter the site.

Questions
1. What were the key success factors facing Craig Knight in his quest to sell Eastman's approach to e-Business?
2. What were the major choices of alternatives that Mr Knight had?
3. List and describe the risks facing Knight and Eastman in their e-business initiative and suggest for each risk what you would have done to reduce or mitigate that risk.

Submit one response document by email to your instructor. Your submission should be no more than 1000 words. Your instructor will announce when to submit.

Click on the link below to read some helpful tips for working with your team.

Figure 1: A sample team assignment

member. This is done through the following set of questions, the responses of which are measured on a 5-point Likert scale:

1. collection of data;
2. data analysis;
3. coordination and writing of submission;
4. overall quality of input (creative ideas, insights);
5. overall contribution to the efficient functioning of the team.

Importantly, the scores received in the self and peer assessment have an adjustment effect on the final mark awarded to a student for the team assignment. The use of a self and peer assessment system has been found to serve as a strong deterrent to 'free riding' (Salomon & Globerson, 1989). Through the self and peer assessment system, the adjunct professor is also able to identify those students who have not performed well in team assignments. Such students can then be given further guidance by the adjunct professor on how to improve their contribution to team assignments.

Monitoring student participation
A number of general tools are used to monitor student participation. The most basic of these tools is the login report that is automatically generated by the U21G learning platform and shows the level of frequency and duration of login for every student. Login reports are available to both the adjunct professor and academic staff at U21G.
student has been inactive, ie, no login activity, for more than 1 week, a polite email is sent to the student's private (non-U21G) email address. If students are inactive for 2 weeks, U21G will attempt to contact the student by telephone. If telephone contact is unsuccessful, the student is sent an email explaining the situation and reminding them of the academic penalties associated with continued nonparticipation. As a matter of policy, students are automatically withdrawn from the class section if no student activity is reported after 3 weeks from the start of the class section. In most cases, however, the email reminder and the telephone call are sufficient to prompt the student into action.

As with many other online programmes, U21G students are typically studying part-time and hold full-time jobs during the day. At U21G, the adjunct professor will provide students with a detailed study schedule at the start of every class, which lists all the assignments, indicating those that are team assignments and those that are individual assignments, and the submission dates for each. The purpose of the study schedule is to establish, at an early stage, the study commitments so that students can plan their other professional, family, social and other personal activities around the study schedule. There are therefore no 'surprises' on the part of the student.

Another set of tools that can be used to track student participation is the gradebook and assignment submission tools. These tools highlight students or teams who have not submitted assignments by the submission deadline. Because assignments are set throughout the duration of the class section, the gradebook and assignment submission tools can also be used to track student progress. The gradebook also allows adjunct professors to check the marks awarded to a student and to identify students who might be having problems or appear struggling in the class. For example, if the adjunct professors notice a significant deterioration in marks, they can contact the student directly.

As with most forms of online education, online discussions boards are one of the main collaboration tools, so it is worth describing how participation in online discussion boards is managed. Specific questions are first crafted into the courseware to explicitly 'kick off' activity on the discussion board. An example of such a question is given below:

Read this article by Sawhney and Parikh and respond to the question below.
How is value created and who gets it in the new economy?
To respond to the question, form a team of two to three students with your fellow classmates and post your answer to the Discussion Board.
Follow up this activity by reviewing the postings by your fellow students. This should be done individually. Select at least two postings that are different from your team and respond to them through the Discussion Board. Your comments and feedback should be thoughtful and helpful in expanding the response to the question.

Here, students are requested to read a paper first and then form a team (typically a team comprises three or four students). Note that teams are self-formed, and students will,
using the various collaboration tools, network with each other to find suitable team members. If any students are unable to find a team, which in practice is quite rare, the professor will assign them to a team. Students within the team, a setting that encourages more intimate interaction, will then discuss the problem and produce a joint response that is shared with all students in the class. Students then individually comment on the postings of the other teams. Students therefore benefit from having discussion at both a team and class level. In addition, by presenting a specific question, the discussion starts off in a precise and directed manner with the student being clear about what they are meant to discuss. During the course of discussion, however, new threads may naturally emerge. The instructor facilitates the discussion by providing feedback on specific postings, summarising key points and steering the discussion as necessary.

Using the reporting tool for the discussion board, an adjunct professor is able to search for postings made by a particular student and to identify students who have not posted at all or posted infrequently. In such cases, the adjunct professor will prompt contributions to the discussion board from these students. A set of U21G guidelines for managing discussion boards has been developed, documented in Lam (2005). Participation in online discussions is assessed, and contributes 20–40% of a student’s final mark. Students would therefore be highly motivated to participate in the discussions to the best of their abilities. The high weighting signals the priority placed on online discussions. U21G provides adjunct professors with guidelines on how to assess online discussion in the form of a rubric. This assessment is based on both the quality and quantity of a student’s postings. For example, frequent postings that demonstrate new insights, introduce new concepts, show critical analysis or integrate ideas in novel ways attract the highest marks. Postings that simply repeat points made in other postings, regurgitate concepts from the online courseware or provide little in the way of new insight generally attract a lower mark.

**QA in delivery**

*Adjunct faculty supervision and mentoring*

For each class section, a full-time faculty member at U21G is assigned to serve as a supervisor and mentor to an adjunct professor. The full-time faculty member works closely with the adjunct professors to guide them through the preparation before a class starts. This involves, among other things, creating a study schedule, identifying assignments and creating topics in the discussion forum. This process is particularly important for adjunct professors who, although having completed the FTP, are teaching a class for the very first time.

The full-time faculty member also monitors the adjunct professor over the 12-week period of a class section. During this time, the full-time faculty member will provide ongoing advice and guidance. For example, the full-time faculty member may suggest ways to generate greater level of participation in the discussion forum if the adjunct professor is having difficulty in eliciting contribution from students. The full-time faculty member also keeps a close watch on adjunct professors who, eg, appear inactive or
disengaged. The full-time faculty member can provide additional support for those adjunct professors who most need it or, in extreme circumstances, can take over the class themselves if the adjunct professor seriously underperforms or is unable to continue teaching the class.

The entire oversight process is invisible to the students, who only interact with and 'see' the adjunct professor. In this way, the full-time faculty member helps ensure that, as far as possible, students have a positive learning experience without being aware of the supervision and mentoring happening 'behind the scenes'.

**Student relationship executives (SREs)**

U21G has a team of SREs whose role is to serve as the first point of contact for any problems or queries of a nonacademic nature that students may have. SREs can be contacted by email, telephone or online chat. Many of the students' queries can usually be resolved by the SRE themselves. For example, students may have purely administrative questions or questions about how use the learning platform. If the problem is of a technical nature, SREs will direct the problem to the U21G technical support team. If the problem is of an academic nature that requires action or investigation on the part of the adjunct professor, the SRE may advise the student to contact the adjunct professor directly or may raise the problem to the full-time faculty member who is serving as supervisor for the adjunct professor. For example, if students contact the SRE about a lack of responsiveness from the adjunct professor, the SRE will raise this issue to the full-time faculty member.

SREs are proactive rather than reactive in meeting students' needs. They have a 'read-only' view of the interactions on the U21G learning platform and monitor the platform on a daily basis. In this way, SREs are able to anticipate and identify problems, and either resolve them or raise them to the full-time faculty member for resolution with the adjunct professor before they become more serious in nature. The SREs therefore provide a detailed monitoring function that would not be cost-effective or appropriate for the full-time faculty member at U21G to do.

**Student service levels (SSL)**

As education increasingly becomes more businesslike, students are seen as customers rather than simply consumers. At U21G, a set of SSLs has been developed. The key SSLs include the following:

- The adjunct professor shall normally respond to student emails and enquiries within 24 hr (although differences in geography between the student and adjunct professor may lengthen the actual response time).
- The adjunct professor shall normally mark and provide feedback on student assignments within 1 week of submission.
- SREs will normally acknowledge all student enquiries (received by email or phone) within 24 hr.
In many ways, the SSLs define the operational standards within the learning environment. The SSLs incumbent upon the adjunct professors are set out in U21G's adjunct faculty handbook, the adherence to which is stipulated in the contractual agreement with the adjunct professor. The SSLs are also enforced, as and when needed, typically through 'reminder' emails sent by the full-time faculty member supervising the adjunct faculty member.

A similar set of SSLs also exists for U21G's learning platform. As an online institution, it would be normal to expect high levels of technical reliability and availability. At U21G, availability, or the percentage of time that students are able to access the U21G learning platform, is 99.5%. This is at par with what one might expect of a commercial website. The complexity of the technical environment, however, means that many different components of the overall technology architecture might malfunction, such as the email system, online discussion boards, the online courseware and dead links within the courseware. U21G has therefore adopted a priority system whereby the most critical errors affecting students are immediately addressed by the technical support team at U21G, and lower priority errors are resolved within 2 hr, 1 or 5 days depending upon the severity.

Adjunct faculty evaluation and flexible hiring policy
At the end of the class section, the full-time faculty member carries out an evaluation of the adjunct professor's teaching performance. This is based on two main sets of inputs. The first is the student evaluation of faculty (SEF) survey, which students are required to fill in after every class section. The SEF comprises 10 individual questions relating to the adjunct professor's level of organisation, helpfulness, enthusiasm, feedback and responsiveness as measured along a 5-point Likert scale. The SEF also allows students to provide free-form feedback. The second set of inputs is based on the full-time faculty member's own experience and interaction with the adjunct professor. The evaluation process focuses on acknowledging strengths and excellence in teaching, as well as identifying opportunities for improvement. In addition, the process is two-way, as adjunct professors are also given the opportunity to comment on their teaching experience and highlight areas where, eg. they felt they would have liked to receive greater support.

Unlike a brick-and-mortar institution where faculty members are rarely removed for below-par teaching performance, the flexible hiring policy of U21G enables the best performing adjunct professors to be given preference when it comes to teaching future class sections. In this way, U21G is able to retain a core set of highly dedicated, enthusiastic and competent adjunct professors. Adjunct professors who perform significantly below par may not be asked to teach again for U21G.

Evaluation
Evaluation by students
Two instruments have been developed to enable U21G to collect feedback from students on the learning experience after the completion of every class section. These two survey-
based instruments are the student evaluation of subject (SES) and the SEF. The SES is designed to capture student feedback on the quality of the courseware, and the SEF is designed to capture student feedback on the quality of the instruction given by the adjunct professor. The questions in the SES are shown in the Appendix. Responses to the questions are measured on a 5-point Likert scale from 1 = strongly disagree to 5 = strongly agree. In addition, spaces on the survey form are provided for students to provide additional written comments. Although completion of the SES and student evaluation of teaching is mandatory for students, the results are anonymous to the adjunct professor and full-time faculty at U21G.

The average SES score is 4.3 out of a possible 5.0 (an approval rating of some 86%) on the basis of data collected from 615 respondents since August 2003. The average SEF score, with the same data set, is 4.09 out of a possible 5.0 (an approval rating of some 82%). The average SEF score represents the faculty performance of over 70 different adjunct faculty members, and now serves as a benchmark for U21G. Adjunct professors who fall below the average are either given additional mentoring by a full-time faculty member at U21G, or in severe cases, are not invited to teach at U21G again. In addition, U21G currently has a student retention rate of 95% (ie, the proportion of students who drop out because they are dissatisfied with the learning experience is 5%). Overall, the data suggests that students are having a positive learning experience, and does provide evidence to support the claim that the QA practices being followed at U21G are having a constructive influence.

**Evaluation by adjunct faculty**

A further instrument, the evaluation of subject by instructor (ESI), enables the adjunct professor to provide feedback on the online courseware, pedagogy, assessment instruments, workload and the quality of the students. The ESI provides important benchmarking information for U21G, as the adjunct professors are familiar with the academic standards at their own institution and so have a sound basis for comparison. The ESI comprises a set of 10 questions, the responses to which are measured on a 5-point Likert scale. The average overall ESI score is very positive, thus providing further evidence that the QA processes used at U21G are having a positive impact on the quality of U21G’s programmes.

**Feedback from corporate clients**

U21G also gathers feedback from the number of corporate clients with which U21G has agreements to provide corporate education to the client’s employees. Feedback from corporate clients could be particularly insightful, as they tend to be very forthcoming when problems or issues arise. The continuation of these corporate agreements with U21G, and in some cases the expansion of existing agreements, is a further indicator that the QA processes used at U21G are leading to a positive learning experience for the employees of U21G’s corporate clients.
Framework for QA

What can other institutions learn from U21G's experience of online education? Although it would not be appropriate for other academic institutions to simply replicate U21G’s processes, U21G’s experience does provide input into a proposed QA framework that can be used to guide online education initiatives at other institutions. The proposed QA framework is described in Table 1.

Table 1: Framework for quality assurance

<table>
<thead>
<tr>
<th>Component</th>
<th>Quality attributes</th>
<th>Questions</th>
</tr>
</thead>
</table>
| Programme Goals and objectives | • Are the goals and objectives of the programme clearly articulated?  
• Is the target audience for the programme clearly identified? |                                                                                   |
| Admissions         | • What are the admission requirements for the programme?  
• Are the admission requirements comparable to face-to-face programmes of similar quality? |                                                                                   |
| Rigour             | • How many courses are required to successfully complete the programme?  
• Approximately how many study hours are required to complete the programme?  
• How is the programme benchmarked against equivalent face-to-face programmes deemed of equivalent quality?  
• How qualified are the instructors who teach on the programme? |                                                                                   |
| Recognition        | • Who confers the degree?  
• Who accredits the programme and how recognised is the accreditation agency? |                                                                                   |
| Track record       | • How many years has the programme been running?  
• How many graduates has the programme produced?  
• What do employers think of the graduates from the programme?  
• To what extent has the programme facilitated the career development or earnings of the graduates?  
• What proportion of students are referrals from existing or previous students? |                                                                                   |
| Content Authoring  | • What are the credentials of the author who wrote the content?  
• What experience does the author have of writing content for this type of academic programme and the anticipated student profile?  
• What type of review process was the content subject to? |                                                                                   |
| Appropriateness    | • How appropriate is the content for the programme where it is used?  
• Is the content sufficiently challenging and how does it compare with the content found on similar programmes at other institutions? |                                                                                   |
<table>
<thead>
<tr>
<th>Component</th>
<th>Quality attributes</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>• What level of ID has the content been subject to?</td>
<td>• To what extent is the content engaging and interactive?</td>
</tr>
<tr>
<td></td>
<td>• To what extent does the content make use of media elements and other technological capabilities?</td>
<td>• To what extent is the pedagogical approach embedded in the ID of the content?</td>
</tr>
<tr>
<td>Maintenance</td>
<td>• How is the content maintained and what inputs are used to guide the maintenance process?</td>
<td>• How often is the content updated?</td>
</tr>
<tr>
<td></td>
<td>• Who updates the content?</td>
<td></td>
</tr>
<tr>
<td>Instructor</td>
<td><strong>Expertise</strong> • What are the credentials of the instructor who is teaching the course?</td>
<td>• What is their teaching experience and to what extent have they taught on a similar programme to a similar student profile?</td>
</tr>
<tr>
<td></td>
<td>• What experience do they have of online teaching?</td>
<td>• To what extent are they familiar with online collaboration and communication tools?</td>
</tr>
<tr>
<td></td>
<td><strong>Responsiveness</strong> • How often is the instructor required to login?</td>
<td>• How quickly is the instructor required to respond to student queries?</td>
</tr>
<tr>
<td></td>
<td>• How quickly is the instructor required to mark and provide feedback on assignments?</td>
<td>• How quickly is the instructor required to mark and provide feedback on assignments?</td>
</tr>
<tr>
<td></td>
<td>• How does the organisation monitor the performance of its instructors?</td>
<td>• How are shortfalls in performance addressed?</td>
</tr>
<tr>
<td>Instructor</td>
<td><strong>performance</strong> • How does the organisation ensure that instructors are able to competently use the learning platform?</td>
<td>• What faculty development programmes exist to improve online teaching skills?</td>
</tr>
<tr>
<td></td>
<td><strong>development</strong> • How does the organisation facilitate the sharing of best practice for online teaching?</td>
<td>• How does the organisation facilitate the sharing of best practice for online teaching?</td>
</tr>
<tr>
<td>Pedagogy</td>
<td><strong>Interaction</strong> • What is the level of interaction between students?</td>
<td>• What is the level of interaction between the student and the instructor?</td>
</tr>
<tr>
<td></td>
<td>• What types of collaboration tools are made available to instructors and students?</td>
<td>• What types of collaboration tools are made available to instructors and students?</td>
</tr>
<tr>
<td></td>
<td>• On average, how many students are there in a class?</td>
<td>• To what extent is the learning experience personalised to the individual student?</td>
</tr>
<tr>
<td></td>
<td>• To what extent is the learning experience personalised to the individual student?</td>
<td>• What level of personal interaction is provided to students by the instructor?</td>
</tr>
<tr>
<td></td>
<td>• What level of personal feedback is provided to students on their assignments?</td>
<td>• What level of personal feedback is provided to students on their assignments?</td>
</tr>
<tr>
<td></td>
<td>• To what extent is the use of multiple learning methods (individual assignments, team assignments, projects, case analyses, etc.) encouraged?</td>
<td></td>
</tr>
</tbody>
</table>
Table 1: Continued

<table>
<thead>
<tr>
<th>Component</th>
<th>Quality attributes</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appropriateness</td>
<td>• To what extent is the pedagogy employed appropriate to the type of programme and intended students?</td>
<td></td>
</tr>
<tr>
<td>Assessment</td>
<td>• How are students assessed?</td>
<td>• Are the quantity and quality of assessment items comparable with that found in a face-to-face programme deemed of similar quality?</td>
</tr>
<tr>
<td></td>
<td>• How is consistency in assessment standards across different classes and instructors achieved?</td>
<td></td>
</tr>
<tr>
<td>Monitoring and</td>
<td>• How are students' learning progress monitored?</td>
<td>• How are students who require additional learning support identified?</td>
</tr>
<tr>
<td>feedback</td>
<td>• How are students who require additional learning support identified?</td>
<td>• What kind of feedback is provided to students on the progress of their learning?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• How often is this feedback given to the student?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• What amount of feedback is personalised to the student?</td>
</tr>
<tr>
<td>Learning</td>
<td>• Is the learning platform professionally hosted?</td>
<td></td>
</tr>
<tr>
<td>platform</td>
<td>• To date, what has been the availability rate of the learning platform?</td>
<td>• How quickly is the organisation required to resolve nonavailability problems?</td>
</tr>
<tr>
<td>Availability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance</td>
<td>• What are the minimum technical requirements for students to use the learning platform?</td>
<td>• To date, what has been the average response time for the learning platform?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• To what extent does video and other bandwidth intensive media impact on the performance of the learning platform?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• How many concurrent users does the platform support?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• How is performance affected when users log in from different geographical regions?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• What tools are used to monitor performance and how often are these tools used?</td>
</tr>
<tr>
<td>Support</td>
<td>• What support exists for addressing technical and other issues that students may have?</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• What are the service levels and how quickly can students expect a response to the issues and problems that they raise?</td>
</tr>
</tbody>
</table>

ID, instructional design.

In the QA framework, we have identified several key components and their associated quality attributes. Not all the quality attributes have been discussed in this paper, but all have emerged out of U21G's experience of online education and are listed here to provide as comprehensive a QA framework as possible. Although desirable, it is not always possible to measure quality attributes. For this reason, we have identified a set of questions designed to assess the extent to which quality attributes have been satisfactorily achieved. The QA framework can serve as a useful guide for those academic
institutions launching fully online programmes, and to a lesser extent, blended programmes.

The need for QA frameworks is particularly pressing, as few internationally accepted QA frameworks exist for online academic programmes. Such QA frameworks often form the basis for accreditation. For business schools offering MBA programmes, three important external accreditation agencies are the Association to Advance Collegiate Schools of Business (AACSB), the Association of MBAs (AMBA) and EQUIS (European Quality Improvement System). However, to the authors’ knowledge, few, if any, fully online MBA programmes are accredited by AACSB, AMBA or EQUIS, suggesting that their accreditation processes are grounded in more traditional face-to-face MBA programmes that have yet to be extended to include online programmes.

Conclusions and future work
The authors believe that the QA processes that U21G has implemented have contributed greatly to the overall quality of U21G’s MBA programme and student learning experience. The QA processes at U21G, possibly those in other distance education universities, are more rigorous than those generally found at brick-and-mortar universities. For example, the double-blind review processes used in content authoring and the additional reviews of the content by U21pedagogica are stringent processes normally demanded of academic journal publication rather than the creation of teaching materials. Also, the flexible hiring policy in relation to U21G’s adjunct faculty has clear advantages over a permanent (and tenured) faculty whose teaching performance may have little bearing on their continued employment.

The U21G experience suggests that universities offering online academic programmes need to establish QA processes in five key areas, namely, content authoring, courseware development, adjunct faculty recruitment, pedagogy and delivery. One drawback of the QA processes used at U21G is that they are expensive and time consuming. Furthermore, the QA processes are quite specific to U21G’s conception as a fully online university, rather than a brick-and-mortar university offering online programmes. However, the authors believe that U21G’s QA processes can be adapted to better suit brick-and-mortar universities in several ways as follows.

In the area of content authoring, universities can identify existing courses that are taught face-to-face which have comprehensive and well-written course materials. Such courses would be ideal for conversion into online courses. In addition, a peer-review process could be conducted with another faculty member within the department. While this would unlikely be a blind review process, it would still provide the benefit of having a qualified and knowledgeable reviewer involved in the content authoring process. Alternatively, the university may identify and contract reviewers from other universities to serve as external reviewers. In the area of courseware development, universities can review online courseware from other universities to help establish its own ID standards. Collaborative development processes, using the services of an external ID company or perhaps an in-house team, could also be adopted in a way similar to U21G.
In the area of adjunct faculty recruitment, brick-and-mortar universities could either use their own faculty for teaching online courses or make use of adjunct faculty. Full-time faculty members who are enthusiastic about online education would be ideal candidates as online instructors given their high level of motivation. The development of a training programme similar to U21G's FTP could serve a dual purpose of preparing faculty members for online teaching and imparting good practice for online teaching. The literature has a wealth of information in relation to good practices for online teaching, which could be compiled into a university or departmental training programme. In the area of delivery, experienced online instructors in the department could serve as mentors for less experienced online instructors. Evaluation of the quality of online education could be conducted using student surveys similar to U21G's SES and SEF.

While U21G's model may not be appropriate for brick-and-mortar universities to emulate, the QA processes in the fundamental areas of content authoring, courseware development, faculty recruitment, pedagogy and delivery have universal relevance to any university involved in online education. Without addressing quality in all these key areas, a university runs the risk of delivering a poor online learning experience to its students. Importantly, U21G has managed to entrench QA processes in the organisation's modus operandi such that QA is not seen as an 'add on' to the administrative burden, but as a normal part of its operation.

Future work should be directed in two main areas. The most significant of these relates to QA in more progressive educational models. Currently, the educational model adopted at U21G follows that used in a traditional academic environment, wherein students are organised into classes, and instructors are responsible for teaching. However, more progressive educational models may involve student learning communities, significantly more peer learning, portfolio-based assessment and a greater facilitative rather than instructional role on the part of the instructor. In such progressive educational models, the QA processes may be somewhat different from those in the more conventional sense. A second area of future work concerns scalability. One of the purported benefits of online education is the ability to scale beyond the limitations inherent in a brick-and-mortar institution. In U21G's experience, however, the delivery of high-quality online education takes at least as much effort than teaching in a face-to-face environment. Increasing student enrolments inevitably means larger class sizes or more frequent classes, and additional workload on instructors. Hence, there is a need to conduct research into how online educational models can be made to scale successfully without compromising the quality of the educational experience.

References


Appendix

A. Subject Organisation
A1 The aims of the subject were clearly articulated.
A2 There was a clear overview of the segments, readings and assignments.
A3 The subject was structured in a way that helped me to understand.
A4 The various learning tools were used effectively (eg, chat, threaded discussion, assignments).
A5 The peer interaction in this subject contributed to my learning.

B. Subject Content and Workload
B1 The content of the subject was relevant to my learning needs.
B2 The content of the subject was engaging.
B3 The writing style of the subject material was clear and easy to read.
B4 The subject content was appropriately linked to the textbook and/or the readings.
B5 The textbook used in this subject was useful for my learning needs.
B6 The subject workload was appropriate for a reputable MBA programme.

C. Subject Assessment
C1 The assessment items were thought-provoking and challenging.
C2 The relative weightings of assessment items (eg, assignment, final project, examination etc.) were appropriate.
C3 The ratio of individual to team assignments was appropriate.
C4 The formats for assignments and the examination in this subject were clearly explained.
C5 The assessment methods and feedback in this subject helped my learning.
C6 The assessment criteria for the assessment items in this subject were clearly delineated.
C7 Assessment methods were compatible with the stated learning outcomes.
C8 The assessment was sufficiently flexible to accommodate my learning style and non-study related activities (eg, career, family).

D. Overall Rating
D1 Overall, how would you rate the quality of your learning in this subject? (1 = poor, 5 = excellent)

Overall Satisfaction
Overall, how would you rate your satisfaction level in this subject? (1 = poor, 5 = excellent)
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