

Quality Assessment for E-learning: a Benchmarking Approach

Third edition



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For the full-assessment, experts can be involved from the E-xcellence network.

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Introduction to third edition

Introduction to third edition

The European Association of Distance Teaching Universities (EADTU) is Europe's leading association for Lifelong Open and Flexible (LOF) learning in distance Higher Education (HE) (www.eadtu.eu). As well as e-learning, the model of LOF learning embraces a range of other characteristics such as open learning, distance learning, online learning, open accessibility, multimedia support, virtual mobility, learning communities, and dual mode (earn & learn) approaches.

This manual is the main product of a suite of EU funded projects undertaken under the auspices of EADTU: E-xcellence (2005-2006), E-xcellence plus (2008-2009) and E-xcellence Next (2011-2012). The overall aim of these projects has been to develop a methodology and supporting resources for the quality assurance of e-learning in higher education. The E-xcellence projects involve a core pool of experts from eight European Universities with a stake in e-learning developments (see below), and an extended group drawn from a total of 50 institutions during the course of the projects. The tools produced in the E-xcellence project have been used by institutions involved in the E-xcellence Plus and E-xcellence Next projects, and the outcomes of these exercises shared with respective national Quality Assurance Agencies in discussion events.

This edition of the manual is based on earlier versions, updated to reflect both the experience gained through engagement with institutions and agencies, and recent developments in e-learning practice. Changes and additions to the manual have been made by a group of experienced E-xcellence reviewers who contributed knowledge both of practice in a range of institutions and of the current literature. A series of online discussion meetings allowed the group to share views. Subgroups took responsibility for

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updating particular chapters, and all contributors were asked to comment on the full manual. A final edit of the entire manual was carried out by two members to ensure the content was comprehensive and consistent. We have tried to ensure that the use of English is accessible and a glossary is provided for specific terms used in e-learning.

There have been significant changes in the e-learning landscape over the period covered by the E-xcellence projects. The second edition of the manual acknowledged the increasing use of blended learning, where e-learning is used in combination with more traditional face-to-face teaching. It also included material that reflected the rise of social media and social networking sites, and the increasing visibility of Open Educational Resources (OER). This edition includes additional material to reflect more recent trends: the rapid rise of Massive Open Online Course (MOOCs), a surge of interest in learning analytics, and an increasing use of learning design in a more systematic approach to the development of e-learning courses. A number of other topics that are not yet widespread have also been included, such as an increased focus on personalisation, flipped approaches to teaching, virtual and remote laboratories, digital badges and e-portfolios.

There has been considerable interest in MOOCs since the previous edition of this manual, but also concerns raised about the quality of the MOOC learning experience. This manual will give useful background information which may be of some benefit to e-learning practitioners creating MOOCs. However, the E-xcellence benchmarks and associated review process are designed to evaluate a programme (i.e. a number of courses leading to one or a group of related qualifications) and the scale is therefore

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inappropriate to MOOCs which are typically short, stand-alone and not offered for credit. The OpenupEd Quality Label¹ offers an alternative to E-xcellence designed specifically for MOOCs. The OpenupEd Quality Label has been derived from E-xcellence, with closely-related benchmarks and the same overall aim of quality enhancement by self-assessment and review, but a lighter-touch process.

In our engagement with institutions, the E-xcellence team has reviewed a broad spectrum of uses of e-learning in institutions operating in both face-to-face and distance teaching modes. We have observed many common challenges in managing the integration of e-learning into pre-existing modes of delivery indicative of a convergence in teaching modes between two formerly distinct sectors.

The launch of the E-xcellence project was broadly coincident with the adoption of the Standards and Guidelines for the Quality Assurance of Higher Education in the European Higher Education Area (EHEA) at the Bologna ministerial meeting in Bergen in 2005. There since has been significant progress in the development of quality assurance systems in higher education led by ENQA (European Association for Quality Assurance in Higher Education). Quality assurance shaped by the European Standards and Guidelines (ESG) has received much attention at the institutional, national and European level through validation centres, universities (and their umbrella organisations), quality agencies, and national ministries of education. These have established systems to cover the full organisational and content-related quality assurance of HE institutions and their programmes.

¹ <http://www.openuped.eu/quality-label>

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However, few of these systems have so far developed a focus on the parameters of quality assurance relevant to e-learning. This has therefore been the objective of the E-xcellence project. One result has been cooperation on quality in online and open education between EADTU and ENQA under the SEQUENT initiative (Supporting Quality in E-learning European Networks)².

It has not been the intention of the E-xcellence project to interfere in any way with existing systems of quality assurance, and this manual is not a comprehensive guide to QA procedures, even in the context of 'pure' e-learning provision. It is assumed that institutions and regulatory bodies will have a defined set of processes which provide for the development, monitoring, evaluation and enhancement of HE provision. This manual offers a supplementary tool which may be used with these QA processes to allow the consideration of e-learning developments as a specific feature. An important aspect of the E-xcellence project is that it offers a European-wide standard, independent of particular institutional or national systems, and with guidance on educational improvement. The E-xcellence Associates scheme has established a community of institutions committed to using the methodology for quality enhancement.

Purpose of the manual

The primary purpose of this manual is to provide a set of benchmarks, quality criteria and notes for guidance against which e-learning programmes and their support systems may be judged. The manual should therefore be seen primarily as a reference tool

² <http://www.sequent-network.eu/>

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for the assessment or review of e-learning programmes and the systems which support them.

However, the manual should also prove to be useful to staff in institutions concerned with the design, development, teaching, assessment and support of e-learning programmes. It is hoped that course developers, teachers and other stakeholders will see the manual as a useful development and/or improvement tool for incorporation in their own institutional systems of monitoring, evaluation and enhancement.

A glossary of terms is provided.

Context

Currently there are few institutions that are not exploiting ICT in some way in support of their teaching and learning activity. It is intended that the manual will be relevant to this wide range of e-learning contexts, including the various styles of blended as well as full online provision. Where e-learning is offered alongside other forms of learning as part of an integrated or blended learning programme, it is important that the evaluation of e-learning elements of the programme takes place alongside those delivered by other means. This allows the relative contributions of different teaching/learning approaches and the role of e-learning in overall provision to be determined. A set of performance indicators, both qualitative and quantitative, chosen to reflect the effectiveness of the programme as a whole, needs to be employed.

One of the characteristics of an e-learning environment is the sheer amount of monitoring information which may be made available relative to more traditional methods of learning. Most e-learning platforms provide for an extensive level of monitoring and feedback, and student learning behaviour is usually more

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easily tracked and recorded in an e-learning context than in a traditional classroom. Also, external reviewers are able to gain access to the full range of course materials and to sample the delivery of the programme directly. This has obvious advantages for evaluation but also certain potential disadvantages associated with the sheer volume of data and opinion available.

The structured environment of the Virtual Learning Environment (VLE) presents one dimension of e-learning but institutions also need to consider the much more unstructured environment provided by the Web. The topic of learning analytics is one of growing interest as academics and others explore how learning takes place within online learning communities and social networks.

It is hoped that by focussing on specific benchmarks and criteria, institutions will be able to develop performance indicators which are fit for purpose in their own context.

Organisation of the Manual

The manual is organised into six sections covering Strategic management, Curriculum design, Course design, Course delivery, Staff support and Student support. Each section follows a similar format setting out benchmarks, detailed indicators, and guidance notes.

The benchmarks provide a set of general quality statements covering a wide range of contexts in which programme designers and others work. It is intended that the benchmarks will be relevant to virtually all e-learning situations. These benchmarks might usefully form the basis for an institution's quality self-evaluation where the full range of criteria and performance indicators are not judged relevant to the institutional context (e.g.

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in situations where e-learning developments are confined to a minority of courses or to specialist areas of the institution's work).

The performance indicators which follow then focus on particular topics relevant to the benchmark statements. Not all the performance indicators will be relevant in all situations and several will be seen to cut across more than one benchmark statement. Thus there is not a one-to-one relationship between the benchmarks and the performance indicators since they are pitched at different levels of analysis. Performance indicators have been developed at both general and excellence levels.

Feedback

EADTU is committed to supporting the continuous improvement of e-learning programmes and intends to produce a web-based supplement to the quality manual giving examples of good practice identified by contributing organisations. The resources are published under a Creative Commons licence 2.5. Additionally EADTU welcomes feedback from and dialogue with any organisation which may be able to contribute to the dissemination of good practice through the E-xcellence user community.

Availability

The resources are available online at <http://www.eadtu.eu/excellencelabel/> in the following formats:

- Full text of the Manual in Word and PDF version
- *Quick scan* online questionnaire based formats that enable interactive engagement with the materials.

The website also provides information on the E-xcellence Associates scheme that fosters a user community of institutions

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with shared interests in the enhancement of quality in their e-learning activities.

Institutions involved

Core Partners (2005-2016)

- EADTU (The Netherlands)
- Open Universiteit Nederland (The Netherlands)
- Open University (United Kingdom)
- OULU-University (Finland)
- Universidad Nacional de Educación a Distancia (UNED) (Spain)
- Dublin City University (Ireland)
- Ghent University (Belgium)
- Lund University (Sweden)
- University College London

Partners E-xcellence (2005-2006)

- Centre National d'Enseignement à Distance (CNED)
- Universitat Oberta de Catalunya (UOC)
- Estonian Information Technology Foundation (EITSA)
- National Council for Distance Education (APERTUS)
- Network per l'Universita Ovunque (NETTUNO)
- European University Association (EUA)
- Nederlands-Vlaamse Accreditatie Organisatie (NVAO)

Partners E-xcellence PLUS (2008-2009)

- International Telematic University UNINETTUNO (Italy)
- NVAO (Belgium/The Netherlands)
- Estonian Information Technology Foundation (Estonia)
- Högskoleverket / NSHU (Sweden)
- KU Leuven (Belgium)

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- The Czech Association of Distance Learning University (CADUV)
- University of Hradec Králové (Czech Republic)
- Slovak University of Technology in Bratislava (Slovakia)
- Moscow State University for Economics, Statistics and Informatics, MESI (Russia)
- Universitäre Fernstudien Schweiz (Switzerland)
- Hungarian e-University Network (Hungary)

ESMU: E-learning Benchmarking Exercise in European universities (2009)

Participating universities

- University of Southern Denmark
- University of Copenhagen
- Aarhus University
- University of Latvia
- Lund University
- University of Kuopio
- University of Porto
- University of Bologna
- University of Oulu

Partners E-xcellence Next (2011-2012)

- Universidade Aberta (UAb), Portugal
- Open University of Cyprus (OUC), Cyprus
- Riga Technical University (RTU), Latvia
- Akademia Górniczo-Hutnicza (AGH), Poland
- Hellenic Open University (HOU), Greece
- Kaunas University of Technology (KTU), Lithuania
- Moscow State University of Economics, Statistics and Informatics (MESI), Russia

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- Accreditation Organisation of the Netherlands and Flanders (NVAO), The Netherlands
- Flemish Interuniversity Council (VLIR), Belgium
- The Flemish Council of University Colleges (VLHORA), Belgium
- African Council for Distance Learning (ACDE), Kenya
- Commonwealth of Learning (COL), Canada
- Latin American and Caribbean Institute for Quality in Distance Higher Education (CALED), Ecuador
- PROSE Network for Quality Management

Associated partners in E-xcellence Next

- European Centre for Strategic Management of Universities (ESMU), Belgium
- European Association for Quality Assurance in Higher Education (ENQA), Belgium
- United Nations Educational, Scientific and Cultural Organization (UNESCO), France
- EADTU Student Council, The Netherlands

Partners updating Quality Assessment for E-learning a Benchmarking Approach (third edition, 2016)

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- OssianniIsson QOOL (quality in open online learning) Consultancy & The Swedish Association for Distance Education (SADE): Ebba OssianniIsson
- EADTU: George Ubachs, Lizzie Konings

How to use the Quick Scan

How to use the Quick Scan

The Quick Scan online questionnaire is intended to give you a first orientation on the strengths of your e-learning performance and the potential for improvement. An initial self-assessment via the Quick Scan can be the basis for a subsequent review using the resources in the manual.

The Quick Scan should ideally be filled out by a team which includes different stakeholders in your organisation: management, academics, course designers, tutors and students. It is therefore recommended that you build a small team which includes members of the stakeholder groups. The review can be conducted at institution, academic department or module level to suit your own needs. However, if you are operating at department or module level, you should ensure that your team includes those with experience of institutional policy and practice relevant to e-learning.

The team should identify which benchmarks are relevant, and which are less important for your organisation. The team should then collaborate to complete the Quick Scan, including adding comments in the open text areas which are provided.

The result of the Quick Scan exercise should be an agreed self-assessment against the benchmarks that fit your organisation. This will reveal those aspects of e-learning where your organisation is already strong, and those aspects where there are opportunities for improvement.

1 Strategic management

The majority of institutions evolved when the prevalent mode of study was face-to-face and campus-based. New modes of study offered through ICT should prompt institutions to review their strategies to take into account increased use of ICT, both in institutional and public online spaces.

The institution should have defined policies and management processes that are used to establish strategic institutional objectives, including those for the development of e-learning. In a mature institution, strategic management will operate over several time horizons.

The institutional strategic plan should identify the roles that e-learning will play in the overall development of the institution and set the context for production of the plans of academic departments, administrative and operational divisions.

The institutional plan should outline options for the use of e-learning in teaching that may define a spectrum of blends of e-learning and more established teaching mechanisms. Institutional plans should also consider issues of resourcing, information systems, staff development, innovation and collaboration with partners.

Faculty and departmental plans should aim to best match the student requirements of their particular market sector (national/international focus) in presenting e-learning/blended learning options.

The institutional strategic plan should ensure that plans of academic departments are consistent with each other. Student

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mobility between departments should not be restricted by major differences in policy or implementation with respect to e-learning.

Benchmarks

- 1 The institution has an e-learning strategy that is widely understood and integrated into the overall strategies for institutional development and quality improvement. E-learning policies conform to legal and ethical frameworks.
- 2 The institution investigates and monitors emergent technologies and educational developments in the field of e-learning and considers their integration in the learning environment. There is an organisational framework that can foster innovation and development, and evaluation by scholarship and research.
- 3 The resourcing of developments in e-learning takes into account requirements such as equipment purchase, software implementation, recruitment of staff, training and research needs, staff workload and technology developments.
- 4 Institutional policy ensures that e-learning systems (e.g. an institutional Virtual Learning Environment) are compatible with related management information systems (e.g. a registration or administrative system) and are reliable, secure and effective.
- 5 When e-learning involves activities or resources beyond the institution (e.g. virtual mobility of students, institutional partnerships, development of

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Open Educational Resources and Massive Open Online Courses, or use of social media), the roles and responsibilities are clearly defined, communicated to those concerned, and controlled by operational agreements where appropriate.

1.1 Policies and plans

The institution should have defined policies and management processes that are used to establish strategic institutional objectives, including those for the development of e-learning. An institutional strategic plan will be the uppermost tier in a planning hierarchy and will shape the plans of academic, administrative and operational units of the institution. The strategic plan will be regularly monitored, evaluated and revised in line with experience and developing requirements. In revising strategy, account should be taken of recent developments in the field of e-learning (for instance learning analytics and MOOCs) and the external environment (for instance the increasing use of tablets).

The strategic plan should encompass a vision for the use and development of e-learning within the institution and provide a timescale for the achievement of strategic goals. The strategic plan should address the provision of the human, technical and financial resources necessary for implementation. Due account should be taken of key strategic issues such as relationships with other institutions, funding and regulatory bodies.

Institutional policies must pay due regard to ethical and legal considerations. Of particular relevance to e-learning is national legislation covering: accessibility to those with particular needs, copyright and other intellectual property rights, data protection, privacy and freedom of information. The institution should have a

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strategy for communicating the responsibilities that emerge from these policies to staff and students.

Indicators

- The institution has an identified group of key staff responsible for formulating, evaluating and developing institutional policies and plans relating to e-learning. These policies and plans are set out clearly for the benefit of all participants and stakeholders.
- The institution has a means for communicating legal and ethical responsibilities to staff and students.
- The institution has policies that respond to recent developments in education practice such as learning analytics, social media, OER, and MOOCs.
- The institution has staff responsible for monitoring changing technology and educational practice in order to inform the development of e-learning policy.

At excellence level

- There is institution-wide engagement with the development of policies and plans for the achievement and enhancement of e-learning.

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1.2 The role of e-learning in academic strategy

The institutional strategic plan should identify the roles that e-learning will play in the overall development of the institution and set the context for production of the plans of academic departments, administrative and operational divisions.

The institutional plan should outline options for the use of e-learning in teaching that may define a spectrum of blends of e-learning and more established teaching and learning mechanisms. The institution should have a policy on the use of external environments and resources such as public social media and open educational resources.

Faculty and departmental plans should aim to best match the student requirements of their particular market sector (national/international focus) in presenting e-learning/blended learning options.

The institutional strategic plan should ensure that plans of academic departments are compatible with each other. Student mobility between departments should not be restricted by major differences in policy or implementation with respect to e-learning.

Indicators

- The e-learning strategy is part of the general educational strategy of the institution and there is compatibility between the approaches to e-learning taken by individual departments and faculties in line with institutional plans.

At excellence level

- There is a widespread understanding of and engagement with the implementation of e-learning policies across the institution.

1.3 Policy on resources

Institutions developing and delivering e-learning programmes should have a comprehensive set of policies that relate to the effective provision for delivery of teaching materials and student support services, whether through its own or through public infrastructure. The policies should address issues of:

- financial, physical and technical resources;
- staffing and staff development;
- management, responsibility and accountability.

Implementation of e-learning may require an institution to review and revise its policies on the deployment of resources to ensure that it has in place an adequate managerial, technical and physical infrastructure.

The administrative aspects of e-learning programmes may require significant changes in administrative systems to enable students to access information regarding their status, progress, etc. online. Equally the system must have the capability to distribute appropriate teaching resources to students. To meet these needs the institution must ensure that its management information system is capable of operation to appropriate standards of reliability, security and effectiveness.

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Indicators

- Departmental and faculty plans address issues of resourcing, staffing and staff development for those involved in delivery and support functions.
- Appropriate operating and security standards for all aspects of the provision of online services are defined.

At excellence level

- Institutional plans make provision for the resources necessary to install and maintain the physical and technical infrastructure needed and allocate responsibility for the delivery of services to specific departments.
- Resourcing plans embrace both initial investment in equipment, software, etc. and also set appropriate targets for cycles of updating, renewal and replacement.
- Staff development plans address the skills required in a digital world.

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E-learning provides opportunities for presenting programmes that offer considerable flexibility in terms of place and time of study and equally provides opportunities for students and staff to participate in virtual communities.

Programmes encouraging the physical mobility of students are commonplace and receive considerable support from agencies such as the EU. The development of policies that encourage and facilitate virtual mobility is desirable for all institutions and is of particular relevance to those operating e-learning programmes.

Policies for virtual mobility should be designed to provide students with opportunities to study programmes from institutions geographically remote from the student's home base and across national boundaries.

Institutions participating in virtual mobility programmes should develop policies that embrace academic, professional and social aspects of student and staff mobility.

Institutions participating in virtual mobility programmes should ensure that assessment of student outcomes is consistent, well documented and interchangeable between institutions. Wherever possible, student performance on a virtual mobility programme should be recognised for the purposes of an award of the home institution in the same way as for other programmes.

Indicators

- The institution recognises the benefits of e-learning for virtual mobility, has assessed the problems, and has an explicit policy on virtual mobility.

Strategic management

At excellence level

- There are exchange agreements with other educational institutions providing e-learning programmes, and interoperabilities have been agreed and set out with these providers.
- The institution evaluates the virtual mobility policy and its results regularly.

1.5 Ventures beyond the institutional boundary

The infrastructure and developmental costs of e-learning can be significant and skills may be required that are not available within the institution. This may be mitigated by collaboration with other institutions or by using external services and resources to develop and/or deliver e-learning. For example, institutions have used external platforms for providing Massive Open Online Courses (MOOCs).

Contractual arrangements between the collaborating partners should define the scope of the collaboration, the responsibilities of partners, financial arrangements and the relationships with third parties, particularly students and teachers. All collaborative ventures should be subject to risk analysis, and contingency planning should be in place in the event of the collaboration breaking down to ensure that student study experience is not jeopardised.

Institutions have produced MOOCs as a way of developing expertise in e-learning away from their core offering. An institution should have a policy that covers engagement with MOOCs, setting out the benefits, costs and risks. MOOCs allow an

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institution to offer e-learning without full conformance to an external accreditation / quality process since MOOCs are typically not credit bearing. However, since there is a reputational risk attached to poor quality, the institution should have a clear policy on an appropriate level of internal oversight.

Another, less formal, collaborative approach is the use and/or development of Open Educational Resources (OER). Sharing and reuse of e-learning material in OER repositories can mitigate the cost of development. They also provide a low risk entry route into online resource-based teaching for individual academics.

At the lowest level of engagement, the institution needs to understand the management of digital rights in this context; the Creative Commons licences are a widely understood rights framework for both provision and use of material.

Higher levels of institutional engagement may include an institution publishing and maintaining an institutionally branded repository of OER or institutional involvement in an OER consortium. In such cases, the strategic rationale for involvement should be evident to staff. In particular, academic staff should understand whether publication of their teaching materials as OER is allowed, recommended or obligatory.

Institutions can also use public social media, such as blogs, wikis and social media, to support learning and build community. If this approach is adopted, issues which need to be considered include accessibility, privacy and the boundary between academic and social life.

Strategic management

Indicators

- Collaborative ventures are formalised through contractual relationships and service level agreements are in place for these.
- Any use of social media takes account of accessibility and privacy issues.
- Staff are supported in the rights issues associated with use of imported OER and implications of publishing their teaching materials as OER.
- The institution has processes for managing rights in the development and use of OER associated with any institutional managed repository or consortium.
- The institution has a clear policy on the development and use of MOOCs.

At excellence level

- A risk analysis is conducted on all initiatives involving third parties and contingency plans to protect student and institutional interests put in place.
- The institution's engagement with OER and MOOCs is regularly reviewed and evaluations widely shared across the institution.

Strategic management

1.6 Research, scholarship and innovation in e-learning

Policies on research, scholarship and innovation in e-learning need to cover both technical and educational aspects.

While not all institutions with e-learning programmes will be in a position to conduct fundamental research into these areas, institutional management needs to ensure that there is a clear policy framework through which new research findings, developments and emerging techniques may be identified, evaluated, disseminated and (where appropriate) adopted. This may involve frameworks to support, resource and evaluate innovative practice by departments, programmes and individual teachers. While such technology tracking activities may be determined by the needs of the institution's own e-learning programmes, the results will usually be of relevance to e-learning programmes at other institutions and the results may represent new scholarship in the field and be published accordingly.

Indicators

- There is a policy framework and an agreed set of planned activities directed towards the improvement of e-learning programmes through more effective use of technology, improved teaching and learning approaches, etc.
- Policies and activities are linked to the institution's processes for continuous improvement based on monitoring, feedback and self-evaluation
- Activities such as horizon scanning or technology tracking take account of developments elsewhere in e-learning and its applications.

Strategic management

At excellence level

- The institution has a research, scholarship and innovation policy which supports the development and/or evaluation of new technical and educational approaches to e-learning, and a planned programme of activities in support of the policy.
- The results of technology tracking activities are disseminated beyond the institution.

1.7 Learning analytics

An e-learning environment can collect extensive data on student activity and performance, for example by tracking the activity of an individual across the pages of a VLE. The systematic measurement, collection, analysis and reporting of such data is known as learning analytics. The learning analytics approach has the overall aim of improving the learning of students and has potential as a tool for quality enhancement.

Learning analytics relies on a 'big data' approach that gathers large volumes of varied data and uses statistical analyses to make predictions. Typical data collected would include number of visits and time spent on VLE pages (including downloads, videos, and forum posts) to reveal whether a student has engaged with particular resources and what routes they took through material. In blended delivery, this might be combined with data on campus attendance, visits to the library and so on. The student's assessment record on their current and previous courses may also be used, together with prior educational achievement and other

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demographic and socioeconomic data from the student's personal records.

Learning analytics can be used for a variety of purposes, focusing on the individual learner, the course experience, or the whole institution. Some examples are below.

- An institution can evaluate courses and curricula to understand which courses perform well as measured by retention, pass rates, or satisfaction. The big data approach offers more sophisticated analysis than simple summary statistics, for example identifying a course that has a better pass rate than expected given the previous educational achievements of the students it attracts.
- Comparative analyses can highlight features of course design that lead to successful learning, and so make it possible to design more successful courses in future.
- A course designer / presenter can monitor a course in presentation to spot pinch points, for example a place in a course where student engagement drops sharply. Action taken might be to provide additional teaching or to rewrite of material for the next cohort.
- A tutor can monitor a group of students to target those for whom timely and appropriate intervention may increase their chance of passing the course.
- A student can monitor their own performance or learning behaviour, relative to themselves over time or to others in a cohort, and take action as a self-regulated learner.
- An automated system could suggest alternative resources or behaviours to students who show patterns of activity associated with poor results.

A learning analytics system should report results to users in a way that is clear and understandable and leads to appropriate action.

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Reporting is typically through dashboard systems that are tailored to the intended class of user: tutor, student or support staff.

Learning analytics relies on the collection of data on individual behaviour and therefore raises ethical and legal issues: these include privacy, data protection and informed consent. The institution should have a code of practice on learning analytics that is consistent with the institution's ethics policies and guidelines. Policies should be in place to ensure that collected data is accurate and held securely. It is important to develop an understanding of the purposes and scope of learning analytics that is widely shared among students, teachers and the institution's management. This is particularly the case because, in practice, students may not be in a position to withhold consent since the institution collects data (for example assessment scores) for its normal operations and for regulatory purposes. The inclusion of demographic and socioeconomic data about individuals is a particular issue: it might improve the accuracy of a statistical model that predicts student success, but may lead to prejudicial judgements about individuals.

Indicators

- The institution has a strategy for use of learning analytics to improve student support and learning.
- There is a policy and code of practice relating to use of student data that covers privacy, security, consent, and the purposes for which learning analytics is carried out.

2 Curriculum design

An important aspect of the quality of e-learning concerns the design of the curriculum. It is assumed that curriculum design is broadly constrained by expectations or requirements on the knowledge, skills and professional outcomes-based curriculum elements; these may be set at national, European and international levels.

The major challenge that institutions face is that of designing curricula that combine the flexibility in time and place of study offered by e-learning without compromising skills development or the sense of academic community that has traditionally been associated with campus based provision. Key challenges and opportunities include: programme modularity, online assessment methods, building online academic communities, integration of knowledge and skills development, and offering personalised learning to meet different learning needs and aspirations.

Curriculum design should address the needs of the target audience for e-learning programmes that, in the context of growing emphasis on lifelong learning, may differ significantly in prior experience, interest and motivation from the traditional young adult entrant to conventional universities.

Benchmarks

- | | |
|---|---|
| 6 | Curricula that use e-learning offer personalisation and a flexible path for the learner, while ensuring the achievement of learning outcomes. |
| 7 | Learning outcomes are assessed using a balance of |

Curriculum design

	formative and summative assessment appropriate to the curriculum design.
8	Curricula are designed to include e-learning that contributes both to the development of subject specific educational outcomes and to the acquisition of more transferable educational skills.
9	Curricula are designed to enable participation in academic communities via social media tools. These online communities provide opportunities for collaborative learning, contact with external professionals and involvement in research and professional activities.

2.1 Flexibility

E-learning offers the opportunity to provide flexibility in the time, place and pace of learning. The presentation of content can be more flexible and the didactic approach more open. There is also potential for more personalised pathways, both at the macro level of modular curricula and the micro level of alternative material within a module. When e-learning is integrated with other study modes, providers need to demonstrate that students can extract the maximum benefit from the flexibility offered.

Institutions need to have clear policies and practices for scheduling programmes and courses. These policies should take due account of student requirements for flexibility in time and place of study.

Flexibility in registration requirements can foster the inclusion of lifelong learners, for example by validating prior knowledge and experience as alternatives to formal educational qualifications. It

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may be possible to dispense with formal prerequisites and have open entry, as is the case with MOOCs and some long-established open universities.

The impact of these policies and procedures on course and programme completion, skills development and the development of student communities should be considered.

Institutions should identify and analyse patterns of usage and use these to inform policies on flexibility.

2.1.1 Time and pace

The 24x7 access to computer network systems commonplace in the commercial world is a feature that facilitates flexibility (see *Chapter 6 Student support*). Flexibility at the macro and micro levels must be addressed in programme design.

At the **macro** level students may have the flexibility to start and complete courses and programmes to schedules of their own choosing.

At the **micro** level e-learning offers the possibility for students to work to flexible timetables of their own choosing within a cohort of students progressing through the course or programme to overall schedules established by the institution.

In curriculum design the focus is usually on the macro level with the presumption that the detail relating to course materials design and delivery system availability will be implemented to maximise micro level flexibility.

While conventional annual or semester-based cycles of course provision may not be appropriate for students on e-learning programmes, the scheduling of courses with no fixed start or finish times is not necessarily educationally effective or desirable. Fixed start and finish dates for modules constrain student

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flexibility but facilitate the management of student cohorts and allow for participation in group activity.

Fixed times for submission of assignments provide target dates for task completion which help to maintain pacing and engagement. Similarly, synchronous online events can provide a structure analogous to the lecture or seminar schedule of a face-to-face programme. However, strict scheduling may place significant restrictions on the flexibility required by students facing pressures from family or employment obligations. It may be beneficial to offer alternative schedules, and even alternative exam dates.

Indicators

- There is an institutional policy for course scheduling to which curriculum designers adhere.
- Curriculum designers consider the needs of their target audience in their decision making.

At excellence level

- Institutional policy provides curriculum designers with a range of options for the scheduling of course presentations.
- The selection of scheduling pattern is influenced by market research amongst potential students.
- There is consistency in the scheduling patterns adopted such that student movement across related courses or programmes is facilitated.

Curriculum design

2.1.2 Place

E-learning programmes should offer learners considerable flexibility in the place of study, with the optimum being the full provision of learning facilities via any internet access point including the use of mobile devices.

The institution may operate a network of study centres to provide elements of e-learning on an intranet basis (e.g. for reasons of limited domestic bandwidth, software licensing or specialist video conference services). Attendance may also be required for assessments where it is important to verify the student's identity. The requirement for attendance at such centres should be clearly recognised as placing a restriction on student flexibility. Attendance requirements should be made clear to students prior to registration.

Provision of aspects of the curriculum that require access to specialist facilities such as laboratories and direct face-to-face contact may prevent institutions offering programmes fully online. In these circumstances blended provision is the only practicable mechanism. Attendance requirements must be clearly explained to students prior to registration.

A major issue for curriculum designers is how to schedule activities that are restricted in place. Designers may choose to aggregate face-to-face activities in a small number of modules within a programme with the result that these modules require similar levels of attendance to conventional provision. Alternatively, curriculum designers may distribute the activities so that the majority of modules have a limited requirement for attendance. If possible, alternative dates should be provided.

It is envisaged that institutions will address issues of eligibility for study by virtue of place of residence at national, European Education Area and broader international presentation and will

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have adequate policies relating to rights issues, fee levels, examination arrangements etc.

Institutions should make every effort to be aware of the national policies regarding recognition of qualifications gained by e-learning in territories from which they accept student registrations and to advise students of the status their qualification carries.

Indicators

- Institutional policies provide a consistent approach to defining the circumstances under which students are required to attend a particular location. These will be (i) for instructional reasons or (ii) for reasons associated with identity verification.
- Programme information clearly indicates the pattern of any attendance requirements and the eligibility for study by place of residence.

2.1.3 Blended learning

Most e-learning is likely to take place in conjunction with other forms of learning either face-to-face or using more traditional distance methods. As in other aspects of flexibility there are macro and micro dimensions. At macro level combining e-learning and face-to-face modules provides a coarse grained blend; at micro level a single module may integrate e-learning and face-to-face teaching.

Curriculum designers must consider what the optimum mixture of online and traditional approaches should be in particular contexts.

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The mixture may depend on several factors, such as actual distance (time and place) between student and teacher, the nature of the learning outcomes, skills acquisition, modes of assessment, available technology, etc.

The institution may offer students the opportunity to blend their learning by offering equivalent course modules through different modes of delivery. For example, a student may choose to study the preliminary parts of a programme through e-learning but choose to attend campus based courses for the remainder in order to access specialist resources. Alternatively, there may be benefits in undertaking initial courses on campus to establish a functioning academic community that will maintain its coherence when study changes to an online mode.

Consistency in module size, together with clearly stated learning and skills development outcomes, will assist students in the selection of programmes and study modes that best suit their requirements.

Blended learning within a module may be achieved through provision of conventional teaching sessions supporting e-learning materials. Whether face-to-face contact is provided directly or delivered through synchronous technologies such as online conferencing or video conferencing may be dependent on student distribution and prevailing technology infrastructure.

Flipped learning offers a similar approach. Here students no longer acquire content knowledge by attendance at a traditional lecture but through independent study, reserving teacher-student contact time for more interactive sessions such as seminar discussion or problem-solving classes. The flipped approach is a natural fit with blended learning, where the independent study can be online using the VLE or the internet (including OER and MOOCs) and the teacher-led sessions can be face to face.

Curriculum design

There should be clarity in the level of engagement expected for the different elements of the blend; for example participation in an online conference may be mandatory in order to demonstrate participation in a collaborative activity. For other elements participation may be beneficial but optional.

Indicators

- Where blended learning is employed, the curriculum provides an appropriate mixture of online and face-to-face approaches to learning, including assessment.
- Curriculum designers have assigned clear educational functions to the different elements of the programmes and these match well with the delivery mode envisaged.
- There are opportunities to complete programmes by integrating e-learning and face-to-face courses within a single programme.

At excellence level

- The institution has a clear strategy for the use of modes of blended learning that is appropriately implemented at departmental level.
- Students are provided with learning experiences that integrate study modes effectively.

Curriculum design

2.1.4 Modularity

Appropriately designed and implemented modular programmes enable institutions to offer their students a broad curriculum and optimise utilisation of resources. Offering short and flexible elements or courses allows students to build a programme to meet their needs.

The institution should adopt a structure for programme and course sizes that is consistent with national and European norms and aligns with systems for credit accumulation and transfer. This should be based on student workloads (expressed in notional study time) and the conversion rate into credit points should be widely understood.

Clearly stated learning outcomes are an important component of modular systems, enabling both academics and the student community to gain an overview of module coverage and establish the relationships and interdependencies between modules.

The costs of e-learning development dictate that many institutions will seek to work in institutional consortia for curriculum development. Under these circumstances agreement over modular structures at programme and course levels is imperative.

Indicators

- The institution has a clear and consistent policy in respect of modular programme design.
- Statements of module learning outcomes are standardised and widely available.

At excellence level

- All programmes have a modular structure and courses have credit points that are consistent with national and European norms.

2.1.5 Credit transfer

Credit transfer between programmes within an institution and more broadly between institutions and across national boundaries contributes to the flexibility offered to e-learning students. Virtual mobility programmes provide another way of offering greater flexibility to students.

Policies on credit transfer and the technical features of credit systems should be applied to e-learning programmes in the same way as for other modes of provision. These need to be aligned to national and European systems for credit recognition and transfer.

Curriculum designers need to be clear about definitions of credit and credit value, workload measures, credit levels, qualification requirements, learning outcomes, generic skills development, assessment criteria, etc. Each of these factors will impact on the policy for credit transfer into and out of the programme.

Indicators

- The institution has a credit transfer policy that is widely applied.
- The credit transfer system is aligned with national and European systems of credit transfer and operates bi-

directionally.

2.2 Academic community development

Participation in a scholarly community that values the exchange of knowledge and ideas is an essential component of higher education. Institutions presenting e-learning programmes should therefore design their curricula to foster broad participation in online academic communities.

In some instances participation is explicit through student (and staff) contributions to online group activities designed as components of the curriculum. In other instances it is implicit through scholarly social interaction face-to-face (where possible) and in online communication environments. To provide parity of experience between traditional forms of higher education and provision primarily delivered through e-learning, institutions should address the issue of formal and informal community-building online.

Three aspects of community development may be identified to which curriculum design needs to be sensitive. Firstly, a general academic community is required by all departments and divisions of the institution to provide a framework for student-teacher and student-student interactions. Secondly, communities may need to be established to fulfil a specific academic objective, such as participation in research activity. Thirdly, communities may be established to link students with broader professional communities.

Policies for curriculum design should consider the knowledge and skills required by national and European award structures, identifying those elements in which collaborative activity is

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required. Direction should be provided as to how students following e-learning programmes can participate in the broader academic community. Online communication is likely to play a major role in this provision.

Participation in online learning communities offers many benefits to e-learners, as well as to teachers and educational institutions. Examples of potential benefits include:

- Convenience and flexibility, particularly for learners who are physically separated and/or studying part-time.
- Development of a sense of course community: feelings of engagement and belonging.
- Increased motivation, leading to enhanced retention and progression.
- Learning with others: interactive and collaborative learning.
- Opportunities for peer feedback and peer assessment (e.g. via forums, wikis, blogs).
- Experience of team working online (e.g. via video-conferencing, forums, wikis).
- Development of interpersonal and communication skills for an online context.
- Opportunities to make students' work more visible and sharable (e.g. via a wiki or social media).
- The ability to collect and share evidence of skills development (e.g. via an e-portfolio).
- Online sharing of resources (e.g. via social media, social bookmarking tools or wikis).
- Support and membership of alumni communities.

However, online communities also present a number of challenges. Examples include:

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- Feelings of impersonality: this can lead to low participation in collaborative activities or team work, particularly if the activities are not part of course assessment.
- Behaviour online: disagreements, misunderstandings and flaming can occur.
- Managing students' expectations of response and support by teachers: students need to develop as self-regulated learners, with reduced dependence on teachers.
- Teachers need to develop new skills and approaches: to become facilitators rather than the holders of knowledge; to develop skills in online moderation.
- Assessment of students' online collaborative work: assessment needs to be motivating and also fair (particularly in relation to group work).
- Workload for teachers in supporting students online and marking students' collaborative work.
- Managing the boundaries between social and academic interactions: this is a particular issue if social media such as Facebook are used.
- Usability issues in online environments: students and teachers can experience problems navigating and learning to use the tools offered.
- Information overload, particularly in large or very active online spaces: online communication should not overwhelm students or dominate their time.
- Minimising collusion and plagiarism via online environments.
- Technical aspects such as connectivity, firewalls, reliability, availability and security in relation to online spaces, particularly if used for assessment.
- Legal issues such as data protection and copyright.

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Teachers may participate in online teachers' communities as part of their professional development, gaining similar benefits.

2.2.1 Student-student and student-teacher communication

E-learning offers modern ways of building communities and supporting communication between teachers and students, and between students and their peers. Interactions between student and teacher and among students are key components of e-learning in a higher education context. Since content can now be delivered direct to the student rather than via the teacher, it should be a principle of curriculum design to embed prompts that encourage online contact between the participants in the teaching-learning process.

If student-student interaction is required for a specific teaching and learning function (e.g. to provide for the development of effective team working skills), curriculum designers should establish the requirement in programme specifications and ensure that the responsibility for teaching and assessing these skills is allocated appropriately between courses in the programme.

Students should be informed of those peer interactions (for example, engagement in online discussions or teamwork) that are essential to successful completion of a programme. Measures should be in place to ensure that such interactions are appropriately monitored and assessed.

Structuring remote student-student contact for discussion presents significant challenges but the institution should be supportive of the formation of online discussion groups.

The institution may work with student groups and associations in fostering online student groups that operate independently of programme structures. These groups may have a subject, professional or predominantly social focus. They may be

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supported via the institution's VLE, for example, or via external social media such as Facebook or LinkedIn.

Assessment policy may provide a structure for one-to-one contact between teacher and individual students. The role of the teacher as the leader of a student group allows the teacher to act as a focal point for student discussion. However, teachers need to be careful not to dominate online discussions, as this will inhibit student input. Skilful moderating requires a balance between encouraging discussions and allowing students the space to take their own initiative online and support each other.

Either teachers or experienced students may be allocated the role of moderating student discussion areas. In either case it is important to ensure that appropriate levels of online etiquette (netiquette) prevail and that there are no instances of collusion among students in relation to assessment.

Electronic forums for interchange of experience amongst teaching staff provide important mechanisms for staff development through exchange of good practice, sharing of teaching resources, and general peer support.

A feature of online discussion is that interactions can be recorded and made available to others; this is clearly the case for forums but is also possible with synchronous communication such as chat and audio conferencing. It should be clear to all involved in online interactions how the digital record may be used or shared with others.

Indicators

- There are institutional policies relating to the provision of online community spaces for student-student and

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student-teacher interactions.

- Curriculum designers specify clearly the educational role that student-student interaction plays in their programmes.
- Criteria for the assessment of student online collaboration exist and are applied consistently across programmes and courses.

At excellence level

- Teaching staff are supported by formal and informal staff development activity in the use of online tools for community building.

2.2.2 Connectivity with non-campus professionals and professions

Programmes that are professional or vocational in nature may traditionally require students to spend some part of their study on placement activities in a professional organisation. Designers of e-learning programmes should explore how they might manage this requirement, particularly taking account that many e-learners will already be in employment.

Institutions may adhere to conventional policies requiring students to be embedded in an organisation selected by the institution. Alternatively, they may develop modes of work-based assessment that relate to their students' current employment and allow for negotiation with their employers.

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There are significant potential difficulties in the negotiation and management of placement arrangements for institutions intending to operate across a broad geographic territory or national boundaries. The possibility of virtual placements, where the student participates remotely in authentic activity in a professional setting by using communications technology, could offer a solution.

Less formal community building with the professional sector may be achieved through structured links to professional body websites, jointly developed online events, etc.

Indicators

- The institution offers mechanisms for students to participate in active communities of professional practice where this is an integral part of the programme.

At excellence level

- The curriculum offers opportunities for (distance) contacts between students and professionals to stimulate and develop a critical attitude.
- The institution works closely with professional bodies in the development of online professional communities.

2.2.3 Research involvement

Development of research skills and participation in individual or group research activity is a requirement of national and European

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qualification structures at degree level. Institutions offering programmes delivered through e-learning must be able to demonstrate that these skills can be delivered and assessed using online technologies.



Access to library facilities now seldom presents problems for students studying remotely, and web-based research forms the backbone of many conventional research projects. Access to laboratory facilities poses greater problems but developments such as virtual labs, hardware simulators, and remote access to real machines make it possible to carry out authentic practical work from a distance. Also, it should be recognised that many students choosing to

study remotely by e-learning may be studying for professional reasons and be in a position to undertake research activity related to their full-time employment. Co-location is not essential for data analysis and there are many examples of major European research projects that operate with distributed teams; hence there is no reason why research students must be campus based. Online students may contribute to the work of campus-based research groups, possibly participating in meetings using desktop video and audio conferencing methods.

Curriculum design

Curriculum frameworks should facilitate a broad interpretation of how research skills may be developed and not restrict the definition to focus solely on traditional campus-based research activity.

Curriculum design should address the placement of research modules in programmes, taking due account of the skills and independence that will be demanded of students in conducting research remote from day-to-day contact with supervisors.

Research supervisors may require new skills to transfer their supervisory experience to an online context. Staff development programmes, appropriate online tools and practical exemplars of their use should be available to support this transition.

Institutional policies regarding the publication and attribution of the outcomes of research should be reviewed to ensure that they adequately address issues associated with the intellectual property in contributions of e-learning students.

Online spaces such as blogs and wikis provide natural dissemination and publication routes for students undertaking e-learning. Publication within a closed online community associated with a programme or subject area will facilitate the development of a community of researchers and encourage a culture of supportive critique and review. This may then lead to more public dissemination via open areas on the web.

Indicators

- The curriculum offers students the opportunity to undertake or be involved in research in order for them to develop appropriate research, critical evaluation and communication skills.

Curriculum design

- A progressive development of research skills is an integral component of programme design.

At excellence level

- The institution has policies regarding the involvement of e-learning students in the activities of campus-based research groups.
- Opportunities are provided for online publication and peer review in a supportive environment.
- The curriculum includes authentic practical work which may be achieved online by virtual or remote laboratory facilities.

2.3 Knowledge and skills

Curriculum design should ensure that the curriculum covers those aspects of knowledge and skills required of graduates in the domain under consideration.

Issues specific to e-learning are those of whether skills can be developed uniformly across all courses in a programme or whether there is a need to adjust programme structure as the mode of delivery demands some partitioning of skills and knowledge acquisition.

There remain issues of whether delivery of some aspects of skills acquisition can be achieved using e-learning technologies. In this domain institutions have a responsibility to demonstrate to their students and to regulatory bodies and employers that the delivery of skills and their assessment are valid and effective.

Curriculum design

2.3.1 Transferable skills

An essential aspect of higher education programmes has always been the development of a suite of core transferable skills that relate to literacy, numeracy, critical analysis, presentation and communication. These skills are highly valued by employers who may regard them as of equal if not greater importance than the subject knowledge that graduates take with them to the world of employment. To these traditional skills must be added e-skills or digital competencies: those literacy, information literacy, communication and organisational skills that apply to conducting professional life online.

Institutions offering e-learning programmes have a responsibility to provide these skills for their students and to demonstrate their provision and effective assessment to potential employers. Students should have the opportunity to demonstrate the skills they have acquired in operating in the online domain.

A key element in curriculum and programme design is the clear definition of learning outcomes and skills to be acquired at various stages. Curriculum designers should identify a logical progression of skills development and allocate responsibility for delivery and assessment of skills to courses in a programme.

Skills prerequisites may be as important as knowledge prerequisites in determining progression between courses in a programme.

The institution may need to develop specific assessment methods to verify skills acquisition. One approach is to support students in recording evidence of skills acquisition via an e-portfolio system.

Digital badges are a way of recognising skills and achievements outside formal assessment. They are therefore particularly suited to recognition of key skills that are taught and developed by

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support units, for example library or digital literacy skills, or other non-formal settings. Badges could also be used to record extra-curricular achievements. Badges validated by an institution should have value to employers and as a visible record of achievement fit well with an e-portfolio approach.

Indicators

- The institution has a clear policy regarding the acquisition and assessment of core transferable skills, including e-skills, which apply to all programmes including those delivered by e-learning.
- The institution has a common framework for the assessment of skills acquisition.

At excellence level

- The institution actively researches educational techniques for the development of generic skills, including e-skills, and findings are widely disseminated to those involved in curriculum design via publications, workshops etc.
- The institution offers an e-portfolio service to assist students in recording evidence of their knowledge and skills development.
- The institution provides digital badges that can be used to recognise generic skills and other achievements not covered by formal assessment.

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2.3.2 Professional and vocational

The curriculum should offer students the opportunity to understand how the content and skills in their modules relate to those used by professionals (including researchers) in their occupation. The development of professional and vocational skills should align with the expectations of professional bodies and employers.

Many students pursuing e-learning programmes may already be in employment, and institutions should make positive efforts to provide recognition for the professional skills and knowledge already held by their students.

Professional bodies may adopt a conservative approach to the potential of e-learning for provision of professional skills, and institutions may need to pay particular attention to ensure that their curricula develop and assess these skills, and that this is apparent to all.

Curriculum design may allocate responsibility for development of professional skills to specific modules. These may address professional skills development in a blended learning format or even require attendance for the full duration of the module.

Virtual internships in companies can be developed that can represent an added value for alumni when entering the labour market.

Indicators

- Curriculum design enables students to relate course content and skills to identified professional contexts.
- The responsibility for delivery and assessment of

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outcomes related to professional knowledge and skills is clearly assigned to particular components of the programme.

At excellence level

- Communications with professional and employer associations regarding their needs, and the effectiveness of e-learning in developing and assessing professional skills, have been undertaken at the curriculum design stage.
- There are opportunities for virtual internships or other ways of developing employability skills.

2.4 Assessment procedures

It should be the goal of all institutions engaged in e-learning to develop and implement assessment systems that are recognised as at least being equivalent to those used in conventional systems regarding their effectiveness and integrity.

Assessment should include both formative and summative elements. Formative assessment provides feedback to students; summative assessment contributes to their course result. Individual items of assessment may fulfil either or both functions.

Curriculum designers should address all the intended learning outcomes for a programme and ensure that there is an overall strategy for their assessment that reflects the diversity of the modes of knowledge and skills acquisition.

Curriculum design

2.4.1 Formative assessment

The goal of formative assessment is to monitor student learning and provide ongoing feedback that can be used by students to improve their learning, helping them to identify their strengths and weaknesses and target areas that need work. It can also help academics to recognise and address problems more easily.

Formative assessment can take a variety of forms ranging from voluntary online self-assessment tests with built-in feedback to more formal items of assessment. Formative assignments typically do not contribute to the student's final grade. However, more formal items may include a summative assessment role, but also demand individualised feedback from a tutor or examiner through which a student can judge their progress and reflect on their further learning.

The role of formative assessment in e-learning curricula is a crucial one in overcoming the limitations imposed by independent learning. Curriculum designers need to exploit the opportunities offered by e-learning platforms to provide feedback to students and to allow assessment of progress at regular intervals.

New technologies offer opportunities for formative peer assessment (peer review). Online communication tools such as forums, wikis and social media can be used by students to view each other's work (perhaps in draft form) and provide constructive feedback. This feedback can be used by students to improve their work prior to final submission. Students will need guidance on how to provide constructive critical feedback to each other. Without such guidance, student feedback is unlikely to be sufficiently in-depth to help others.

Self-assessment and reflection can be valuable in helping students to improve their own work and develop as self-regulated learners. Again this will need support and guidance; a structured

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framework for self and peer-assessment will help students to develop skills and effective practice.

Virtual Learning Environments incorporate quiz engines for automatic marking of an increasingly sophisticated range of question types. Provision of instant feedback according to student response can offer an effective mechanism for integrating formative assessment. Structuring questions and feedback may require considerable time and intellectual effort but will enrich the student learning experience.

Academics may need significant support in the design and development of learning activities, such as online formative assessments, that fully exploit the potential offered by VLEs.



2.4.2 Summative assessment

Summative assessment is aimed at awarding a grade or mark to the student. These grades determine whether the student

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progresses to the next stage of a programme or gains an award on completion.

Procedures for summative assessment need to be:

- **Explicit:** the requirements for successful completion of the assessment item and the criteria by which marks are allocated should be clear to students and examiners alike.
- **Fair:** the nature of the assessment should not favour or disadvantage any particular student or group of students.
- **Valid:** the assessment should be an effective test of the achievement of the particular learning or skills outcomes under consideration.
- **Reliable:** the procedures for assessing performance and allocating marks should be internally consistent - with respect to time, place, and the markers involved.
- **Plural:** not over-reliant on one particular form of assessment.

Assessment judgements should be exercised collectively, as far as possible. Where e-learning programmes involve the participation of examiners at widely dispersed geographical locations, measures should be put in place to ensure that agreed marking criteria are being adopted consistently. This may involve workshops (physical or virtual) for training and dissemination of good practice, and might also involve some form of second-marking between examiners. External moderation of summative assessments and their outcomes is regarded as good practice, and e-learning curricula generally lend themselves well to external moderation.

Particular care needs to be exercised in online summative assessments to ensure that the work submitted for assessment is that of the registered candidate for the award. Cheating can take the form of impersonation for a written examination or plagiarism of another's work in essays or assignments. Plagiarism can mean

Curriculum design

unattributed copying from third-party material; the copying of material from the web is a particular issue in e-learning contexts. Computer software is now routinely used to check for possible plagiarism and collusion. Preventing impersonation online is more difficult, and for this reason many e-learning programmes require candidates to attend a registered examination centre to undertake written examinations.

Student behaviour codes should specifically address plagiarism and state clearly the institutional policy and the sanctions applied when they are breached. Study skills development on good academic practice such as correct referencing will help students avoid inadvertent plagiarism.

It is good practice to identify and analyse cases of significant discrepancy between an individual student's performance on different forms of assessment.

New technologies offer opportunities for assessment through student creation of non-traditional media such as video, audio, presentations or websites. Assessment of these new media products entails both technical and educational challenges for institutions.

Technologies also offer possibilities for the assessment of collaborative group work, and in particular for assessing the process of the collaboration, as well as the product. If students undertake their collaborative work via forums or wikis, for example, there is a record of the interactions between students, and this can be reviewed in order to assign marks fairly for the collaborative process.

Assessing online collaboration will encourage students to participate in the collaborative activities, and is therefore recommended practice. However, designing assessment for collaborative work can be problematic. The assessment methods

Curriculum design

need to encourage active participation and genuine collaboration, rather than a 'performance' by students which is simply aimed at meeting the assessment requirements.

Peer review, supported by communication technologies, can contribute to summative assessment. For example, students can be required to review each other's work and can be given marks for the quality of the reviews they provide. Marks can also be given for how students make use of the reviews they receive, in order to make improvements. True summative peer assessment can also be used, but this requires some care and oversight by teaching staff.

Indicators

- The institution's processes for curriculum design leads to an appropriate balance of formative and summative assessment, taking advantage of the opportunities of online assessment for providing timely feedback to students.
- Assessment processes are well documented and all those involved in marking are trained in their role, work to common marking schemes and are subject to effective monitoring.
- All involved in assessment are aware of the particular problems of the identification of the work of individual students, and appropriate security arrangements are applied to summative components of continuous assessment and examinations.

Curriculum design

At excellence level

- Innovative assessment approaches, such as online collaborative work, peer assessment and self-assessment, form a part of the institution's practice in this area.

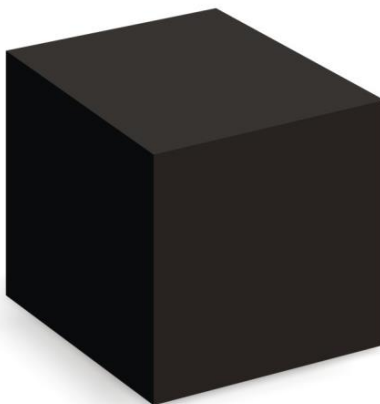
3 Course design

The course design process should demonstrate a rational progression: the need for the course within the overall curriculum should first be established; then a conceptual framework for the course should be designed, followed by the detailed development of course materials.

Each course should include a clear statement of the learning outcomes to be achieved on successful completion. These outcomes will be specified in terms of knowledge, skills, vocational/professional competencies and personal development

The development of each course should include a clearly documented course specification which sets out the relationship between learning goals/outcomes, teaching and learning activities and assessment methods. A course may include a blend of e-learning and face-to-face elements; attention should be paid to the appropriateness of assessment methods, the levels of interactivity and the provision of adequate feedback.

Aspects of course design and implementation may be delegated to an outside agency (a consortium partner, commercial developer or through use of OER). However, the parent institution should retain oversight and responsibility.



Course design

Benchmarks

- 10 Each course includes a clear statement of learning outcomes in respect of both knowledge and skills. There is reasoned coherence between learning goals/outcomes, the teaching and learning activities, the learning materials and the assessment methods.
- 11 Learning outcomes determine the use of methods and course contents. In a blended-learning context there is an explicit rationale for the use of each element in the blend.
- 12 The design, development and evaluation of a course involves individuals or teams with expertise in both academic and technical aspects.
- 13 OER and other third-party material is selected with regard to learning outcome, tailored if necessary for fit to the learning context, and integrated with other learning materials. These materials are subject to the same review processes as other course materials.
- 14 E-learning materials have sufficient interactivity (student-to-content, student-to-student and student-to-teacher) to encourage active engagement and enable students to test their knowledge, understanding and skills.
- 15 Independent learning materials provide learners with regular feedback through self-assessment activities or tests.
- 16 Courses conform to explicit guidelines concerning layout and presentation and are as consistent as

Course design

possible across a programme.

- 17 Courses provide both formative and summative assessment. Assessment is explicit, fair, valid and reliable. Appropriate measures are in place to prevent impersonation and/or plagiarism, especially where assessments are conducted online.
- 18 Course materials, including the intended learning outcomes, are reviewed by expert educators prior to first use, and then regularly reviewed, up-dated and improved using feedback from stakeholders.

3.1 Educational strategy

Decisions about the use of e-learning should be made on the basis of providing the most effective means of achieving the learning outcomes in particular contexts. There should be a clear rationale for the use of e-learning and the level of support provided.

E-learning provides tools to support a range of educational modes:

- highly efficient text and interactive media distribution to serve didactic approaches;
- resource rich environments for investigative and problem based learning;
- collaborative working environments for dialogue-centred learning processes and group projects.

It is expected that learning design choices will vary with the subject and level of courses. An e-learning institution should provide for a diversity of educational approaches in its offering.

Course design

Learning design must resolve the tension between the ease of access offered by the anywhere, anytime availability of online learning materials and the individualised interaction offered by direct face-to-face contact with teachers.

3.1.1 Educational approach

Establishing an appropriate educational approach is a key stage in course design. Those undertaking this task should address how the e-learning methodologies available to them can best be used to assemble a learning model appropriate to the level and subject domain of the course.

Three broad educational approaches make differing demands on the capabilities of e-learning systems:

- Didactic learning: efficient delivery of structured teaching materials, embedded testing and automated feedback can be achieved online, allowing for flexible pace of study by independent learners working to self-determined schedules.
- Resource based learning: online learning can provide access to information resources that are on a par with campus based access.
- Collaborative learning: various online social media tools can be used for online collaborative learning. Their use may, however, place constraints on flexibility of study and will require appropriate academic oversight.

The majority of courses will utilise several educational approaches to secure their learning outcomes. The use of different types of e-learning and levels of support needs to be fit for purpose.

Course design

Indicators

- Staff understand the advantages and disadvantages of using e-learning in particular course contexts.
- Staff have the necessary knowledge and skills for e-learning.

At excellence level

- A deep, evidence-based understanding of the relationship between educational design and e-learning activities is widespread among staff.

3.1.2 Blended learning models

The earlier chapter *Curriculum design* addressed blended learning in relation to structuring a broad approach to the curriculum. Similar factors apply at a finer granularity in applying a blended approach to course/module design.

The educational approach currently referred to as blended learning involves the use of a number of media for curriculum delivery and student support. For example, students may study e-learning materials but also attend face-to-face sessions to facilitate academic community building and to help develop interpersonal and practical skills.

The rationale for the blend should be clearly communicated to students in course documentation.

Course design

Indicators

- Fitness for purpose drives decisions on the selection of teaching and learning activities. The blending is such that different methods and media are well chosen within and between courses, both in distribution over time and extent of use.

At excellence level

- There is extensive institutional experience of delivery using blended learning and this experience is widely shared through the organisation.
- Well informed decisions on the use of teaching and learning activities are made routinely and reflect institutional policies regarding the development of learner knowledge and skills.

3.1.3 Roles of tutors and mentors in e-learning

Depending on the scale of an e-learning or blended learning programme, tutors/mentors may undertake a vital teaching support role that differs somewhat from that of a conventional traditional classroom teacher. It is frequently asserted that support by a tutor is a key factor in achieving high student satisfaction and low drop-out rates.

Availability to respond to online questions in a timely fashion may require support from a team rather than an individual. Students

Course design

and tutors/mentors should be aware of the institutional policy and practice on response time to online questions.

At the educational design phase, course designers must define the roles that will be undertaken by those responsible for provision of online support. In a mature e-learning institution these roles will be well defined and course designers will have a number of options available to them, suited to differing levels and subject domains.

How to provide support in a MOOC is a particular challenge since MOOCs are designed to be delivered at large scale and so must support large numbers of participants with restricted input from the lead academics. The use of moderators or mentors to monitor online forums, answer routine queries and escalate others to the course leader, is one way of handling large numbers. The mentor may be a student who has already completed the course and is studying at a higher level rather than a member of academic staff.

A number of communication routes may be used for providing support and feedback to students, and there will be recognised mechanisms to initiate contact between tutor and student. Communication routes may be both synchronous and asynchronous.

Indicators

- Access to tutors is provided on a regular and sufficient basis, known to both tutors and learners.
- At the minimum level of engagement tutors provide learners with timely expert advice on course issues or materials and individual feedback on assignments within a

Course design

stated response time.

- Tutors are able to use a variety of means (e-mail, phone, VLE tools etc.) to interact with learners both individually and in groups.
- The course design requires tutors to monitor learners' progress on a regular and on-going basis and to contact learners to discuss progress.

At excellence level

- Tutor-learner and learner-learner interaction is integral to the educational design.
- Where a Virtual Learning Environment is deployed, this fully supports the range of interactions needed, including individual and group interactions.

3.1.4 Independent learning materials

The use of learning materials designed for independent study offers learners significant flexibility in time and place of study. Their use aligns with changing patterns of student centred study and equipping graduates with the skills to become self-directed learners throughout their professional lives.

Independent learning materials may be used to provide the essential core learning of the course but may also offer a valuable mechanism to provide additional support in topics that may be desirable, rather than essential prerequisite knowledge for a course.

Course design

Independent learning materials may be designed to serve the needs of several courses or programmes; such packages should therefore be self-contained, have clear learning objectives and measurable outcomes.

When delivered by e-learning the materials should be designed to maximise the use of interactive techniques to provide opportunity for student self-assessment of progress towards learning outcomes.

The availability of readily accessible resources, e.g. repositories of Open Educational Resources (OER), MOOCs or other third-party material, enables institutions to augment their own inventory of independent learning materials and provide their students with a wide range of independent learning materials.

Course designers should establish the extent to which they will exploit the availability of OER and other independent learning materials.

Indicators

- The availability, function and purpose of independent learning materials is clearly defined and communicated to students.
- Self-paced materials incorporate extensive embedded testing of learning outcomes.
- Materials have specified embedded learner support and self-assessment elements.

Course design

At excellence level

- Materials demonstrate high levels of student activity providing a rich learning experience.
- Automated assessment elements provide remedial teaching in response to student performance.
- The institution has a policy for use of independent learning materials from a number of quality assured sources, including OER and MOOCs.

3.2 The course design process

The course design process should demonstrate a rational progression from establishing the need for the course within the overall curriculum, through the design of a conceptual framework to the detailed development and production of course materials.

The learning design for the course should take into account the student context and study mode and identify the methodologies to be deployed.

Each course should include a clear statement of the learning outcomes to be achieved on successful completion. These outcomes will be specified in terms of knowledge and skills, integrated into vocational/professional competencies and personal development. The development of each course should include a clearly documented course specification which sets out the relationship between learning outcomes and their assessment.

The design of an e-learning course may be subcontracted to an outside agency (e.g. a consortium partner, a commercial e-

Course design

learning developer) or Open Educational Resources (OER) from an external repository may be used. However, responsibility remains with the awarding institution and arrangements must be made for evaluation, modification and enhancement.

3.2.1 Relationship with curriculum

The course should be designed to fulfil a clear role in the institution's curriculum and the learner's overall programme, with clear statements of its learning outcomes in terms of knowledge and skills acquisition, and the development of competencies.

If the course fulfils a role in more than one programme the dependencies that may affect student knowledge and skills in all these programmes should be clearly identified.

An institutional curriculum map or programme guide provides information on the role and goals of each course offered by the institution.

Indicators

- Course planning and approval takes place within a structured curriculum framework.
- The objectives and learning outcomes for the course and its methods of assessment are compatible with those of courses delivered by other means.
- The rationale for use of e-learning and the level of support provided is clear to staff and learners alike.

Course design

At excellence level

- Course learning outcomes and skills acquisition are mapped to an institutional framework.
- The role of the e-learning course in the programme as a whole is set out clearly and comprehensively in student handbooks/guides.

3.2.2 Concept and specification

During this phase, course designers will define:

- the coverage of the course;
- any prerequisite knowledge;
- the key instructional techniques that will be used;
- the likely methods required for assessment;
- the subject expertise required by teaching staff;
- the professional skills required by course development staff;
- an indication of the required study time.

The output from this phase of activity is an outline specification of the course. This may represent a critical step in an institution's course approval and resource allocation process.

Statements of knowledge and skills prerequisites are an important component of the specification, particularly in institutions and consortia constructing modular programmes.

Dependent on the scope and size of the course, authoring roles will be allocated to specific authors and media professionals may be commissioned to contribute to the development of course

Course design

materials. The authoring specification will indicate the outcomes expected.

Mechanisms for acquiring feedback from learners and other stakeholders also need to be planned at this stage.

Indicators

- Students' expected prior knowledge, skills and competencies have been considered, and requirements made explicit.
- Sources of expertise for course development have been identified.
- Key aspects of the course and learner context are researched and specified.
- Detailed prerequisites and student learning outcomes (knowledge, skills and competencies) are specified.
- There are clear statements regarding the use of e-learning within the course.
- The importance of appropriate interaction (synchronous or asynchronous) between learners and with tutors is reflected in the design of the course.

At excellence level

- Course design, development and evaluation is conducted by teams bringing expertise in subject domain, media use, instructional design and technical competences.

Course design

- The course design process includes mechanisms for trialling or evaluating materials with students, and incorporating their feedback.
- Analysis of course and learner context is conducted within an institution-wide framework.
- Pre-requisites and student learning outcomes are developed within an institutional, or national framework, facilitating student mobility between courses, departments and institutions.
- Each course defines its use of e-learning within an institutional framework.

3.2.3 Learning and content design

Student interaction with course material is a key factor in e-learning. Design of course content should aim to deliver outcomes via a balanced use of e-learning media, online support facilities and (in the case of courses employing a blended learning approach) other teaching media.

In particular, content should:

- be relevant, appropriate and clearly presented
- build on and reinforce prerequisite concepts and skills
- introduce, assess and reinforce new concepts and skills
- be logically structured and sequenced
- incorporate interaction (student-content and student-student).

Course designers will match their use of the media and delivery modes available to them to the course outcomes identified in the analytical phase. There are tools available to support the learning

Course design

design process and the sharing of learning designs with colleagues.

Course designers develop content that allows for educational and subject updating.

Indicators

- The specification of course content demonstrates appropriate matching of e-learning media with educational objectives.
- The e-learning content is well structured with clear relationships between elements and signposting of study routes through the course materials.

At excellence level

- The institution has effective mechanisms to share knowledge and experience in the design of course content and the consequent impact on student learning.
- E-learning content is designed to allow for updating and adaptation to new contexts.

3.3 Materials and production design

The processes employed in the design and development of course materials can have a major impact on their teaching effectiveness.

Course design

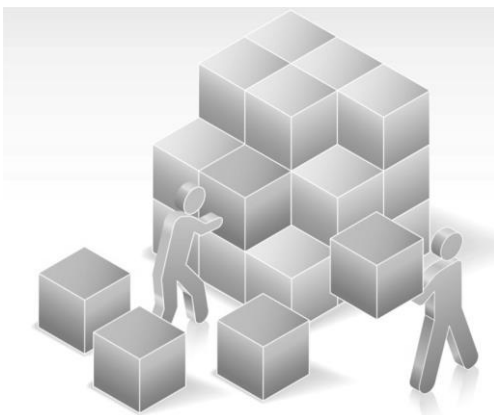
Development of a course may be a significant media and software development project and demands the application of project management techniques. These may be applied during initial course design, but are particularly important during the materials production phase.

Inputs from several professions are desirable for the development of high quality e-learning materials. Effective interaction between key professionals is an important performance indicator. Specialists in design of learning materials may be located in an educational development unit, library or information services unit dependent on the institutional policy and history.

The increasing availability of Open Educational Resources or other third-party resources provides an alternative to creating materials from scratch. Review of available Open Educational Resources may identify resources that may fully or partially meet the requirements of the course or, dependent on licensing conditions, may be revised to meet them. Improved or newly created resources may be offered back to the OER community, contributing to the wide availability of high quality resources.

3.3.1 Technical design

The Institution should provide a framework of technical, accessibility and presentational standards that apply to e-learning materials and systems. These standards should embrace the following factors:



Course design

- Interfaces used in the technical design of courses should conform to up-to-date usability and accessibility standards.
- As far as possible, materials should be provided which are accessible to users with special requirements, for example students with a visual impairment or limited manual dexterity. Materials may be provided in alternative formats (for example, transcripts of audio) to cater for different needs.
- Learning materials should have good graphic design standards.
- Materials should be neutral as to sex, ethnicity, age and related issues.
- Software used in courses should be reasonably up-to-date and platform neutral, or alternative versions should be available. Software updates should be easily available to users.
- When creating learning materials to be delivered online, course developers should take into account download times taking due account of the infrastructure available at the point students are likely to use for access.
- Learning materials should be accessible and usable via a variety of devices including mobile devices. Institutional policy may stipulate the types of material that should be accessible via mobile devices, e.g. all course calendars and schedules.
- Stylesheets and schemas should be used in order to provide consistency of presentation format for learners.
- Course developers should be provided with suitable authoring tools and a supportive environment to enable them to make effective use of these tools.

Course design

Indicators

- Course materials and other online services are designed to operate effectively on clearly specified equipment and connectivity platforms.
- The technical aspects take appropriate account of the locations and circumstances in which students may access the learning materials.
- Course materials complies with national and European standards on accessibility.

At excellence level

- The institution provides course authors and course teams with extensive support on the technical aspects of course design.
- The institution has implemented a clear strategy for the technical requirements for student access to e-learning.

3.3.2 User interface

The student user interface is the primary route through which students access learning materials. Poorly designed features of this interface may create irritating barriers to learning achievement.

Where courses are available on a number of device platforms the user interface should retain its major features on all platforms.

Course design

From a student perspective the interface should incorporate common features across all the institution's programmes.

Important features are, for example:

- Elements such as font, text, placement and presentation should be consistent.
- Elements and layout should stimulate the learner's motivation to study the online materials.
- Feedback cues should be available, e.g. the link changes colour when clicked.
- Navigation should be user-friendly: intuitive, consistent, easy and efficient.
- The interface should comply with usability and accessibility requirements.
- Learning materials should be provided in alternative formats where possible.

Indicators

- Course materials have a consistent user interface, with a common use of styles, formats etc.
- All interfaces comply with applicable usability and accessibility standards.

At excellence level

- The institution offers course teams a choice of interface tools, styles, formats etc. appropriate to course needs whilst retaining operational efficiency and institutional

identity.

3.3.3 E-learning elements and activities

A course will contain a number of e-learning elements or activities.

In some circumstances, it may be appropriate to design these as reusable learning objects, or to reuse such objects obtained from a repository. Learning objects are focused on a specific learning objective, contain learning content (text, images, video etc.) and possibly (self-)assessment. To be easily reusable they should be accompanied by a metadata description that includes a statement of the learning objective, subject area keywords, copyright information etc.

More commonly, a less formal approach is taken to creating e-learning elements and activities but many of the characteristics listed below will still apply.

Academics should be literate in the use of e-media and aware of technical opportunities and constraints. However, the design and implementation of more sophisticated e-learning elements and activities will require input from media/technical experts. Close collaboration and good communication between these experts and academics contributes significantly to the creation of effective e-learning. It remains the responsibility of academic leaders to rule on matters of teaching and content.

E-learning elements and activities should:

- conform to usability and accessibility standards;
- where appropriate, conform to metadata standards;
- be relevant, accurate, appropriate and clear;
- be designed for regular updating;

Course design

- be reviewed periodically to ensure they continue to meet programme standards;
- be appropriately interactive (either student-computer or student-student);
- comply with legal requirements e.g. copyright issues should be identified and documented.

Indicators

- The e-learning elements and activities of a course are judged to be fit for purpose by students and external assessors.
- The e-learning elements and activities of a course provide a range of learning experiences for students and are adequately interactive.

At excellence level

- The e-learning elements and activities are acknowledged to be of high standard by students, academic peers and media professionals.
- The e-learning elements and activities offer diversity in the learning experiences provided and enables students to fulfil learning outcomes in a stimulating environment.
- The e-learning elements and activities can be used flexibly in contexts other than their initial application.

Course design

3.3.4 Open educational resources

Open Educational Resources (OER) are digital materials offered freely and openly for use and reuse by educators and students. OER can be found through the large institutional and collaborative repositories that now exist.

The intellectual property rights associated with OER (often one of the Creative Commons licences) usually allow material to be used without cost for non-commercial purposes and allow material to be freely reverted and updated. However, some rights may still be reserved, most commonly a requirement that the attribution to the original author should be preserved. Rights must therefore be carefully tracked to ensure that the appropriate level of access is preserved and that authors are credited where appropriate.

A course designer could develop a course by picking existing OER elements (and perhaps customising them as appropriate) rather than developing new material from scratch. The OER elements might range from single images to more extensive learning objects containing learning objectives, content and assessment. The resulting e-learning material should be judged under the same quality criteria as new material or bought-in material. However, an OER obtained from a repository may already have some assurance attached to it. The repository itself may carry some weight of the reputation or brand of an institution, user reviews and voting systems may offer recommendation, or the repository may offer a peer review stage prior to acceptance.

An important benefit of OER is that the licence to freely change material makes it possible to update and improve it, allowing high quality e-learning resources to evolve as users improve content and offer it back to the OER community.

Learning material, either modified from existing OER or created from scratch, may be offered back to the community as further

Course design

OER. OER therefore have specific quality dimensions relating to reusability and openness in addition to the quality dimensions relating to content discussed above. These include:

- Format: conformance to standards and file formats.
- Localisation: ease of adaptation to other languages, cultures, or contexts.
- Discoverability: metadata, tagging.
- Technological barriers: bandwidth, software requirements.
- Interoperability: ease of reuse in different software environments.
- Accessibility: to users with special needs.
- Digital preservation: likelihood of continuing access over the long-term.

Indicators

- Course materials obtained from OER are judged fit for purpose by students and external assessors.
- There is a principled approach to judging the quality of material obtained from an OER repository.
- There is a process for tracking intellectual property rights associated with e-learning resources.

At excellence level

- E-learning resources are contributed to repositories as OER.

Course design

3.3.5 Massive open online courses

Massive open online courses (MOOCs) are in a sense a development of open educational resources (OERs). A MOOC offers a full course experience and includes some form of assessment, whereas OER might be a much smaller component. (There is however a trend toward shorter MOOCs since these are more likely to be completed by participants.) The 'open' nature of a MOOC is typically taken to mean both that it is free to the learner and that there are no formal entry requirements. (Unlike OER, MOOC content rarely has an open licence that would allow for reversioning and reuse.) A MOOC is typically run with a defined start and completion dates and therefore has a defined cohort of participants who are offered some student support, although some are offered for study at any time. Successful completion of a MOOC is usually recognised by a certificate of completion rather than formal credit, although formal credit is offered for a minority.

Quality issues for institutions developing for MOOCs are similar to those of other e-learning courses. A specific characteristic is that a MOOC must be designed to scale to large numbers of participants without the quality of the student experience suffering; in practice this means it must scale without a large increase in the load placed on teaching staff. Scaling to large numbers is not a problem to online content delivery, but raises issues for student support and assessment. A limited amount of support from academic staff can be supplemented by using mentors and forum moderators who can answer routine queries, and by encouraging peer support. Peer assessment and automated assessment such as multiple choice quizzes will scale to large numbers of students; both may require considerable design effort to deliver reliable and valid assessment.

Course design

Some institutions have offered a course in mixed mode: as a conventional for-credit e-learning course for its registered students (possibly with additional support and assessment), and simultaneously to other participants as a not-for-credit MOOC. Registered students may benefit from the knowledge and collaboration brought in by the larger number of participants.

A course or programme taught at one institution could allow students to take a MOOC offered by another institution. If the MOOC has accompanying formal credit, this can be treated as an example of virtual mobility. Alternatively, the home institution could treat the MOOC as OER and provide its own assessment to validate the students' learning.

3.3.6 Process management

The materials necessary to support e-learning are varied in nature and there is no single methodology for managing their development. However, there are technical and presentational aspects that increase the complexity of their production beyond that associated with print based materials. The contents of this section present a comprehensive view of processes that may be involved with large-scale production, but in many instances a more agile and flexible management framework will be appropriate.

The processes for producing course material should be well managed and allow for effective collaboration between the professional groups involved. Management of the interface between academic and media/technical experts is a key issue. Institutions should use project management processes appropriate to their circumstances. Materials development projects should be progressed within agreed budgetary frameworks.

Course design

In circumstances where a significant proportion of materials production activity is undertaken by external organisations or consortium partners, external partners should be appropriately integrated into the institution's project management process.

Particulars of the project management framework might include:

- Documentation of production processes and roles.
- Clear protocols for the transfer and handover of course materials between professional groups.
- Involvement of and support for all categories of professional staff engaged in materials development and production.
- Clearly established pathways for materials development, allowing for parallel and serial contributions by professional groups and other participants as necessary.
- Clear mapping of dependencies in the production pathways.
- Establishment and use of protocols for version control.
- Templates for contracts where development is sub-contracted to external agencies.
- Clearly defined relationships between contributors to consortium arrangements.
- Costing methodologies that reflect the impact of media choice on material and staff costs over the lifetime of the course.

Indicators

- The production of the course is progressed using appropriate levels of project management.
- The roles of individuals within the project team are well

Course design

defined and all recognise their professional interdependence.

- Those responsible for project management make timely and appropriate decisions.

At excellence level

- The institution operates a production management system that provides tools and information essential to monitoring course materials production.
- Well established protocols and contracts facilitate project management of course elements commissioned from third party individuals or organisations.
- The institution has extensive information on the costs of course materials production.

3.4 Assessment

Student assessment should be considered as an integral part of the design of e-learning. It needs to be considered as part of both curriculum design and course design. See Sections 2.4.1 Formative assessment and 2.4.2 Summative assessment which discuss various types of assessment.

Course designers should plan the process of student assessment as an integral component of a course. They should ensure that the assessment fits the method of delivery and that the total assessment burden is proportionate to the size of the course and its credit rating.

Course design

Student work may be marked by peers, teachers or by automated marking processes and these techniques may be used for both continuous and final assessment.

For students following e-learning courses the sequencing of assessments and their schedule forms an important factor in determining student study patterns. The use of formative assessment can be designed to provide points at which students can verify and consolidate their progress towards achievement of learning outcomes. Learning outcomes will be assessed more formally in the summative assessments.

3.4.1 Continuous assessment

Students should be fully informed on the nature and function of assessments during the course, their contribution to summative assessment and their relationship to intended learning outcomes.

Teacher feedback on assessments is an essential teaching tool. Teachers should be required to provide timely feedback aimed at improvement. In circumstances where marking responsibilities are devolved to tutors, or in consortium arrangements, marking criteria need to be uniformly understood and consistently applied. Clear marking guides, and online discussion among tutors, will help to achieve this.

Peer and self-review can also be used for formative assessment. Clear marking criteria are needed for this to be a valuable exercise.

E-learning offers opportunities for embedded interactive formative assessment with automated feedback. Development of these assessments requires significant academic input and collaboration with experts in the facilities available through the institution's VLE systems. The benefits to students through rapid

Course design

feedback are considerable.

Indicators

- Student assessment, both summative and formative, is considered as an integral part of the course design process.
- The course provides timely opportunities for students to verify their progress towards achieving learning objectives.
- Appropriate measures are in place to ensure fairness and consistency in marking, and timely feedback to students. This is monitored on a regular basis.

At excellence level

- Staff development programmes in online assessment are provided.
- There is a demonstrable institutional commitment to improve the assessment of courses, by monitoring tutors' marking and by using feedback from students and tutors.

3.4.2 The examination process

The formal examination has been the cornerstone of assessment in higher education, but it can be argued that it does not provide a true measure of an individual's likely performance in their future profession. Other assessment modes such as portfolio or project-

Course design

based assessment are therefore increasingly used. However, examinations are likely to continue to be used extensively in e-learning courses to reassure stakeholders on matters such as student identity.

Many e-learning courses will require one or more examinations as a component of the summative assessment. In designing examinations, staff should take into account the students' primary (computer-based) mode of learning, and examiners (including external examiners) should bear this in mind. Students should be clearly advised on examination requirements.

The use of e-learning raises issues of verification of student identity, and measures should be taken to prevent impersonation and plagiarism. These measures may include: checking identities at approved examination centres; using software to detect plagiarism and collusion; cross-referencing and correlation between performance on written examinations and on continuous assessment.

Institutions offering programmes internationally should ensure that their mechanisms for verification of identity can be operated in all territories in which they register students.

Indicators

- Examination procedures for e-learning courses comply with institutional examination procedures and do not disadvantage e-learning students.
- Adequate identity checks guarantee the integrity of the examination process.
- Software is used to detect plagiarism and collusion.

Course design

At excellence level

- The institution operates examination policies that have been specifically designed/adapted to cater for the needs of e-learning courses.
- Development and quality management of fully online examination processes is an objective for the institution.

3.5 Course evaluation and approval

Institutions should have in place appropriate structures for the approval and long-term evaluation of courses. Independent evaluation of course design and course materials may be carried out to ensure comparability with national or professional standards. In the case of e-learning courses the evaluation process should address subject content, modes of delivery and levels of interactivity. For example:

- External assessors should be engaged to review course design and provide developmental feedback.
- The monitoring and evaluation process should provide feedback relevant to improvement and redevelopment that course authors can act on.
- Once a course is in presentation, data on patterns of student use may be gathered and analysed, in addition to evaluation information from formal survey activity.

In an e-learning situation there is potential for generation of extensive data on student activity and performance. The systematic use of this data is now known as learning analytics and

Course design

is of growing importance for quality improvement, including provision of feedback and advice to students or to prompt tutorial interventions. The course design team should devise a strategy for exploiting these information sources and tools.

Course development and presentation schedules should provide sufficient time and resources to implement improvements.

Indicators

- Course design and materials are subject to independent review and there is evidence that the course designers respond appropriately to reviewer comments.
- There are appropriate feedback mechanisms in place to support the improvement and development of the course.

At excellence level

- The institution operates an independent review system whose results are used widely, alongside its own feedback systems, to improve the design of subsequent courses.
- Monitoring of student activity and student feedback is used, on a continuous or cyclical basis, to highlight areas for improvement.
- All course materials are developed and tested using fit-for-purpose quality management procedures.
- Learning analytic data is used to gain insight into the success of aspects of e-learning design. This is used to improve the design of future courses.

4 Course delivery

Course delivery encompasses the Virtual Learning Environment, personal learning environments and/or other channels, such as social media, through which students receive their course materials or communicate with fellow learners and staff.³ These systems represent a very significant investment of financial and human resource in their acquisition and on-going support.

The selection of a particular system, which may influence teaching developments for many years, should be driven by both educational and technical requirements. Educational requirements include delivery of learning resources, facilities for online communication and tools for assessment. Technical requirements include reliability and security standards. The delivery system should be reviewed and monitored to ensure it continues to meet these requirements.



³ The system through which the e-learning student interacts with the University may have several components: a system through which the student accesses learning materials and teaching services, an administrative system that handles registration, etc. These components may be commercially acquired or developed by the institution itself. We are using the term VLE as a coverall term to describe this system. In a well-developed system a student should be able to access all services via a single log-on.

Course delivery

Effective course delivery requires collaboration between academic and operational divisions of the institution. Technical infrastructure should serve the educational requirements of the academic community, both students and staff.

Benchmarks

- 19 The technical infrastructure maintaining the e-learning system is fit for purpose and supports academic, social and administrative functions. Technical specification is based on stakeholder requirements and involves realistic estimates of system usage and development.
- 20 The systems for communication and storage of data are secure, reliable and assure appropriate levels of privacy. Measures are in place for system recovery in the event of failure or breakdown.
- 21 Appropriate provision is made for system maintenance, monitoring and review of performance against the standards set. These standards are updated when necessary.
- 22 E-learning systems provide a choice of online tools which are appropriate for the educational models adopted and for the requirements of students and educators.
- 23 Information about how to use the institution's e-learning systems and services is provided to all users in a logical, consistent and reliable way.
- 24 Institutional materials and information accessible through the VLE are regularly monitored, reviewed and updated. The responsibility for this is clearly

Course delivery

defined and those responsible are provided with appropriate and secure access to the system to enable revision and updating.

4.1 Technical infrastructure

Effective delivery of e-learning courses requires the institution to acquire, operate and maintain a computer-based system capable of: registering students to courses and programmes; distributing e-learning materials to students; maintaining and updating records of student performance; conducting aspects of e-business with respect to student fees etc.; and facilitating communication between the institution, its students, staff and affiliate staff (if any).

The system must be capable of operation to standards commonly encountered in the commercial world in terms of availability and capacity to cope with anticipated business flows. This section does not purport to offer detailed definitions of the services or the technical specifications required.

The technical infrastructure for e-learning, together with its management and development, should be guided by a strategic plan at institutional level.

4.1.1 System design and architecture

The design and architecture of the institution's technical infrastructure is a key factor in successful delivery of e-learning programmes. This may demand significantly greater capacity and capability than is required to support campus based students or research programmes.

Course delivery

Institutional systems are one aspect of the delivery system, the other major factor being the facilities owned or accessed by its target student audience. Increasingly students can be expected to own their own devices (laptops, tablets or smartphones). Institutional decisions should therefore be influenced by information about the equipment and online services used by students. Hence socio-technical foresight activities play a role in informing institutional decision making. The institution should adopt a strategy that allows for increases in demand and the emergence of new technologies and patterns of use. For example, there has been a shift from personal computers to tablets and smartphones; this creates a pressure for platform-neutral delivery to which content and web applications delivered through a browser offer one solution. But perhaps paradoxically, the rise of tablets and phones has also created a demand for apps which are high platform-specific.

The institution may choose to work in consortium arrangements with other institutions or to outsource provision of its technical infrastructure. In either case it should ensure that the arrangements will provide effective service for students and staff.

Indicators

- The technical infrastructure is well defined and supports institutional e-learning objectives.
- The system meets the equipment and connectivity requirements of student users.
- Any necessary contractual relationships with partners or service providers are in place and well defined.
- There are secure systems for storing and analysing data

Course delivery

on students' learning activity and interactions with university online systems (learning analytics data).

At excellence level

- The strategic plan defines the current and future technical needs of the institution.
- The institution undertakes regular technical foresight activity to inform decision making.

4.1.2 Technical infrastructure management

The technical infrastructure should be professionally designed, managed and maintained to ensure that it meets capacity and availability targets.

Services and standards of performance should be equivalent to those encountered in customer service organisations such as banks and other companies that offer their customers online services. Staff responsible for these functions should have performance targets and reward systems equivalent to those encountered in the service sector.

Indicators

- There are clear operating standards and management processes.
- Operating standards are implemented effectively.
- There is sufficient server capacity and bandwidth to

Course delivery

handle the planned usage.

- The technical requirements of the system are monitored on a regular basis.
- E-learning requirements are integrated with the longer-term IT infrastructure plans of the organisation.

At excellence level

- The institution sets standards for the operation of its technical infrastructure that are benchmarked against other major online customer service providers.
- The future planning of technical infrastructure for e-learning is a major aspect of organisational ICT planning.

4.2 Virtual Learning Environment

The term Virtual Learning Environment (VLE) is used to describe the collection of software systems that provide materials and facilities for online learning. These systems allow for management of all processes from course authoring to delivery of the course materials to students and recording their performance. (The term Learning Management System (LMS) is often used synonymously with VLE but may indicate a greater focus on administration than on course authoring and production.)

The system requires integration with many pre-existing systems within an institution e.g. its student registration system. Some institutions may choose to implement a VLE by an internal systems integration project. Increasingly institutions are

Course delivery

purchasing commercial systems, or using open source systems that may be modified to suit institutional requirements.

This section describes aspects of the functions carried out by the VLE. It is not a checklist for VLE functionality.



4.2.1 Learning platforms and management systems

The core of the Virtual Learning Environment is the system for delivery of e-learning materials to students. This component of a VLE may also be known as a learning platform. Its facilities influence the nature of teaching and student interactions that can be offered and affect the work of course designers and students.

Previously many institutions operated home-grown learning platforms, often with their origins in a single department. For most institutions the operation of such systems is no longer a feasible option. Instead, institutions may choose to:

Course delivery

- buy a system from a commercial provider and manage it in-house;
- buy a managed service from a commercial provider;
- operate and manage an open source system (and contribute to the development community);
- join a consortium that has itself selected one of the above options.

The advent of cloud computing may result in institutions and their students using services that are hosted in the cloud rather than on servers controlled by the institution's staff. Cloud computing is 'software as a service': the cloud provides the infrastructure and platforms on which the applications run and end-users access cloud-based applications through a web browser or a light-weight desktop or mobile app.

Students are accustomed to using public services for social media (e.g. Facebook) and storage and sharing of media (e.g. Flickr). The issues facing institutional use of these services include how to integrate them with a VLE and defining the boundary between institutional and personal space.

Whatever the service model chosen, the institution retains the responsibility for ensuring it fulfils institutional objectives.

Learning analytics approaches to improving student learning depend on accurate tracking of an individual student's activity in the VLE. To support this the VLE should capture appropriate data and provide reporting tools that can be tailored to the intended user (student, tutor or support staff).

A further aspect provided by a VLE is a learning management system that focuses on administrative aspects such as the allocation of students and staff to courses, the submission of assessment, etc. Many institutions have existing administrative systems and the VLE should be integrated effectively with these.

Course delivery

Indicators

- The VLE is appropriate for the type of learning and the requirements of learners.
- The system provides robust privacy, and this applies to personal data and interactions, in addition to academic and financial transactions.
- The VLE captures data that can be used for learning analytics approaches and there are appropriate reporting tools such as dashboards for users of this data.
- The VLE and resources demonstrate ease of use for the full range of target users, including people with disabilities.
- Provision of the VLE is protected by robust contractual arrangements and contingency planning.
- The system allows for personalisation.

At excellence level

- The VLE is under constant review in the light of technical and educational developments.
- The institution contributes to the development of e-learning systems.

Course delivery

4.2.2 E-learning material provision

E-learning resources should be developed or selected to meet the requirements of target users (learners and teachers). The e-learning system should address the needs of users for easy access and high quality interaction with the learning materials. The e-learning system should enable students to interact with all features of the learning materials as intended by the course developers without any reduction in intended functionality or interactivity.

In circumstances where students do not have routine access to good connectivity, the institution may use hybrid systems to deliver materials. For example, materials that have large amounts of dynamic graphics or video content may be distributed via DVD rather than online.

Course materials and delivery technologies should be evaluated under realistic conditions of anticipated use that replicate both the equipment and connectivity used by students and the traffic volumes anticipated at central portals and course servers.

Copyrights and licence arrangements should be protected and managed effectively and any limitations on the use of third party materials effectively implemented.

The organisation's approach and policy on interoperability of resources and adherence to technical standards should contribute to the effectiveness of the system.



Course delivery

Indicators

- The content is presented in a learner-oriented fashion.
- Policies for delivery of materials are consistent with the technical infrastructure available to students.
- The e-learning materials exploit opportunities for interactivity.
- The VLE supports rich interactivity.
- Course materials and delivery systems are technically tested under realistic conditions.
- There is a system for securing and recording the rights necessary for use of third party resources in teaching materials.

At excellence level

- The institution has in place policies for internal reuse of materials and is active in the OER movement facilitating the sharing of materials between institutions and individual learners.

4.2.3 Information requirements

There should be clear information available to students and other interested parties on the main aspects of each course: its size and level, subject content, relationship with other courses, mechanisms for dissemination of course materials, and types of assessment.

Course delivery

Information may be extracted to suit the needs of differing audiences and modes of presentation, for example prospective students, enrolled students, system managers and student support agents.

Indicators

- Students contemplating study by e-learning are adequately informed of the courses available to them and the requirements for study.
- Learners are provided with full information on sequence, timing and options within their intended programme of study.
- Details of course delivery are provided to learners and staff in a clear and accessible way.
- Responsibilities of the different staff groups (teachers, tutors, etc.) involved are specified and clear to learners.
- The provision of information is managed consistently at programme level.

At excellence level

- The institution has a comprehensive policy for the provision of online information to prospective, current and former students.
- There are institutional templates for the presentation of information and these are adhered to by all programmes and courses.

Course delivery

- There is clear responsibility for overall management of information provision across all programmes.

4.2.4 Monitoring and updating the e-learning system

The e-learning provision should be monitored and managed on a continuous basis to ensure its effectiveness. It should be evaluated and updated on a planned and appropriate basis. Monitoring should cover both the detailed operational aspects of the system (performance, availability, capacity utilisation, user error reports etc.) and also the performance of the human support systems.

Routine student surveys administered online should be augmented by consultation with the student body regarding the effectiveness of the system. This information should be used to inform future development.

Indicators

- The performance of the e-learning systems is monitored and opportunities for performance improvement identified.
- Performance of mentors, tutors and moderators is monitored regularly.
- Problems and issues are acted upon promptly.
- Longer term improvements are identified.

Course delivery

At excellence level

- Provision is evaluated and updated on a planned and appropriate basis.
- There is an institutional policy of performance analysis and survey that informs future developments.

4.2.5 Online assessment

Online assessment is an important function of a Virtual Learning Environment, and may be formative or summative. Online systems are capable of delivering assessments in a range of styles and providing remedial teaching in response to student error. The system should be designed to do this effectively and provide feedback speedily, linking with other support mechanisms wherever possible.

For assessments that are essentially conventional in format, e.g. essays, but are submitted online, security in transit between student and marker, quality of the marking tools and detection of plagiarism are technical aspects that should be implemented and monitored.

Students should have access to their up-to-date assessment record at all times.

Indicators

- Assessment methods are appropriate to the programme and topic.
- Learners are informed about the conditions and outcomes

Course delivery

of the assessment before and after completion.

- Appropriate arrangements are made for security of assessments.
- Data protection and privacy procedures are in place.
- Feedback is relevant, contains appropriate depth and is timely.
- Progress details are available to the individual involved.
- Plagiarism detection systems are available and staff conform to policies on the use of these systems.
- Learning analytics approaches use data from online assessments.

At excellence level

- The institution invests in the development of online assessment tools and techniques.
- There is evidence of research and development of online assessment and the dissemination of these across the institution.

4.2.6 Alternative formats

Though it is envisaged that the majority of learning needs will be met by online materials, a course may be designed to include physical materials (e.g. printed books or CDs/DVDs). Additionally, online material may need to be provided in multiple formats to

Course delivery

meet the accessibility needs of individual students. The learning system should make it clear to students which materials are delivered online and which in a physical format.

Indicators

- Distribution systems for physical materials operate effectively and meet student needs in terms of time and cost.
- Online material are provided in alternative formats to meet the accessibility needs of individual students.

5 Staff support

The objective of staff support services is to enable all members of academic, administrative and technical staff to contribute fully to e-learning development and service delivery. Institutional adoption of innovations from the media and technical landscape will trigger the need for specific staff development activities. There is also a need for ongoing dissemination of good practice.

Academic staff need particular support to make the transition from traditional face-to-face teaching to effective teaching using an online environment; this support should encompass both educational and technical aspects without demanding that academics become ICT or media specialists in their own right.

Teaching through e-learning should be acknowledged when managing staff workload. Career development incentives should promote the use of e-learning. It is important to address the needs of both full time and associate staff who may be employed in a number of teaching and administrative roles.



Staff support

Benchmarks

- 25 Staff in academic, media development and administrative roles can adequately support the development and delivery of e-learning elements and activities.
- 26 The institution ensures that appropriate training and support is provided for staff and that this training is enhanced in the light of technological and educational developments.
- 27 Educational research and innovation in e-learning are regarded as high status activities, and are promoted by career development incentives.
- 28 There are mechanisms for the dissemination of good practice based on experience and research on e-learning.
- 29 The institution ensures that issues of staff workload, and any other implications of staff participation in e-learning activities, are taken into account when managing courses or programmes.
- 30 Adequate support and resources (e.g. technical helpdesk and administrative support) are available to academic staff, including any affiliated tutors/mentors.

5.1 Technical aspects

Academic and administrative staff working in an e-learning environment may require significant technical support in the

Staff support

acquisition, operation and maintenance of ICT systems. Specialist technical staff should be available to provide support in all technical aspects.

5.1.1 Technical support

All staff should have access to technical support in the use of the e-learning environment and the hardware and software used in teaching. This support should extend to software used for authoring and production, including audio/visual media, and for teaching support, including learning analytics. Support may be provided by a helpdesk service.

For those working remotely, technical support can be provided online or by telephone. Whilst the institution may not have responsibility for the physical equipment used by those employed in support roles, it should provide access to a comprehensive advisory service to staff that covers technical aspects that might affect the institution's teaching. The use of cloud computing may reduce the need for locally provided technical support.

Within the institution, technical support should be available to all staff and should operate to clear performance levels, bearing in mind the impact that technical problems might have on the capacity of staff to support student learning.

Indicators

- All staff have access to technical support services in selection, acquisition and maintenance of their ICT equipment and networks.
- Technical services operate to clear and agreed standards

Staff support

for provision of staff support.

- The infrastructure supports teachers at all times with online access to materials, administrative data and communication facilities.
- Technical support is available for access to academic and administrative services through mobile devices.

At excellence level

- There is an institutional plan for the provision and future direction of the technical support function.
- Technical departments collaborate with academic, media development and administrative staff in the development of strategies and plans that take into account the potential of emerging technologies.
- A suite of online technical support services is available to staff working remotely.

5.1.2 Technical training

Academic, administrative and support staff should have access to appropriate training.

Design of training programmes should be informed by a training needs analysis that identifies training requirements by job function and addresses the needs of existing and newly recruited staff.

Training may be provided by induction programmes on appointment, training programmes associated with the

Staff support

introduction of new systems, updating programmes, online training materials and helpdesk services. Elements of embedded training may be available via the help functions within the VLE or other online systems.

The training of staff who work remotely from the institution's headquarters or campus may be provided via online and telephone support services.

Indicators

- Responsibility for the provision of training is clearly defined and adequate resources are allocated.
- Newly appointed staff are provided with induction in the use of software and systems.
- The introduction of new systems or equipment is supported by adequate training for all users.

At excellence level

- There is an institutional plan for the provision of training in the technical aspects of e-learning.
- The institution provides access to online self-help training materials augmented by helpdesk services.

Staff support

5.2 Educational aspects

The provision of support for staff in the educational aspects of e-learning is essential if e-learning is to be implemented as an integral component of institutional activity. Many academic staff will not have experienced e-learning during their own education and may not have received training in the educational possibilities of e-learning.

The development of early generations of e-learning programmes was driven by enthusiasts, but future institutional development should be based on involvement by the majority of academic staff. Institutions must foster an environment that encourages and supports the development of teaching skills and expertise amongst its staff. Recognition of these in its structures of reward and esteem is an important factor.

An institution may choose to implement a formal, mandatory programme of training, to equip staff with a basic introduction to e-learning techniques before they assume significant responsibilities for e-learning. However, in a higher education environment a more collegial approach is likely to be adopted, particularly with respect to academic staff.

Lighter touch approaches might involve a rolling programme of seminars, websites providing examples of pedagogic techniques, developmental workshops for course development teams etc.

5.2.1 Educational support

Staff need to be supported in the development of the teaching skills and methods that are necessary for e-learning.

Enthusiasts and professionals may have key expertise but be dispersed across an institution. This can be focused by the formation of a real or virtual department within the institution

Staff support

charged with the responsibility for e-learning development. Members of this department can make their expertise available to others involved in e-learning delivery via, for example: internal consultancy; secondment to course development teams; training courses; seminars (real and virtual); and good practice guides.

Indicators

- The institution offers to its staff an online information service on uses of e-learning.
- Training courses are available for staff engaged in e-learning activities.
- Staff are encouraged to provide mutual support, in cross-professional groups, in the development of e-learning materials.
- Staff are supported in the educational uses of digital technologies (including web oriented tools) in teaching.
- Staff employed as tutors and in other student support roles are appropriately briefed, trained and supported in the educational techniques incorporated in courses.
- Staff are encouraged to reflect on the possibilities of mobile and ubiquitous learning as well as on the implications of merging formal and informal learning.
- Staff are supported in the educational use of learning analytics, including how to interpret analytics data in order to inform learning design.
- Staff have opportunities to provide and receive feedback on their experience of teaching a course.

Staff support

At excellence level

- The institution has recognised structures for the dissemination of best practice in relevant educational techniques.
- There is an institutional plan for the development of educational support services.
- The institution has means of showcasing best practice in online teaching and learning.

5.2.2 Educational innovation

Educational innovation and development should be seen as a key activity for academic and student support staff within the institution. The efforts of staff in this area should be respected, acknowledged and rewarded.

Workload planning processes should acknowledge the time required to develop and practice new teaching skills.

Indicators

- Staff are encouraged to take part in new teaching and learning developments.
- Professional development seminars and symposia on teaching and learning issues are organised (and well attended).
- Internal and external publication on teaching and learning issues related to e-learning is encouraged and rewarded.

Staff support

- Internal secondments and cross-departmental working are used as mechanisms for sharing expertise in teaching and learning techniques.
- The experience of tutorial and other support staff is valued and acknowledged by the institution.
- Student feedback is used extensively in review of new teaching and learning developments.

At excellence level

- Teaching and learning development is widely respected throughout the institution and recognised through reward and career development structures.
- The institution has a group of staff who are committed to the development of e-learning methods. These staff may operate as a self-contained unit or as a distributed group.
- The institution encourages and supports participation in inter-institutional collaboration and exchange programmes related to teaching and learning development.

5.3 Resources

Those involved in the development and delivery of e-learning courses and programmes should have access to the resources to enable them to undertake their activities effectively. The aspects identified in this section include information resources, administration and support in their career development.

Staff support

5.3.1 Information and media support

Staff should have support in the acquisition of information and media materials necessary for them to fulfil their role in the development and delivery of e-learning programmes. This should include information needed to understand and track intellectual property rights, particularly when use is made of OER.

Information on the performance of current and previous e-learning programmes is an important aspect of achieving improvement in programme design and delivery; hence staff should have access to institutional data and other information relevant to their sphere of activity.

Data on student activity and performance may be captured and stored to allow the analysis of individual e-learning activities. This is an aspect of learning analytics that focuses on the improvement of the learning experience rather than the individual learner.

The indexing and archiving of e-learning materials is essential to institutional learning, in order to avoid reinvention of materials, teaching activities or software tools. The indexing and archiving of e-learning materials demands different approaches to those required for traditional materials, and institutions risk losing hard-won experience if they are unable to easily identify and access exemplars of materials or software components. Library staff can provide this expertise.

The semantic web may be one way to increase the reusability of learning resources. This envisages web material marked-up in a way that is machine-understandable. Semantic web technologies could help learners to find learning resources, courses, or complete learning paths that best suit their needs.

Staff support

Indicators

- The technical infrastructure supports teachers by providing online access to materials, administrative data and communication facilities.
- The library function within the institution is adapted to the provision and maintenance of online resources for staff and students
- Support is available for course design staff in locating and evaluating online resources for student use.

At excellence level

- The institution has staff committed to the maintenance of historical records of course and student performance and their analysis to assist in programme development and delivery.
- Learning analytic data is used to gain insight into the success of aspects of e-learning design. This is used to improve the design of future courses.
- The institution has processes for indexing and archiving its e-learning materials for evaluation and potential re-use.
- Development teams are routinely able to access previously developed materials and OER, and consider their potential for re-use.

Staff support

5.3.2 Administrative support

Effective administrative support should be provided to all staff involved in the development and delivery of e-learning courses and programmes.

Institutions are increasingly providing online interfaces for administrative services which can be used efficiently by students and staff. There is a parallel requirement that interactions requiring staff input are processed with the speed and efficiency appropriate to a customer service organisation operating primarily via online interaction, e.g. full student information is available to all staff handling phone or postal enquiries.

The introduction of e-learning may create new administrative tasks or shift the burden to different staff compared to previous modes of delivery (e.g. the administration and management of teaching activities devolved to tutors/mentors). The impact on staff should be assessed and appropriate arrangements made for additional staff to be employed or for adjustment of workloads.



Staff support

The institution may operate a network of study centres; if so, these should provide tutors and teachers with support for effective teaching (e.g. supply electronic teaching facilities independently of the central office). This includes administrative support, both at the study centre as well as (online) via the central office.

Indicators

- The administrative impact of e-learning and e-learning systems on the workloads of all staff groups has been assessed and adjustments made as required.
- Administrative support is provided for devolved teaching, for example where tutors or mentors are used.
- Where study centres are used, effective administrative support is provided, for example to arrange meetings with students.

At excellence level

- All staff using the online administrative system report that it operates well.

5.4 Career development, incentives and recognition

Staff motivation is important to the effective development of e-learning programmes. The institutional leadership should provide motivation for staff to engage with e-learning by emphasising e-learning as a high-status activity and providing reward by financial incentive or peer esteem. Institutional initiatives to change

Staff support

teaching methods will not be well supported if the staff are not appropriately rewarded for adopting new practices.

The involvement of staff in e-learning should therefore be properly recognised and rewarded by the institution. This recognition and reward needs to be integrated into mechanisms for promotion and career development.

The introduction of e-learning may require different working patterns, and produce different outputs, to those that have been used as markers for existing career progression patterns. The institutions should therefore pay considerable attention to the impact of new teaching methods on career review and progression procedures.

Indicators

- Inputs by staff to e-learning programmes are recognised and rewarded.
- The institution has reviewed its careers progression structures to take account of new roles and functions associated with e-learning.
- Criteria for progression and promotion from existing roles are reviewed to ensure that e-learning contributions are appropriately reflected.

At excellence level

- There is evidence that the criteria are actively used by decision makers in the career progression process.

6 Student support

Student support services are an essential component of e-learning provision. Students' retention, success and satisfaction are their main objectives.

Institutions should develop policies and strategies for the design and provision of student support services. Although the delivery of student support services may vary between institutions, some aspects of student support should be taken into account in all e-learning programmes.

Summarizing, support services for e-learning students should be designed to cover the pedagogic, technical and administrative aspects that affect the online learner:

- Clear and up-to-date information and advice about courses should be provided to enable students to make informed choices.
- Information and advice about technical and administrative matters should be easily accessible.



Student support

- Guidance, resources and activities should be provided to support students on their journey through university, including induction, pastoral support, the development of generic study skills and e-learning skills, and career advice.
- Staffed helpdesk and advisory services should be provided at times appropriate to students' needs.
- Online library services should be provided to e-learning students. Study centres may be appropriate for some courses.
- Students should be supported through online communities.

Quality student support services depend on adequate numbers of professional staff. Students should be provided with identified academic contacts responsible for providing feedback and support. Other supporting roles and services should be also available.

Benchmarks

- | | |
|----|---|
| 31 | Students are provided with clear and up-to-date information about their courses, including learning and assessment methods. |
| 32 | Students are provided with guidelines stating their rights, roles and responsibilities and those of their institution. Guidelines of specific relevance to e-learning include provision of hardware, information on accessibility and expected participation in collaborative activities. |
| 33 | Social media opportunities are provided in order to |

Student support

build and support student communities. This may be achieved using the institution's VLE or through external social media, as appropriate.

34 Students have access to support services including technical helpdesk, administrative support and course choice advice.

35 Students have access to learning resources, including online library access, study skills development and a study advisor, and they receive guidelines and training in using these resources.

6.1. Student support organization

Organising student support at an institutional level, perhaps as the responsibility of a unit or department, is key to the quality of support that a student receives. This requires a holistic approach with student support planning based on previous analyses of students' needs and demands, taking into account different learner groups and the specific characteristics of lifelong learners. Institutional planning should integrate different types of resources, coordinating staff to give support in academic, technical, administrative, and other relevant areas. Promotion of student success, satisfaction and retention should be the main objectives.

Support services encompass all those aspects of the university experience other than the specific teaching and learning elements of a course. This covers administrative, technical and pastoral aspects, and includes induction, course choice and careers advice. Some generic academic provision can also be considered under this heading, particularly library facilities and support for study

Student support

skills such as digital literacy. Teaching support is better considered as an aspect of *Course Design* (Chapter 3), even when a devolved model of teaching is used that uses tutors or mentors.

6.1.1. Institutional student support planning

The institution should have a holistic and proactive approach for the delivery of student support services, developing specific policies and programmes that integrate specialised support units and expertise across the institution.

Indicators

- Specific student support policies are developed.
- The institution has specialised support units for the design and provision of academic, technical and administrative support services.
- Expertise on student support is found and promoted across the institution. Development of general support services, resources and materials is allocated to departments or working groups with expertise (e.g. the library may have responsibility for information literacy).
- The institution provides all students with access to professional guidance, including career advice and pastoral support services.
- Student support services for e-learning programmes are available through a range of channels (online and face to face, synchronous and asynchronous, using mobile technologies, etc.).
- Student support services are integrated into the quality

Student support

assurance system of the institution, and students can give their feedback on these services online.

At excellence level

- Learning analytic data is used to target student support.

6.1.2. Support needs for different learner groups

The institution should monitor the needs of its students in order to inform the planning of support services for e-learners. The institution should consider the needs of different learner groups, including prospective and new students, and students with special needs (such as disabled students or those in prison). The demands of each course, and likely prior experience of the students, should be considered. Ways of delivering more personalised support should also be addressed where possible.

Special attention should be paid to offering adequate support to lifelong learners, as many higher education e-learning students are adults with professional and personal responsibilities, who are studying part-time and working to flexible schedules.

Indicators

- The support needs for the main learner groups or profiles are analysed and addressed.
- Prospective and new students receive specific support such as induction programmes, using a cross-institution

Student support

approach where possible.

- Course entry requirements and recruitment information are realistic and matched with the prior skills and knowledge of most prospective students.
- Support for students who lack required skills and knowledge is provided by appropriate online or blended-learning courses and materials, for example OER resources or MOOCs.

At excellence level

- The institution has a proactive approach to student retention, progression and success. Research is developed to promote retention.
- Learning analytics approaches are used to develop strategies for student success and more personalised student support measures.
- Support for students with special needs is analysed and addressed.

6.2. Support staff

The nature of higher education and the breadth of responsibility that institutions carry for the educational and personal development of their students require significant human intervention, and specialised interventions in programmes that are delivered predominantly through e-learning.

E-learning students should be provided with access to human support delivered online, via telephone and/or face-to-face. The

Student support

support may be course-specific or generic in nature. The roles may include tutors, mentors, counsellors, librarians and advisors. Institutional policies should define the service standards for this support. The expected level and frequency of academic student-tutor interaction during a course or programme should be made clear to students and staff.

Staff providing student support should have clear job descriptions and access to necessary information sources and training in order to carry out their functions effectively.

Staff need to be aware of the range of support services available and be able to guide students accordingly.

6.2.1. Human resource planning

The requirements for particular types of human interaction and intervention for delivering student support should be part of the institution's planning process, and incorporated within curriculum and course design.

Indicators

- Analysis of the human support functions needed for successful operation of e-learning is included in institutional planning.
- Planning encompasses human support for mentoring, tutoring, coaching, counselling, assessment, management, advice and guidance services, and includes academic, professional and other specialist staff inputs.
- There are mechanisms in place for the training and development of staff undertaking student support

Student support

functions.

At excellence level

- Staff workload is managed carefully, to ensure that supporting e-learning and e-learners does not create unreasonable demands on staff.
- The institution works to staffing norms and levels of staff resource (e.g. staff-student ratios) which are informed by practice elsewhere and adjusted in the light of experience and feedback.

6.2.2. Support role definitions

The institution should have clear definitions of the student support activities conducted by its various categories of staff: academic, technical and administrative.

Where there is a transition to e-learning from either face-to-face teaching or an earlier form of distance learning, the staff roles should be redefined to ensure that they adequately address the requirements for support of e-learners.

Clear information should be provided to students at the start of their course or programme regarding: the support staff resources available; the roles undertaken by different staff; and the levels of support available. Students should be made aware of how often staff will be available online, and how quickly staff will respond to queries. Students' expectations may need to be managed carefully so that they do not demand immediate 24-hour attention online.

Student support

Arrangements for the organisation and management of online student groups (e.g. for small group tutorials or for larger discussion groups) need to be clear to both staff and students. Tools should be available for the organisation and management of student groups. It should be clear to staff in what situations their intervention will be required, and this should also be conveyed to students.

Indicators

- The job descriptions for staff contain specific references to responsibilities for learner support.
- The scope and function of all the student support roles are clearly specified.
- Student information and materials describe the roles undertaken by those staff categories engaged in student support activities, and the levels of support that can be expected by students.

6.2.3. Administrative support

The majority of administrative functions can be delivered online. Online systems should cater for: registration on programmes and courses; payments; study timetables; access to student records etc. All systems should operate at appropriate levels of security to ensure confidentiality. Online guides to administrative systems should provide students with a clear indication of the services available and how to access them.

Student support

Students may require access to human intervention in some aspects of administration when difficulties arise that are not catered for adequately by online systems. There should be mechanisms for appropriate levels of intervention, from routine error correction in records to personal support for major difficulties. In order to improve administrative processes, institutions should monitor the use made by students of access to their records and the occasions when human intervention is required.

Indicators

- Information and guidance about administrative procedures and regulations is available to students online.
- Students can carry out many administrative tasks online, for example registration and payment.
- There is provision for human intervention in administrative processes and these interactions are appropriately initiated and delivered.
- There are clear online procedures for complaints and for handling and resolving any difficulties or disputes that may arise.

Student support

At excellence level

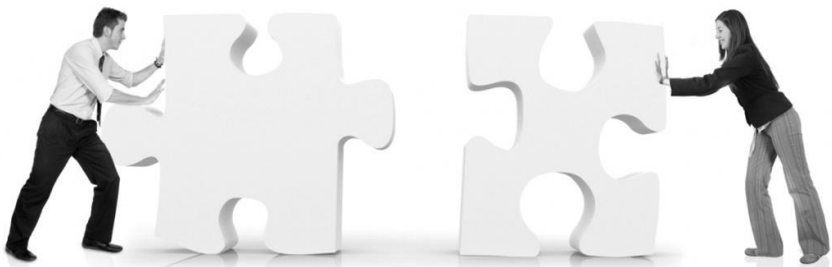
- Information and guidance is available in a range of media, for example video guides.
- The administrative system is proactive, for example providing reminders of submission deadlines to students.

6.3. Technical support

Students will expect to use the institution's online learning environment at any time. They may need technical support to do this. Students should be aware of the nature of services available and the means of accessing them.

6.3.1. Online services availability

As e-learning students are likely to adopt flexible study patterns, the technical infrastructure should operate to a 24x7 schedule. This has impact on the technical aspects of operation (maintenance, upgrading, etc.) and on the provision of helpdesk and other advisory services.



Student support

Indicators

- The online service is available and fully functioning 24 hours per day, seven days per week over the learning period, except for planned maintenance.
- Maintenance and updating is performed as quickly as possible, and at the time of lowest student demand, with all users clearly notified in advance.
- Students are made aware of any technical incidents causing a loss of service.
- Students and prospective students are clearly informed about the personal equipment they require; what technical support is available; and when and from whom it can be obtained.

At excellence level

- Online services are available on mobile, small-screen devices.

6.3.2. Professional management of technical support

The management of the institution's online systems should be the responsibility of professionals, who operate the system to standards equivalent to those in the commercial customer service sector. Comprehensive documentation of operational procedures should be evident; logs and other routine record keeping should demonstrate whether the standards set are being achieved.

Student support

Indicators

- Technical support services are delivered by IT professionals at the institution or by external ones.
- Technical staff at the institution receive initial and updating training.

6.3.3. Online technical support system availability

Students should be provided with access to a technical helpdesk service. This service should cover both the technical aspects of the online learning system and, wherever possible, any problems that students might encounter with the use of course-specific software.

The provision of technical and helpdesk support should be managed by IT professionals or staff specially trained to deliver technical support to students.

Indicators

- Guidance and information, including FAQs, about technical issues is available to students.
- A technical helpdesk is provided.
- Support service opening hours are arranged to suit the needs of students.
- The helpdesk staff have access to comprehensive documentation of operational procedures, and record

Student support

technical incidents and solutions given to students.

At excellence level

- There is a 24 x 7 technical helpdesk.
- Helpdesk staff are able to use remote access to diagnose and solve student IT issues.
- A strategy is in place to overcome technological barriers for disadvantaged groups (disabled students, those in remote rural areas, those who are socio-economically disadvantaged etc.).

6.4. Pedagogical support

Support for learning is at the core of student support. While studying at university, students are expected to acquire a range of generic transferable or key skills such as numeracy, information literacy, presentation and communication skills. While many learning opportunities may be provided within course teaching, an institution-wide approach to support learning and study skills development brings clear benefits.

E-learning may require students to acquire new skills or adopt new learning techniques. Students should be supported in the development and application of new skills and techniques through a range of mechanisms and services. They should also be supported in developing new approaches to their learning. For example, students should be introduced to the development of self-regulated, active and collaborative learning in blended and online environments.

Student support

Students should be informed about the services and resources available to help them to adopt or acquire new learning skills, and how to access these services.

6.4.1. Advice and guidance on study skills development

The provision of relevant pedagogical advice and guidance is an integral part of the course or curriculum planning process, primarily organised to support students.

Students should be informed prior to registration about the skills they will need to develop and the study skills support available to them. Support may be provided through online resources, contact with tutors or mentors who have a specific responsibility to support a particular group of students, or contact with advisory services that may be generic or course-specific.

Support should be provided to help students develop good academic practice in quoting and referencing the work of others. Helping students understand the issues surrounding plagiarism can result in better learning and reduce the burden to the institution of handling plagiarism issues.

Indicators

- There is an analysis of the specific demands of each course and likely prior experience of the student population, in order to design specific learner support services.
- Guidance materials are based on previous analyses of potential students' needs and characteristics, and aim to promote self-directed learning in online environments.

Student support

- The quality of study materials and guidance documents is reviewed by experts to check that they are suitable for self-directed e-learning.
- Materials to support the acquisition of required learning skills are built into courses, or are available to students at institutional level when needed.
- Students are clearly informed about the kind of pedagogic support they will receive in each course.
- Tutoring of each course is carefully planned. Guides about tutoring activities are available to students and tutors prior to the course.
- Feedback and responses to students' concerns and questions are delivered within a short period of time.

At excellence level

- Advice, guidance and tutoring are supported via asynchronous and synchronous online tools (e-mail, forum, chat, videoconference, etc.).
- Students have access to learning skills advisors to augment or reinforce their learning skills.
- Students have access to recordings of synchronous sessions, to be used because they could not attend or for reflection and revision.

Student support

6.4.2. Support for e-learning skills development

Though there may be variation in learner needs from subject to subject, there is likely to be a core of common skills development that is required to support learners' development in online environments, for example digital and Information literacy, and skills for online collaborative work.

Different student groups may display differing experience of relevant technologies and learning methods. Although younger students may be more experienced with technology, they will nevertheless need support in using technology to best effect for learning. New students may need targeted support.

Support can be offered through a variety of means: materials and activities such as OER, MOOCs, seminars, online courses, video-tutorials, blended-learning courses, etc.

Indicators

- Prior to the start of their course, students are informed of the e-learning skills required.
- Opportunities are available online for students, prior to the start of a course, to assess their preparedness for study and to undertake preparatory study as necessary.
- Well-designed online guides/ webpages/ video-tutorials for the IT tools required for students' e-learning studies (virtual campus, software, virtual tools, etc.) are available.
- New students are offered specific online support for the development of required skills and competences for e-learning.

Student support

- The preparatory skills development materials and activities are subject to regular review and updating.
- Tutors have available to them support materials for use with students and receive institutional training for this role.

At excellence level

- Opportunities are available for students to self-test their skills prior to the start of a course and to undertake preparatory study to refine these skills as necessary
- Online taster experiences are available to prospective students. Examples of VLE resources and study materials are available online.

6.5 Support resources

Many aspects of student support can be provided via online access to information and advice resources, materials and services. Since a wide range of support services will be available to students, they will need additional guidance to navigate these; clear information should be provided about what services are available and how to access them.

Resource provision in general is usually managed at an institutional level in order to deliver economies of scale and ensure consistency of provision and dissemination of best practice. Examples include:

- Course choice advice and guidance

Student support

- Online library resources
- Resources and systems to facilitate the development of online learner communities.
- Study centres for face-to-face teaching as part of blended provision
- Careers advice.

6.5.1. Course choice advice and guidance

The institution should provide students with clear advice and guidance on course choice prior to registration, taking into account their personal characteristics and time available for study. Students should be provided with clear and up-to-date information, including a full description of the study programme, the variety of learning methods used, and information on how they will be assessed. E-learning students are likely to use online access to investigate programme availability. Curriculum guides and advisory notes should be available to potential students from programme launch.

Curriculum designers should provide guides to their programmes that indicate routes appropriate to students with commonly encountered profiles of prior education and experience.

Modular programmes may be difficult for students to understand at the outset of their studies. The institution should therefore make every effort to help students to construct a programme that addresses their needs.

Indicators

- The website provides prospective students with all the information they need to make decisions about their

Student support

studies. Information is provided about the institution, faculties, degrees, courses, registration procedures, academic and assessment calendars, etc. Navigation is easy and clear.

- Each study programme and course has a full description of its learning objectives, credits, content, requirements, learning and assessment methods used. This information is freely available for prospective students.
- Navigation through possible course combinations is facilitated by online curriculum guides.
- Advisory notes are available informing students of the consequences of particular choices.
- Advice and counselling over choice of courses and progression through a programme is provided.

6.5.2. Library resources

The library service is an aspect of resource provision that is widely available to campus students; extension of the service to online students (via an e-library service) is essential for effective delivery of e-learning. The provision of library resources and any required training in their use is an institutional responsibility. Digital (online) library facilities provide a good solution for e-learners, as well as being useful for campus students and staff.

Indicators

- Online library resources are available to all students.

Student support

- Online library resources are accessible 24 x 7.
- Resources are available for delivering training to students in digital information literacy.
- The institution offers clear and detailed information that serves as an introduction to library resources and other services.

At excellence level

- The institution is able to provide an equivalent library service for its e-learning and its campus-based students.
- There is a close collaboration between academic and library staff in planning for library resource provision as part of a course design.

6.5.3. Learner communities

Creation of online communities of students is important as it reduces the isolation often associated with traditional modes of distance education and encourages social and informal learning. Institutions should identify the online communication activities that are essential to the achievement of course objectives and those that are more social in nature.

Learner communities can stimulate the creation of a sense of community amongst online students, fulfilling a number of academic and social functions particularly giving students the opportunity for mutual support.

Student support

Online community spaces, such as discussion forums, allow staff to respond and interact with students. Dialogue between students and staff is an important part of building community in a course context. However, this can require considerable input of staff time. They also provide one way to gather informal feedback on students' experience of a course.

Devolving responsibility for the set up and monitoring of online communities (e.g. to student moderators) is possible, but carries with it risks that require sensitive management.

Online communities may be also formed by students (or staff) on external social media, such as Facebook, Twitter or LinkedIn. Consideration needs to be given to handling any problems that may arise (such as collusion, disagreements among students, privacy issues, blurring of boundaries between social and academic life).

Indicators

- The institution is committed to enabling the establishment and proper functioning of communities of e-learning students via its VLE or social media.
- Online learner communities support learning interaction between individuals and within groups, social interaction between students and feedback on students' experiences of their programme. Adequate group sizes are taken into account in the different learner communities.
- Arrangements for the organisation and management of online student groups are clear to both staff and students.
- To support communities of learners, the institution offers

Student support

to students both asynchronous tools (e.g. discussion forums, wikis, blogs, social media) and synchronous tools (e.g. video-conferencing, real-time chat).

- The institution makes clear where participation in collaborative activities is encouraged or required.
- Participants are clearly informed about the use of Netiquette and codes of behaviour online. A clear statement is made about the code of behaviour that applies to students on external social media.
- There is a process for the resolution of contentious issues and for handling complaints.

At excellence level

- Formal and informal online mentoring and peer-to-peer help and learning are promoted, and students receive institutional guidelines for a proper development of these processes.
- Social media, such as Facebook or Twitter, are used to offer dynamic interactions with students, in order to give them relevant or interesting information, as well as to engage and motivate them.
- The institution monitors and surveys the effectiveness of online community groups to inform future policy. Examples of good practice are disseminated across the institution.

Student support

6.5.4. Role of study centres in student support delivery

The primary target for e-learning should be to allow students to interact with course materials, library materials, tutors/mentors and fellow students online, irrespective of location. However, requirements for use of specialist equipment or learning materials, the nature of certain types of tutorial or seminar-type interactions, and the requirement for security of assessment practice may demand the attendance of students face-to-face at study centres.

Institutions may operate a network of study centres which they regard as outposts of the institution and which serve multiple purposes, e.g. regional recruitment and administration centre, local library, teaching centre, assessment centre, etc. Using these study centres for the specific functions noted above should therefore be straightforward. However, pre-existing study centres may require adaptation to meet the needs of e-learning students, depending on the mode of delivery and whether students have online access via their own equipment.

The staff of study centres may be regarded by students as the public face of the university. Induction and training programmes should equip them for this key relationship role, in addition to their primary functions. The study centre may also provide a focus for student community development.

Indicators

- The institution has a clear policy regarding the role of any study centres in its provision of e-learning and has plans for the required update, resourcing and management of the centres for blended and e-learning programmes.

Student support

- Programme designers make appropriate decisions on the use of study centre resources in programme plans, and communicate these clearly to students.
- Students receive clear and detailed face-to-face and online information about the locations of study centres, the facilities and support they offer, the conditions for their use, the occasions during their programme at which they will have to attend a study centre, the type of staff in attendance and their hours of attendance.
- Staff at study centres understand the contribution that they are expected to make to informing prospective new students, supporting student progress on registered courses, and student community development.
- Staff at the local centres are trained in the e-learning services of the institution and are aware of the e-learning policies.
- Study centre opening hours are arranged to suit the needs of students.
- Students can express a preference for allocation to a particular centre for face- to-face events.

At excellence level

- Good Internet connections and specialised equipment or software is provided at all study centres.
- Videoconferencing facilities are available.
- Students are free to use the technical facilities in any study centre.

GLOSSARY

Accessibility

The extent to which a course is designed to allow disabled students to take part in all the activities available to their non-disabled peers and achieve all the learning outcomes. This includes technical aspects such as conforming to accessibility standards, the provision of alternative formats, and processes for making reasonable adjustments to accommodate individual needs.

Adaptive teaching

The use of the computer to analyse a student's current performance and offer alternative content or a different sequence of activities to optimise the student's learning.

Availability

The percentage of time in which a computer system is available for use and not unavailable due to failure or scheduled maintenance.

Badges

Badges can be used to recognise skills or competencies, and are suited to non-formal learning. Digital badges have a software infrastructure that supports the awarding, collecting and display of badges, and verification of both the holder and issuer.

Glossary

Big data

A term to describe approaches to gathering and analysing large volumes of rapidly changing data from a wide variety of sources.

Blended learning

A mix of e-learning with traditional teaching and learning practices. Typically there is a combination of face-to-face interaction with online learning.

Cloud computing

The provision of computer services running on distributed servers provided by a third party, in contrast to computers provided by an institution. Cloud computing makes use of computing resources (hardware and software) delivered as a service over the Internet. It entrusts remote services with a user's data, software or computation.

Collusion

A form of **plagiarism** where there is inappropriate collaboration between students or the knowing exchange of answers.

Course

A well-defined module of study, typically of a term or semester in duration. In this manual, a course is understood to be synonymous with a **module** and not with a qualification.

Glossary

Curriculum

A broad term covering both academic and subject requirements and the processes for organising and managing the teaching and learning.

Distance learning

A mode of study that allows the learner to study most or all of a course without attendance at a campus-based institution.

E-learning

Learning facilitated through the use of information and communication technologies. There are several facets to e-learning including hardware (computers, mobile phones, digital cameras, etc.), digital resources (the Web, materials presented via Virtual Learning Environments, online libraries, etc.), software (tutorials, office packages, etc.), and online communication tools (email, chat, forums etc.).

Evaluation

A systematic appraisal of the effectiveness of a teaching or learning element or activity, carried out for the benefit of the teacher and institution. It should be contrasted with **assessment** activities which are carried out to gauge the progress of an individual student's learning.

Feedback

Advice and commentary given by a teacher on examinations, coursework, or classroom activity. This

Glossary

can be oral or written and helps learners to understand their progress.

Flaming

In online communication (e.g. discussion forums), exchanges of increasingly angry and offensive messages, often caused by a breach of netiquette.

Flexibility

Provision of study such that students can choose their own time, pace and place of learning. It also describes how programmes of study may allow students to choose courses or topics of particular interest to them.

Flipped learning

In flipped learning, students acquire most of their content knowledge by independent online study rather than in face-to-face lectures. Teacher-student contact time is instead used for discussion and problem-solving.

Formal learning

Formal learning is delivered by trained teachers in an institutional setting and is typically assessed for credit. This contrasts with non-formal and informal learning.

Formative assessment

Assessment aimed primarily at determining the strengths and weaknesses of a student's work, with the objective of improvement. Formative assessment demands feedback to the student in some form and

Glossary

may, but will not always, contribute to summative assessment.

Independent learning material

Material designed for learners to study with minimal or no support from a teacher. Also known as self-study materials.

Informal learning

Informal learning takes place outside of formal settings and often takes place in the context of some other experience than an intentional learning activity.

Interactivity

Methods of teaching and learning that include techniques in which learners communicate with each other and with the tutor. Interaction may be synchronous (e.g. telephone) or asynchronous (e.g. e-mail). It is also used to refer to the way in which learning materials themselves are designed to require the active participation of learners.

Key skills

Those essential skills which people need in order to be effective members of a modern society and a flexible, adaptable and competitive workforce. Examples of key skills are communication, collaboration and group working, literacy, numeracy, use of information technology and knowing how to learn.

Glossary

Learning analytics

The measurement, collection, analysis and reporting of student activity, particularly tracking their use of web pages, in order to visualise and analyse learning interactions. This can be for a number of purposes: the institution can gain insight into the effectiveness of courses, teachers can detect problematic areas of a course, teachers can monitor their students' learning, and individual learners can visualise their achievements and behaviour in relation to others.

Learning design

The process of planning, structuring and sequencing learning activities.

Learning management system

A system that focuses on the administration, tracking and recording of learning or training. In higher education contexts, these functions are often subsumed into a **VLE**.

Learning outcomes

Statements indicating what a learner should have achieved in respect of both knowledge and skills at the end of a given course or programme.

Learning platform

A system that focuses on the delivery of the content and tools needed for learning; often used as a synonym for **VLE**.

Glossary

Lifelong learning

A term that emphasises that need for continuous formal and non-formal learning throughout life to improve knowledge and skills in a changing world.

Mentor

A person who acts as an adviser to a learner. The activity is called mentoring. The term is especially used in work-place learning environments to cover professional advice. It is also used for advisors in online forums (see **Moderating**), typically those who are past students rather than full academic staff.

Mobile learning

E-learning through mobile devices such as smartphones or tablets. More specifically, mobile learning activities can be designed to make use of a student's immediate context and surroundings, for example offering information about an artist while visiting an art gallery.

Moderating

Facilitating discussions in forums and other online systems, including ensuring acceptable behaviour. Moderators have privileges that allow them to edit or delete messages that contravene a code of conduct. They may also have a role in guiding and shaping discussion, helping students to engage in useful and appropriate interactions.

Module

A separate and coherent block of learning, usually over a term or semester. Part of a modular programme of

Glossary

studies where the programme is divided into a range of similar sized segments.

MOOC (Massive Open Online Course)

MOOCs are online courses designed for large numbers of participants which have no entry qualifications and are offered for free. They are distinguished from OER by offering a full course experience, and content that is often not free to reuse.

Netiquette

The informal rules of good behaviour online that would not be covered by a formal code of conduct. Text-only media lack clues such as expression or tone of voice used in face-to-face conversation, so greater effort should be made to keep online conversations positive and constructive.

Non-formal learning

Non-formal learning typically occurs in a structured setting as a deliberate activity, but is not associated with formal assessment and credit.

Online

A term describing activity that requires a connection to the Internet.

Open Educational Resources

Materials offered freely for use by teachers and learners. 'Freely' in this context means without charge and with few or no restrictions on the way material can be adapted and reused.

Glossary

Pedagogy

The theory and process of teaching.

Peer assessment / review

Assessment or review of students' work carried out by other students.

Personalised learning

Tailoring the curriculum and pedagogy to meet the learning needs of an individual learner; typically this implies a negotiation between teacher and learner.

Plagiarism

Using the ideas or writings of another as if they were one's own, (i.e. without acknowledging the original author).

Programme

A sequenced set of courses or modules representing a student's total study requirement and usually leading to an award on successful completion.

Reliability

(of a computer system) The ability of a system to continue to perform correctly, both in routine and unusual circumstances.

(of assessment) The consistency and repeatability of assessment.

Glossary

Semantic web

A set of technologies and metadata standards intended to allow machines to 'understand' the meaning of information in web pages.

Social media / Social networking site

Web sites and apps (such as Facebook) devoted to supporting and representing links between individuals based on real-life connections or shared activities and interests. Social media may be used to support online communities.

Stakeholder

A broad term to include students, teachers, educational managers, employers, etc., any of whom will have a legitimate interest in aspects of the learning provision.

Study centre

Local facilities away from the main campus of an institution providing some facilities for study, such as meeting rooms for tutorials, collections of reference material, and computer access to the internet.

Summative assessment

Assessment (often taking place at the end of a course or programme) leading to the attribution of a grade or a mark to the student. The results of summative assessment determine whether a student progresses to the next stage of the programme or, on completion, gains an award.

Glossary

Tutor

A teacher who provides instruction, academic advice or counsel to one or more students. The tutor role focuses on the presentation of a course to students and may be distinguished from the role of the academics who design and create an e-learning course.

Transferable skills

Skills such as communication, problem-solving and teamwork that can be applied in different academic and work contexts.

Usability

The degree to which a computer system can be used effectively, efficiently and with satisfaction by its users.

Virtual Learning Environment (VLE)

A set of computerised systems or tools which allow controlled access by students to online course materials and the facilities needed to support learning. Typically, a VLE is accessed via the web and will contain tools for course/programme registration; content management, including access to external resources; student-student and student-tutor discussion; tracking student activity; secure submission of assignments; assessment; access to course/programme information; access to student support systems; etc.

Virtual mobility

The use of information and communications technology as an alternative to physical mobility to allow students to study programmes from other

Glossary

institutions as part of an award of their home institution.

Vocational courses

Courses of study related to professional practice and labour market needs.