Curriculum Design and Delivery
Resources Analysis (Phase 2)

Glenaffric Ltd
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1 Introduction

The Higher Education Academy is a partner in the Support and Synthesis project established to support the work of the JISC Transforming Curriculum Design and Delivery Programmes. As part of this work, the Academy commissioned Glenaffric Ltd to provide an initial analysis of outputs and resources relevant to curriculum design and delivery from work the Academy has been supporting in this area. The report on this work, *Analysis of Academy Resources supporting the JISC Transforming Curriculum Design and Delivery Programmes*, was submitted in January 2010 with a spreadsheet mapping relevant resources to the key curriculum design and delivery themes.

The Academy has now commissioned an extension of this initial review, focusing on:

- Updating the work undertaken by Subject Centres since the evidence for the first report was gathered, with particular reference to the work of the Discipline-Focused Enhancement Academy projects
- Drawing on outputs and outcomes of other Academy-supported initiatives relating to curriculum design and delivery which were not covered or had little coverage in the first analysis, including:
  - e-Learning Pathfinder projects
  - Enhancement Academy
  - Change Academy projects
  - NTFS projects
  - Relevant CETLs

The primary purpose of this phase is to provide a broader picture of the work the Academy has been supporting in the field of curriculum design and delivery. This includes an overview of the key findings, issues and challenges which are emerging from some of the broader strategic enhancement and change management projects supported by the Academy.

2 Approach

2.1 The Framework

Consultation with Academy staff at the outset of this work confirmed the ongoing relevance of the mapping framework for Academy resources relating to curriculum design and delivery which was developed for Phase One. Resources have therefore been categorised under the following themes:

- **Curriculum Design:**
  - Curriculum Development
  - Employability and Employer Engagement
  - Quality and Process Enhancement
  - Institutional Learning Design

- **Curriculum Development:**
  - Pedagogic Models and Approaches
  - Work-related and Work-based Learning
  - Learner Experience and Learner Focus
  - Personalisation
  - Assessment and Feedback
This report presents illustrative examples for each of the themes, focusing on new developments and innovative approaches. Examples have been selected with a particular emphasis on resources that have generic application beyond the institutional or subject-based context within which they were developed.

The spreadsheet that was produced for Phase One has been updated and augmented with resources identified and reviewed for this report and is available at:

http://tinyurl.com/designdelivery

In keeping with the approach agreed for Phase One, the web references link to assets pages rather than to individual resources.

2.2 Identifying and Selecting Resources

Key staff associated with Academy-supported initiatives were contacted and asked to highlight projects or initiatives that could be particularly relevant to the curriculum design and development themes.

Subject Centres

Subject Centre websites, resource pages and newsletters have been reviewed for recent resource additions relevant to curriculum design and delivery. While the majority of relevant existing resources were previously identified through an iterative process of review and consultation with the Subject Centre network for Phase One, some recent improvements to navigation and searching facilities – such as tag clouds – have resulted in the identification of additional relevant resources.

A number of Subject Centres have been coordinating collaborative subject-based projects under the HEFCE-funded JISC/Academy Open Educational Resources (OER) Programme.\(^1\) The pilot phase ended in April 2010, with outputs and resources to be shared with the sector through JorumOpen.\(^2\) This report highlights resources relevant to curriculum design and delivery that are currently available from the Subject Centre websites.

Centres for Excellence in Teaching and Learning

Formal HEFCE funding for the CETLs ended in March 2010. An interim review of CETL resources was produced for the Academy in January 2010 by Glenaffric Ltd with the purpose of establishing processes for ensuring that CETL resources were identified and captured for inclusion in the Academy's EvidenceNet repository\(^3\). This included a thematic overview of the work of the CETLs, along with an assets overview of the kinds of resources that CETLs were producing and how these might be accessed. Since this initial review was produced, the Academy has conducted a further survey of the CETLs to identify anticipated resources. Using this information, CETL outputs have been mapped to the curriculum design and development themes. Where resources currently exist and are accessible, the weblinks point to the appropriate assets pages; otherwise links are to the home pages of the CETLs in anticipation that relevant resources may soon be made available.

\(^1\) http://www.jisc.ac.uk/oer
\(^2\) http://open.jorum.ac.uk/xmlui
\(^3\) http://www.heacademy.ac.uk/evidencenet
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**National Teaching Fellowship Scheme**

The NTFS has been in operation since 2000. Under Academy coordination, since 2006 NTFS has made 50 small annual awards to individuals for their professional development, and ten substantial annual awards to institutional teams for three-year projects.

The first set of three-year NTFS projects are currently in the process of completing in mid 2010. Each of the projects has an institutional focus, but is intended to have sector-wide relevance and is required to disseminate their work to the sector. Projects which started in 2008 and 2009 are at an earlier stage in their development. Staff in the Academy have identified some NTFS projects that are particularly closely aligned to curriculum design and development themes, including employability, assessment and achievement, creativity, numeracy and graduate skills development. Where project resources and outputs have already been made available, these have been identified in this review in relation to the relevant curriculum design and delivery themes.

**Change Academy**

Since 2004, more than 100 institutional teams have undertaken Change Academy. Each instantiation of Change Academy is a unique and discrete process and the Academy does not undertake any specific thematic analysis of Change Academy across the participating institutions. However, some common themes have emerged in the areas prioritised by the institutional teams, which map to the curriculum design and delivery (CDD) themes as follows:

<table>
<thead>
<tr>
<th>Change Academy priorities</th>
<th>CDD Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introducing or developing the use of e-learning in the institution</td>
<td>Pedagogy</td>
</tr>
<tr>
<td>Improving assessment and feedback</td>
<td>Assessment</td>
</tr>
<tr>
<td>Unifying student support services</td>
<td>Learner Experience and Learner Focus</td>
</tr>
<tr>
<td>Using the estate (particularly with relation to the development of a new campus)</td>
<td>Institutional Learning Design</td>
</tr>
</tbody>
</table>

At the end of the Change Academy process, each team is asked to produce a summary report in the form of a case study. The Academy has recently made available case studies, reports and summaries from some of the institutional Change Academy initiatives and these are identified in this review, mapped to the appropriate themes.

**2.3 Other Resources**

**Pathfinder**

At the end of the funded phase of the Academy and JISC Pathfinder Programme in 2008, each of the participating institutions was invited to write a ‘Pathfinder Journey’ report, and to produce one or more briefing papers. In January 2010, the Academy published a Users’ Guide to the Pathfinder Briefing Papers[^1] which presented a thematic synthesis of the resources produced by the institutional Pathfinder projects. Resources are discussed under the following broad themes:

- Creating a receptive culture for e-learning methods

[^1]: [http://elearning.heacademy.ac.uk/weblogs/ea/?p=572](http://elearning.heacademy.ac.uk/weblogs/ea/?p=572)
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- Course (re)design: a moment of maximum opportunity for e-learning
- Empowering staff directly
- Enhancing the Learners’ Experience
- Developments in e-Pedagogy

The papers themselves are currently available only as zipped files of multiple papers for each participating institution, not as discrete resources or in thematic bundles. This review therefore makes reference to the Pathfinder themes as they map to the curriculum design and development themes, and not to specific briefing papers or reports.

Following the Pathfinder Programme, groups of participating institutions have collaborated in the establishment of a number of Special Interest Groups (SIGs). These are self-organising entities which the Academy continues to support. SIGs provide a forum for the sector for the presentation, discussion, consolidation and advancement of learning and teaching innovation.\(^5\)

**Enhancement Academy**

Enhancement Academy builds on the Change Academy model and involves institutional teams working on change management initiatives with a specific focus on the use of technology to enhance learning and teaching. Participating institutions have produced a digital story outlining the issue they were setting out to address through this initiative, the key activities undertaken, anticipated outcomes and further plans. While these digital artefacts have a principally internal focus and intended impact, they may be made publicly available in due course, and therefore relevant to a future phase of outputs analysis for curriculum design and delivery.

**Discipline-Focused Learning Technology Enhancement Academy**

The Discipline-Focused Learning Technology (DFLT) Enhancement Academy initiative is focusing on supporting the process of change in academic departments. Each project will produce a case study and an evaluation report, but not within the timeframe of this review (Phase 1 will report in January 2011, Phase 2 in April 2011).

**Evidence-based Practice Syntheses**

Through the 2009/2010 academic session the Academy has been running a series of evidence-based practice seminars on three themes:

- Assessment and Feedback
- Employability and Employee Learning
- Professional Learning and Teaching Practice

The first two seminar themes map directly to curriculum design and development themes. Syntheses of the briefing papers in the three areas have been commissioned, scheduled for submission at the end of August 2010 with dissemination events planned for autumn 2010. A number of other Academy programmes are planning to run a seminar series on this model in 2010/2011. The Academy is in the process of creating an overall branding for the seminar series with a dedicated page on the Academy website. These resources may also be relevant to a further phase of outputs analysis for curriculum design and delivery.

\(^5\) [http://www.heacademy.ac.uk/ourwork/teachingandlearning/learningandtechnology/alldisplay?type=resources&newid=ourwork/learningandtech/aboutsectornetworksandsigs&site=york](http://www.heacademy.ac.uk/ourwork/teachingandlearning/learningandtechnology/alldisplay?type=resources&newid=ourwork/learningandtech/aboutsectornetworksandsigs&site=york)
4 Curriculum Design

4.1 Curriculum Development

Subject Centres have supported a range of initiatives supporting staff in the integration of innovative approaches to teaching and learning in their practice. Some recent examples include:

- Where and how do I start?[^6] is an introductory resource supported by the Art Design Media (ADM) Subject Centre for staff who are beginning to transform their approach to learning and teaching from a didactic approach to integrating aspects of sustainability education through active learning.

- Making the Creative Process Visible[^7] is another ADM-supported project which aims to provide a means of teaching the fundamental structures at work in the development of ideas in the practice of ceramics, with potential application in other creative areas.

The UK Centre for Bioscience provides a suite of audit tools to help teaching staff consider the content and design of a course or programme in relation to a particular issue. These tools are often used by teaching staff who are redesigning a course and may be relevant to a range of academic disciplines.[^8] The Centre has also recently updated its Resource Folder for Academic Staff, designed for staff new to teaching and intended to complement the largely-generic information delivered in staff development courses, which includes information relevant to a range of areas relating to curriculum development.^[9]

Supporting students in the early years of their university courses is a particular focus of many recent curriculum development resources:

- The Subject Centres for science, technology, engineering and maths (the STEM group) have jointly produced a guide for academic staff to understanding the pre-university mathematics curriculum.^[10] This includes an introduction to the main qualifications, a brief historical review of major developments and an overview of what and how entrants have studied prior to starting higher education.

- The Centre for Education in the Built Environment (CEBE) has presented a case study on the development of core skills in engineering students using a contextualised problem-based learning approach[^11] in synoptically linked modules. Initial feedback suggests that using this approach means that first-year students have a clearer idea of the application of knowledge taught in traditional lecture courses.

- The Economics Network has made available more than twenty-five case studies presenting and exploring the use of new curriculum resources and approaches for a range of teaching contexts and student groups.^[12] Many of these resources have generic application in a number of different teaching contexts, such as "TEFL –

[^8]: http://www.bioscience.heacademy.ac.uk/resources/audit.aspx
[^9]: http://www.bioscience.heacademy.ac.uk/resources/resourcepack.aspx
[^10]: http://www.mathstore.ac.uk/index.php?pid=news#news5
[^12]: http://www.economicsnetwork.ac.uk/showcase/content
Teaching Economics as a Foreign Language’ and the recent addition ‘Teaching Economics to non-Economists’.

- The Hospitality, Leisure, Sport and Tourism Network (HLST) also provides a range of more than fifteen case studies relating to particular aspects of hospitality, leisure, sport and tourism curricula.\(^\text{13}\)

- The Subject Centre for Medicine, Dentistry & Veterinary Medicine (MEDEV) continues to publish a series of Special Reports, with recent additions including reports published in collaboration with other relevant Subject Centres on areas of curriculum development in areas such as psychology and law for medical education.\(^\text{14}\)

- ESCalate, the Subject Centre for Education, provides a range of resources including reports, case studies, journal articles and conference proceedings aiming to support staff in the development of innovative approaches to curriculum design and delivery.\(^\text{15}\)

Some Subject Centres have commissioned updated overviews of the curriculum and approaches to teaching in specific subject area. In January 2010, the English Subject Centre published a Survey of the English Curriculum and Teaching in UK Higher Education.\(^\text{16}\)

Subject Centres are also supporting curriculum development in specific subject areas through engagement with the JISC-Academy OER initiative, encouraging teachers within HE institutions to publish excellent teaching and learning resources openly on the web:

- ADM is coordinating the work of a consortium of arts-based institutions in the development of a series of documents, reports and templates intended for use by the wider subject community.\(^\text{18}\)

- Teaching Resources for Undergraduate Economics (TRUE) is a set of web pages for sharing teaching materials in specialist areas of Economics.\(^\text{19}\)

- HumBox\(^\text{20}\) is a collection of more than 1000 humanities teaching resources that have been uploaded to the web for lecturers to use freely. The project is coordinated by the Subject Centre for Languages, Linguistics and Area Studies (LLAS).

- Led by the UK Physical Sciences Centre, Skills for Scientists\(^\text{21}\) has brought together chemistry, physics and astronomy, and forensic science departments from fifteen institutions to release a range of high quality teaching and learning materials which can be reused, and in most cases adapted, by anyone worldwide.

- The Subject Centre for Information and Computer Sciences (ICS) has made available collections of lecture notes/slides, lab sheets, code and online resources supporting a range of computer-related programmes including new and emerging disciplines.\(^\text{22}\)

\(^{13}\) http://www.heacademy.ac.uk/hlst/resources/casestudies/curriculumdev
\(^{14}\) http://www.medev.ac.uk/resources/articles-and-reports-special-reports/
\(^{15}\) http://escalate.ac.uk/resources/tags/Curriculum%20development
\(^{16}\) http://www.english.heacademy.ac.uk/explore/publications/currsurvey.php
\(^{17}\) http://www.jisc.ac.uk/oer
\(^{19}\) http://www.economicsnetwork.ac.uk/projects/oer
\(^{20}\) http://www.llas.ac.uk/projects/3233
\(^{21}\) http://www.heacademy.ac.uk/physsci/home/projects/skillsforscientists
\(^{22}\) http://www.ics.heacademy.ac.uk/projects/oer/index.php
• The Engineering Subject Centre has presented teaching materials including documents, images and videos under open licensing agreements. The project also captured the technical, logistical and legal processes undertaken in both traditional and innovative ways to build expertise and provide guidance for future developments.

• Supported by the UK Centre for Materials Engineering, the CORE-Materials repository contains more than 1300 open educational resources in Materials Science and Engineering, freely available under a range of Creative Commons licenses. Resources include images, texts, presentations and videos/animations, arranged within teaching packages.

• The STEM (science, technology, engineering and maths) Subject Centres have collectively authored a set of documents giving practical advice on all matters related to OER, which can be found on the STEM OER Guidance wiki.

• C-Change is exploring the open licensing of educational resources in the Subject Centre for Geography, Earth and Environmental Sciences (GEES) disciplines through a themed approach focusing on climate change and sustainability.

• The UK Centre for Bioscience has collated and made available resources supporting teaching and learning in a wide range of biological science-related subjects including biodiversity, ecology, zoology, biochemistry and sports science.

• PHORUS (Public Health Open Resources for the University Sector), a consortium-based project coordinated by the Health Sciences and Practice Subject Centre (HSP), provides access to a wide range of public health related resources including presentations, handbooks and guides, and entire interactive learning modules.

• The Subject Network for Sociology, Anthropology, Politics (C-SAP) coordinated a project evaluating the practice of opening up resources for learning and teaching in the Social Sciences. This has produced a toolkit containing a number of case studies with accompanying video narrative, an online demonstrator and module mappings.

• MEDEV is documenting and testing a toolkit providing guidance on the processes for HEIs to implement changes enabling them to use their own or centralised repositories for storing and sharing educational resources.

The Centre for Excellence in Reusable Learning Objects (RLO-CETL), a partnership CETL of London Metropolitan University, University of Cambridge and University of Nottingham, leads on innovation in pedagogical design for the sector through developing, sharing and evaluating learning objects. To date, the RLO-CETL has developed more than 150 RLOs in a range of curriculum areas, Generative Learning Objects (GLOs) with a core pedagogical pattern providing the basis for reuse, together with a wide range of supporting guides, reports

23 http://www.engsc.ac.uk/oer
24 http://www.core.materials.ac.uk/
25 http://stemoer.pbworks.com/
26 http://c-changeproject.org.uk/?page_id=39
27 http://www.bioscience.heacademy.ac.uk/resources/oer/projectpartners_AllResources.aspx
28 http://phorus.health.heacademy.ac.uk/accessing-resources-0
29 http://www.c-sap.bham.ac.uk/oer/index.html
30 http://www.medev.ac.uk/ourwork/oer/toolkits/
31 http://www.rlo-cetl.ac.uk/index.php
and research papers. Resources available to support good practice in learning design include the GLO maker authoring tool and user guide for practitioners.\(^{32}\)

Other CETLs producing resources that may be of relevance for generic curriculum development activity include:

- The objectives of the Centre for Excellence in Developing Professionalism (CEDP) at the University of Liverpool include enshrining within the undergraduate curriculum a system for personal development, career planning and reflection of professionalism that allows a seamless progression to postgraduate practice. Currently available resources include presentations and journal articles.\(^{33}\)

- The partnership Centre for Excellence in the Performing Arts (CEPA) pioneers innovative approaches to teaching Dance, Drama and Music Technology, alongside an exploration of learning across creative disciplines and through encounters between those disciplines.\(^{34}\)

- The Centre for Excellence in Active and Interactive Learning\(^{35}\) (CEAIL) at Queen’s University Belfast has been developing new pedagogical models for curriculum design and delivery based on active and interactive approaches to learning. The Centre was created in order to improve the development of generic and subject-specific skills, and enhance student employability. Resources include publications, reports and newsletters.\(^{36}\)

Curriculum design and redesign was a particular focus of the Pathfinder Programme. The thematic summary published by the Academy includes a section entitled ‘Course (re)design: a moment of maximum opportunity for e-learning’, with links to relevant briefing papers and institutional resources.\(^{37}\)

Special Interest Groups (SIGs) providing a forum for the development and dissemination of resources with particular relevance to curriculum development include:

- Evaluation of Learners’ Experiences of e-learning Special Interest Group (ELESIG) is an international community of researchers and practitioners involved in investigations of learners’ experiences and uses of technology in learning.\(^{38}\)

- The e-Learning and the First Year Student Experience (ELFYSE) Special Interest Group, recently merged with ELESIG, focuses on students’ transitions into Higher Education, and in particular the role that technology can play in providing support during their first year.\(^{39}\)

- The Quality Assurance and Quality Enhancement in e-Learning (QA-QE) SIG focuses on supporting institutions in the development of effective quality assurance processes, as well as the enhancement of learning, teaching and assessment through the innovative use of technology.\(^{40}\)

\(^{32}\) http://www.glomaker.org/
\(^{33}\) http://www.liv.ac.uk/cetl/resources.htm
\(^{34}\) http://www.dmu.ac.uk/faculties/humanities/cepa/index.jsp
\(^{35}\) http://www.qub.ac.uk/sites/CentreforExcellenceinActiveandInteractiveLearning/
\(^{36}\) http://www.qub.ac.uk/sites/CentreforExcellenceinActiveandInteractiveLearning/BiosciencesProject/PublicationsReports/
\(^{37}\) http://elearning.heacademy.ac.uk/weblogs/ea/?p=572
\(^{38}\) http://elesig.ning.com/
\(^{39}\) http://elfyse.middlesex.wikispaces.net/
\(^{40}\) http://www.qe-sig.net/
4.2 Employability and Employer Engagement

Some NTFS-funded projects have specifically focused on the development of resources supporting employability in the curriculum:

- **Creating Future-Proof Graduates**[^41] aimed to help students identify and prepare for critical incidents epitomising the major challenges encountered by newly qualified graduates when they enter the world of work. Outputs from the project have recently been made available – these include eight multimedia resources, using a combination of audio, video, animations and cartoon strips, workshops, interactive games and simulations, and web 2.0 networking platforms. All resources have been evaluated by practitioners and are accompanied by teaching notes.

- **Every Student Counts**[^42] is investigating the curriculum requirements and support necessary to enhance students’ numerical skills within undergraduate programmes, with a view to helping students develop and practise the generic numeracy skills required by employers.

Many Subject Centres provide web pages and online resource banks dedicated to the development of employability in the curriculum, and advice on engaging with employers. Some have recently funded the development of specific case studies and reports analysing aspects of employability in areas of the curriculum:

- **CEBE** has funded the development of a case study on employability in a Building Surveying programme, which analyses the content and themes of the programme and examines the main influences, constraints and dynamics for development and delivery.[^43]

- **The Dance, Drama and Music Network PALATINE** has presented the reports of an ethnographic study into enhancing employability through work-based learning experiences in music.[^44]

- **ESCalate** has made available a range of resources supporting the development of employability in the Education curriculum, including advice on engaging employers, personal development planning and employability, and enhancing student career skills.[^45] **Narrowing the Gap**[^46] is an ESCalate-supported project focusing on developing and trialling alternative modes of engaging public, private and voluntary sector employers with the different phases of HE course design and delivery.

- The recent ‘Engineering Graduates for Industry’ report produced by the Engineering Subject Centre examines the needs of industry and identifies effective practices to meet these needs within current and developing experience-led engineering degrees.[^47]

- The UK Physical Sciences Centre leads a consortium of institutions and employers in the development of a suite of flexible, work-based Foundation Degrees.[^48] The Centre has also been carrying out surveys of Chemistry, Physics and Forensic Science

[^41]: http://www2.bcu.ac.uk/futureproof
[^42]: http://www.uclan.ac.uk/information/services/ldu/every_student_counts.php
[^43]: http://www.cebe.heacademy.ac.uk/learning/casestudies/record.php?
process=full_view&identifier=cebe.ltsn.ac.uk:545080756597&edition=&availability=yes
[^44]: http://www.palatine.ac.uk/development-awards/1353/
[^45]: http://escalate.ac.uk/resources/tags/Employability
[^46]: http://escalate.ac.uk/5117
[^47]: http://www.engsc.ac.uk/graduates-for-industry
[^48]: http://www.heacademy.ac.uk/physsci/home/projects/workinghigher
graduates from universities in England, Scotland and Wales. designed to identify which areas of the curriculum and generic skills are of particular value to new graduates and how well they were developed within the degrees.  

- The UK Centre for Biosciences has supported CETLs which have undertaken to provide resources relating to the development of employability skills include:

- The Centre for Integrative Learning (CIL) at the University of Nottingham has supported a number of subject specific and generic initiatives which aim to help academics to understand, monitor and integrate a range of skills into degree programmes to help graduates perform more effectively in their early careers or in postgraduate study.

- The Centre for Excellence in Training for Theatre (CETT) at the University of London supports models of specialist teaching, performance practice and research in training for theatre. CETT offers progressive models of vocational training, a creative interface between industry and educational practice, and a locale for innovative contemporary research.

- The Engineering Centre for Excellence in Teaching and Learning (engCETL) at Loughborough University has been working with industry with a view to producing graduates who are employable, entrepreneurial, productive and innovative. Currently available resources include guides for academics and industry, six case studies, and a range of reports, articles and leaflets.

Other work supported by the Academy in the employability arena include the STEEL (Sharing Technology Enhanced Employability Learning) project. This aims to produce a synthesis of evidence-based research in order to inform decision-making by practitioners in the appropriate use of technology enhanced learning for employability and employee learning in higher and further education.

4.3 Quality and Process Enhancement

The Engineering Subject Centre has published a handbook for external examiners, which addresses the challenges and changes in this field of academic activity. The guide is relevant to a wide range of disciplines, with topics including the role of external examiners, academic infrastructures in the UK, current developments in Europe and considerations for students with disabilities.

ESCalate has collated four resources which deal with quality enhancement, relating specifically to professional recognition in an institutional context and supporting student learning enhancement for practitioners.

In most other subject areas, quality enhancement is implicit in the provision of resources supporting generic curriculum design. For example, ADM makes clear that resources supporting transition from FE to HE are in line with the institutional strategic aims for establishing high

49 http://www.heacademy.ac.uk/physsci/home/projects/graduateskills
50 http://www.nottingham.ac.uk/integrativelearning/?module=contentman&c_id=122
51 http://www.cssd.ac.uk/content/centre-excellence-training-theatre
52 http://www.engcetl.ac.uk/publications/
53 http://steelproject.wordpress.com/
54 http://www.engsc.ac.uk/teaching-guides/external-examining/
55 http://escalate.ac.uk/resources/tags/Quality%20enhancement
quality, consistent guidance and support for increasingly diverse range of students within a quality enhancement context.\textsuperscript{56}

The thematic summary of Pathfinder resources includes many examples of the opportunities offered by curriculum redesign to adapt the institution’s formal quality procedures so that the full and informed consideration of e-learning methods becomes a required step in course validation and review processes.\textsuperscript{57}

\textbf{4.4 Institutional Learning Design}

All of the recently-published case studies and summary reports of institutional Change Academy initiatives include generic tips for managing institutional change.\textsuperscript{58} Many of the initiatives have focused on enhancing communication and cross-institutional collaboration in developing creative approaches to identified challenges. Another emerging theme of generic relevance to institutional approaches to learning design relates to the opportunities and challenges presented by a new campus development

- The Creative Campus\textsuperscript{59} project at the University of Kent aims to cultivate an inspirational learning environment in which ideas are shared and innovation promoted by providing greater opportunities for consultation, engagement and participation by staff, students and the wider community.

- The University of Wales, Newport has published a case study entitled 'Developing communities for the new campus: Great Minds Think Differently'.\textsuperscript{60}

- The case study 'Graduate attributes – beginning to embed!'\textsuperscript{61} presented by the University of Wolverhampton focuses on the articulation of three key graduate attributes – Digital Literacy; Knowledgeable and Enterprising; Global Citizenship – and the processes by which these informed a redesign of the University's entire undergraduate portfolio.

Among the resources collated by ESCalate under the heading 'Institutional role'\textsuperscript{62} is the report of a project supported by the Centre for Sustainable Future CETL, focusing on building university-community partnerships and researching how such partnerships work.\textsuperscript{63} The report makes recommendations for future partnerships promoting role of universities in supporting the sustainability of communities.

The Users’ Guide to the Pathfinder Briefings includes a summary of resources relating to the development of an institutional culture for innovative learning and teaching, particularly the sections 'Creating a receptive culture for e-learning methods' and 'Empowering staff directly'.\textsuperscript{64}

\textsuperscript{56} http://www.adm.heacademy.ac.uk/resources/case-studies/what-next-supporting-student-progression-from-further-to-higher-education

\textsuperscript{57} http://elearning.heacademy.ac.uk/weblogs/ea/?p=572

\textsuperscript{58} http://www.heacademy.ac.uk/ourwork/universitiesandcolleges/alldisplay?type=resources&newid=ourwork/changeacademy/CaseStudies&site=york

\textsuperscript{59} http://www.kent.ac.uk/creativecampus/

\textsuperscript{60} http://www.heacademy.ac.uk/ourwork/universitiesandcolleges/alldisplay?type=resources&newid=ourwork/changeacademy/casestudy_newport&site=york

\textsuperscript{61} http://www.heacademy.ac.uk/ourwork/universitiesandcolleges/alldisplay?type=resources&newid=ourwork/changeacademy/casestudy_wolverhampton&site=york

\textsuperscript{62} http://escalate.ac.uk/resources/tags/Institutional%20role

\textsuperscript{63} http://escalate.ac.uk/4063

\textsuperscript{64} http://elearning.heacademy.ac.uk/weblogs/ea/?p=572
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The work of some CETLs has focused on developing and supporting practice change at a strategic as well as operational level within institutions:

- Originally established as a CETL, the Blended Learning Unit at the University of Hertfordshire aims to develop, promote and evaluate the combination of established ways of learning and teaching, and the opportunities offered by technology in order to improve students' learning and increase flexibility. Resources include case studies, ‘how to’ guides, workshop materials and evaluation reports.65

- The University of Ulster's CETL: Institutional E-learning Services (CIES) is supporting practice change across the institution, helping staff to have a fuller understanding of the learner's perspective and rewarding high quality teaching and learning. CIES is currently developing a suite of tools for staff. These include a Practice Change Repository for staff to share good practice and to search for specific teaching and learning examples to enhance and inform practice, providing data about courses that can be re-purposed to support a wide variety of institutional processes.66

A number of Academy-supported community groups provide a forum for the development of strategic institutional approaches to curriculum design. These include:

- Heads of e-Learning Forum (HELF) is a network of senior staff in institutions engaged in promoting, supporting and developing technology enhanced learning. HELF organises a regular programme of well attended events, and represents the interests of its members to various national bodies and agencies.67

- The Supporting Sustainable eLearning Forum (SSeLF) offers a platform for the community to debate the challenges facing universities in a changing society, with a particular focus on issues of sustainable forms of technology enhanced learning grounded in current research, contextualised within real-life practice.68

5 Curriculum Delivery

5.1 Pedagogic Models and Approaches

The Academy has recently launched an initiative using the Cloudworks academic networking platform69 for practitioners interested in sharing and discussing ideas in relation to the use of evidence in changing learning and teaching practices with technology.70

Global Studio71 is a learning and teaching initiative supported by ADM. Student teams across the globe undertake a product development project, working together in ‘designer’ and ‘client’ roles. Geographically distributed work groups provide students with experience in using skills that would enable them to work successfully in distributed design teams.

ADM has also published a number of case studies with supporting materials focusing on particular pedagogic approaches:

- Supporting active learning for sustainable provision in the area of interior design72

66 http://cett.ulster.ac.uk/elearning/whatwedo.php
67 http://wo1.helfcms.wf.ulcc.ac.uk/
68 http://uk-sself.ning.com/
69 http://cloudworks.ac.uk/
70 http://cloudworks.ac.uk/cloudscape/view/2045
• Using wikis to support students doing media production-based projects

• Using open online communication tools to enhance social learning

The Simshare project coordinated by the UK Centre for Legal Education (UKCLE) under the JISC-Academy OER Programme has focused on the use of simulation to enhance learning. The project aimed to help staff to create, use, evaluate and repurpose simulations as open educational resources. UKCLE is also in the process of developing a Toolkit for law teachers, including recently available materials on small and large group teaching.

The Engineering Subject Centre has published the report of a project concerned with the use of simulation tools and multidisciplinary collaboration, based on a real-life brief on tackling healthcare-associated infections. A range of simulation tools were employed to help the students understand the needs of potential users and the context of use. The report includes suggestions for the effective use of simulation tools in design projects and possible improvements in multidisciplinary collaboration.

The Subject Centre for English has published a number of resources supporting good practice in the use of online tools. These include:

• Online Discussion in English Studies: A Good Practice Guide to Design, Moderation and Assessment offering advice on how to design meaningful tasks, moderate the boards and ensure smooth and effective communication between students. The question of whether or not to assess contributions is also explored.

• A case study on Enhancing Interactive Learning using Turning Point, an electronic response system.

Many of the CETLs have been concerned with the development of and support for the implementation of particular pedagogic approaches:

• The Creative Learning in Practice (CLIP) CETL at the University of the Arts, London has made available a range of resources including a documentary film, an annotated digitised museum collection and a web resource for developing sketchbook and reflective writing skills as well as leaflets, reviews and evaluation reports.

• The Centre for Active Learning (CeAL) has been concerned with developing, promoting and embedding active learning for students throughout the University of Gloucestershire. CeAL is developed around communities of active learners where students and staff inquire together.

73 http://www.adm.heacademy.ac.uk/resources/case-studies/using-wikis-to-support-students-doing-media-production-based-projects
74 http://www.adm.heacademy.ac.uk/resources/case-studies/using-open-online-resources-to-enhance-social-learning
75 http://www.ukcle.ac.uk/projects/past-projects/simshare/
76 http://www.ukcle.ac.uk/projects/current-projects/toolkit/
78 http://www.english.heacademy.ac.uk/explore/resources/technology/report.php
79 http://www.english.heacademy.ac.uk/explore/publications/casestudies/technology/turningpoint.php
80 http://www.arts.ac.uk/clipcetl-resources.htm
81 http://resources.glos.ac.uk/ceal/index.cfm
• The Bristol ChemLabs CETL has developed a web-based Dynamic Laboratory Manual which includes inbuilt pre- and in-laboratory e-assessment tools and materials. Reports and a range of publications including articles, dissertations and newsletters are publicly available.\(^{82}\)

• The London-based partnership CETL for Clinical & Communications Skills\(^ {83}\) has supported a number of projects focusing on areas including simulation and skills development in practice settings.

• The Centre for Effective Learning in Science at Nottingham Trent University has made available a range of teaching and learning materials including worksheets, presentations and interactive animations, which present scientific concepts in novel and highly visual formats.\(^ {84}\) Resources are intended for learners in primary, secondary and post-16 education.

• The Centre for Inquiry-based Learning in the Arts and Social Science (CILASS) at the University of Sheffield has published case studies of around 40 different implementations of inquiry-based learning (IBL) including strategic departmental/School implementations, curriculum development in particular areas, scholarship of teaching and learning projects and a student-led IBL initiative.\(^ {85}\)

• The Lifelong Independent Veterinary Education (LIVE) CETL at the Royal Veterinary College has pioneered the use of haptic simulators and virtual anatomical models for clinical practice training.\(^ {86}\) This work has received international acclaim and has led to the award of the Times Higher Education's most innovative educator of the year award for 2009.

• The Open University's Centre for Open Learning of Mathematics, Science, Computing and Technology (COLMSCT) is helping to develop effective and engaging open learning in mathematics science, computing and technology. Resources include reports of projects exploring issues and approaches to the online curriculum with a particular focus on experimentation and investigation.\(^ {87}\)

• The Physics Innovation CETL has created a range of innovative learning tools that can be used in a variety of ways, including resource and image banks, interactive screen-based versions of real physics experiments, and a mathematics e-book.\(^ {88}\)

• The Spatial Literacy in Teaching (SPLINT) CETL has focused on the application of geospatial technologies, such as Geographical Information Systems, Satellite Remote Sensing and Global Navigation Satellite Systems.\(^ {89}\)

• The Centre for Excellence in Media Practice\(^ {90}\) (CEMP) at Bournemouth University has developed a range of online tools for use in media education and industry.

\(^{82}\) http://www.chemlabs.bris.ac.uk/Publications.html

\(^{83}\) http://www.cetl.org.uk/cetl_projects.php

\(^{84}\) http://www.ntu.ac.uk/cels/outreach/Resources/index.html

\(^{85}\) http://www.shef.ac.uk/cilass/projects

\(^{86}\) http://www.live.ac.uk/html/projects_haptic_01.html

\(^{87}\) http://www.open.ac.uk/colmsct/activities/theme.php?themelId=462e1b3385db5

\(^{88}\) http://www.open.ac.uk/picetl/activities/theme.php?themelId=460261fae1b28

\(^{89}\) http://www.le.ac.uk/cetl/splint.html

\(^{90}\) http://www.cemp.ac.uk/about/
Sections in the Users' Guide to the Pathfinder Briefings that are relevant to this theme include 'Enhancing the Learners' Experience' and 'Developments in e-Pedagogy'.

Academy-supported SIGs with a particular focus on the use of innovative pedagogical tools and approaches include:

- The Media Enhanced Learning special interest group (MELSIG), initiated following the Pathfinder Programme with a particular focus on podcasting for pedagogical purposes. MELSIG has subsequently expanded both its membership and its interests in the pedagogical purposes of a range of other digital media.

- The Ethics and Ethical Issues in the use of Web 2.0 in Higher Education SIG promotes discussion, collaboration and dissemination relating to the ethical dimensions associated with researching and evaluating teaching and learning using technologies such as Facebook, SMS, Twitter and Second Life.

- The Engaging Students Through In-Class Technologies (ESTICT) SIG is dedicated to researching and sharing the pedagogical value of classroom technologies such as Electronic Voting Systems (EVS), interactive whiteboards and web conferencing tools.

5.2 Work-related and Work-based Learning

Following the model established for the Phase One review and synthesis, resources relating to entrepreneurship and enterprise education as well as practice-based learning and industrial placements are included under this heading.

Creative Interventions is an NTFS project exploring how work-related learning in the public and third sectors encountered during a creative arts higher education, is valued and fostered by students, tutors and employers.

Subject Centres have continued to focus on developing resources to support the provision of industrial placements and the integration of work-based learning into the academic curriculum:

- The Subject Centre for English has produced a Good Practice Guide on work-related learning in English Studies. The publication discusses the benefits of work-related learning and also addresses some of the discipline-based concerns about its place on academic programmes. It offers practical advice about the costs of work-related learning, collaborating with employers and coping with assessment, and includes case studies disseminating the ideas and experiences of those who have introduced work-related learning into the curriculum.

- CEBE has published a case study report of an initiative capturing on film students reflecting on their industrial placement. This serves not only to conceptualise and formalise the experiences for those students, but also helps to prepare others for their forthcoming placement experience.

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91 http://elearning.heacademy.ac.uk/weblogs/ea/?p=572
92 http://www.heacademy.ac.uk/ourwork/teachingandlearning/learningandtechnology/alldisplay?type=resources&newid=ourwork/learningandtech/MELSIG&site=york
93 http://heethicsweb2zero.ning.com/
94 http://estict.ning.com/
95 http://creativeinterventions.pbworks.com/
96 http://www.english.heacademy.ac.uk/explore/resources/careers/report.php
• ESCalate has collated a number of resources on work-based learning (WBL) for a variety of levels and sectors in the education curriculum. These include an article discussing generic principles of work-related learning in terms of pedagogic theory, which is applicable to all disciplines.

• The Engineering Subject Centre has presented the report of a mini-project focusing on the development of new, practical and transferable skills through real-life work experience. The report recommends the provision of flexible, innovative and responsive work-based learning schemes within engineering degree programmes in order to meet the demands of both employers and undergraduates.

Some CETLs have had a particular focus on the development and provision of WBL:

• The Centre for Excellence in Work-Based Learning (CEWBL) at Middlesex University aims to provide a catalyst for the dissemination of good practice in WBL.

• The Centre for Excellence in Professional Learning from the Workplace (CEPLW) at the University of Westminster focuses on professional learning in, from and through work and workplaces.

5.3 Learner Experience and Learner Focus

Some CETLs have had a specific focus on understanding and enriching the learner experience:

• The Centre for the Promotion of Learner Autonomy (CPLA) at Sheffield Hallam University has made available resources including case studies, guides to good practice, literature references, conference presentations, video and poster resources, and a number of presentations to support those interested in developing autonomous learners. The resources cover a range of practices including enquiry-based and problem-based learning, feedback on assessment, mentoring and peer assisted learning, inter-disciplinary and negotiated learning.

• Write Now is a partnership CETL which aims to students’ learning experiences by enabling them to develop academic and disciplinary identities as empowered, confident writers. Forthcoming resources are to include guides on peer mentoring and writing in the disciplines.

Subject Centres have continued to support the development of a range of resources relating to understanding the needs of learners and engaging students in shaping the content and delivery of the curriculum:

• The UK Centre for Bioscience has recently redesigned its website pages for students to bring together resources under various themes and to encourage students to take an active role in influencing the curriculum.
• HSP has published the report of a mini-project which tracked a cohort of students on a new full-time Paramedic Science course, providing insights into the unfolding of their first year experience.\textsuperscript{106}

• Among the many resources collated by ESCalate under the heading 'Student Experience'\textsuperscript{107} is the report of a project exploring how universities can meaningfully involve students in shaping the curriculum.\textsuperscript{108}

• The English Subject Centre website includes a number of pages dedicated to resources and reflections from a student perspective, focusing on how the curriculum, assessment, seminars, lectures and academic services are experienced by learners.\textsuperscript{109} Recent additions include a report on 'The Experience of Studying English in UK Higher Education', based on a series of undergraduate focus groups across a range of institutions.\textsuperscript{110}

HEARing Student Voices\textsuperscript{111} is an NTFS project at the University of Manchester, focusing on how feedback from assessment, advising and formative HEARs (Higher Education Achievement Reports) impacts on student choices in the taught and wider curriculum.

Many of the institutional Change Academy initiatives have been concerned with understanding the needs of learners and enhancing the learner experience. Some of those which have been concerned with new approaches to the provision of student support include:

• Remodelling Student Support Systems at the University of Gloucestershire\textsuperscript{112}

• The Enhanced Student Experience: Developing Student focused Services that are fit for the Future, at Canterbury Christ Church University\textsuperscript{113}.

5.4 Personalisation

In Phase One, the review highlighted the work of the Subject Centres in providing resources to support personalisation in curriculum delivery through the development of personal development planning (PDP) systems and e-portfolio-based platforms for learners. Further developments in these areas include the recent publication of a guide to PDP signposting relevant resources and activities for the Information and Computer Science disciplines.\textsuperscript{114}

The focus of personalisation in curriculum design and delivery also includes resources to promote inclusive practice, addressing the needs of a diverse student population, and support for learner transition across different sectors and institutions.

• ADM has supported the development of a resource supporting student progression from further to higher education\textsuperscript{115}. This recognises that tutors supporting these students at this time need to have access to good, relevant and current information.

\textsuperscript{106} http://www.health.heacademy.ac.uk/news-events/newsbox/news-2010/completeminiproj2010-ajones/
\textsuperscript{107} http://escalate.ac.uk/resources/tags/Student%20experience
\textsuperscript{108} http://escalate.ac.uk/4314
\textsuperscript{109} http://www.english.heacademy.ac.uk/explore/resources/studexp/index.php
\textsuperscript{110} http://www.english.heacademy.ac.uk/explore/resources/studexp/survey.php
\textsuperscript{111} http://www.campus.manchester.ac.uk/tlso/hearingstudentvoices/
\textsuperscript{112} http://www.heacademy.ac.uk/ourwork/universitiesandcolleges/alldisplay?type=resources\&newid=ourwork/changeacademy/casestudy_gloucestershire\&site=york
\textsuperscript{113} http://www.heacademy.ac.uk/ourwork/universitiesandcolleges/alldisplay?type=resources\&newid=ourwork/changeacademy/casestudy_canterburychrist\&site=york
\textsuperscript{114} http://www.ics.heacademy.ac.uk/resources/pdp.php
\textsuperscript{115} http://www.adm.heacademy.ac.uk/resources/case-studies/what-next-supporting-student-progression-from-further-to-higher-education
advice and guidance. Information has to be consistent and easily accessible and suitable for dissemination to a very large and very diverse student body.

- The Psychology Network has recently published a guide providing advice on aspects of inclusive and accessible psychology teaching.\textsuperscript{116} Contents include: improving provision for disabled psychology students; legislation and policy surrounding disabled students' needs; the role of departments in providing equality for disabled students; disabled students' experiences of postgraduate clinical training; and effective psychology teaching practices in relation to specific disabilities and impairments. There are also references and key resources to assist in designing an inclusive curriculum and inclusive assessment.

- MEDEV Special Reports include a series of reports on developing provision for students with disabilities.\textsuperscript{117}

The work of the Bridges CETL\textsuperscript{118} at the University of Bedfordshire touched on a number of curriculum design and delivery themes, underpinned by a concern to meet the individual needs of students. The CETL aimed to build bridges between the curriculum and student development and between student learning and the world beyond the university, paving the way for smoother transitions into the global workplace, and life beyond undergraduate study.

5.5 Assessment and Feedback

The UK Centre for Bioscience has recently published an Assessment Briefing which brings together resources and references in a variety of assessment topics, including assessing work placements and work-based learning; accessible and inclusive assessment; feedback and feed-forward; and question and assessment design.\textsuperscript{119}

Recent resources provided by Subject Centres demonstrate an increasing emphasis on the role of assessment feedback in enhancing learning:

- The Subject Centre for English has collated a range of assessment case studies and reports including studies in the use of various online resources for enhancing assessment feedback.\textsuperscript{120}

- GEES has published two new briefings on assessment feedback.\textsuperscript{121}

Supported by the MSOR Subject Centre through the JISC-Academy OER Programme, FETLAR\textsuperscript{122} provides a raft of electronic learning content, together with the infrastructure to deliver end-to-end electronic assessment (the process of creating electronic assessment content and then delivering it to students) within a VLE. This initiative builds on other work supported by the Subject Centre providing assessment tools and resource banks, notably the STACK project.\textsuperscript{123}

Assessment for learning is a key focus of the work of several CETLs:

- The CETL in Assessment for Learning at Northumbria University focuses on fostering student development in taking responsibility for evaluating, judging and improving their

\textsuperscript{116} \url{http://www.psychology.heacademy.ac.uk/s.php?p=70&menu=publications}
\textsuperscript{117} \url{http://www.medev.ac.uk/resources/articles-and-reports-special-reports/}
\textsuperscript{118} \url{http://www.beds.ac.uk/bridgescetl/time}
\textsuperscript{119} \url{http://www.bioscience.heacademy.ac.uk/resources/briefings/assessment.aspx}
\textsuperscript{120} \url{http://www.english.heacademy.ac.uk/explore/publications/casestudies/assess/index.php}
\textsuperscript{121} \url{http://www.gees.ac.uk/pubs/briefings/briefings.htm}
\textsuperscript{122} \url{http://www.fetlar.bham.ac.uk/}
\textsuperscript{123} \url{http://www.mathstore.ac.uk/index.php?pid=194}
own performance by actively using a range of feedback. The CETL has made available a range of collated resources and support materials including activities, exercises and information.\footnote{http://www.northumbria.ac.uk/sd/central/ar/academy/cetl_afl/resources/?view=Standard}

- The Assessment Standards Knowledge Exchange (ASKe) CETL at Oxford Brookes University focuses on ways of helping staff and students develop a common understanding of academic standards.\footnote{http://www.brookes.ac.uk/aske/index.html}

- The CETL for Assessment and Learning in Practice Settings (ALPS) has published resources including a report charting the lessons learned from a five-year-long programme introducing mobile technology for learning and assessment to health and social care students and staff.\footnote{http://www.alps-cetl.ac.uk/publications.html}

- The COLMSCT CETL has published the results of a number of projects concerning issues around assessment for learning, include the enhancement of the formative potential of assignments through appropriate design of both task and feedback, associated staff development, improved exploitation of computer-based assessment and the role of criterion-based assessment and feedback.\footnote{http://www.open.ac.uk/colmsct/activities/theme.php?themeld=48a94349b1870}

- The Physics Innovation CETL has published reports of a range of assessment-related activities including the electronic annotation of student assignments, and online computer marked assessment with enhanced feedback mechanisms.\footnote{http://www.open.ac.uk/picetl/activities/theme.php?themeld=46025e333b504}

6 Conclusions and Next Steps

This phase of outputs analysis has identified more than 100 new, recently published or presented resources or sources of information relevant to curriculum design and delivery. The Subject Centres continue to provide access to resources to support their communities in priority development areas which are themselves identified by the communities. These include institutional strategic priorities such as the provision of assessment feedback, and sector strategic initiatives such as the employability agenda. There is an ongoing focus on practitioner development, network support and collaboration, and the provision of high quality online resources and tools. Providing a forum for the validation of learning innovation by the academic community through research-based and evidence-based practice continues to be a mainstay of Subject Centre activity. It is likely that the mini-projects supported by the Subject Centres will continue to be a key source of materials and resources from Academy-funded initiatives available for external access and use in relation to curriculum design and delivery.

The HEFCE-funded OER initiative has enhanced access to a range of new resources and tools supporting practitioners in reviewing and redesigning the curriculum. Potentially, the outputs which have been produced by the CETLs are a valuable resource for the sector in general and for practitioners engaged in curriculum design and delivery in particular. The earlier review of CETL resources commissioned by the Academy confirmed that the single-institution CETLs have predominantly focused on supporting substantive change in internal learning and teaching processes, while partnership-based CETLs are concerned with supporting change in areas of common interest across the sector – and that most CETLs were producing resources that had sectoral relevance. This review further

\footnote{http://www.northumbria.ac.uk/sd/central/ar/academy/cetl_afl/resources/?view=Standard} \footnote{http://www.brookes.ac.uk/aske/index.html} \footnote{http://www.alps-cetl.ac.uk/publications.html} \footnote{http://www.open.ac.uk/colmsct/activities/theme.php?themeld=48a94349b1870} \footnote{http://www.open.ac.uk/picetl/activities/theme.php?themeld=46025e333b504}
confirms that conclusion, highlighting areas of particular relevance for curriculum design and delivery.

The work currently being undertaken by the Academy to secure access (through EvidenceNet) to these resources will be important for further iterations of this resource review. Forthcoming resources from NTFS projects, Change Academy, DFLT and the Evidence-based practice seminars also promise to be highly relevant for ongoing developments in curriculum design and delivery. The SIGs also continue to provide a practitioner-led forum for the presentation, discussion, consolidation and collaborative development of resources.