JISC

Managing Curriculum Change

Transforming curriculum design and delivery through technology

A four-year JISC programme, Institutional Approaches to Curriculum Design, is investigating how processes involved in the design of programmes of study can be made more agile and responsive through the use of technology.

Reconsidering curriculum design

Curriculum design touches every aspect of an institution's core business – from aligning its portfolio of courses to its mission and vision, through market research and product development to quality assurance, recruitment, assessment, resource allocation and timetabling.

The importance of curriculum design is prompting many institutions to rethink the processes, systems and procedures involved in planning, designing and administering programmes of study. In the 21st century, institutions aim to be increasingly demand led, responsive to cultural and economic change, and capable of providing opportunities for learners to acquire both knowledge and skills for employability and lifelong learning. Joined up, adaptive processes and interoperable systems are vital to the realisation of these aims.

The JISC Institutional Approaches to Curriculum Design programme aims to explore how technology can help address particular design challenges and so provide benefits for institutions, learners, employers, professional bodies and the wider community. This innovative programme of 12 projects led by teams in UK universities is to run until 2012.

Integrating technology into curriculum design

A number of institutional systems support the design of a curriculum. These systems include quality assurance and validation processes, learner record systems, virtual and managed learning environments, assessment systems and procedures, repositories of learning resources, systems of timetabling and physical space allocation, and the production and updating of course-related documentation such as programme specifications and learner-focused information.

Projects within the Institutional Approaches to Curriculum Design programme are testing process modelling tools to achieve more agile and adaptive working procedures, exploring ways of integrating a wide range of stakeholder views and enabling learners to benefit from more personalised curriculum designs.

However, technology is not the driving force. Technology-enabled systems may benefit institutions – for example by improving workflows, involving stakeholders in more active and timely ways and by making possible more flexible, learner-defined curricula – but enhanced curriculum design also involves engaging the interest and participation of all concerned.

Explore

Curriculum delivery focuses on the processes that take place when learners engage with a designed curriculum. A two-year JISC programme, Transforming Curriculum Delivery through Technology, explores how technology can enhance the experience of learning.

Revising approaches to curriculum delivery

Because it impacts directly on the student learning experience, the quality of curriculum delivery is of institution-wide concern. But curriculum delivery presents many complex challenges – for example, responding to changing learner needs, ensuring availability of high-quality learning resources and environments and delivering a more engaging and flexible learning experience.

Learners' needs also vary widely. Mature work-based learners and younger campus-based learners experience the curriculum in different ways, yet the quality of their experience must be consistent and equitable. Improving learners' experience of taught curricula and the assessment of learning, in particular, remain priorities for most further and higher education institutions.

In response to these challenges, institutions are seeking to exploit technology to achieve more innovative, personalised and learner-centred approaches to curriculum delivery. The JISC Transforming Curriculum Delivery through Technology programme is funding 15 projects to explore technology-enhanced ways of enabling learners to achieve the outcomes offered by their curricular choices.

Benefiting from enhanced curriculum delivery

Learners are clear beneficiaries of effective and engaging curriculum delivery, but institutions that seek to continuously improve the learner experience gain in a variety of ways.

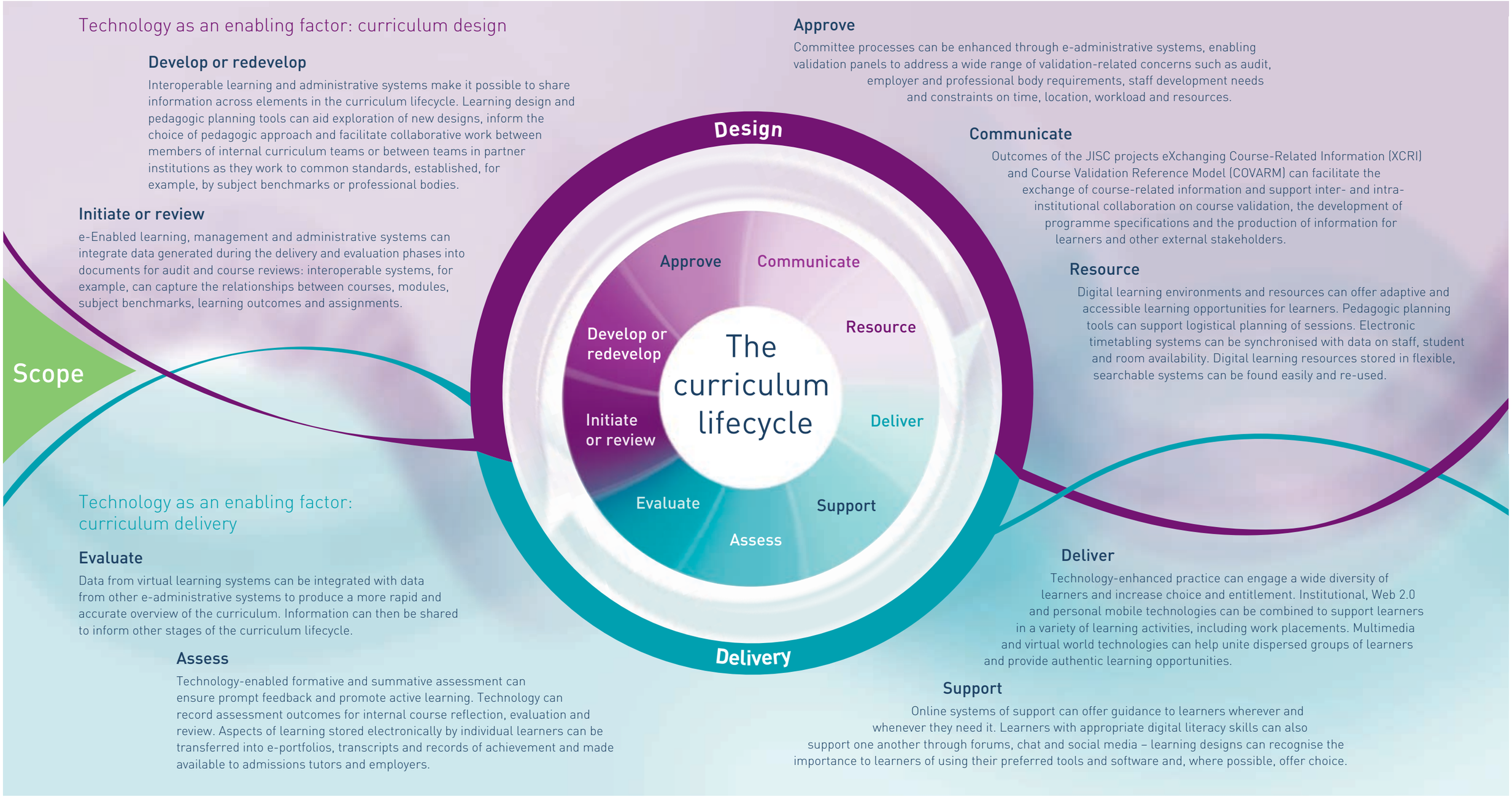
For example, supporting and enhancing curriculum delivery through the appropriate use of technology can:

- Build capacity among teaching practitioners, tutors, coaches and learning support staff
- Develop experience and knowledge that can be shared between as well as within subject disciplines
- Enable innovative initiatives with regional and international partners
- Enhance the institution's provision for its learners and improve learner satisfaction
- Increase the institution's competitiveness in regional, national and global markets
- Enable a broader range of outcomes for learners

'Managing Curriculum Change' introduces the aims of the JISC Curriculum Design and Delivery programmes and highlights key messages and resources from the developing work of the project teams.

Integrating technology into the curriculum lifecycle

'In practice, there is overlap and interplay between the processes we are calling "curriculum design" and "curriculum delivery"... For example, the educational rationale for design decisions should be understood by staff involved in the delivery process, and ideally by learners too, while evidence from learners' engagement with the curriculum should inform future iterations of design.' JISC, 2008



Technology as an enabling factor: curriculum design

Develop or redevelop

Interoperable learning and administrative systems make it possible to share information across elements in the curriculum lifecycle. Learning design and pedagogic planning tools can aid exploration of new designs, inform the choice of pedagogic approach and facilitate collaborative work between members of internal curriculum teams or between teams in partner institutions as they work to common standards, established, for example, by subject benchmarks or professional bodies.

Initiate or review

e-Enabled learning, management and administrative systems can integrate data generated during the delivery and evaluation phases into documents for audit and course reviews: interoperable systems, for example, can capture the relationships between courses, modules, subject benchmarks, learning outcomes and assignments.

Approve

Committee processes can be enhanced through e-administrative systems, enabling validation panels to address a wide range of validation-related concerns such as audit, employer and professional body requirements, staff development needs and constraints on time, location, workload and resources.

Communicate

Outcomes of the JISC projects eXchanging Course-Related Information (XCRI) and Course Validation Reference Model (COVARM) can facilitate the exchange of course-related information and support inter- and intra-institutional collaboration on course validation, the development of programme specifications and the production of information for learners and other external stakeholders.

Resource

Digital learning environments and resources can offer adaptive and accessible learning opportunities for learners. Pedagogic planning tools can support logistical planning of sessions. Electronic timetabling systems can be synchronised with data on staff, student and room availability. Digital learning resources stored in flexible, searchable systems can be found easily and re-used.

Technology as an enabling factor: curriculum delivery

Evaluate

Data from virtual learning systems can be integrated with data from other e-administrative systems to produce a more rapid and accurate overview of the curriculum. Information can then be shared to inform other stages of the curriculum lifecycle.

Assess

Technology-enabled formative and summative assessment can ensure prompt feedback and promote active learning. Technology can record assessment outcomes for internal course reflection, evaluation and review. Aspects of learning stored electronically by individual learners can be transferred into e-portfolios, transcripts and records of achievement and made available to admissions tutors and employers.

Deliver

Technology-enhanced practice can engage a wide diversity of learners and increase choice and entitlement. Institutional, Web 2.0 and personal mobile technologies can be combined to support learners in a variety of learning activities, including work placements. Multimedia and virtual world technologies can help unite dispersed groups of learners and provide authentic learning opportunities.

Support

Online systems of support can offer guidance to learners wherever and whenever they need it. Learners with appropriate digital literacy skills can also support one another through forums, chat and social media – learning designs can recognise the importance to learners of using their preferred tools and software and, where possible, offer choice.

Bringing about curriculum enhancement

The Design Studio

The Design Studio is a dynamic web-based toolkit which draws together a range of resources around technology-enhanced curriculum design and delivery, including those that result from the work of the Curriculum Design and Delivery programmes and resources from previous JISC and Higher Education Academy programmes and other relevant sources.

It is envisaged that the Design Studio will offer institutions a single coherent source of information and guidance to enable the effective integration of technology into curriculum design and delivery processes. The curriculum lifecycle concept provides the defining structure for this wiki-based resource and the primary portal to the supporting materials.

Design Studio resources

The emphasis of the Design Studio will be on practical resources that support institutions in achieving a vision for streamlined and responsive curricula, such as:

- Models of workflows, systems and processes
- Structured case studies
- Exemplar learning designs and learning resources
- Methods, protocols and how-to guides
- Findings, key messages and lessons learnt
- Evidence such as video clips and quotes
- Resources for staff development
- Narratives of transformation

For more information on the Design Studio, see **www.jiscinfonet.ac.uk/curriculum**

A vision for curriculum design

- Efficient and flexible institutional review and validation processes
- Access to design tools to support effective pedagogic design
- Interoperable systems that support information flow in a number of directions
- Ability to respond creatively and flexibly to changing cultural and economic climates
- Ability to involve a range of stakeholders in decision making
- Curriculum documentation, course review and validation procedures facilitated by appropriate data
- Systems, data and processes capable of supporting reorganisation of units of learning
- Learning resources that are searchable, accessible and sharable

A vision for curriculum delivery

- Curriculum delivery practices that meet the diverse needs of learners
- Learners fully engaged, appropriately challenged and supported
- Learners able to show evidence of their skills and achievements against the requirements of employers and professional bodies
- Learners supported in developing digital literacy and lifelong learning skills
- Teaching practice informed by current research and evidence
- Tutors able to obtain timely access to learner information
- Tutors able to give prompt, supportive feedback to learners
- Coherent, streamlined systems that not only support learners' access to information and resources while learning, but also enable transfer of data on progression

'There has to be widespread stakeholder agreement about the desirability and feasibility of the proposed changes, and so how stakeholders feel about them will be critical to their success.'

Professor Stephen Brown, Critical Friend to the JISC Institutional Approaches to Curriculum Design programme

Managing transformation

Adapting systems and procedures to bring about transformative change is a significant challenge and requires an institution-wide approach. Technology may offer potential solutions to commonly experienced challenges, but equally important is the effective management of a diversity of roles and perspectives. Effective curriculum change depends more on people than on technology, so supporting staff through the change process is critical to the success of each project or initiative.

A model illustrating key institutional roles indicates how different teams contribute to the achievement of curriculum change. The model also suggests the importance of the support and participation of many groups (some with overlapping and interconnecting functions) as curriculum change initiatives take shape.

Project teams participating in the JISC Curriculum Design and Delivery programmes have commenced their work by engaging key stakeholders and examining institutional processes, systems and procedures in order to assess the socio-technical change management that each project entails. Their vision is to develop curriculum design processes and delivery practices that are efficient and flexible, providing learning opportunities that can adapt in a context of rapid change.

Each project addresses a number of challenges and involves the participation of a range of stakeholders in the achievement of its aims.

'One of the key challenges... is how to engage students, peers and tutors in creative and mutually beneficial dialogue characterised by innovative and reflective critical thinking – both in face-to-face, distance and work-based flexible learning contexts.'

Professor Peter Chatterton, Critical Friend to the JISC Transforming Curriculum Delivery through Technology programme

Re-engineering the curriculum involves aspects of both design and delivery.

'A new delivery mechanism can change a design totally... so new technologies in particular can drive the design process.'

Professor Alan Staley, Head of Learning Technology Development Unit, Birmingham City University

Successful initiatives are based on a shared and common purpose.

'I view technology as a liberating agent. It presents the means to address learner diversity and target differentiated learning and reinforcement activities.'

Phil George, Project Manager, KUBE, Kingston College

Awareness of benefit increases acceptance of change.

'It is important that... the offering is more responsive and accessible to learners and employers and the processes are owned by schools with little or no increase in the administrative burden on academic and support staff.'

Maureen Castens, Project Director, UG-FLEX, University of Greenwich

Innovative approaches can enhance the learning experience.

'We are integrating podcasting, Second Life and e-book readers into curriculum delivery to enhance the work-based experience of learners studying at a distance.'

Gabi Witthaus, Teaching Fellow in Distance Learning with Technologies, DUCKLING, University of Leicester

Enhancing the institution's standing is a unifying force.

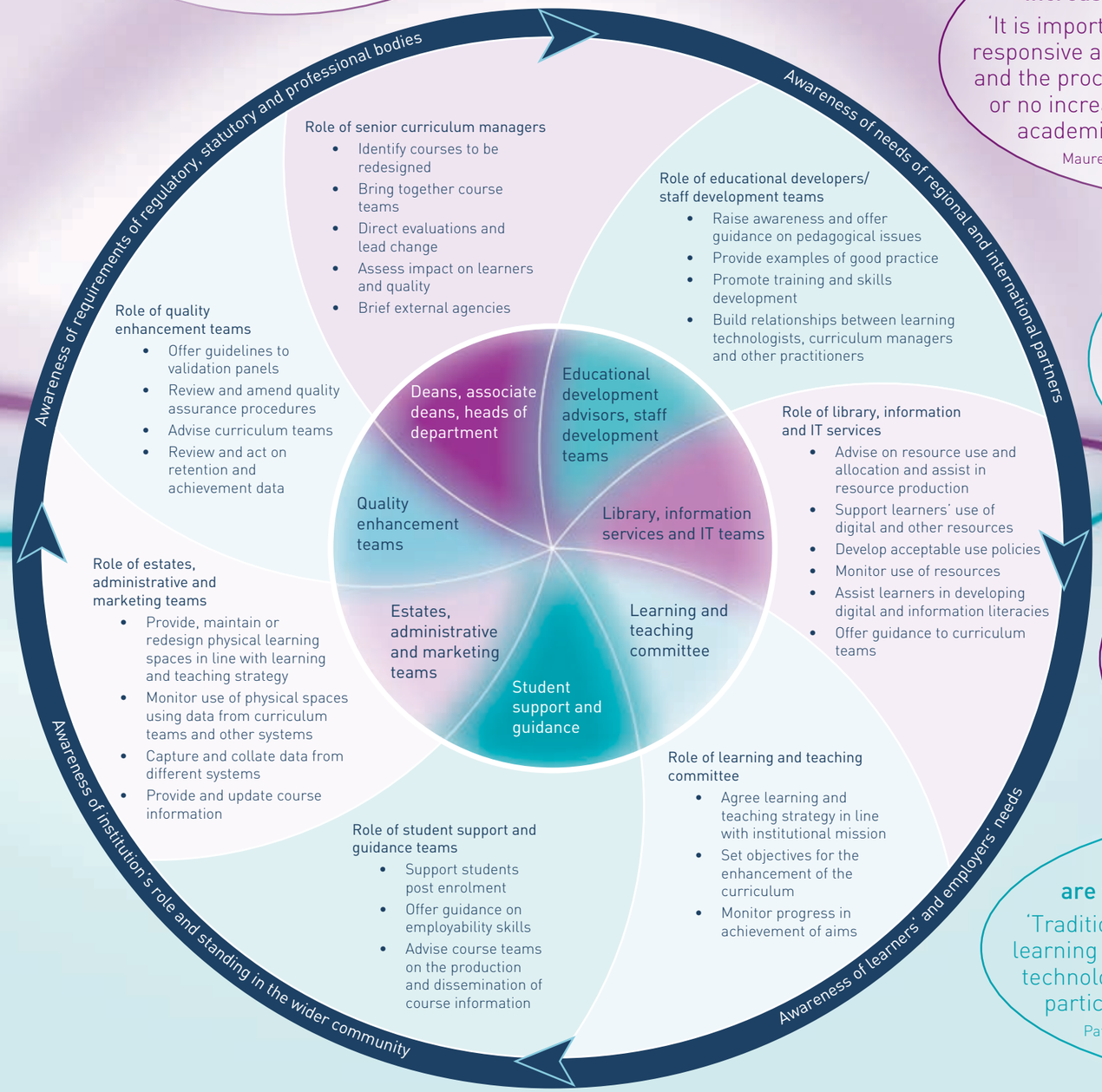
'At the heart of this project is the desire to create more effective communication about what is important about the educational experience at our institution.'

Catherine Owen, Project Manager, Patterns in Principles, University of Strathclyde

Transformative uses of technology are those that empower learners.

'Traditional methods of delivering teaching and learning are being transformed by the use of technology to enable learners to become active participants in their learning.'

Patricia Forrest, Project Director, Making the New Diploma a Success, Lewisham College



Participating projects

The following projects have been funded under the JISC Curriculum Design and Delivery programmes.

Institutional approaches to curriculum design

Birmingham City University
Technology-Supported Processes for Agile and Responsive Curricula (T-SPARC)

Cardiff University
Programme Approval Lean Electronic Toolset (PALET)

City University London
Process Re-engineering Design for an Interdisciplinary Curriculum with Technology (PREDICT)

Leeds Metropolitan University
Personalised Curriculum Creation through Coaching (PC3)

Manchester Metropolitan University
Supporting Responsive Curricula (SRC)

Staffordshire University
Institutional Change Initiative for Curriculum Development (ENABLE)

The Open University
Open University Learning Design Initiative (OULDI-JISC)

University of Bolton
Coeducate

University of Cambridge
Course Tools

University of Greenwich
UG-FLEX

University of Strathclyde
Principles in Patterns (PiP)

University of Ulster
Viewpoints

Transforming curriculum delivery through technology

College of West Anglia (funded by Becta)
Springboard TV – An Internet TV Station to Enrich Teaching and Learning

Coventry University
Coventry Online Writing Laboratory (COWL)

Kingston College
Kingston Uplift for Business Education (KUBE)

Kingston University and De Montfort University
Mobilising Remote Student Engagement (MoRSE)

Lewisham College (funded by Becta)
Making the New Diploma a Success

Middlesex University
Information Spaces for Collaborative Creativity (ISCC)

Newcastle University
Dynamic Learning Maps

St George's University London
Generation 4 (G4)

The Open University
Achieving Transformation, Enhanced Learning and Innovation through Educational Resources in Design (ATELIER-D)

University of Bristol
eBioLabs

University of Exeter
University of Exeter Business School Integrative Technologies Project (Integrate)

University of Hertfordshire
Effecting Sustainable Change in Assessment Practice and Experience (ESCAPE)

University of Leicester
Delivering University Curricula: Knowledge, Learning and INnovation Gains (DUCKLING)

University of Oxford
Developing New Models to Transform the Delivery and Support of Learning for Continuing and Professional Learning (Cascade)

University of Westminster
Making Assessment Count (e-Reflect)

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Further information
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References

JISC e-Learning programme
www.jisc.ac.uk/elearningprogramme

Institutional Approaches to Curriculum Design programme
www.jisc.ac.uk/curriculumdesign

Transforming Curriculum Delivery through Technology programme
www.jisc.ac.uk/curriculumdelivery

JISC infoNet
www.jiscinfonet.ac.uk

The Design Studio
www.jiscinfonet.ac.uk/curriculum

The Higher Education Academy
www.heacademy.ac.uk

Becta
www.becta.org.uk

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