



Management and Innovation Consultancy for Education

HEFCW
Enhancing Learning Through Technology
(ELTT) Strategy
Implementation Review
June 2011

Contents

1	EXECUTIVE SUMMARY	4
2	INTRODUCTION	10
3	BACKGROUND AND CONTEXT	11
3.1	Strategy and Policy Context	11
3.2	Technology Context	12
3.3	Initiatives supporting Implementation.....	14
4	REVIEW APPROACH AND METHODS	16
5	ANALYSIS	17
5.1	Enhancement of Learning, Teaching & Assessment, and of Core Processes.....	20
5.1.1	Progress against indicators.....	20
5.1.2	Issues arising and implications for the revised strategy	22
5.1.2.1	Benchmarking.....	22
5.1.2.2	Mainstreaming/Normalising v Transformation.....	23
5.1.2.3	Policy, procedure & process.....	23
5.1.2.4	Staff Development	24
5.1.2.5	Measuring Change.....	24
5.2	An Enhanced Student Learning Experience.....	25
5.2.1	Progress against indicators.....	25
5.2.2	Issues arising and implications for the revised strategy	28
5.2.2.1	Students as Partners.....	28
5.2.2.2	Digital Literacies	29
5.2.2.3	Learner Profiling/Analytics.....	30
5.2.2.4	Curriculum Design	30
5.2.2.5	Learning in and for Employment.....	30
5.2.2.6	Delivery through Partners.....	31
5.2.2.7	Other.....	31
5.3	Increased Flexibility and Accessibility of Provision.....	32
5.3.1	Progress against indicators.....	32
5.3.2	Issues arising and implications for the revised strategy	33
5.3.2.1	Supporting Transition.....	33
5.3.2.2	Equality of Access.....	34
5.3.2.3	Learning through the medium of Welsh.....	34
5.4	Effective Collaboration and Sharing of Current and Good Practice.....	35
5.4.1	Progress against indicators.....	35
5.4.2	Issues arising and implications for the revised strategy	37
5.4.2.1	Supporting Collaboration.....	37
5.4.2.2	Range of Collaboration	38
5.4.2.3	Cross-sector Collaboration.....	38
5.4.2.4	Cloud Computing & Shared Services.....	38
5.4.2.5	Engaging the Academic Community	39
5.4.2.6	Work-Based Learning	39
5.4.2.7	Cross-Functional Collaboration.....	39
5.5	Institutional engagement	40
5.5.1	Progress against indicators.....	40
5.5.2	Issues arising and implications for the revised strategy	41
6	CONCLUSIONS AND RECOMMENDATIONS	42
6.1	Continuing relevance of the strategy & objectives.....	42
6.2	Approach to updating the strategy	44
6.3	Recommendations	45
6.3.1	Enhancement of Learning, Teaching & Assessment, and of Core Processes	46
6.3.2	An Enhanced Student Learning Experience.....	47
6.3.3	Increased Flexibility and Accessibility of Provision	48
6.3.4	Effective Collaboration and Sharing of Current and Good Practice.....	49
6.3.5	Institutional engagement.....	50
6.4	Areas where HEFCW and agencies can add value.....	50

7	REFERENCES	52
8	APPENDICES	61
Appendix 1.	List of interviewees	61
Appendix 2.	Analysis of HE Survey Responses	62
Appendix 3.	Analysis of FE Survey Responses	74

1 Executive Summary

Introduction

In April 2008 the Higher Education Funding Council for Wales (HEFCW) published '[Enhancing learning and teaching through technology: a strategy for higher education in Wales](#)' (HEFCW 2008: the ELTT strategy). This provided a ten year strategy, from 2007/08 to 2016/17. In the strategy HEFCW announced that, as technological change is rapid, the strategy would be reviewed in 2010/11. This document outlines the outcomes of that review process.

The strategy has five main objectives:

1. enhancement of learning, teaching and assessment, and of core processes
2. an enhanced student learning experience
3. increased flexibility and accessibility of provision
4. effective collaboration and sharing of current and good practice
5. institutional engagement

The strategy identifies a number of short-term (by 2010/11) indicators and longer term (by 2016/17) indicators for each of the objectives.

The review was carried out by a team of independent consultants who sought to engage with representatives of key stakeholders in a variety of ways. The findings and recommendations in this report are based on research which includes: interviews with 41 individuals, surveys of staff in universities and further education colleges, participation in a range of events and review of the outcomes of technology enhanced learning projects in Wales.

Overall Conclusions

The existence of the strategy has played a significant role in advancing ELTT in the Welsh higher education sector over the last 3 years.

Institutions began from very different 'baseline' positions when they began to engage with the strategy but across the sector there is a clear trajectory of travel in alignment with the strategy and implementation of the strategy has achieved a good threshold level of maturity with ELTT across the sector as a whole.

All of the short term indicators in the strategy have either been met or there is good evidence of progress against the indicator from all institutions.

The picture is similarly positive with regard to progress towards achieving the longer term indicators. Progress is variable against a couple of indicators which largely reflects the different missions of the universities comprising the Welsh HE sector.

The initiatives funded to support implementation: a benchmarking exercise and the Gwella programme (managed by the Higher Education Academy) and the Building Capacity programme (managed by JISC) were well designed and executed. They are recognised by all institutions as having been of considerable value and a significant factor in achieving the excellent rate of progress overall.

There is a continuing need for the ELTT strategy in order to maintain an appropriate focus on this important area of enhancement.

The broad objectives of the strategy remain relevant and valid but both the policy and technology contexts underpinning the strategy have changed over the course of the last three years and the strategy now requires updating in the light of these changes and the outcomes of recent research.

The level of institutional maturity with ELTT means it is appropriate for HEFCW to play a less direct role in supporting implementation and to adopt a light-touch approach to monitoring.

Key findings and recommendations in relation to each of the objectives and related indicators are summarised in the following section of this executive summary.

Key Findings & Recommendations

Enhancement of Learning, Teaching & Assessment & of Core Processes

Key Findings:

- The strategy and implementation activities, especially Gwella, have increased senior management engagement with this area and reinforced their commitment to investment in technology.
- There is a risk that not all of the outcomes of benchmarking (this refers only to those that remain relevant) will be addressed and not all of the positive changes will be sustained and embedded.
- Benchmarking was very helpful at the time and there is a diversity of views about the extent to which a similar exercise should be repeated and what form it should take.
- Mainstreaming and normalising of ELTT is a current goal for many institutions.
- The strategy does not really stretch those who are undertaking curriculum transformation and should be more ambitious in terms of asking institutions to exploit the potential of technology to facilitate pedagogic innovation.
- There is considerable evidence of institutions making good progress in terms of using technology to integrate the administrative aspects of the core processes associated with learning and teaching but there is variability in the extent to which technology enhanced learning is truly embedded in institutional processes.
- There are numerous examples of good and sustainable practice in staff development whereby ELTT is being embedded into Postgraduate Teaching Certificates for staff, induction processes etc.
- There is a need for methodologies for evaluating enhancement.
- There is a need for better ways to assess the cost-benefits of new technologies.

Recommended changes to strategy text:

- R 1.1. Address the fact that technology may facilitate the development of new pedagogic practices and assist in curriculum transformation. Set out an expectation that institutions will explore this transformative potential as well as applying technology effectively to existing practice. (5.1.2.2)
- R 1.2. Recognise that, for normalisation to occur, the effective use of technology must be considered at the appropriate point in each of the core curriculum-related processes such as programme and module design, validation and review, QA-QE etc and that effective services are needed to support these processes. (5.1.2.3)
- R 1.3. Set out an expectation that institutions will develop effective means of measuring and evaluating organisational change and its impact. (5.1.2.5)
- R 1.4. Change the emphasis from benchmarking to a culture of continuous improvement, recognising the importance of light touch self assessment and peer review in this process. (5.1.2.1)
- R 1.5. Consider revising the text on staff development to better reflect the breadth and depth of activities taking place and the need for these to be fully embedded to be effective. (5.1.2.4)

An Enhanced Student Learning Experience

Key Findings:

- An enhanced student learning experience is core to the mission of all Welsh universities and senior management commitment is very evident.
- There are excellent examples of good practice and research but they tend to occur in pockets.
- Mainstreaming the good practice is a goal for many institutions and this involves significant culture change and enhanced staff communications/engagement programmes in many cases.
- Students as partners is an important emerging theme that is helping institutions to address the needs of future students and there is good practice that should be shared and built upon.
- The digital inclusion agenda is about more than connectivity: digital literacies is a key area of enhancement.
- There is a need for more sophisticated approaches to learner profiling/learning analytics in order to plan effective delivery tailored to individual learner needs.
- Institutions are working towards enhancing the experience of work-based learners in a variety of ways: employer engagement is only one aspect of this and should not be the sole focus of the indicator.
- There is a need to ensure equality of student access to technology where delivery is via partners.
- There may be benefit in institutions collaborating to develop a framework for evaluating the student experience.
- ELTT is an area where small funded projects can have a disproportionately large impact particularly where projects are incentivised to institutionally embed outputs and realise benefits for the sector.
- Initiatives with academic champions are more likely to be accepted by other academics.

Recommended changes to strategy text:

- R 2.1. Set out an expectation that institutions will use technology to develop creative and innovative ways of engaging with students as partners. (5.2.2.1)
- R 2.2. Recognise the importance of digital literacies in the digital inclusion agenda and also the range of higher order skills that may be included under this heading and advise that institutions undertake further research in this area. (5.2.2.2)
- R 2.3. Recommend that institutions look to develop new and more sophisticated ways of learner profiling in order to better understand and meet student needs. (5.2.2.3)
- R 2.4. Mention the importance of ensuring parity of the learning experience, particularly with regard to access to technology, when in working with partner institutions. N.B. this comment could equally well sit under objective three in relation to equality of access. (5.2.2.6)

Increased Flexibility and Accessibility of Provision

Key Findings:

- A new heading of 'Learning in and for employment' would sit well under this broad objective.
- There is considerable evidence of good use of assistive technologies and an holistic approach to technology supporting inclusion.
- Good learning design, for example learning outcomes described in terms of competencies rather than the ability to use particular tools, is essential for an inclusive curriculum.
- These good practice approaches to inclusivity will stand institutions in good stead in meeting their international ambitions.
- Different technologies and policy approaches across Welsh institutions present challenges to collaborative delivery.
- There are opportunities to make better use of technology to support learning through the medium of Welsh.

Recommended changes to strategy text:

- R 3.1. Revise the text of existing paragraph 7.7 to reflect the broad range of activities that support learning in and for employment and consider moving that paragraph under this objective. (5.2.2.5)
- R 3.2. State the importance of making effective use of technology to support transition and progression. (5.3.2.1)
- R 3.3. Consider making reference to the importance of an holistic approach to accessibility and the fact that such an approach does make sound business sense. (5.3.2.2)

Effective Collaboration and Sharing of Current and Good Practice

Key Findings:

- There is genuine maturity in the collaboration versus competition dialogue in Wales and a culture of sharing across institutions particularly with regard to learning and teaching, although specific communities of practice may exist within their own 'silos'.
- CAMEL groups peer reviewing practice and the external perspective brought by Gwella Critical Friends have been key to success.
- There are good examples of effective, collaboratively managed networks/special interest groups with a clear common purpose.
- Further intervention may be needed to sustain sharing of good practice in turbulent and challenging times.
- The mechanisms for capturing and sharing good practice with the wider academic community could be enhanced
- The Welsh Video Network is a shared service that provides a robust platform for collaboration and has the potential for further use in work-based learning and international markets.
- A considerable proportion of senior managers interviewed feel that Wales is too inward-looking.
- Geography does impact on institutional ability to collaborate more widely and technology can help address this.
- Welsh medium provision is one of the clearest areas where institutions can see real benefit in sharing resources.
- In the area of work-based learning there may be benefit in multi-sector (FE/HE/employer/sector body) approaches to employer engagement, progression and the development of OERs to meet employer/sector needs
- There are a few good examples of shared services but these are limited; this position is likely to change as a result of mergers.
- There is some interest in wider public sector shared services.
- Internal collaboration especially the central role of libraries/learning resource centres in ELTT should not be overlooked.

Recommended changes to strategy text:

- R 5.1. Emphasise the importance of cross-sector collaboration especially in relation to the regional agenda. (5.4.2.3)
- R 5.2. Mention the need for cross-functional collaboration and the fact that support services such as libraries/learning resource centres may need to support different types of collaborative partnerships in future. (5.4.2.7)
- R 5.3. Emphasise that there are a wide range of cloud and shared service options that may benefit institutions in different ways and encourage institutions to explore the possibilities. (5.4.2.4)

Institutional Engagement

Key Findings:

- ELTT is becoming more embedded in other strategies but fully holistic planning approaches are still rare.
- Central units that co-ordinate and disseminate ELTT work are achieving considerable success.
- Programme teams need institutional strategic direction and hands-on support brought together coherently at the point of need.

Recommended changes to strategy text:

R 5.1. HEFCW is invited to consider whether this heading warrants a separate objective or whether the aim and the indicator could be incorporated into objective one.

2 Introduction

In April 2008 the Higher Education Funding Council for Wales (HEFCW) published '[Enhancing learning and teaching through technology: a strategy for higher education in Wales](#)' (HEFCW 2008). This provided a ten year strategy, from 2007/08 to 2016/17 that aimed to accelerate the mainstreaming of technology-enhanced learning and teaching provision, processes and practice, and to support Welsh higher education institutions in embracing new technologies and identifying how their application could enhance learning, teaching and the overall student experience. In the strategy HEFCW announced that, as technological change is rapid, the strategy would be reviewed in 2010/11. This document outlines the outcomes of that review process.

Over the life of this strategy we have seen changes, both technological and economic, that could not have been foreseen and which have far reaching implications for the future of higher education. Against this backdrop it is laudable that the strategy is still worthy of review and able to engender meaningful dialogue about enhancing the learning and teaching experience. Technology is playing an increasingly important role in how we communicate, work and learn and it is ever more crucial for students and teachers to master the skills for successfully exploiting the technologies. Despite technological change, there are however, enduring principles of good teaching and learning that transcend technologies and media. The successful coupling of these principles with the affordances of new technologies will be vital in creating learning experiences fit for the digital age and the strategy for ELTT in Wales seeks to reflect this.

The review was carried out by a team of independent consultants and the consultants would like to formally thank all those who participated in the review process. We encountered a vibrant and enthusiastic community engaged in technology-enhanced learning who, despite all of the challenges they face, were remarkably optimistic about the future. We would also like to thank the staff of HEFCW and RSC Wales for their assistance and Professor Tony Toole for his advice. We hope the resulting document is a credible attempt to reflect the views of a diverse and fast changing sector and that it may contribute in some small way to taking the sector forward over the years to come.

Dr Gill Ferrell (Project Manager)
Paul Bailey
Professor Peter Chatterton

3 Background and Context

3.1 Strategy and Policy Context

[‘Enhancing Learning and Teaching through Technology: a Strategy for Higher Education in Wales’](#) (HEFCW 2008: the ELTT strategy) needs to be viewed in the overall context of the Welsh Government's priorities and the role it sees Higher Education playing in meeting these objectives. Although the direction has remained broadly similar since it was described in [‘Reaching Higher’](#) (Welsh Government 2002), government policy has been more clearly defined in a number of important documents released since the publication of the ELTT strategy.

In July 2008, immediately following publication of the ELTT strategy, the government set out its skills and employment strategy [‘Skills that Work for Wales’](#) (Welsh Government 2008). In November 2009, it delivered [‘For our Future - The 21st Century Higher Education Strategy and Plan for Wales’](#) (Welsh Government 2009a). This built on the 2002 vision for higher education, suggesting a direction of travel based upon two key themes of social justice and supporting a buoyant economy. *‘For our Future’* is now the key document giving HEFCW its steer. The [2011/12 remit letter](#) from the Welsh Government to HEFCW (Welsh Government 2011) states: *‘... delivery of For Our Future is the overriding objective on which the Council must focus in 2011-12, and to which all its actions must demonstrably relate.’*

The vision outlined in *‘For our Future’* (Welsh Government 2009a) includes HE developing better partnerships with employers and communities to help develop high level skills, widen participation, foster innovation and business competitiveness and to help shape a more democratic and inclusive society that generates international recognition and engagement. The vision also includes HE offering more flexible, accessible and learner-centred provision as well as equipping individuals with the knowledge, skills and attributes to achieve their maximum potential. This plan for HE goes hand in hand with the broader skills strategy *‘Skills that Work for Wales’* (Welsh Government 2008).

The government has also identified more clearly the role of technology in meeting its objectives. In [‘Delivering a Digital Wales’](#) (Welsh Government 2010a) and [‘Delivering Digital Inclusion: a Strategic framework for Wales’](#) (Welsh Government 2010b) published in December 2010 it outlines a vision for a digitally enabled, innovative and inclusive society.

A further key development of policy concerns the future structure of higher education in Wales and the part that universities play within the regional economy. In a [statement](#) issued on 22 December 2010, HEFCW (2010g) identified an expectation that by March 2013 there would be no more than two institutions in each of the three identified Welsh regions. The desire to see rationalisation and economies of scale is not new but the steer is now much more direct. HEFCW is also looking to see that in developing their learning and teaching and widening access strategies, institutions take account of their regional strategies including looking at issues such as joint curriculum working, rationalisation of provision, reducing unnecessary duplication and progression arrangements.

This review of the ELTT strategy is thus timely following as it does the publication of these key documents and recent elections to the Welsh Government. The final piece of the policy jigsaw is the change to the funding regime and the role of students as fee payers. This has a number of implications for how best to implement the strategy going forward not least relating to student expectations of universities.

Universities are autonomous institutions and their response to the strategy and policy steers has not been uniform. The mergers that are now under consideration are not necessarily those of which the regional policymakers would have conceived. What is clear is that some mergers will occur and these will significantly change the profile of the institutions involved with major implications for the technologies in use in those universities. The regional collaborations, including a dual sector university, could change the relationship between further and higher education in Wales with resulting implications for systems and processes. Many of the institutions also have ambitions that extend significantly beyond their immediate region and the increasing importance of the international agenda again impacts the role of technology. These significant changes are taking place at the same time as the reduction in the proportion of learning and teaching funding coming directly from HEFCW will make it increasingly difficult for that body to play a role in steering policy within individual institutions. HEFCW will have to find the appropriate means of trying to shape a Welsh higher education sector whilst continuing to recognise institutions’ autonomy and diversity of mission.

3.2 Technology Context

The strategy was written in full recognition of the fact that technology is a fast-moving area and regular reviews were envisaged in the expectation that opportunities which could not have been anticipated at the start would continue to arise over the life of the strategy. This assumption has proven correct and there have been significant developments in a number of key areas.

The whole area of social and collaborative technologies has moved on immensely in the last three years. The explosion in the use of social media amongst the general population was in its infancy when the strategy was written. Whilst this is an unstable market and particular tools come and go, often at short notice, the phenomenon has without doubt changed the nature of peer-to-peer communications. Strategies for use of technology in learning and teaching now need to be conceived in the context of different forms of technology-enhanced communication and their implications for institutional infrastructure and the nature of IT provision.

The range and availability of (relatively) low-cost consumer/user owned and mobile devices has also increased. The affordances of such technologies have implications both for the design of learning activities and for the infrastructure to support such activities. The availability of robust, high speed broadband connections remains problematic in parts of rural Wales yet the level of use of 3G devices in Wales is the highest in the UK.

The question of static infrastructure versus mobile technologies also comes to the fore in considering the future role of the [Welsh Video Network](#) in supporting the sector. There are now a range of technologies available that support video communications and greater or lesser degrees of overlap between the capabilities of the various products. Looking to the future it is vital that the sector is able to understand both the affordances and the cost benefits of the available technologies and to make decisions based on fitness for purpose and cost effectiveness on a sector scale.

Attitudes to developing and managing technical infrastructure are changing but the HE sector (generally and not just in Wales) has been slow to take an enterprise view of its systems and to respond to changes in the market. Enterprise Architecture (EA) is not a new practice but it is a term little heard in the HE sector. [JISC](#) is exploring EA through a [Strategic Technologies Group](#), which includes representation from Wales (see Anderson & Backhouse 2009 for a case study on pilot work in Wales). EA offers a way of aligning strategic vision, business goals and underlying systems and processes. EA thinking can help make most efficient use of existing systems and identify opportunities where approaches such as cloud computing, service oriented approaches or shared services can deliver benefit. A detailed discussion of the ways forward for managing institutional infrastructure is outside the scope of this review, and indeed of the strategy, but in looking at the use of technology in learning and teaching against a backdrop of institutional mergers and regional collaboration, it is important to flag up these developments. At least some institutions are considering cloud solutions for student facing services and Wales is playing a lead role in assessing cloud options from the information professional's perspective (Convery 2010). The sharing of experience around the management of technical infrastructure needs to underpin the effective deployment of technology for learning and teaching.

Over the last three years there has been a considerable shift from proprietary to open source systems as the core VLE in institutions. There remain two main systems in use. The open source system Moodle is the predominant VLE in use in the FE sector with obvious implications for collaborative working and progression routes across FE¹ and HE. On the other hand there has been considerable investment of institutional time and resource in the Welsh language pack for Blackboard (now an integral part of the product) which has been chosen as the platform for [Y Porth](#). Anecdotal evidence suggests that the Welsh language capabilities of this platform remain superior to those available in Moodle despite the Welsh Government investing in the development of a Welsh language pack for Moodle. The existence of two platforms within what is a relatively small market has implications for shared services across HE and more widely in post-compulsory education.

¹ References to FE in this document use the term in the sense applied by the Department for Business, Innovation & Skills i.e. to denote the broad FE and Skills sector.

There has been considerable investment over this period in the investigation of [Open Educational Resources](#) (OERs) in England. Wales as a whole did not participate in the OER work managed by JISC and the [Higher Education Academy](#) as the funding council was unable to meet the cost of such participation at the time (although some Welsh institutions did collaborate with projects led by the Higher Education Academy Subject Centres). This decision is unlikely to have left Welsh institutions at a significant disadvantage in terms of actual resources; it does however mean that Wales was not part of some important conversations around culture and process change relating to the adoption and use of such resources. It may be pertinent for a new strategy to consider the importance of Welsh institutions joining, and benefiting from, those conversations especially as a further round of OER work is likely to be forthcoming. The OER programme is however only one strand of a shift in how academic content is created and distributed. Since the original development of the strategy there has been a huge increase in the emphasis on user generated content and in the availability of tools for content sharing.

Alongside the explosion in tools and content, and perhaps partly because of this, has come recognition of the need to reconsider the whole subject of digital literacies. It is now widely accepted (see for example Bennett et al 2008; Margaryan & Littlejohn 2008) that the concept of 'Digital Natives' (sometimes referred to as the 'Net Generation' or 'Screenagers') is, at best, naive and, at worst, a myth that has hindered rather than helped learning design. Indeed even Prensky who originally coined the phrase (Prensky 2001), has moved against the distinction between 'natives' and 'immigrants' as originally conceived (Prensky 2009). Addressing the question of digital literacies is a vital part of meeting the priorities of the Welsh Government as outlined in 'Delivering a *Digital Wales*' (Welsh Government 2010a) and '*Delivering Digital Inclusion*' (Welsh Government 2010b). The policy documents concentrate on infrastructure and on the skills needed in the Welsh economy. It is vital that the education sector is able to translate what this means in terms of designing an educational experience.

The UK HE sector as a whole is now reaching a level of maturity with ELTT whereby it is becoming embedded into core institutional processes and institutions can go beyond applying technology to existing practice and begin to use technology to facilitate pedagogic transformation. Two important JISC programmes of research began in 2008 to investigate this area: '[Institutional approaches to curriculum design](#)' (2008-2012) is looking at how the use of technology can help make curriculum design processes more agile and responsive (and includes one project in Wales) and a related programme '[Transforming curriculum delivery through technology](#)' (2008-2010) addressed ways in which the appropriate integration of technology could help institutions respond to changing learner and employer needs to deliver a more engaging and flexible learning experience. The outcomes of these programmes and much other related work are feeding into a resource for the sector known as the '[Design Studio](#)' which is an evolving wiki-based resource and a recommended reference source for ELTT practitioners. Although covering a broader spectrum than ELTT, the Higher Education Academy's wiki '[EvidenceNet Extra](#)' takes a similar approach and is rich in examples from Wales.

The approach of the sector creating self-help toolkits is becoming increasingly common. Other examples referenced in this document as being of relevance to the implementation of the ELTT strategy are: '[Harnessing Quality Assurance Processes to Enhance Technology Enabled Learning](#)' produced by the Quality Assurance and Quality Enhancement in e-Learning Special Interest Group, the '[Work-Based Learning Maturity Toolkit](#)' an outcome of the JISC [Lifelong Learning and Workforce Development Programme](#) and the '[Sustaining and Embedding Innovations Good Practice Guide](#)' which distils lessons learned from various JISC innovation programmes. Welsh institutions have contributed to the development of all of these resources.

Finally, and not least, the number and range of different technologies now available has implications for the support services needed by institutions. It is no longer possible for individual academics, curriculum teams, or indeed even small central units within institutions, to keep abreast of all developments in technology, the research into their use and the evaluation of cost benefits. The combination of the explosion in technologies and the opportunities they offer, the impact of the economic recession on the sector, and the significant structural changes about to take place in Welsh HE make it vitally important that there are effective means in place for carrying out, and sharing the outcomes of, research and for disseminating good practice across institutions.

The above also relates to the points made earlier about infrastructure and enterprise architecture. Innovative use of technology has the potential to be a significant differentiator in the learning and teaching offer of at least some institutions. In order to focus effort where it matters, and in the areas that do impact institutional mission and identity, institutions will need to ensure that their back office functions are as streamlined and cost-effective as possible. Institutions will need to be at a level of maturity in their deployment of technology where they manage core systems efficiently and effectively, they understand where they are able to innovate and differentiate and they are able to do so using a suite of continuously evolving technologies. A systems architecture that meets the needs of the 21st century will have to be flexible and agile and use open data to enable it to adapt to change. It is likely that many institutions will require support in the medium term to achieve this.

3.3 Initiatives supporting Implementation

Having delivered a strategy for ELTT in consultation with the sector, the funding council did not then simply leave the sector to get on with implementation. A co-ordinated series of funded initiatives was put in place to support the sector through the early stages of implementation. In looking to the future of ELTT we therefore need to consider the ways in which the sector has moved forward as a result of these initiatives.

The most significant of the initiatives was a programme to support enhancement of learning and teaching in individual institutions, managed by the Higher Education Academy, which came to be known as [Gwella](#). The Higher Education Academy had previously managed a benchmarking exercise in which some Welsh institutions participated and followed this up with a HEFCE funded 'Pathfinder' programme in England. Gwella is the Welsh counterpart to Pathfinder using a similar approach of building on the outcomes of benchmarking to develop an individual institutional enhancement action plan. Those institutions who had not already undertaken a benchmarking exercise did so at the start of the programme. All HEFCW funded institutions (except the Open University in Wales) participated in Gwella.

The outcomes of Gwella have been well documented at the institutional level (see references) and a report summarising both institutional achievements and the overall support programme has been published (Higher Education Academy 2011). It should be clear therefore that this review is not a review of Gwella, however, it will necessarily refer to the achievements of Gwella in describing overall progress against the objectives of the strategy and draw on lessons learned in terms of making recommendations for the future. Having said that, it is clear that the Gwella programme has been the single biggest influence on technology-enhanced learning and teaching in Wales over the last three years and that for many of those consulted as part of this review Gwella and the strategy are synonymous with one another.

This is testimony to the success of the Gwella programme in meeting its objectives and, in some cases, effecting a sea change in attitude towards the use of technology in academic institutions. The question of how the impetus and direction might be sustained in future in the absence of such a co-ordinated and readily identifiable support mechanism is addressed later in this report although it should be noted that HEFCW has provided funding for continued input from Gwella Critical Friends for a further year.

It is evident that certain characteristics contributed to Gwella's success:

- The programme drew on tried and tested approaches from Higher Education Academy/JISC Programmes in England and support mechanisms such as Benchmarking, [Critical Friends](#) and [CAMEL](#) networks.
- The programme was tailored to individual institutional needs and priorities.
- The programme allowed for the development of relationships and networks over an extended period of time.
- The programme actively engaged with senior managers and involved a support team that had credibility with these people.
- The programme was focused on enhancing learning and teaching rather than on technical innovation.

Over the last year JISC has run a programme entitled [Building Capacity](#) which has involved 10 Welsh institutions. The aim of this programme was to help institutions make better use of existing JISC services and resources. The programme has endeavoured to engage with senior staff who may be change agents within their institution, to identify existing resources that could support them in addressing key issues for their institution and to support them in using, and giving feedback on, the resources. The Building Capacity programme in England had a broad focus across teaching, research, enterprise and institutional support functions. The programme in Wales was different being based on formula funding and envisaged as an extension of Gwella although institutions did use it to make progress in some new areas as well as continuing earlier work. At the time of writing not all of the projects are complete and published. The reviewers have however had access to draft material and anecdotal evidence on the ways in which this programme has helped institutions build on their Gwella work.

HEFCW has also recently provided funding for Welsh institutions to take part in a fourth round of the successful [HEAT](#) (Higher Education Assistive Technology) scheme supported by the [JISC TechDis](#) service. Five universities are involved in this scheme which is still ongoing.

All Welsh universities have been involved in other JISC funded Innovation programmes (many of these under the e-learning banner) as a result of HEFCW being one of the funding partners for the JISC and hence, its innovation programme. Whilst the initiatives described above refer to ring fenced funding that HEFCW has provided to support implementation of the strategy, it should be noted that participation in many of the other programmes is the result of a highly competitive bidding process. For example, a Welsh institution was selected as one of 12 universities, out of 55 UK-wide, bids to be part of the '*Institutional approaches to curriculum design*' programme. Welsh participation in other JISC e-learning, digital infrastructure and business and community engagement programmes (see references) has been similarly competitive. This bigger picture is important as, in addition to achieving UK-wide recognition for some learning and teaching work, Wales has nationally recognised centres of expertise in areas such as Information and Records Management, and the emerging field of Enterprise Architecture, whose experience will be pertinent in developing the infrastructure and underpinning processes that can move the sector forward.

A full list of project outputs examined as part of this review is included in the references section.

4 Review Approach and Methods

The review was charged to consider:

- The extent to which the short-term indicators in the 'Enhancing Learning and Teaching through Technology: a strategy for Higher Education in Wales' have been met
- The extent to which the longer-term indicators in the 'Enhancing Learning and Teaching through Technology: a strategy for Higher Education in Wales' have been met
- Identify where objectives have not been met, and why.
- The remaining objectives – are they still valid/current?
- Whether any additional objectives should be set given recent developments in technology
- The strategy in the context of documents published more recently, and the outcomes of the programmes to support the strategy

The reviewers endeavoured to conduct their activities in the spirit in which the original strategy was conceived i.e. on the basis of considerable engagement with the stakeholders involved. The approach has been one of Appreciative Inquiry, identifying achievements to date and using the lessons learned from these to give pointers for the future. Evidence has been collected from a range of sources and triangulated. This report includes a range of anonymised quotes from interviews and surveys that help to illustrate the key points.

The review took place over a period of three months between March and June 2011. The timescale was however compressed in practice by the exceptional occurrence of five public holidays during the review period. Despite the fact that many key stakeholders took extended leave over this period, there was a very good response to requests for one-to-one interviews. The timing probably contributed to a lower response rate to the two surveys than would have been desired, although the response was sufficient to be both significant and interesting. Overall the review team undertook the following activities.

- Participation in three face-to-face events on topics relating to the strategy: the 'Gwella/ ELESIG Meet Up' in March that explored further collaboration on ELTT in Wales; Future Directions: Feeding Forward, Enhancing Learning and Teaching supported by the Regional Support Centre for Wales; and Future Directions for Higher Education in Wales, Learning and Teaching and Widening Access Strategies supported by the Higher Education Academy.
- One-to-one telephone interviews with 41 representatives of stakeholder organisations within the sector. The reviewers attempted to speak to at least three relevant members of staff in every university. This generally comprised: the pro-Vice Chancellor responsible for learning and teaching (or in one case the head of the institution); another senior manager with learning and teaching responsibilities and either the Head of IT/library services or the person responsible for employer engagement and work-based learning. Other interviews included people from key support organisations. A full list of interviewees is given in Appendix 1.
- A survey (available in English and Welsh versions) of staff in Welsh universities: details of the outcomes are given in Appendix 2.
- A survey (available in English and Welsh versions) of staff in Welsh further education colleges: details of the survey outcomes are given in Appendix 3.
- Two face to face workshops: one with representatives from the Higher Education Academy and another with the eight JISC Advance services.
- A review of the published (and some unpublished) outcomes of a range of technology-enhanced learning projects (this goes wider than the initiatives specifically funded to support implementation of the ELTT strategy). In addition to this some institutions provided information not in the public domain for example their annual monitoring statements and benchmarking reports (see references section 7).
- Following threads on a range of social networking sites. This aspect of the review was unsystematic but nonetheless threw up some interesting links to research outputs.

5 Analysis

The strategy has five main objectives:

1. enhancement of learning, teaching and assessment, and of core processes
2. an enhanced student learning experience
3. increased flexibility and accessibility of provision
4. effective collaboration and sharing of current and good practice
5. institutional engagement

The strategy identifies a number of short-term (by 2010/11) indicators and longer term (by 2016/17) indicators for each of the objectives.

Some of the objectives are broken down into a number of different subheadings. There is however no direct mapping between the subheadings and the indicators. For the sake of clarity progress has therefore been reported against the indicators mapped to the five main objectives. In some cases, however, under the heading '*Issues arising and implications for the revised strategy*' and in the recommendations, some specific observations on the subheadings are made.

The remit required the review to '*Identify where objectives have not been met, and why*'. The conclusion is that progress has been made against all of the objectives. In most cases the rate of progress is as might be expected in a period of three years. In other words it would not be expected that all, or indeed any, of the long term indicators would have been achieved in this timescale. There is thus no heading of '*objectives not met*'. The rate of technological and structural change over the life of the strategy means that in some cases the context framing the objective has changed significantly. For this reason the heading '*Issues arising and implications for the revised strategy*' has been used.

The following pages summarise progress against each of the short and longer term indicators, using the classifications shown below, then go on to discuss the evidence in more depth. There is more narrative on some indicators than others which reflects the broader scope of some indicators. Also some findings cut across a range of indicators and an attempt has been made to keep the main narrative on each topic in one place with cross-reference to other points where the finding is relevant.

Key:

Met	All institutions appear to have met this indicator
Good Progress	Good evidence of progress against indicator from all institutions
Varied	Some good evidence but variation across sector
Not Met	Lack of evidence of progress against indicator
Context Change	Change in context framing this objective

Short Term Objectives

Enhancement of learning, teaching & assessment & of core processes

<ul style="list-style-type: none"> Senior management support for the use of technology to enhance the learning and teaching experience is evident. 	Met
<ul style="list-style-type: none"> All institutions have carried out benchmarking to analyse their capacity and capability to support and enhance learning and teaching using technology. 	Met
<ul style="list-style-type: none"> All institutions have completed projects to take forward the outcomes of benchmarking. 	Met

An enhanced student learning experience

<ul style="list-style-type: none"> Institutions are aware of technological developments and outcomes of research which will enhance the experience of their students. 	Good Progress
<ul style="list-style-type: none"> The experience of students has been enhanced through the harnessing of new technologies where appropriate. 	Good Progress Context Change
<ul style="list-style-type: none"> Institutions and employers engage as appropriate to provide a flexible, accessible and enhanced student experience for work-based learners. 	Good Progress Context Change

Increased flexibility and accessibility of provision

<ul style="list-style-type: none"> Technology has been used to increase flexibility and accessibility of provision, including for students studying through the Welsh language and the diverse student body. 	Good Progress
---	---------------

Effective collaboration and sharing of current and good practice

<ul style="list-style-type: none"> Increased links with collaborative partners are evident on a range of levels, including with existing and new networks and organisations, to drive the enhancement of learning through use of technology. 	Met
---	-----

Institutional engagement

<ul style="list-style-type: none"> Institutional strategies and strategic planning are considered holistically and include the use and application of technology where relevant. 	Good Progress
---	---------------

Long Term Objectives

Enhancement of learning, teaching & assessment & of core processes

<ul style="list-style-type: none"> Ongoing evaluation of technology-enhanced learning and teaching results in evidence of change being recorded. 	Varied
<ul style="list-style-type: none"> Use of technology is viewed by staff at all levels and by learners as relevant and beneficial while being integral to effective operation of the institution. 	Good Progress

An enhanced student learning experience

<ul style="list-style-type: none"> Research is being carried out on technology-enhanced learning, particularly where it supports institutions' individual missions, including on what comprises an enhanced learning experience and engagement with work-based learners. 	Good Progress
<ul style="list-style-type: none"> Institutions are working collaboratively and sharing results of research to identify how the student experience may be enhanced. 	Good Progress
<ul style="list-style-type: none"> Capacity and capability to support and enhance learning and teaching using technology has been re-analysed periodically through benchmarking. 	Context Change
<ul style="list-style-type: none"> Institutions have built their capacity and capability to a point where they have been able to enhance their delivery of a quality learning experience to students. 	Good Progress

Increased flexibility and accessibility of provision

<ul style="list-style-type: none"> There is greater understanding of the impact of technology on flexibility and accessible delivery of learning in the context of equality and diversity. 	Met
<ul style="list-style-type: none"> Technology is used appropriately to strengthen and enhance the Welsh medium, bilingual and lifelong learning agendas. 	Varied
<ul style="list-style-type: none"> There is early provision of bilingual and adaptive technologies with quality materials provided for all learners. 	Good Progress

Effective collaboration and sharing of current and good practice

<ul style="list-style-type: none"> Increased efficiencies and other benefits are identified through collaborative activity, and other impact measurement of collaboration, including collective ownership and understanding. 	Good Progress
<ul style="list-style-type: none"> Increased collaboration has been noted within & between institutions in Wales, the UK & globally, resulting in added value for students and/or institutions, including sharing & promoting good practices & learning resources as appropriate. 	Good Progress
<ul style="list-style-type: none"> Technology is used to maintain competitiveness and increase the contribution of HE to the knowledge economy. 	Varied

Institutional engagement

<ul style="list-style-type: none"> Institutions have contributed to interim reviews of the strategy to ensure it takes accounts (<i>sic</i>) of new developments. 	Met
--	-----

5.1 Enhancement of Learning, Teaching & Assessment, and of Core Processes

Key Findings:

- The strategy and implementation activities, especially Gwella, have increased senior management engagement with this area and reinforced their commitment to investment in technology.
- There is a risk that not all of the outcomes of benchmarking (this refers only to those that remain relevant) will be addressed and not all of the positive changes will be sustained and embedded.
- Benchmarking was very helpful at the time and there is a diversity of views about the extent to which a similar exercise should be repeated and what form it should take.
- Mainstreaming and normalising of ELTT is a current goal for many institutions.
- The strategy does not really stretch those who are undertaking curriculum transformation and should be more ambitious in terms of asking institutions to exploit the potential of technology to facilitate pedagogic innovation.
- There is considerable evidence of institutions making good progress in terms of using technology to integrate the administrative aspects of the core processes associated with learning and teaching but there is variability in the extent to which technology enhanced learning is truly embedded in institutional processes.
- There are numerous examples of good and sustainable practice in staff development whereby ELTT is being embedded into Postgraduate Teaching Certificates for staff, induction processes etc.
- There is a need for methodologies for evaluating enhancement.
- There is a need for better ways to assess the cost-benefits of new technologies.

5.1.1 Progress against indicators

Short Term Indicators

<ul style="list-style-type: none"> • Senior management support for the use of technology to enhance the learning and teaching experience is evident 	Met
<ul style="list-style-type: none"> • All institutions have carried out benchmarking to analyse their capacity and capability to support and enhance learning and teaching using technology 	Met
<ul style="list-style-type: none"> • All institutions have completed projects to take forward the outcomes of benchmarking 	Met

Senior management support for enhancing learning and teaching through technology was voiced loudly and clearly in all of the interviews. Although some senior managers claimed not to have a great depth of technical understanding they appeared knowledgeable about what was going on in their institution and very supportive of the staff leading these initiatives. Gwella has clearly played a very important role in awareness-raising amongst senior staff. The involvement of the Higher Education Academy has served to give academic credibility to the initiative and a number of interviewees noted the value they attributed to the external perspective brought by their Critical Friend. There was also some suggestion that the very ubiquity and increasing ease-of-use of end user technologies is having an impact. Examples were cited of senior individuals encountering iPads and other devices at home and this opening their eyes to the educational potential of such technologies. Others noted their

pleasure in discovering a range of tools that made their day-to-day working life easier. A few senior managers referred to little that is going on in technology enhanced learning across higher education beyond Gwella giving rise to a slight concern that they perhaps see this as *'job done'*.

Many senior managers stated that it is not possible to realise their institution's ambitions with regard to international students and work-based learners unless they are fully able to harness the potential of technology. In some cases senior management support is evidenced by direct financial investment in technology, in others it is visible through the extent of institutional staff development initiatives. In a few instances however there is sense that there may be a certain vulnerability as regards sustainability of the current momentum should particular champions amongst the senior management team move on, or where technology enhanced learning has not yet been sufficiently embedded into process and culture.

All institutions have carried out benchmarking and found it useful yet there is a diversity of views about whether or not it would be useful to repeat the process. One institution appeared very enthusiastic about gaining an overview of the post Gwella landscape. Some institutions have embedded the principles into their own practice with their own choice of comparator organisations. In many cases however it is clear that, despite broad recognition of the value of the original benchmarking, most institutions would probably be reluctant to invest the necessary resources to repeat the exercise in the same way.

The final objective as it is currently described, has largely been met through Gwella, the Building Capacity programme and other initiatives although some institutions have yet to complete certain projects. A slight reservation about completion of this particular indicator stems from the fact that few institutions have been able to address all of the outcomes of the benchmarking process. This may amount to little more than a technicality in some cases given that institutions were able to prioritise the issues they tackled and often the entire context will have moved on over the period of implementation. Many institutions have however identified that mainstreaming of ELTT is a significant current issue for them and this is addressed further in 5.1.3.

Longer Term Indicators

<ul style="list-style-type: none"> Ongoing evaluation of technology-enhanced learning and teaching results in evidence of change being recorded 	Varied
<ul style="list-style-type: none"> Use of technology is viewed by staff at all levels and by learners as relevant and beneficial while being integral to effective operation of the institution 	Good Progress

Evaluation, and this is a widespread issue by no means confined to Wales, is a weakness in many change initiatives: the greater the ambition, the more difficult the problem. The difficulties inherent in analysing large-scale transformation and attributing change to specific interventions are not new. Institutions often struggle to deliver evidence that new technology enhanced pedagogic approaches deliver benefits when it is very difficult to separate them from other changes e.g. teachers, physical environment and support mechanisms that impact learner motivation and achievement. In general however, despite some small-scale initiatives whereby academics are required to evaluate the outcomes of their projects in order to qualify for institutional grants, there appears to be a lack of mature and well-defined institutional approaches to measuring change. This situation is compounded by the extent of structural change and reorganisation within institutions and will be further complicated by forthcoming mergers.

There is nonetheless evidence of a wide range of technologies being piloted and adopted by institutions, as well as the creation of new learning spaces to meet learners' expectations of technology (i.e. wifi-enabled spaces capable of facilitating social learning). There are numerous pockets of good practice and expertise across all of the institutions that could be shared further with minimal support.

A clear message from the interviews with Pro-Vice Chancellors (again not at all unusual in the sector) is a lack of confidence and experience in assessing the cost-benefits of new technologies. This appears to be an area where external support and guidance would be welcomed.

It is probably fair to say that the use of technology is viewed by staff at all levels and by learners as relevant and beneficial while being integral to effective operation of the institution. Such an attitude can however mask significant differences in the quality of the infrastructure and the extent to which it is optimised. There is considerable evidence of institutions making good progress in terms of using technology to integrate the administrative aspects of the core processes associated with learning and teaching. Online submission of assessment, assessment tracking and integration of Turnitin are all relevant examples that are not really reflected in the existing indicators. Some respondents have noted that emerging/optional practice in their own institution has become normal practice elsewhere. For most institutions however the stage of 'mainstreaming and normalising' ELTT is where they recognise themselves currently. The word most often used to describe ELTT institution-wide was 'patchy' meaning that some departments/schools/subject areas had embraced ELTT to a much greater extent than others in the same institution.

Much of the good work in mainstreaming is being achieved through a rich and varied range of staff development activities. There are numerous good examples of sustainable practice whereby ELTT is being embedded into Post Graduate Certificates in learning & teaching for staff and induction processes etc as well as other less formalised activities such as lunchtime seminars.

Related Quotes from interviews and survey

'Our preference is for a more qualitative approach than benchmarking took.'

'Implementation of the strategy is starting to shift 'Academic Practice' in areas wider than teaching e.g. relating to admin, not attending meetings face-to-face etc.'

'Tools used differentially across the university.'

'Because we now have a tool to facilitate the process (online assessment) there is no reason for staff to remain wedded to old ways of doing things.'

'If the VC would just use the word 'technology' now and again it would fire up the troops a bit.'

'Implementing 'e-learning' is relatively easy, but anodyne, because the HEFCW strategy does not link deep organisational change to technological implementation.'

'In some subject areas TEL (technology-enhanced learning) is used extensively in others not at all. The key thing is that it is used to improve learning where appropriate.'

5.1.2 Issues arising and implications for the revised strategy

The notion that the strategy focuses on learning rather than technology and that it is looking to build capacity across the whole institution, so that effective use of technology to enhance learning becomes the norm, is a real strength. It is recommended however that this objective be merged with the existing objective five to reinforce the emphasis on the strategic application of technology and holistic approaches and planning.

5.1.2.1 Benchmarking

A number of indicators in the existing strategy (not just against this objective) refer to the initial benchmarking exercise and the need to repeat this periodically. Although all institutions have initiated projects to take forward the outcomes of benchmarking and evidence against the short term indicator is thus positive, there is a question over the long-term need for some kind of self/peer assessment and moving forward. Institutions have not yet addressed *all* of the issues raised through benchmarking. In some cases this may amount to a technicality due to shifts in the overall context yet, despite the best of intentions, there remains a risk, not consistent across all institutions, that progress may wane at the end of the funded programmes and that even quite significant developments may vanish without trace if they are not supported through changes in key personnel and management structures. There is also a concern, as expressed by some interviewees, that institutions are less clear about where they fit in the post Gwella landscape. This situation will be further complicated by the mergers as many institutions will exhibit very different profiles to those they analysed in the previous benchmarking exercise.

A series of questions for the future therefore arise: the desirability of repeating a similar exercise; the timing of such an exercise should it occur; the scope of such an exercise given that a number of institutions see their most appropriate comparators as lying outside Wales and how any such exercise could be encouraged and supported? The initial benchmarking effectively provided a baseline against which progress could be measured. The exercise was particularly useful at the time but it is nonetheless a costly and time-consuming activity for the institutions and it is not clear that the benefits of repeating it, in a similar form, would merit this investment. The term benchmarking is also problematic in that it implies measurement against a fixed set of external comparators at a specific point in time. The elements that appear to be important are: that institutions undertake some form of self assessment, that they have some means of knowing how their own performance relates to developments in a wider context and that the process is beneficial in helping each institution focus on being the best that it can be on an ongoing basis (recognising the different missions and specialisms that exist within Wales). What this implies is the need for some kind of light-touch approach to continuous improvement and peer review. The terminology for this remains problematic: some participants have suggested that the idea of continuous review does ultimately engender a familiarity that leads to contempt and others have questioned the possibility of continuous improvement in a discontinuous external environment. Perhaps terming the expectation as a combination of self assessment and peer review in relation to enhancement would be less problematic or indeed the familiar and fairly open terms of Gwella and/or CAMEL could be applied to an activity that can evolve to meet the changing needs of the institutions involved.

5.1.2.2 Mainstreaming/Normalising v Transformation

This objective in the strategy encompasses a number of sub-headings many of which are not covered by specific indicators. '*Mainstreaming the role of technology in enhancing learning, teaching and assessment*' and '*Normalising the role of technology within other core processes*' are significant areas that are not really addressed by the indicators even though they are being evidenced by a number of institutions. If the future strategy is aiming to be as ambitious as some of the institutional visions (and indeed as the learners deserve) it should perhaps go further than talking about mainstreaming and normalising the use of technology to address the question of how technology may assist in curriculum transformation (a point made strongly in the comments on the survey). It is all very well to mainstream and normalise the enhancement of existing provision through technology (and this may indeed deliver very real benefits) but there are opportunities to go very much further and move away from the existing emphasis on content and subject matter driven courses to do more in the way of research-led teaching, recognising students as co-creators of knowledge and applying the more process driven pedagogies that have been used to good effect in some work-based learning contexts. The most radical of the suggestions for change is therefore that the strategy should strive to be significantly more ambitious in this area. As well as mainstreaming identified good practice and normalising the effective application of technology, the strategy should prompt institutions to look for opportunities where technology can assist in curriculum transformation. Certain institutions have clearly identified the potential of technology to be a significant differentiator in terms of their educational offering and are applying technology to support pedagogic innovation. Whilst not all institutions will share the same vision, the HEFCW strategy should not appear less ambitious than the aims of some of the institutions who will be implementing it.

5.1.2.3 Policy, Procedure & Process

Whether the goal is transformation or enhancement, institutions are unlikely to be able to make the most of available opportunities unless recognition of these opportunities is explicitly built into institutional policy and procedure. This means looking at the full life-cycle of the curriculum from market research, the business case for new developments, learning design, validation and approval, quality assurance, assessment and feedback, student support and review processes and ensuring that they involve the right stakeholders and ask the right questions in order to capitalise on the opportunities afforded by technology. There is variability in the extent to which technology enhanced learning is truly embedded in institutional processes such as curriculum design, validation and review, QA-QE (quality assurance and enhancement) and the services that support these processes although we have already noted that a number of institutions have made significant progress in making ELTT an essential element of curriculum design, integrating both the academic and administrative aspects of learning support and have affected significant business process change. An indicator around

ensuring that the effective use of technology is considered at the appropriate point in each of these core 'life-cycle' processes is recommended. Academics in particular are most likely to be motivated by prompts that are mandated in QA procedures. It should however be noted that, without the appropriate support to enable them to capitalise on the opportunities, even revised procedures could revert to a tick-box exercise.

5.1.2.4 Staff Development

Much of the good progress to date has been achieved through staff development (as discussed in 5.1.2) and it would be helpful if the text of the strategy were amended to address the breadth and depth of staff development activities rather than refer only to 'programmes' which tends to imply a certain type of formal initiative.

5.1.2.5 Measuring Change

Institutions do need effective means of measuring and evaluating organisational change and its impact (as discussed in 5.1.2). This is always a thorny area, particularly so in the face of the impending structural change in the sector. A prompt in the strategy around evaluation and encouragement to research appropriate methodologies would be appropriate. It may however be deemed that this sits better as part of the overall learning and teaching strategy implementation and thus builds on the recently issued Higher Education Academy guidance (Blackey *et al* 2011).

5.2 An Enhanced Student Learning Experience

Key Findings:

- An enhanced student learning experience is core to the mission of all Welsh universities and senior management commitment is very evident.
- There are excellent examples of good practice and research but they tend to occur in pockets.
- Mainstreaming the good practice is a goal for many institutions and this involves significant culture change and enhanced staff communications/engagement programmes in many cases.
- Students as partners is an important emerging theme that is helping institutions to address the needs of future students and there is good practice that should be shared and built upon.
- The digital inclusion agenda is about more than connectivity: digital literacies is a key area of enhancement.
- There is a need for more sophisticated approaches to learner profiling/learning analytics in order to plan effective delivery tailored to individual learner needs.
- Institutions are working towards enhancing the experience of work-based learners in a variety of ways: employer engagement is only one aspect of this and should not be the sole focus of the indicator.
- There is a need to ensure equality of student access to technology where delivery is via partners.
- There may be benefit in institutions collaborating to develop a framework for evaluating the student experience.
- ELTT is an area where small funded projects can have a disproportionately large impact particularly where projects are incentivised to institutionally embed outputs and realise benefits for the sector.
- Initiatives with academic champions are more likely to be accepted by other academics.

5.2.1 Progress against indicators

Short Term Indicators

<ul style="list-style-type: none"> • Institutions are aware of technological developments and outcomes of research which will enhance the experience of their students 	Good Progress
<ul style="list-style-type: none"> • The experience of students has been enhanced through the harnessing of new technologies where appropriate 	Good Progress Context Change
<ul style="list-style-type: none"> • Institutions and employers engage as appropriate to provide a flexible, accessible and enhanced student experience for work-based learners 	Good Progress Context Change

The student learning experience is absolutely at the heart of what all of the institutions are trying to achieve. This was evident from the very top down. In a section headed 'What is Wales doing well?' the ['For Our Future'](#) document (Welsh Government 2009a) cites evidence from the National Student Survey which suggests that, overall, students in Wales are more satisfied with their courses than those in England. This is unsurprising given the obvious commitment to improving the student learning experience. The review team were struck by, given all of the other demands and pressures on them, the passion and commitment shown by senior managers in this area.

The first indicator states: '*Institutions are aware of technological developments and outcomes of research which will enhance the experience of their students*'. The problematic word here is '*institutions*'. There are some excellent examples of awareness and of research being carried out and disseminated but this tends to occur in pockets. In every institution individuals and small groups display extensive knowledge of the technology enhanced learning landscape (in Wales and beyond) and are undertaking valuable and innovative research. What is currently lacking (with some notable exceptions) is a consistent picture of mechanisms to ensure that the knowledge that resides within individuals and small units is disseminated effectively, and routinely, on an institution-wide basis. Several senior managers acknowledged that this is the next challenge they are addressing as part of their new learning and teaching strategies.

The second indicator gets to the real heart of the objective '*The experience of students has been enhanced through the harnessing of new technologies where appropriate*.' This is the main focus of what institutions are trying to achieve and a number of institutions can demonstrate an impressive range of projects and technologies tackling this issue. HEFCW has also been actively promoting this in a wider way via its circular on '[Mechanisms for supporting the enhancement of learning opportunities](#).' (HEFCW 2010c) Two issues arise: firstly, the means of engaging learners in this process seems to be variable. Some institutions are able to demonstrate clear examples of engaging students as partners in the process of designing the learning experience. Others appear to rely heavily on mechanisms that are more removed and less immediately responsive such as the National Student Survey and course and module surveys (approaches criticised in responses to the review survey). Most institutions cited student representation on key groups and committees but there was some concern about whether this actually translated into real partnership and effective action. Secondly, there seems to be a lack of maturity around approaches to evaluating the impact of these enhancement activities as noted in the commentary on the first objective. This has obviously already been recognised and the recently published Higher Education Academy guidance on '[Assessing the Impact of Learning and Teaching Strategies in Wales](#)' (Blackey *et al* 2011) is a welcome step forward.

Interestingly, despite the small number of responses, the clearest agreement from the FE survey respondents (78% agreed or strongly agreed) about benefits to students was with the following statement: '*As a result of enhancing learning & teaching through technology Welsh universities offer a better learning experience*.' It was nonetheless noted that it was sometimes difficult to ensure equality of access to technology for students on HE courses delivered through franchise partners often because of differing technologies in use and policies relating to the use of technology. This came out clearly in the work of the Universities Heads of the Valleys Institute ([UHOVI](#)) where college firewalls were a major barrier in FE to implementing some technologies that are in common use in HE. In some cases it may be that the FE emphasis on the duty of care to younger learners is inhibiting colleges from making the most of some effective educational tools. It must however be recognised that the learner profile varies considerably across the vast spectrum of FE and HE and some web 2.0 tools can be a distraction from learning in some contexts. This is an issue in terms of ensuring parity of entitlement for learners on HE in FE franchised courses. The problem may effectively be set in a new context with the proliferation of user owned devices over which the college has no control although some colleges currently respond to this by banning mobile phone use altogether. A similar problem is often encountered in relation to the use of technology on employers' premises for work-based learners. The issue of parity of learning experience is likely to become increasingly important in relation to both regional and international partnership arrangements.

The third indicator '*Institutions and employers engage as appropriate to provide a flexible, accessible and enhanced student experience for work-based learners*' is possibly the most tricky of all the indicators in the strategy to evaluate in the sense that it is quite tightly worded and, as such, does not fully reflect the range of excellent work that is going on in a complex area. There is lots of evidence

that institutions are working towards the spirit of this objective (and indeed the aims of *'For Our Future'*) through addressing graduate employability, digital literacies, flexible delivery, outreach in communities with low participation etc. Employer Engagement is only one aspect of this bigger picture (and indeed by far the most difficult aspect in a nation where most employers are SMEs). To say this objective has only been partly met would be to do an injustice to the institutions and, hence, this is an area where the description of the domain in the strategy needs to change. The sub-heading *'Employer Engagement'* should be broadened and the accompanying indicator should encompass the broad range of activities institutions are undertaking to support learners in the workplace and those seeking employment.

Longer Term Indicators

<ul style="list-style-type: none"> Research is being carried out on technology-enhanced learning, particularly where it supports institutions' individual missions, including on what comprises an enhanced learning experience and engagement with work-based learners 	Good Progress
<ul style="list-style-type: none"> Institutions are working collaboratively and sharing results of research to identify how the student experience may be enhanced 	Good Progress
<ul style="list-style-type: none"> Capacity and capability to support and enhance learning and teaching using technology has been re-analysed periodically through benchmarking 	Context Change
<ul style="list-style-type: none"> Institutions have built their capacity and capability to a point where they have been able to enhance their delivery of a quality learning experience to students 	Good Progress

To a considerable extent progress against these indicators has already been addressed in the commentary on earlier sections.

Research has indeed been carried out through a range of centrally funded initiatives and the key question is the extent to which such research will continue should the funded programmes cease. A number of institutions do have central learning enhancement and learning development units and, in many cases, the research profile of these units is such as to engender considerable confidence in the likelihood of their future survival and indeed growth and development. In other cases such units have lost staff who were funded through the central programmes and there have been some concerns raised about their ability to deliver the kinds of support that were envisaged as a result of Gwella. As a result of the initiatives the sector has learned a lot about the types of research that are most valuable in learning and teaching (see below).

It is nonetheless surprising that the sector as a whole (and this is not confined to Wales) appears to leave much of the research and development into its core business to communities who are not really resourced to do this. Whilst the strength of communities and sharing is one of the sector's strengths, the non-core situation of much of this work is also a weakness. As one respondent put it *'You have to do the research in the cracks between other activities'*.

Experience suggests that research into learning and teaching differs significantly from many other types of research. Whereas research in many disciplines depends on large projects and economies of scale, improvements in learning and teaching often stem from quite small-scale initiatives. There is indeed evidence that very large projects create their own 'silos' within the institution and that seed corn funding for small projects can often leverage additional funding from within the institution. In the current climate it is also worth noting that many low-cost initiatives prove to be more sustainable in the longer term. Ownership of the initiative is also a relevant issue: academic-led initiatives (provided they also have senior management support) are more likely to gain widespread support from the teaching fraternity and the existence of a strong project 'brand' (and hence credit clearly associated with a specific part of the institution) can often work against the aim of promoting wider adoption. Some would go further and say that the existence of a 'project culture' is the reason why embedding and adoption pose problems and that, the role of agencies (as with the Enhancement Academy) should be to provide support rather than funding projects (this is not to suggest of course that there is not an

essential continuing role for the kind of large technical projects undertaken by JISC where that agency is specifically funded to take the kind of risks, on behalf of the sector, that no individual institution could bear). These messages were heard so consistently in the review that they need to be taken very seriously both by institutions and funders in considering how best to support implementation of the strategy going forward.

The question of collaboration is covered further in relation to objective four but the development of an identifiable Gwella group within the active [ELESIG](#) (Evaluation of Learners' Experiences of e-learning Special Interest Group) community is a very positive step. The group will need a clear purpose if it is to continue to have value for its members post Gwella and indeed some of the recommendations in relation to taking this strategy forward may help to shape such a focus.

The subject of benchmarking has already been covered (5.1.2.1). It may be helpful if any future iteration of the strategy were to address 'benchmarking' or any successor to this process under a single objective. The term is placed in inverted commas as it has already been suggested that a different type of organisational maturity model may be appropriate.

The above links to the final indicator around building capacity and capability and indeed this may be the prompt for the strategy to say more about the breadth and depth of staff development activities shown to be effective (as discussed in 5.1.2.4).

Related Quotes from interviews and survey

'Students are always ahead of us in what they do.'

'The myth of the 'digital native' needs to be recognised and challenged. Schools need to be giving students the relevant skills.'

'[Institution name] wants progress not in terms of quick wins but in terms of what really does enhance learning and impact on achievement.'

'A lot is going on but not everybody knows about it.'

'The biggest learning curve is staff attitude.'

'When students have to apply technology to their own projects it is much harder to copy than in a 'cut and paste' situation.'

'Someone has calculated that you will be paying £195 per lecture so how do we enhance the learning from that lecture? The access to research-led resources around that lecture will be key.'

'Why make students do 2 hour exams with cramped hands when they aren't used to writing? Why not let them use iPads etc? These debates are on the agenda.'

'Academics need proper support to think differently about the learning process and to become more facilitators in a diagnostic role.'

'Student benefit is a story worth telling even though much of this may be intangible benefit. The quality of the student learning experience can change greatly without necessarily resulting in changed end grades.'

5.2.2 Issues arising and implications for the revised strategy

This objective lies at the heart of the strategy and of what the institutions are trying to achieve. The heading covers a complex range of topics and it is an area where much research has been undertaken across the UK in recent years. Hence, although the objective remains sound, it is an area where refinement of the existing strategy in the light of newer research is recommended.

5.2.2.1 Students as Partners

One area that has moved on in the last three years, and which is likely to become increasingly significant in the future, is the approach to student engagement in the enhancement agenda. As a result of a range of initiatives, not least the two phases of the [JISC Learner Experiences of e-Learning programme](#) and the '[JISC Study of how UK FE and HE institutions are supporting effective learners in a digital age](#)' and the active [ELESIG](#) (Evaluation of Learners' Experiences of e-learning Special Interest Group) community that grew out of the Pathfinder programme, the sector has gone beyond merely highlighting the need to hear the 'Learner Voice' to a point where valuable and innovative approaches to engaging with students as partners and using students as 'Agents of Change' are emerging. In often used models involving a 'ladder of participation' (for example Rudd *et al* 2006) approaches rarely go beyond the relatively passive stages of informing and consulting to reach levels of empowerment and partnership. Technology opens up new possibilities for learners, especially work-based learners with a wealth of experience behind them, to become co-creators of knowledge. Any future strategy should recognise this and encourage institutions to adopt approaches to engagement that make the most of these possibilities.

Key to enhancing the student learning experience is the idea of genuine partnership with students and 'Students as Partners' is a current enhancement theme for the Higher Education Academy in Wales. The Welsh Government requirement, as set out in the [HEFCW remit letter](#) (Welsh Government 2011), for institutions to develop student charters recognises this and tries to address the issue. It is a welcome step but there is a need to ensure that institutions do not see the creation of a charter as an end in itself and that they are encouraged to go beyond this to continue to fully explore creative and innovative ways of engaging students and working with them as partners. The institutions themselves would expect no less of the strategy and the existence of the '[Student as Partners](#)' wiki site testifies to the fact that this is happening. Again this may seem to be a general learning and teaching issue rather than one specifically related to ELTT but technology is playing an important part in devising innovative means of engagement and, equally, students are playing an important part in helping institutions understand how best to use technology in learning and teaching.

Work is already in hand to address the topic of student engagement in Wales: the Wales Initiative for Student Engagement ([WISE](#)) is co-ordinating a forum for sector level drafting of a student engagement action plan for Wales and related activities. There would appear to be opportunities to dovetail the activities of the ELESIG Gwella group with this in order to ensure that ELTT features in this agenda.

5.2.2.2 Digital Literacies

Digital literacies as a theme did not surface to the extent anticipated during the course of the review. In part this possibly reflects the fact that much of the work in this area is being driven by library and information professionals (Cardiff University 2011). Libraries/learning resources are areas not specifically referenced in the strategy and seem to be slightly apart from the 'core' ELTT community and hence possibly slightly under-represented in the contributors to the review. Having said that it would be expected that the key messages would be known to the many people who were interviewed. Many institutions appeared to see any problems relating to familiarity and competence with the tools of the day as affecting staff rather than students (staff digital literacy was identified as the single biggest challenge in terms of taking ELTT forward with almost 90% of HE survey respondents feeling this is a significant issue).

There seems to be a similar lack of emphasis on supporting learners to manage their digital identities. Whilst the whole theme of e-safety is unlikely to feature as prominently in HE as it does in FE (where the duty of care to learners aged 14-19 is strictly regulated), research suggests there is still a significant need to ensure that learners take online security seriously and that they understand the implications (and the potential longevity) of the things they choose to share with the wider world. Only one institution specifically mentioned this as part of their student induction although a number did refer to the importance of the digital student experience as a significant element in what it means to be a student in that particular institution and highlighted its role in their employability agenda.

Overall, the impression formed is that a number of institutions seem to underplay the importance of digital literacies and view the agenda as relating to a lower level skill set around basic IT skills and information literacy without considering the importance, for example, of digital search skills etc for the researchers of the future and the relevance of broader digital literacies in relation to employability. The strategy therefore requires updating to reflect current thinking on the subject of digital literacies. This is especially important given that a number of key policy documents ('*Delivering a Digital Wales*', Welsh Government 2010a and '*Delivering Digital Inclusion*', Welsh Government 2010b) tend to focus on connectivity as the key to digital inclusion. The strategy needs to recognise the range of elements, including many higher order skills, which go to make students effective learners and researchers in the digital environment.

5.2.2.3 Learner Profiling/Analytics

Institutions (and indeed the whole widening access agenda) could also benefit from more sophisticated approaches to learner profiling. This would go beyond any simplistic definitions of digital natives and immigrants (Prensky 2001) to look at the whole range of factors including previous learning experience, other prior knowledge, experience with technology, motivation for undertaking study at this point and mode of study etc that are pertinent to the design of an effective learning experience for that particular student. There is an emerging field of study, particularly in the US and Canada, known as 'Learning Analytics' that addresses some of these issues. The research is possible because of new ways of capturing and analysing data, largely through Web 2.0 technologies, and draws on the semantic Web, data mining and open data. Its use at the moment appears to be largely around prediction of performance and the design of appropriate interventions where warning signs are identified but it is also pertinent to the whole issue of curriculum design, personalisation and inclusivity (see Buckingham Shum & Ferguson 2011 for an overview of the topic and discussion of some of the issues). It is not suggested that institutions should adopt this particular approach (although should they choose to do so this type of analysis is certainly an area where it would make sense to apply the techniques on a considerable scale) simply that they should look at ways of better understanding their learners.

5.2.2.4 Curriculum Design

Learning design is an important issue related to the earlier point about creating a different kind of curriculum (5.1.2.2). A recent report by the [BBC](#) (2011) suggested that plagiarism is a significant issue in Welsh HE. Whilst it could be argued that a high percentage of disciplinary cases reflects effective use of plagiarism detection technology this would be missing the point that prevention is better than cure. Whilst effective policies and consistent approaches are needed, curriculum design also has a part to play. One of the review participants made the point very eloquently that good learning design, whereby students are using technical tools for problem-solving and individual research, is very different from the type of curriculum where students can simply cut and paste content from elsewhere. It is however evident that these connections are not being made universally and there were some strong points made in the survey about how the application of technology was, in some cases, levelling academic standards downwards. '*Most of the work done has had an element of dumbing-down. That applies both to the technology and the underlying intellectual/conceptual framework.*' The fact that a number of survey respondents questioned the pedagogic approaches underlying the use of technology is nonetheless a positive sign of maturity in ELTT and a desire to go beyond mundane applications of technology.

5.2.2.5 Learning in and for Employment

It has already been suggested that the indicator around work-based learning is currently quite tightly defined and focused on direct employer engagement. The Welsh Government (with the aid of European funding) is doing much to support institutions in this agenda for example through the portals [Expertise Wales](#) (helping businesses find knowledge, resources and facilities in universities and colleges) and [Go Wales](#) (highlighting graduate opportunities from student and employer perspectives). The indicator however does not really reflect the full range of activities being carried out by institutions to support both work-based learners and those trying to enter the world of work. The whole area of work-based learning is one where the context has moved on as a result of considerable research across the sector. As well as the Higher Education Academy's work on

Employer Engagement, JISC has been running programmes, in [Lifelong Learning and Workforce Development](#) and various aspects of [Business and Community Engagement](#), in which Welsh institutions have participated and, in the learning and skills sector, the [JISC Regional Support Centres](#) have been doing some excellent work to support work-based learning. It is recommended that both the subheading under the objective (currently titled 'Employer Engagement') and the related indicator be broadened. Current thinking in Wales is reflected in the new Higher Education Academy enhancement theme '*Graduates For our Future*' and its work strands on '*Learning For Employment*' and '*Learning in Employment*'. Whilst accepting that the strategy has a longer timeframe than specific enhancement themes, there is merit in considering the topic '*Learning in and for Employment*' as a meaningful description of the activities being undertaken. This broader heading would then sit better under objective three (increased flexibility and accessibility of provision).

5.2.2.6 Delivery through Partners

The point was raised that it is not always possible to provide a directly comparable experience for HE level learners on courses that are franchised to FE institutions often because of differing technologies in use and policies relating to the use of technology. The strategy already covers the fact that learning should be enhanced through technology 'regardless of location of delivery'. Given the Welsh Government emphasis on progression, the possibility of regional groupings and a dual sector institution, the growth of foundation degrees and the growth in courses franchised to international partners, this aspect of the strategy should be strengthened and explicit reference made to delivery through partners.

5.2.2.7 Other

As this objective is refined and disaggregated, it may simplify matters to consider putting some of its elements elsewhere in order to avoid overlap. The second indicator '*Institutions are working collaboratively and sharing results of research to identify how the student experience may be enhanced,*' whilst it is clearly pertinent, could equally fit under objective four (effective collaboration and sharing of current and good practice). The sub heading and long-term indicator around 'Benchmarking' may fit better under objective one (with the caveat already noted about the future of benchmarking as a specific activity).

5.3 Increased Flexibility and Accessibility of Provision

Key Findings:

- A new heading on 'Learning in and for employment' would sit well under this broad objective.
- There is considerable evidence of good use of assistive technologies and an holistic approach to technology supporting inclusion.
- Good learning design, for example learning outcomes described in terms of competencies rather than the ability to use particular tools, is essential for an inclusive curriculum.
- These good practice approaches to inclusivity will stand institutions in good stead in meeting their international ambitions.
- Different technologies and policy approaches present challenges to collaborative delivery.
- There are opportunities to make better use of technology to support learning through the medium of Welsh.

5.3.1 Progress against indicators

Short Term Indicators

<ul style="list-style-type: none"> • Technology has been used to increase flexibility and accessibility of provision, including for students studying through the Welsh language and the diverse student body 	Good Progress
--	---------------

This objective is represented by a single short-term indicator. The evidence suggests that the breakdown of the long-term indicators better reflects the different elements of this objective around general inclusivity, adaptive technologies to aid disabled learners and Welsh medium provision. It appears that, whilst significant progress can be reported against this objective, the progress is variable across the different elements hence is discussed in more detail below. This more general indicator may however be the appropriate one to take forward into the revised strategy.

Longer Term Indicators

<ul style="list-style-type: none"> • There is greater understanding of the impact of technology on flexibility and accessible delivery of learning in the context of equality and diversity 	Met
<ul style="list-style-type: none"> • Technology is used appropriately to strengthen and enhance the Welsh medium, bilingual and lifelong learning agendas 	Varied
<ul style="list-style-type: none"> • There is early provision of bilingual and adaptive technologies with quality materials provided for all learners; 	Good Progress

There is very clearly an understanding that technology can help to enhance equality and diversity. This is most evident in the provision of assistive technologies to aid learners with disabilities. All Welsh HEIs are actively engaging with the [JISC TechDis](#) service both through funded programmes and through opting in to request publications and training. Welsh HEIs have been keen consumers of [Xerte](#) training courses (Xerte is a tool to help provision of accessible learning materials) and all Welsh HE Library teams have been involved in the '[Accessibility](#)' series for Libraries, provision of alternative formats and e-book publishing. Seven Welsh HEIs participated in a series of role-focussed Online

Accessibility Self Evaluation sessions in 2009 to help organisations anonymously benchmark their provision against other colleges and universities. Three Welsh HEIs contributed to the '[Total Change for Inclusion](#)' report (Ball 2009), which takes a holistic view of organisational inclusivity, and have piloted the principles. Institutions are also working with other relevant organisations such as [AbilityNet](#) and examples of good practice are cited in '[Delivering Digital Inclusion: a strategic framework for Wales](#)' (Welsh Government 2010b). In addition, institutions are also striving for greater flexibility in how they deliver learning, particularly to meet the needs of part-time and work-based learners.

Welsh medium provision seems to be one of the more variable elements under this objective. This is of major significance for some institutions whereas it appears as though a number of others (those with currently low numbers of Welsh speaking students) are not making full use of the affordances of the available technologies to encourage and *promote* learning in Welsh. It is however the case that some of these institutions recognise that changes to their student body as a result of forthcoming mergers may necessitate greater emphasis on learning in Welsh. Many senior managers recognised Welsh language skills as being in short supply and identified this as an area where collaboration on a sector-wide scale is beneficial.

Against the third indicator considerable pro-activity in terms of making resources available in a variety of formats to meet the needs of different learners is evident (the need to do this up-front rather than waiting for requests was identified in some of the benchmarking work and addressed as a priority) but, again, there is a more reactive approach from some institutions to meeting the needs of Welsh speakers. [Y Porth](#) will, however, have an important role to play in future in the learning experience for those who choose to study in Welsh. Students will be members of the [Coleg Cymraeg Cenedlaethol](#) as well as the university where they are enrolled and Y Porth will be used to make them feel part of the Coleg and part of a Welsh-speaking learning community before they arrive at university.

Related Quotes from interviews and survey

'There is no point in being accessible to non-traditional students (including those with disabilities) unless we succeed in helping them to overcome their handicaps and achieve a high level of performance.'

'On the Cymraeg language front, research needs to be undertaken about its costs as well as its benefits. That research would need to cover the whole of the UK, not just Wales. If Cymraeg language education is keeping bright people from coming to Wales, then we will all be the losers.'

5.3.2 Issues arising and implications for the revised strategy

This is a broad objective and a very important one. It is key to the widening access aims of the strategy and to the social justice element of [For our Future](#) (Welsh Government 2009a) but it is not only groups currently under-represented in HE who require greater flexibility of study. It is recommended that, in the revised strategy, this objective be broadened still further as the proposed elements related to learning in, and learning for, employment sit well in this area.

5.3.2.1 Supporting Transition

Although the existing strategy does mention lifelong learning, it would benefit from being more explicit about the role that technology can play in facilitating progression and transition. This is as relevant to the transition between university and work, or the transition from undergraduate to research as it is to progression between FE and HE. There appears to be a lot of experience in supporting transition in Wales but most of the work has not been from an HE perspective. The work already done to support 14-19 transition between local authorities and FE in Wales and the '[Articulation Hubs](#)' in Scotland (Scottish Funding Council 2008) are models that could be developed. The requirement that widening access strategies reflect institutional commitment to Welsh medium progression routes is noted and further strengthens the case for including this in the ELTT strategy.

A specific example of where technology can play a part in lifelong learning is in adoption of the [XCRI](#) (eXchanging Course Related Information) specification for sharing (and advertising) course information. This has the potential to reduce data entry and streamline approaches to the syndication

of such information, opening up opportunities for a more sustainable approach to lifelong learning services that rely on course information from learning providers. The [X-CERP](#) project (UWIC 2010) has looked at XCRI from a Welsh perspective and also concluded that '*specific benefits may arise from the implementation of XCRI in the area of employer engagement.*'

5.3.2.2 Equality of Access

The point that it is not always possible to provide a directly comparable experience for HE level learners on courses that are franchised to partner institutions has already been made in relation to the student learning experience (5.2.1; 5.2.2.6). It is however worth repeating here as this is the objective in the strategy that references 'equality of students' access to technology'.

It would be helpful for the strategy to point out that the inclusion agenda is not simply an altruistic one and that it does indeed make commercial sense. By taking an holistic approach, and designing learning from the outset so that it is as inclusive as possible to as many learners as possible, institutions can open up new markets and can save themselves time and expense by pre-empting issues that can arise for individual students rather than having to deal with each one on an *ad hoc* basis. As an example lecture capture, or making resources available in a variety of formats, can be as useful to students who do not have English (or Welsh) as their first language and to learners who need to combine work, study and family responsibilities, as it is to disabled students. This is also an area where good learning design comes into play, for example, learning outcomes described in terms of competencies rather than the ability to use particular tools, is essential for an inclusive curriculum.

5.3.2.3 Learning through the medium of Welsh

It is evident that there is still potential to make greater use of technology to support learning through the medium of Welsh. [Y Porth](#) offers a great opportunity. The fact that institutions recognise a pressing need for shared resources and the fact that they will be supported through the new role of the [Coleg Cymraeg Cenedlaethol](#) increases the confidence that this potential will be achieved. There is however a need to ensure that Wales draws on all of the lessons learned by others who have implemented repositories and tried to share open educational resources. Coleg Cymraeg Cenedlaethol could benefit from creating a package of support for teachers drawing on the experience of the [JISC Advance](#) services. Such a package might include use of digital media, copyright, legal and cultural issues around the use of OERs. There could also be considerable potential in the development of Welsh language versions of key tools such as [Xerte](#).

The choice of Blackboard as the platform for Y Porth is a decision that will have far-reaching consequences for Welsh medium provision. Considerable effort, on the part of Welsh HEIs, has gone into the development of the Welsh language pack for Blackboard (this is now a core part of the product maintained by the supplier) and this was the dominant VLE in use when it was selected as a platform for Y Porth. Since then there has been a significant shift to Moodle for a variety of reasons. It does however appear that, despite investment by the Welsh Government in the development of a Welsh language pack for that product, and its predominance in FE, some HEIs are dissatisfied with its Welsh language capabilities and this is a significant factor in preventing them making a similar shift. Other Blackboard users cited the supplier's commitment to ongoing support for the Welsh language pack as meaning this was now a 'non issue' for them. This matter could prove to be a significant issue in relation to mergers.

5.4 Effective Collaboration and Sharing of Current and Good Practice

Key Findings:

- There is genuine maturity in the collaboration versus competition dialogue in Wales and a culture of sharing across institutions particularly with regard to learning and teaching, although specific communities of practice may exist within their own 'silos'.
- CAMEL groups peer reviewing practice and the external perspective brought by Gwella Critical Friends have been key to success.
- There are good examples of effective, collaboratively managed networks/special interest groups with a clear common purpose.
- Further intervention may be needed to sustain sharing of good practice in turbulent and challenging times.
- The mechanisms for capturing and sharing good practice with the wider academic community could be enhanced
- The Welsh Video Network is a shared service that provides a robust platform for collaboration and has the potential for further use in work-based learning and international markets.
- A considerable proportion of senior managers interviewed feel that Wales is too inward-looking.
- Geography does impact on institutional ability to collaborate more widely and technology can help address this.
- Welsh medium provision is one of the clearest areas where institutions can see real benefit in sharing resources.
- In the area of work-based learning there may be benefit in multi-sector (FE/HE/employer/sector body) approaches to employer engagement, progression and the development of OERs to meet employer/sector needs
- There are a few good examples of shared services but these are limited; this position is likely to change as a result of mergers.
- There is some interest in wider public sector shared services.
- Internal collaboration especially the central role of libraries/learning resource centres in ELTT should not be overlooked.

5.4.1 Progress against indicators

Short Term Indicators

<ul style="list-style-type: none"> • Increased links with collaborative partners are evident on a range of levels, including with existing and new networks and organisations, to drive the enhancement of learning through use of technology 	<p>Met</p>
--	------------

Most people who contributed to the review, by participating in interviews or the survey, think that levels of collaboration within Wales are high. Some felt this had increased as a result of Gwella whilst others thought that Gwella simply tapped, very effectively, into existing networks of practitioners. Overall it does seem that Gwella has increased the geographic range of collaboration for many

institutions. At practitioner level a small group of individuals, across all of the HEIs, are highly active in ELTT circles both in Wales and UK wide. Senior managers in particular do seem to have valued the contact they had with their peers through Gwella and there seems to be a genuine maturity in the collaboration versus competition dialogue in Wales with institutions understanding where the boundaries lie so that they can achieve mutual benefit. People do however need a reason to collaborate and while the funded initiatives have certainly provided this, the challenge is for institutions to sustain the dialogue and embed ways of capitalising on the knowledge that exists within small pockets in each organisation. If they fail to do so then the momentum generated by Gwella may not translate into achievement of the long-term objectives.

Welsh institutions are active in the major UK networks related to this field of work including for example: the Association for Learning Technology ([ALT](#)), the Heads of e-Learning Forum ([HeLF](#)), the Higher Education Academy Special Interest Groups on a range of related topics, the Standing Conference of Heads Of Media Services ([SCHOMS](#)), the Society of College, National and University libraries ([SCONUL](#)) and Universities and Colleges Information Systems Association ([UCISA](#)). They are also actively engaging with the [JISC Advance](#) services and contributing to the resources those services provide for the community (see sections 3 and 5.3.1).

There are also many active networks specific to Wales including: the Higher Education Wales Information Technology Forum ([HEWIT](#)), the Wales Higher Education Libraries Forum ([WHELP](#)) and the Higher Education Academy's Welsh Institutional Group (WIG) and collaborative efforts such as the '[Students as Partners](#)' wiki site have already been noted.

In terms of specific examples of new networks there is now a Gwella subgroup of the [ELESIG](#) (Evaluation of Learners' Experiences of e-learning Special Interest Group) community and institutions have used additional Gwella funding to establish CAMEL groups that have been highly valued by the participants.

Longer Term Indicators

<ul style="list-style-type: none"> Increased efficiencies and other benefits are identified through collaborative activity, and other impact measurement of collaboration, including collective ownership and understanding 	Good Progress
<ul style="list-style-type: none"> Increased collaboration has been noted within & between institutions in Wales, the UK & globally, resulting in added value for students &/or institutions, including sharing & promoting good practices & learning resources as appropriate 	Good Progress
<ul style="list-style-type: none"> Technology is used to maintain competitiveness and increase the contribution of HE to the knowledge economy 	Varied

One obvious area where collaboration is delivering benefits is in helping institutions deal with the fact that Welsh language skills are in relatively short supply amongst academic staff. Previous attempts to address this through investment in staff development have barely kept pace with turnover, due to retirement and other routes out of the sector, so technology-based solutions offer a more sustainable way forward. Y Porth is effectively a shared learning resource service for the sector with some open content that may serve to encourage more people to think about studying in Welsh. It is interesting to speculate on the extent to which the necessity of collaborating around Welsh medium resources may serve to further the wider OER agenda in Wales. Swansea University is providing shared services to Coleg Cymraeg Cenedlaethol so that the Coleg does not need to set up its own infrastructure. There is little other specific evidence of shared infrastructure services but this is likely to change very soon with the forthcoming mergers. There is other evidence of shared teaching and sharing of learning resources most notably a joint Teacher Training Centre and tripartite shared law provision. The greatest interest in the possibility of shared services seems to be around libraries and the existence of a collaborative virtual academic library in the south-west is noted below.

The South West Wales Higher Education Partnership ([SWWHEP](#)) is an example of wide-ranging collaboration and exploration of shared services across a wider spectrum of activities than learning

and teaching. The initiative has produced some excellent resources and introduced a virtual academic library. The initiative has now come to an end but the partners can draw on lessons learned from the two years of working together to aid the development of new partnerships/merged institutions in support of the regional agenda.

The Universities Heads of the Valleys Institute ([UHOVI](#)) is a good example of collaboration, outreach and employer engagement.

There is some evidence that technology is being used to good effect to develop and foster international relationships. Statistics on usage of the [Welsh Video Network](#) show that Welsh HEIs have been engaging with partners in 31 different countries (on all continents except South America – perhaps a surprising omission given the existence of a community of Patagonian Welsh speakers). It appears that most of the partners in these 31 countries are involved in around 6 to 8 online meetings so this would seem to demonstrate that the technology is supporting ongoing relationships that may not otherwise have been possible. The role of technology in supporting students also featured prominently in discussions with those institutions who have strong international ambitions. The approaches Wales is taking to maintaining and promoting its cultural identity through a language that has a relatively small population of native speakers are of international interest given the parallels with other little-used languages.

Related Quotes from interviews and survey

'Putting aside political stuff there are really good networks out there.'

'The regionalisation strategy is not necessarily helpful in collaboration across Wales but we just get on with it.'

'Wales is very inward looking. Universities are a global business and we need to be better at collaboration with like-minded institutions further afield.'

'Collaboration in future may be more at arms length with universities who aren't seen as direct competitors. Academics will collaborate with whoever they want to collaborate with.'

'One of the issues with the breakup of the University of Wales is that we haven't been thinking collegially in the way that we used to. This will get worse in the future with fees.'

'I see the benefits of collaboration but budget holders may not without the resources to support a collaborative model of development.'

'The opportunity to engage with the sector happens more easily if a body like HEFCW supports it.'

'We can't afford to be parochial: it is a waste of tax-payers' money.'

'Wales works well together. ... We know each other well enough to be able to share good things and bad.'

5.4.2 Issues arising and implications for the revised strategy

The benefit of collaboration is one of the key messages of this review. This will come as no surprise as it is evident that Welsh institutions already do it and do it well. This objective is a critical element in the strategy and, throughout implementation to date, institutions have noted the beneficial effects of collaboration. The existing strategy already gives fairly comprehensive coverage to the whole area of collaboration and sharing but it is worth considering whether some topics of increasing importance are worth emphasising in the revised document:

5.4.2.1 Supporting Collaboration

Having achieved threshold levels of engagement with technology across all HEIs, it will become increasingly difficult for HEFCW to meet its obligations in terms of shaping a sector in the face of differing institutional missions and changes to the funding regime. The most important role HEFCW can play in terms of taking the strategy forward is in supporting effective collaboration, networking and peer review i.e. helping institutions to help each other. Many participants in this review identified a risk

that, although the benefits of collaboration are well recognised, such engagement may be an easy target in the face of other pressures resulting from the economic climate and it is an area where further encouragement by HEFCW may be needed to sustain sharing of good practice in turbulent and challenging times. HEFCW's role in future is likely to be one of steering and encouraging, rather than funding implementation, and this is entirely appropriate given the level of institutional maturity already achieved. Any future funding that might become available would nonetheless be well directed towards supporting collaboration.

Collaboration does of, course, need a purpose and self directed initiatives do, nonetheless, work best when they are expertly co-ordinated and facilitated. The collaboration fostered through Gwella was successful because it had clear goals and it built upon recognised, structured models for collaboration and support that have proven successful in a range of contexts i.e. Critical Friends and CAMEL networks. This should be borne in mind by both HEFCW and institutions when considering how best to collaborate and how to make best use of limited funds. The ELESIG Gwella group needs to find a real focus to sustain its community beyond the life of the initial Gwella funding and it may be that some of the issues identified in this review (particularly around contributing to the work on student engagement in Wales in relation to ELTT) could form the basis of a set of future objectives for the group. Supported collaboration should be focused on delivering outputs. These could relate to key themes identified in this review e.g. students as partners, digital literacies, work-based learning, measuring change, cost-benefits analysis etc. Collaboration on the production of frameworks and toolkits could allow institutions to benefit from economies of scale in the research whilst still arriving at an output that can be applied to individual institutional needs.

5.4.2.2 Range of Collaboration

Whilst there is very good collaboration across Wales, a considerable proportion of the senior managers who contributed to the review feel that Wales is too inward-looking and that it needs to collaborate with, and learn from, a much wider pool of institutions if it is to achieve its ambitions. The strategy already recognises the importance of collaboration beyond the Welsh borders and should continue to do so if it is to remain relevant to the majority of institutions.

There was a similar view voiced on a number of occasions that the regional agenda is not necessarily conducive to meeting these wider ambitions. Senior managers took the view that government policy does not stand in the way of them collaborating where they see benefit in doing so (and thought it highly unlikely that academics would consider anything other than their disciplinary and research interests when deciding with whom to collaborate). Some other staff did however suggest that the regional agenda made it a little difficult to know who they were 'allowed to talk to'. It is significant that, despite having been in receipt of HEFCW funding since 2005, the Open University in Wales appears peripheral to much of this collaboration despite its considerable expertise in the technology-enhanced learning field and the fact that it is the only university present in all Welsh regions. The University indicates that it is keen to contribute to the development of the sector and we feel there would be value in the Open University in Wales playing a more explicit part in collaborative activity.

5.4.2.3 Cross-sector Collaboration

The regional agenda is a key government priority and there is a real possibility that one or more of the institutions that are required to implement this strategy may have become part of a 'dual sector' university during the life of the strategy. The importance of technology facilitating progression and transition has already been noted (5.3.2.1) and cross-sector collaboration will be important in taking this forward. Some institutions already have a very strong links with FE, others are developing them and the Open University has recently signed an Memorandum of Understanding with [ColegauCymru](#) the umbrella body for FE colleges in Wales. The experience with cross-sector CAMEL networks in England shows that very different institutions can have a surprisingly amount to learn from one another. The strategy could usefully give a stronger steer about how technology can support cross-sector collaboration (including schools, FE and other sectors) at a strategic level.

5.4.2.4 Cloud Computing & Shared Services

The obvious goodwill and sharing is not only translating into inspiration for people to look at their teaching practice but also, in some cases, for senior managers to see that significant business

process change is achievable. It may nonetheless have been expected that there would be more references to the use of technology in this context, for example, [XCRI](#), hosted VLE services, OERs, Cloud and shared services, than was the case. In the period since the strategy was published, advances in technology have occurred not only in terms of the range of social, collaborative and learning technologies and mobile end user devices but also in the range of technical infrastructure options. Cloud computing and shared services are current 'buzzwords' that will be known to all senior managers but few will be aware of the full range of options under each of these umbrella terms and/or able to evaluate the risks and benefits of each. The strategy could play a role simply by emphasising that the range of options is extensive and encouraging institutions to explore these options bearing in mind that there may be significant differences in terms of the viability of certain options for particular institutions. It could of course go a little further than that and stress, despite all the associated issues, that this offers a huge opportunity to do things differently. It might also recognise something that a number of institutions are already exploring, namely that efficiencies and benefits may be derived through collaboration beyond the immediate sector and indeed across the whole of the public sector in Wales. This is a major issue that extends far beyond the remit of this review but which warrants mention in any strategy related to the use of technology.

5.4.2.5 Engaging the Academic Community

The aims of mainstreaming and normalising ELTT, set out under objective one, will also require institutions to find appropriate means of sharing good practice across those parts of the academic community that are not currently engaged with ELTT. Case studies were suggested by some respondents as a means of doing this whilst others feel this is a currently fashionable type of output that is of limited value unless very clearly focused on a specific target audience. If institutions do opt to produce case studies then perhaps they could collaborate on an agreed template that addresses questions of widespread interest, particularly those related to costs and quantifiable benefits, and could also share good practice in terms of the use of multi-media technology to capture and share 'lived experience' rather than simply rely on text. The lack of 'warts and all' case studies was something that cropped up several times in the review. Engaging the wider academic community is a clear case where institutions would benefit from applying a range of approaches and learning from each other.

5.4.2.6 Work-Based Learning

Work-based learning also came up a number of times as an area where institutions would welcome more sharing of good practice and the reviewers pointed a number of institutions to the recently launched [work-based learning maturity toolkit](#) (as a result of which there may now be a specific launch in Wales). This is an area where the development of OERs may benefit from a multi-sector approach that includes FE/HE/employers/sector bodies.

5.4.2.7 Cross-Functional Collaboration

The strategy currently mentions individual, inter-institutional and cross-subject collaboration and it would be helpful to stress collaboration between the different functions within institutions as well. This point is largely made due to the relatively low profile of library and information professionals in relation to the strategy and associated implementation activities. It is clear that these functions are indeed central to much institutional strategy development (and to developments such as new kinds of learning spaces) but it may be helpful for the strategy to reflect the role of libraries and learning resource centres in terms of digital literacies, accessibility of, and access to, resources, OERs and their increasing relevance to the whole widening access agenda as new types of collaborative partnerships require new types of central support functions.

5.5 Institutional Engagement

Key Findings:

- ELTT is becoming more embedded in other strategies but fully holistic planning approaches are still rare.
- Central units that co-ordinate and disseminate ELTT work are achieving considerable success.
- Programme teams need institutional strategic direction and hands-on support brought together coherently at the point of need.

5.5.1 Progress against indicators

Short Term Indicators

<ul style="list-style-type: none"> • Institutional strategies and strategic planning are considered holistically and include the use and application of technology where relevant 	Good Progress
--	---------------

This is an objective that highlights the degree of variation across the sector and probably reflects very strongly both the different baselines and different institutional characteristics/missions. Whilst all institutions have actively engaged with the ELTT strategy not all can be said to have approached this '*holistically*'. Most have integrated ELTT into their learning and teaching strategy or are in the process of doing so; some have gone further by integrating ELTT into Information Systems and Estates plans. One institution evidenced a particularly rigorous process of regular strategy updating and monitoring while another made reference to clear articulation between institutional and faculty level plans. This issue is of course another area that is complicated by impending mergers.

It is clear that central units within institutions who exist to co-ordinate and disseminate ELTT activity are achieving considerable success. There is likely to be an ongoing need for such units in the future as, even while ELTT becomes more embedded in all areas, it is unlikely that individual academics will have the capacity to keep pace with research and developments. The most successful institutions will be those that incorporate ELTT into quality and other relevant processes and procedures such that they prompt programme teams to ask the right questions at the right time and can provide specialist support to those teams at the point of need.

Longer Term Indicators

<ul style="list-style-type: none"> • Institutions have contributed to interim reviews of the strategy to ensure it takes accounts (<i>sic</i>) of new developments 	Met
---	-----

Institutions have certainly participated willingly in this review. The question is perhaps less about their engagement with the *strategy* though than with ELTT overall. There is nonetheless some indication, largely from the survey which targeted a wider group of staff, that some staff feel that, although the ELTT strategy is relevant to their work, they have not been provided with enough information about it by their institution. This does not necessarily mean that the institution is not supporting and promoting ELTT activity, simply that the strategy is not a major focus for how this is communicated internally.

In the case of this objective the short term indicator seems the more wide-ranging. Until there is clear evidence that ELTT is viewed holistically and this is demonstrated in terms of the ways in which it is embedded into institutional policies and business processes, this objective cannot be regarded as having been met. Again the real test of strategic application of technology probably comes where institutions can evidence that they leveraged technology to undertake curriculum transformation.

Related Quotes from interviews and survey

N.B. These quotes need to be viewed against the, more numerous, positive remarks in 6.1

' As an e-Learning Technologist at [institution name] I think I've missed something... Have answered "Don't know" to most of the questions as I've never heard of ELTT. Hmm.

I feel I don't know the strategy well enough to comment.

There is no generally available information about it [the ELTT strategy] that I am aware of as a MAJOR contributor to undergraduate teaching.

5.5.2 Issues arising and implications for the revised strategy

It is recommended that this objective should be incorporated into objective one and hence the pertinent issues are discussed under that heading.

6 Conclusions and Recommendations

Key Findings:

- The strategy has played a significant role in advancing ELTT in the sector over the last 3 years.
- There is a continuing need for the strategy as a means of maintaining a focus on ELTT.
- The broad objectives remain relevant and valid.
- Some updating of the sub-headings and indicators is needed to better reflect current thinking and practice and this is the subject of specific recommendations in section 6.3.
- It is recommended that HEFCW update the strategy on the basis of the findings of this review.
- It is recommended that the approach to monitoring should be light-touch.
- It is recommended that a Steering Group should comment on the draft strategy and monitoring arrangements, propose ways of taking forward the suggestions to aid implementation (see 6.3.1-6.3.4) and maintain an overview of progress in the period between formal reviews to help ensure long term sustainability.

6.1 Continuing relevance of the strategy & objectives

It is evident that the existence of the strategy (and the associated funding) has played a significant role in advancing ELTT in the sector over the last 3 years. Whilst for some institutions it may have served to affirm, rather than change, the direction of travel, it certainly appears to have speeded up progress across the board. Staff were very clear that the external attention served to focus senior managers on this as a priority and senior managers recognised that, having an external obligation as regards accountability for the use of funds, required them to complete projects that may otherwise have drifted down the priority list.

A few institutions noted a change of emphasis as a result of implementing the strategy. This is not to say that they were directed to do things they would not have chosen to do, more that, as a result of participating in the consultation process leading to the development of the strategy, they gained a new insight that influenced their future vision and, hence, they felt ownership of the final strategy. In relation to specific projects undertaken as part of the enhancement initiatives, a number of institutions noted the value of external input at a formative stage. Having to explain their ideas to others served to focus and validate their thinking.

‘What we did was our decision but HEFCW forced the timescale and provided the resources. Timescales we set ourselves would have been balanced against a lot of other things. HEFCW pushed it quicker.’

‘It [the strategy] meant that bits and pieces we had already started actually got done.’

‘The [ELTT] strategy is an enabler and framework against which we can see how we are progressing. We recognise this is where we have to go, where we have to go quickly and what students want.’

‘The strategy gave us focus and direction: we might have gone in a different direction without it.’

‘We wouldn’t have got as far without Gwella.’

‘Gwella showed us that little bits of money and just changing the way you think about things can have a big impact.’

‘Gwella was greater than the sum of the parts. If we had all gone off and done our own thing we wouldn’t have got as much out of it.’

Any attempt to sum up the achievements of the last three years must necessarily recognise the diversity of institutional vision and mission and the diversity of the 'baseline' when institutions began to engage with the strategy. There is a clear trajectory of travel in alignment with the strategy but it is not to be expected that the variations in the baseline would level out over the short period since its inception. It is also clear that, whilst a threshold level of maturity is desirable across the sector, the role of technology as a 'differentiator' will vary greatly according to institutional context. HEFCW has always been careful to recognise institutions' autonomy and diversity of mission. Its role in trying to shape a Welsh higher education sector will become increasingly difficult as its significance in terms of the overall level of funding it provides decreases.

Opinions as to the ongoing need for an ELTT strategy vary. Senior managers, on the whole, tend to think that the need to ensure their institutions stay competitive in terms of technology is self evident and that they will do this without the need for any kind of external driver or scrutiny. On the other hand, other managers throughout the organisations tend to welcome the focus the strategy gives to this area of work. The point was made often that technology-enhanced learning is not yet fully embedded within institutional practice and processes and there is a risk that, simply embedding it into learning and teaching strategies at this stage, will result in it becoming invisible and some institutions losing the momentum obtained through Gwella. There is an underlying fear that, in spite of the important role technology will play in helping institutions address the future challenges, institutions will not prioritise this type of work when there are so many other demands on resource and the risk of a possible unanticipated outcome of the success of Gwella was noted earlier i.e. that senior managers feel they have reached a level of institutional maturity in this area and can move on to focus on other things.

The conclusion is that there is a continuing need for HEFCW to find an appropriate means of maintaining a focus on ELTT. This does however need to be achieved without creating burdensome reporting and monitoring mechanisms for the institutions.

'Let us get on with it. Most organisations have to use technology and embed it in everything they do to remain competitive.'

'There are calls on resources from all areas so without this external profile TEL [technology-enhanced learning] might not be seen as a priority.'

'It is crucial that universities don't chip away at this area if there is no more central funding.'

'The projects could drift down the priority list if we hadn't given the external commitment. They aren't core business.'

'We kind of know where we are: CAMEL challenges us to improve.'

The existing strategy covers the following five broad objectives:

1. enhancement of learning, teaching and assessment, and of core processes
2. an enhanced student learning experience
3. increased flexibility and accessibility of provision
4. effective collaboration and sharing of current and good practice
5. institutional engagement

These broad objectives (discussed in detail in section 5 of this report) remain relevant and valid. It is however recommended that some of the subheadings underneath each of the objectives should be reviewed and refined in order to better reflect current thinking and practice. The fifth objective could be better described as institutional engagement with ELTT rather than with the strategy specifically and is thus already covered by objective one.

6.2 Approach to updating the strategy

The remit for the review specifically asked for recommendations as to how any updates to the strategy could be achieved. The review has turned out to be more extensive in terms of stakeholder engagement than was originally envisaged and the picture it paints of the current ELTT landscape and key issues can be accepted as a fairly comprehensive one. This document could thus form a sound basis for drafting a future strategy and a small working group could implement the changes suggested in this report relatively easily.

From the point of view of stakeholder engagement, not only the content of the strategy but also the approach to implementation and monitoring is critical. Whilst it is suggested, despite some assertions from institutions to the contrary, that it is valid and helpful to have such a strategy to maintain the institutional focus on ELTT, institutions are already required to report on a number of different strategies and it would not be appropriate to create an unnecessary burden around this area. To be entirely pragmatic about this, universities are unlikely to place much emphasis on this (especially with little funding attached) unless it is presented in a way that is useful to them.

'Money can help to drive agendas but the L&T money from HEFCW is not much now in the bigger picture.'

'HEFCW can come up with the right political sentences (e.g. around retention or employability) but it comes down to the institutions to make meaningful interventions.'

The indicators were originally devised, in consultation with the sector, primarily to enable HEFCW to measure progress and at present there is little evidence (despite the monitoring requirement) that institutions are actually using the indicators for their own purposes although they have little difficulty mapping specific activities back to the indicators. Most respondents recognise that such indicators need to be quite general to cover the sector as a whole and, whilst they would not have them otherwise, they find them too broad to relate to specific institutional objectives other than in a very general sense (a limited number of respondents actually thought the indicators should be more specific and these people were generally in institutions that were in earlier stages of their overall ELTT development).

'The indicators are very subjective so not really useful to the institution.'

The indicators were very useful but located in their timeframe. This is an opportunity to refocus. Some of the short term ones are a done deal now and we have moved on.

'Nice intent and broad aims but a bit woolly.'

'The long term indicators were more prescient and achieved (sic) more clearly what they were meant to achieve.'

Given that the indicators are primarily to enable HEFCW to measure progress in another 3 to 5 years, it may be impractical to require institutions to report in detail on them in the intervening period. ELTT is currently covered in the annual monitoring statement (AMS) template by a single prompt: *'Actions to address enhancement of learning and teaching through technology, emphasising the outcome (learning and teaching) rather than the input (technology)'*. The situation is complicated by the fact that, although ELTT is included in the AMS template, there is only a further year's funding guaranteed. The solution would seem to be to maintain this prompt for the life of the strategy (rather than the life of the separate funding stream) and accept that institutions are likely to use the indicators as general pointers rather than the basis for specific targets within their own strategies.

Having said this, the focus of a number of the recommendations arising from this review is on helping institutions devise better means of measuring their own progress. The good work achieved to date in benchmarking could be built upon to develop robust approaches to continuous improvement and

assessing organisational maturity as regards ELTT. The sector as a whole may also benefit from collaborating on some kind of framework for evaluating the student learning experience.

It is therefore recommended that the strategy be revised on the basis of the findings of this review and a light touch approach to monitoring adopted. Effort, in terms of stakeholder consultation and engagement, should be directed towards helping the sector collaborate on creating some models and frameworks for them to measure their own progress in the period between now and the next review. It is recommended that a Steering Group be set up to comment on the draft strategy and monitoring arrangements, propose ways of taking forward the suggestions to aid implementation (see 6.3.1-6.3.4) and maintain an overview of progress in the period between formal reviews to help ensure the long term sustainability of the excellent work being undertaken by institutions.

6.3 Recommendations

On the basis of the review outcomes a number of suggestions for changes to the strategy have been identified. Whilst HEFCW did not impose any particular constraints on the types of recommendations to be made, the reviewers have taken a pragmatic approach based on the following assumptions:

- That, in the revised strategy, HEFCW will again wish to identify short and long term indicators.
- that any indicators identified as already 'met' will not appear in the revised strategy.
- that some short term indicators that appear still to be pertinent, may be retained and carried forward into the new strategy.
- that some of the previous long term indicators may become short term indicators in the revised version.
- that as much continuity as possible will be welcomed by all stakeholders.
- that there is unlikely to be any further new funding to support implementation.

Suggestions for amendments to the text of the strategy are therefore made only where there appear to have been significant shifts in the wider context or where the existing text does not fully reflect institutional practice (possibly due to the changes in context) and we recommendations for new indicators have been kept to a minimum.

The recommendations are set out below in the following format:

1. Recommended changes to the text of the strategy. Given that the number of recommendations is limited, all of the suggestions are significant; they are nonetheless presented in order of priority.
2. Recommended changes to the indicators. Some new indicators have been proposed and designated as either short term (to 2014) or longer term (to 2017). The new indicators are the highest priority items. Suggestions are made as to where, given the recommended revisions to the text, some existing indicators may sit better under a different objective.
3. Suggestions that may aid the implementation of the revised strategy.

The specific recommendations are numbered in relation to the relevant objective such that recommendations relating to objective one: enhancement of learning, teaching and assessment, and of core processes are numbered R1.1, R1.2 and recommendations relating to objective two: an enhanced student learning experience are numbered R2.1, R2.2 etc.

An attempt has been made to show how the recommendations map back to the analysis. There is however not a 1:1 mapping between key findings in the analysis and recommendations. This is because many of the key findings in the analysis relate to parts of the strategy that do not require any updating and because some of the findings cut across more than one objective.

6.3.1 Enhancement of Learning, Teaching & Assessment, and of Core Processes

Recommended changes to strategy text:

- R 1.1. Address the fact that technology may facilitate the development of new pedagogic practices and assist in curriculum transformation. Set out an expectation that institutions will explore this transformative potential as well as applying technology effectively to existing practice. (5.1.2.2)
- R 1.2. Recognise that, for normalisation to occur, the effective use of technology must be considered at the appropriate point in each of the core curriculum-related processes such as programme and module design, validation and review, QA-QE etc and that effective services are needed to support these processes. (5.1.2.3)
- R 1.3. Set out an expectation that institutions will develop effective means of measuring and evaluating organisational change and its impact. (5.1.2.5)
- R 1.4. Change the emphasis from benchmarking to a culture of continuous improvement, recognising the importance of light touch self assessment and peer review in this process. (5.1.2.1)
- R 1.5. Consider revising the text on staff development to better reflect the breadth and depth of activities taking place and the need for these to be fully embedded to be effective. (5.1.2.4)

Recommended changes to indicators:

- R 1.6. Add an indicator on exploiting the potential of technology to facilitate new pedagogic practice and seek evidence of curriculum transformation. (Long)
- R 1.7. Add an indicator related to ensuring that effective use of technology is considered at the appropriate points in each of the institutions' curriculum-related processes. (Short)
- R 1.8. Consider moving the existing indicator under objective five 'Institutional strategies and strategic planning are considered holistically and include the use and application of technology where relevant' under this heading.

Suggestions to aid implementation:

- HEFCW to consider promoting the continued existence of the Gwella brand and the CAMEL approach as a focus for continuous improvement.
- Institutions to explore a range of self evaluation tools, determine criteria appropriate to the technical and political context and form networks to undertake peer review.
- Institutions to research and review existing methodologies for evaluating large-scale transformation and enhancement.
- HEFCW to encourage appropriate agencies in receipt of its funding to provide guidance and tools for assessing the cost benefits of new technologies to help decision making for senior managers and programme teams.

6.3.2 An Enhanced Student Learning Experience

Recommended changes to strategy text:

- R 2.1. Set out an expectation that institutions will use technology to develop creative and innovative ways of engaging with students as partners. (5.2.2.1)
- R 2.2. Recognise the importance of digital literacies in the digital inclusion agenda and also the range of higher order skills that may be included under this heading and advise that institutions undertake further research in this area. (5.2.2.2)
- R 2.3. Suggest that institutions look to develop new and more sophisticated ways of learner profiling in order to better understand and meet student needs. (5.2.2.3)
- R 2.4. Emphasise the importance of ensuring parity of the learning experience, particularly with regard to access to technology, when in working with partner institutions. N.B. this comment could equally well sit under objective three in relation to equality of access. (5.2.2.6)

Recommended changes to indicators:

- R 2.5. Add an indicator on engagement with students as partners in the learning experience. (Short)
- R 2.6. Delete the indicator on benchmarking or incorporate it into the relevant indicator under objective one.
- R 2.7. Consider whether the indicator 'Institutions are working collaboratively and sharing results of research to identify how the student experience may be enhanced,' may fit better under objective four.

Suggestions to aid implementation:

- HEFCW, institutions and agencies should recognise the lessons learned about research into learning and teaching when designing future support mechanisms: large projects may create their own silos whereas small projects can often be more sustainable and leverage other funding from within the institution but, whatever the initiative, stakeholder engagement is key.
- Institutions should seek out (both within and beyond their own institution) and share examples of innovative and creative practice in using technology in student partnerships/engagement and HEFCW should encourage their dissemination via mechanisms such as EvidenceNet Extra and the Design Studio.
- Institutions would benefit from the development of a sector framework for evaluating the student learning experience. This may fit with the activities of WISE and the ELESIG Gwella network could be a possible focus for this in relation to ELTT.
- Institutions should investigate ways of developing a more sophisticated approach to learner profiling/learning analytics in order to better respond to individual needs within a diverse student body.

6.3.3 Increased Flexibility and Accessibility of Provision

Recommended changes to strategy text:

- R 3.1. Revise the text of existing paragraph 7.7 to reflect the broad range of activities that support learning in and for employment and consider moving that paragraph under this objective. (5.2.2.5)
- R 3.2. State the importance of making effective use of technology to support transition and progression. (5.3.2.1)
- R 3.3. Consider making reference to the importance of an holistic approach to accessibility and the fact that such an approach does make sound business sense. (5.3.2.2)

Recommended changes to indicators:

- R 3.4. Add an indicator to the effect that technology is used appropriately to support learning in and for employment. (Short)
- R 3.5. Consider adding an indicator to the effect that technology is used appropriately to support progression and transition. (Long)
- R 3.6. Consider retaining the more general short-term indicator '*Technology has been used to increase flexibility and accessibility of provision, including for students studying through the Welsh language and the diverse student body*.' in place of the more specific existing long term indicators.

Suggestions to aid implementation:

- The Coleg Cymraeg Cenedlaethol may benefit from working with the JISC Advance services in order to pool expertise related to the creation and sharing of learning resources.
- Institutions should consider implementing the XCRI (eXchanging Course Related Information) specification for sharing (and advertising) course information.

6.3.4 Effective Collaboration and Sharing of Current and Good Practice

Recommended changes to strategy text:

R 4.1. Emphasise the importance of cross-sector collaboration especially in relation to the regional agenda. (5.4.2.3)

R 4.2. Mention the need for cross-functional collaboration (internal and external) and the fact that support services such as libraries/learning resource centres may need to support different types of collaborative partnerships in future. (5.4.2.7)

R 4.3. Emphasise that there are a wide range of cloud and shared service options that may benefit institutions in different ways and encourage institutions to explore the possibilities. (5.4.2.4)

Recommended changes to indicators:

R 4.4. Two of the existing long term indicators could be moved into the short-term category leaving '*Technology is used to maintain competitiveness and increase the contribution of HE to the knowledge economy*' as the long-term indicator.

R 4.5. It has already been suggested that HEFCW should consider whether the indicator '*Institutions are working collaboratively and sharing results of research to identify how the student experience may be enhanced,*' may fit better under this objective than under objective two.

Suggestions to aid implementation:

- Institutions could benefit from sharing good practice in ways of engaging the wider academic community with ELTT.
- Institutions should continue to contribute to the community resources described in section 3.2 of this report and encourage their wider use within each institution.
- In the area of work-based learning there may be benefit in multi-sector (FE/HE/employer/sector body) approaches to employer engagement, progression and the development of OERs to meet employer/sector needs.
- Cross-functional collaboration, whether internal or external, should not be overlooked particularly in terms of tying in the work of libraries/learning resource centres in to the main ELTT agenda.
- Institutions should look to capitalise on the evident interest in sharing library/learning resource services.

6.3.5 Institutional Engagement

Recommended changes to strategy text:

R 5.1. HEFCW is invited to consider whether this heading warrants a separate objective or whether the aim and the indicator could be incorporated into objective one.

Recommended changes to indicators:

R 5.2. The short-term indicator '*Institutional strategies and strategic planning are considered holistically and include the use and application of technology where relevant*' is an important one and we recommend that it is retained in the revised strategy (possibly under objective one).

Suggestions to aid implementation:

- See suggestions under objective one.

6.4 Areas where HEFCW and agencies can add value

The review has identified that the most important role HEFCW can play in terms of taking the strategy forward is in encouraging effective collaboration, networking and peer review.

It appears unlikely that the next phases of implementation will be supported by any government funding direct to institutions and, whilst funding is generally welcome (provided there are not too many strings attached), few institutions indicated that this was an expectation or a necessity. The initiatives undertaken so far have brought the sector as a whole to a threshold level of maturity with ELTT and institutions are now pursuing a range of different priorities within the overall agenda. The existing strategy does indeed emphasise the fact that institutions are expected to carry out research into technology enhanced learning but so far these activities have usually been supported by funded initiatives so it is encouraging to see signs of readiness to pursue the agenda on the basis of a steer and guidance from HEFCW.

In terms of being seen to give support HEFCW could do more to make a virtue of the fact that it funds a set of specialist services, particularly through its participation in JISC, in order to give institutions the support they need to carry out research in their own way and in support of their own individual missions.

It is clear that institutions value the interest these agencies take in their work (as evidence of its relevance, currency and overall worth) and the external perspective and specialist support that they can provide (this came out clearly in the survey with almost 80% of respondents indicating this support was important). It is also evident that the institutions like to see the agencies operating in a joined-up way to take best advantage of their complementary skills. A good example of this is the way the JISC Building Capacity programme dovetailed with, and built upon, Gwella. The [Higher Education Academy](#) has just signed a memorandum of understanding with [JISC Advance](#) which signals, despite a period of change for both organisations, increased possibilities for the two organisations to work together for the benefit of the institutions they support. A number of the issues in the priority list from this review also feature in the operational plans for those organisations which may offer opportunities to negotiate focused support in specific areas as an addition to the general support the agencies give the sector.

There are also possibilities for collaboration between the UK services and those specific to Wales. The [Welsh Video Network](#) is an extremely valuable shared service with considerable potential that is not being fully exploited by institutions across the board. Some of the issues it faces have been tackled by the JISC Advance services in other contexts and it may be possible to pool experience to mutual benefit. Similarly, we have already suggested that the [Coleg Cymraeg Cenedlaethol](#) could benefit from collaboration with these services.

The structural change underway in the sector means a period of huge challenge and massive opportunity. Regional approaches (and indeed the planned creation of a 'dual sector' university) are developments that may require new types of support. There are a limited range of agencies with experience of supporting both FE and HE and [RSC Wales](#) could play an important role in bringing this experience together for the benefit of institutions. Even without the cross-sector complexity, there will be changes within HE that could result in mergers and/or shared services. Much of this would appear to be outside the scope of this strategy but ELTT and the wider structural issues come together in recognising the necessity to have an infrastructure of learning and teaching administrative and support systems that facilitate enhancement rather than act as a barrier to it. The ELTT community will know some of the agencies mentioned here mainly for their learning and teaching support and should be made aware that some, for example JISC infoNet and JISC Legal, also have expertise in administrative computing and are actively engaged in research around cloud computing and shared services.

The importance of collaboration outside Wales has been noted and the UK agencies such as the Higher Education Academy and JISC Advance can play an important role, not only in disseminating more widespread examples of good practice, but also in matching up like-minded institutions on a wider geographic basis.

7 References

N.B. The Higher Education Academy website was unavailable due to redevelopment during the final stages of drafting this report. It cannot therefore be guaranteed that the URLs for any Academy resources referenced will be correct in the new website structure.

- Aberystwyth University (2007a). *Aberystwyth Benchmarking Report sent to the Higher Education Academy*. Aberystwyth University.
- Aberystwyth University (2007b). *IMPROVING E-LEARNING CAPABILITY. A Report to the Faculty of Science*. Aberystwyth University.
- Aberystwyth University (2009a). *Strategic Plan 2009 – 2013: 2. Learning and Teaching*. [online] (no date) Available at: <http://www.aber.ac.uk/en/strategic/section02/> [Accessed: 23 June 2011].
- Aberystwyth University (2009b). *University Of Wales Aberystwyth e-Learning Strategy 2005-2009*. [pdf] Available at: <http://www.aber.ac.uk/en/media/e-learning.pdf> [Accessed: 23 June 2011].
- Aberystwyth University (2010a). *Optimising Audio Feedback Assisted Learning (AFAL) for Student and Staff Experience Final Report*, [online] (Updated 17 January 2011). Available at: <http://www.jisc.ac.uk/whatwedo/programmes/elearning/ltig/afal.aspx> [Accessed: 15 May 2011].
- Aberystwyth University (2010b). *PDP Portfolios 2010-11: The step by step guide*. [pdf] Available at: (<http://www.inf.aber.ac.uk/advisory/faq/148/>) [Accessed: 23 June 2011].
- Aberystwyth University (2010c). *Annual Monitoring Statement 2009/10*. [unpub]
- Aberystwyth University (2011a). *JISC Building Capacity Case Study* [pdf] Available at: <http://nexus.aber.ac.uk/xwiki/bin/download/Main/Outputs/abuildingcapacitycasestudyreport.pdf> [Accessed: 23 June 2011].
- Aberystwyth University (2011b). *Nexus - Sharing Good Practice in Technology-enhanced Learning at Aberystwyth University*. [online] (Updated 7 April 2011) Available at: <http://nexus.aber.ac.uk> [Accessed: 22 June 2011].
- Aberystwyth University (2011c). *Our Gwella – Aberystwyth University*. [pdf]. Available at: http://elearning.heacademy.ac.uk/weblogs/gwella/wp-content/uploads/Aberystwyth_OurGwella2011.pdf [Accessed: 23 June 2011].
- Ball, S. (2009). *Technology Change for Inclusion – 12 steps towards Embedding Inclusive Practice with Technology as a Whole Institution Culture in UK Higher Education*. [doc] JISC Techdis Service. Available at: http://www.jisctechdis.ac.uk/assets/Documents/goingdigital/TCI_Report_Full.doc
- Bangor University (2011a), *E-Learning Case Studies* [online] (no date) <http://www.bangor.ac.uk/itservices/lt/casestudies.php.en> [Accessed: 22 June 2011].
- Bangor University (2011b). *Bangor Gwella Report* [pdf] Available at: http://elearning.heacademy.ac.uk/weblogs/gwella/wp-content/uploads/Bangor_OurGwella2011.pdf [Accessed: 22 June 2011].
- Bangor University (no date), *Learning And Teaching Strategy 2007/08 – 2009/10*. [doc] Available at: http://www.bangor.ac.uk/adu/strategydocs/LandT_Strategy07-10_v4.doc [Accessed: 23 June 2011].
- BBC Wales News website (2011). *Call for Welsh universities to unite on plagiarism*. [online] (Updated 5 May 2011) Available at: <http://www.bbc.co.uk/news/uk-wales-13280594> [Accessed: 25 June 2011].
- Bennett, S., Maton, K., Kervin, L. (2008). The digital natives' debate: a critical review of the evidence. *BJET* vol.39. No.5: 775-786.
- Blackey, H. Clayton, S. Connor, C. and Lim, H. (2011). *Assessing the impact of learning and teaching strategies in Wales: A guide for institutions*. [online] The Higher Education Academy. Available at: http://www.heacademy.ac.uk/wales/ourwork/alldisplay?type=resources&newid=ourwork/nations/wales/Assessing_Impact_guidance_doc_31_03_11&site=york [Accessed: 6 May 2011].

- Buckingham Shum, S. and Ferguson, R. (2011). Social Learning Analytics. Available as: *Technical Report KMI-11-01*, Knowledge Media Institute, The Open University, UK.
<http://kmi.open.ac.uk/publications/pdf/kmi-11-01.pdf> [Accessed: 20 June 2011].
- Building Capacity (Wales) Swansea University (updated 8 September 2010) Available at:
<http://www.jisc.ac.uk/whatwedo/programmes/bcap/swansea.aspx> [Accessed: 23 June 2011].
- Building Capacity (Wales): University of Wales Institute Cardiff (UWIC) (updated 9 August 2010) Available at: <http://www.jisc.ac.uk/whatwedo/programmes/bcap/cardiff.aspx> [Accessed: 23 June 2011].
- Building Capacity (Wales): University of Wales Trinity St David (Updated: 9 August 2010) Available at: <http://www.jisc.ac.uk/whatwedo/programmes/bcap/carmarthenandlampeter.aspx> [Accessed: 23 June 2011].
- Cardiff University (2011a). Building Capacity Case Study, (unpublished 23 June 2011 see JISC Building Capacity Programme)
- Cardiff University (2011b). The Cardiff University Gwella Story [pdf]
http://elearning.heacademy.ac.uk/weblogs/gwella/wp-content/uploads/Cardiff_OurGwella2011.pdf
[Accessed: 22 June 2011].
- Cardiff University, Credit and Qualifications Framework for Wales and Welsh Government (2011c). *Information Literacy Framework for Wales Finding and using information in 21st century Wales*. [pdf] Available at: http://library.wales.org/uploads/media/Information_Literacy_Framework_for_Wales.pdf [Accessed: 23 June 2011].
- Cardiff University PALET Project. (Updated 1 February 2011). Available at:
<http://www.jisc.ac.uk/whatwedo/programmes/elearning/curriculumdesign/palet.aspx> [Accessed: 30 June 2011].
- Cardiff University (no date). *Strategic Framework for Learning, Teaching and Assessment* [online] (no date) Available at <http://learning.cf.ac.uk/strategies/> [Accessed: 23 June 2011].
- Chickering, A.W and Gamson, Z.F. (1987). *Seven Principles for Good Practice in Undergraduate Education*. [online] (no date). Available at:
<http://honolulu.hawaii.edu/intranet/committees/FacDevCom/guidebk/teachtip/7princip.htm> [Accessed: 24 June 2011].
- Coleg Cymraeg Cenedlaethol website (no date) Available at: <http://www.aucyfrwngcymraeg.ac.uk/en/> [Accessed: 22 June 2011].
- Convery, N. (2010). *Cloud Computing Toolkit: Guidance for outsourcing information storage to the cloud*. [online]. Archives and Records Association (ARA) and Aberystwyth University. Available at: http://www.archives.org.uk/images/documents/Cloud_Computing_Toolkit-2.pdf [Accessed: 6 April 2011].
- DIVERSE conference (Updated 9 July 2009) Available at: <http://www.aber.ac.uk/diverse/> [Accessed: 23 June 2011].
- ELESIG: Evaluation of Learners' Experiences of e-learning Special Interest Group Website (2011) Available at: <http://elesig.ning.com/> [Accessed: 30 June 2011].
- ENHANCE – UWIC's Building Capacity Project (no date) Available at:
<http://uwicjisccapacity.wordpress.com/> [Accessed: 23 June 2011].
- Expertise Wales (no date) <https://www.expertisewales.com/welcome-to-expertise-wales> [Accessed: 27 June 2011].
- Getting Started at Glamorgan (no date) Available at: <http://gettingstarted.glam.ac.uk/glamstart/> [Accessed: 23 June 2011].
- Glyndwr University (2009). *Learning, Teaching and Assessment Strategy 2007/08 – 2009/10*. [pdf] Available at: <http://mimas.glyndwr.ac.uk/intranet/teac/lear> [Accessed: 23 June 2011].

- Glyndwr University (2011). *Our Gwella – Glyndwr University*. [pdf] Glyndwr University Available at: http://elearning.heacademy.ac.uk/weblogs/gwella/wp-content/uploads/Glyndwr_OurGwella2011.pdf [Accessed: 23 June 2011].
- GO Wales (no date) Available at: <http://www.gowales.co.uk/> [Accessed: 27 June 2011].
- Gwella/ELESIG Meet Up (Updated 21 March 2011). Available at: <http://elesig.ning.com/events/gwellaelesig-meet-up> [Accessed: 24 June 2011].
- Higher Education Academy (2008a). *Challenges and Realisations from the Higher Education Academy/JISC Benchmarking and Pathfinder Programme*. [online] Higher Education Academy and JISC. Available at: http://elearning.heacademy.ac.uk/weblogs/pathfinder/wp-content/uploads/2008/09/Bench_and_PathFinalReview20080926.pdf [Accessed: 9 Mar 2011].
- Higher Education Academy (2008b). *Support for Enhancing Learning and Teaching through Technology in Wales Interim Report, December 2008* [pdf]. The Higher Education Academy. Available at: <http://elearning.heacademy.ac.uk/weblogs/gwella/wp-content/uploads/GwellaInterimReport2Final.pdf> [Accessed: 7 April 2011].
- Higher Education Academy (2010). *Enhancing Learning and Teaching through Technology in Wales (The Gwella Programme) Second Interim Report* [online]. The Higher Education Academy. Available at: <http://elearning.heacademy.ac.uk/weblogs/gwella/wp-content/uploads/GwellaInterimReport2Final.pdf> [Accessed: 7 April 2011].
- Higher Education Academy (2011). *Enhancing Learning and Teaching through Technology in Wales Gwella Programme Final Report*. [pdf] The Higher Education Academy. Available at: <http://elearning.heacademy.ac.uk/weblogs/gwella/wp-content/uploads/GwellaFinalReportPublic.pdf> [Accessed: 7 June 2011].
- Higher Education Academy EvidenceNET (2011). *First Year Student Experience Wales* [online] (no date) Available at: <http://evidencenet.pbworks.com/w/page/32949752/First-Year-Student-Experience-Wales> [Accessed: 25 June 2011].
- Higher Education Academy EvidenceNET (2011). *Student Engagement in Wales*. [online] (no date) Available at: <http://evidencenet.pbworks.com/w/page/33485770/Student-Engagement-in-Wales> [Accessed: 25 June 2011].
- Higher Education Academy EvidenceNET (no date). Available at: <http://evidencenet.pbworks.com> [Accessed: 25 June 2011].
- Higher Education Funding Council for England (2009). *Enhancing learning and teaching through the use of technology: A revised approach to HEFCE's strategy for e-learning* [online] (Updated March 2009) .Available at: http://www.hefce.ac.uk/pubs/hefce/2009/09_12/ [Accessed: 9 March 2011].
- Higher Education Funding Council for Wales (2008). *W08/12HE Enhancing Learning and Teaching through Technology: a Strategy for Higher Education in Wales*. [pdf] Available at: http://www.hefcw.ac.uk/documents/publications/circulars/circulars_2008/W08_12HE_circ.pdf [Accessed: 3 March 2011].
- Higher Education Funding Council for Wales (2010a). *HEFCW Corporate Strategy 2010-11 - 2012-13*. [pdf] Available at: http://www.hefcw.ac.uk/documents/publications/corporate_documents/Corporate_strategy_2010-English.pdf [Accessed: 28 March 2011].
- Higher Education Funding Council for Wales (2010b). *W10/06HE: Developing a Regional Dimension to the Planning and Delivery of Higher Education*. [pdf] Available at: http://www.hefcw.ac.uk/documents/publications/circulars/circulars_2010/W10%2006HE%20Developing%20a%20Regional%20dimension.pdf [Accessed: 9 March 2011].
- Higher Education Funding Council for Wales (2010c). *W10/02HE: Mechanisms for Supporting the Enhancement of Learning Opportunities*. [pdf] Available at: http://www.hefcw.ac.uk/documents/publications/circulars/circulars_2010/W10_02HE_Mechanisms_for_Supporting_the_Enhancement_of_Learning_Opportunities.pdf [Accessed: 4 March 2011].

Higher Education Funding Council for Wales (2010d). *W10/28 HE: Regional Strategies for the Planning and Delivery of Higher Education: Funding and Support*. [pdf] Available at: http://www.hefcw.ac.uk/documents/publications/circulars/circulars_2010/W10_28HE_Regional_Strategies_for_the_Planning_and_Delivery_of_HE_-_Funding_and_Support.pdf [Accessed: 28 March 2011].

Higher Education Funding Council for Wales (2010e). *W10/36HE: HEFCW's Strategic Approach and Plan for Widening Access to Higher Education*. [pdf] Available at: http://www.hefcw.ac.uk/documents/publications/circulars/circulars_2010/W10_36HE_HEFCW_Strategic_Approach_and_Plan_for_Widening_Access_to_Higher_Education.pdf [Accessed: 28 March 2011].

Higher Education Funding Council for Wales (2010f). *W10/41HE: Learning and Teaching and Widening Access Strategies 2011/12 to 2013/14: Initial Guidance*. [pdf] Available at: http://www.hefcw.ac.uk/documents/publications/circulars/circulars_2010/W10_41HE_LT_WA_guidance.pdf [Accessed: 28 March 2011].

Higher Education Funding Council for Wales (2010g). *The future shape of higher education in Wales*. [pdf] Available at: http://www.hefcw.ac.uk/documents/news/press_releases/2010%20Press%20Releases/22%2012%2010%20The%20future%20shape%20of%20higher%20education%20in%20Wales%20-%20English.pdf [Accessed: 25 June 2011].

Higher Education Funding Council for Wales (2011a). *W11/03HE: Regional Redistribution Exercise 2011/12*. [pdf] Available at: http://www.hefcw.ac.uk/documents/publications/circulars/circulars_2011/W11_03HE_Regional_Redistribution_Exercise_2011_12_v2.pdf [Accessed: 28 March 2011].

Higher Education Funding Council for Wales (2011b). *W11/07HE: Changes to the funding system for higher education in Wales*. [pdf] Available at: http://www.hefcw.ac.uk/documents/publications/circulars/circulars_2011/W11_07HE_Changes_to_the_funding_system_for_higher_education_in_Wales.pdf [Accessed: 28 March 2011].

Higher Education Funding Council for Wales (2011c). *W11/24HE: Reaching Wider Strategies 2011/12 to 2013/14: Supplementary Guidance*. [pdf] Available at: http://www.hefcw.ac.uk/documents/publications/circulars/circulars_2011/W11_24HE_Reaching_Wider_Strategies_2011_12_to_2013_14_Supplementary_Guidance.pdf [Accessed: 3 March 2011].

JISC Advance (2011). *Sustaining and embedding innovations - A Good Practice Guide*. [online] (no date) Available at: <https://sustainembed.pbworks.com/> [Accessed: 23 June 2011].

JISC Building Capacity Programme (Updated: 13 May 2011). Available at: <http://www.jisc.ac.uk/whatwedo/programmes/bcap.aspx> [Accessed: 23 June 2011].

JISC Building Capacity Wales: Dr. Clive Buckley - Migration to Moodle [video] (Updated 14 March 2011) Available at: <http://www.youtube.com/watch?v=5s89aEWtdEw> [Accessed: 23 June 2011].

JISC Building Capacity Wales: Mike Bellis - Audio Feedback [video] (Updated 24 March 2011) Available at: <http://www.youtube.com/user/glyndwrTEL> [Accessed: 23 June 2011].

JISC Building Capacity Wales: Sandra King - Mahara [video] (Updated 17 March 2011) Available at: <http://www.youtube.com/user/glyndwrTEL#p/a/u/2/Ahcs4irpkYo> [Accessed: 23 June 2011].

JISC Design Studio (no date) Available at: <http://jiscdesignstudio.pbworks.com> [Accessed: 25 June 2011].

JISC HE in FE Programme (Updated: 13 August 2010) Available at: <http://www.jisc.ac.uk/whatwedo/programmes/elearningcapital/heinfe.aspx> [Accessed: 23 June 2011].

JISC Institutional approaches to curriculum design (Updated: 8 April 2011) Available at: <http://www.jisc.ac.uk/whatwedo/programmes/elearning/curriculumdesign.aspx> [Accessed: 23 June 2011].

JISC Learner experiences of e-Learning Programme (Updated: 17 August 2010) Available at: <http://www.jisc.ac.uk/whatwedo/programmes/elearningpedagogy/learnerexperience.aspx> [Accessed: 23 June 2011].

- JISC Learning and teaching innovation grants (Updated 19 May 2011) Available at: <http://www.jisc.ac.uk/whatwedo/programmes/elearning/ltig.aspx> [Accessed: 23 June 2011].
- JISC Lifelong Learning and Workforce Development Programme (Updated: 11 February 2011) Available at: <http://www.jisc.ac.uk/whatwedo/programmes/institutionalinnovation/workforcedev> [Accessed: 23 June 2011].
- JISC Open educational resources programme (Updated: 1 February 2011). Available at: <http://www.jisc.ac.uk/whatwedo/programmes/elearning/oer2.aspx> [Accessed: 23 June 2011].
- JISC Study of how UK FE and HE institutions are supporting effective learners in a digital age (SLiDA) (Updated: 8 March 2011) Available at: <http://www.jisc.ac.uk/whatwedo/programmes/elearning/slida.aspx> [Accessed: 23 June 2011].
- JISC TechDis (2011). *Current projects (HEAT round 4)*. [online] (no date), Available at: http://www.jisctechdis.ac.uk/techdis/pages/detail/floating_pages/HEAT_projects4 [Accessed: 17 March 2011].
- JISC Transforming curriculum delivery through technology* (Updated 23 June 2011) Available at: <http://www.jisc.ac.uk/whatwedo/programmes/elearning/curriculumdelivery.aspx> [Accessed: 25 June 2011].
- Johnson, B. and Schanzer, P. (2008). *An e-Learning Framework for NHS Wales* [pdf] National Leadership and Innovation Agency for Healthcare. Available at: http://www.mle.wales.nhs.uk/file.php/1/An_e-Learning_Framework_for_NHS_Wales.pdf [Accessed: 9 March 2011].
- Joint Information Systems Committee (2010). *Enabling Innovation 2006 – 2009*. [pdf] JISC. Available at: <http://www.jisc.ac.uk/publications/generalpublications/2010/enablinginnovationengland.aspx> [Accessed: 16 March 2011].
- Labour Party Wales and Plaid Cymru (2007). *One Wales: An agreement between the Labour and Plaid Cymru Groups in the National Assembly* [pdf]. Available at: http://news.bbc.co.uk/1/shared/bsp/hi/pdfs/27_06_07_oneyales.pdf [Accessed: 9 March 2011].
- Margaryan, A. and Littlejohn, A. (2008) Are digital natives a myth or reality?: Students' use of technologies for learning. [pdf] Available at: <http://www.academy.gcal.ac.uk/anoush/documents/DigitalNativesMythOrReality-MargaryanAndLittlejohn-draft-111208.pdf> [Accessed: 20 June 2011].
- Morrison, D. (2011a). "Our Gwella" Stories Now Available. <http://elearning.heacademy.ac.uk/> [blog] 8 March 2011. Available at: <http://elearning.heacademy.ac.uk/weblogs/gwella/?p=320> [Accessed: 7 April 2011].
- Morrison, D. (2011b). *Gwella Briefings now available*. <http://elearning.heacademy.ac.uk/> [blog] 13 June 2011. Available at: <http://elearning.heacademy.ac.uk/weblogs/gwella/?p=406> [Accessed: 13 June 2011].
- OldBell 3 Ltd, Dateb and O'Shea, E. (2009). *The Future of the Welsh Video Network Support Centre Final Report*. [pdf] Available at: http://download.wvn.ac.uk/oldbell3_report.pdf [Accessed: 10 March 2011].
- Phipps, L. (2011). JISC Building Capacity Programme (Wales). JISC [unpub]
- Premsky, M. (2001) Digital Natives, Digital Immigrants, *On the Horizon* 9(5) [pdf] NCB University Press. Available at <http://www.marcprensky.com/writing/Prensky%20-%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part1.pdf> [Accessed: 20 June 2011].
- Premsky, M. (2009) H. Sapiens Digital: From digital immigrants and digital natives to digital wisdom, *Journal of Online Education* 5 (3).
- Quality Assurance - Quality Enhancement in e-Learning Special Interest Group (2011). *Toolkit – Harnessing Quality Assurance Processes to Enhance Technology Enabled Learning*. [pdf] Available at: http://qaqe-sig.net/wp-content/uploads/2011/03/Toolkit_version_2011_9_3.pdf [Accessed: 24 June 2011].

- Rudd, T, Colligan, F and Naik, R (2006). Learner Voice. [pdf]. Futurelab. Available at: www.futurelab.org.uk/resources/documents/handbooks/learner_voice.pdf [Accessed: 20 June 2011].
- Scottish Funding Council (no date). *e-learning approach* [online] (Updated no date). Available at: http://www.sfc.ac.uk/effective_institutions/eLearning/elearning.aspx [Accessed: 9 March 2011].
- Scottish Funding Councils (2008). *SFC/11/2008:Improving articulation from HN to degree courses: funding for 2008-09* [pdf] Available at: <http://www.webarchive.org.uk/wayback/archive/20100411233743/http://www.sfc.ac.uk/web/FILES/CircularsSFC1108/sfc1108.pdf> [Accessed: 25 June 2011].
- Sero Consulting (2007). *Baseline Study of e-Activity in Scotland's Colleges*. [pdf] Scottish Funding Councils. Available at: http://www.sfc.ac.uk/web/FILES/learningfiles/sero_e_activity_study.pdf [Accessed: 9 March 2011].
- Sero Consulting Ltd (2009). *BCE Evaluation Phase 0 Final Report*. [pdf] Available at: <http://www.jisc.ac.uk/media/documents/programmes/bce/evalphase0finalreport.pdf> [Accessed: 17 March 2011].
- South West Wales Higher Education Partnership (no date) Available at: <http://www.swwhep.ac.uk/en/> [Accessed: 23 June 2011].
- Students as partners (no date) <http://studentsaspartners.wikispaces.com/> [Accessed: 27 June 2011].
- Swansea Metropolitan Building Capacity Website (2011a). *Work package 4: Building Capacity Case Studies*. [online] (no date). Available at: <https://sites.google.com/site/swanseametbcp/project-outputs/workpackage-4> [Accessed: 23 June 2011].
- Swansea Metropolitan Building Capacity Website (2011b). WP 2.1: Project Report: Curriculum Development, Programme Approval, Amendment, Monitoring and Review in an Electronic Age. [doc] Available at: <https://sites.google.com/site/swanseametbcp/WP2.1CurriculumDevelopmentReviewReport.docx?attredirects=0> [Accessed: 23 June 2011].
- Swansea Metropolitan Building Capacity Website (no date). Available at: <https://sites.google.com/site/swanseametbcp/> [Accessed: 23 June 2011].
- Swansea Metropolitan University (2009). *Re-Usable Content for IT Education (RECITE) Final Project Report*. [online] (Updated 17 August 2010). Available at: <http://www.jisc.ac.uk/whatwedo/programmes/elearningcapital/reproduce/recite.aspx> [Accessed: 9 March 2011].
- Swansea Metropolitan University (2010a). *Annual Monitoring Statement 2009/10*. [unpub]
- Swansea Metropolitan University (2010b). *Remote access to academic trials & testing (RATATAT) final report*. [online] (Updated 17 January 2011). Available at: <http://www.jisc.ac.uk/whatwedo/programmes/elearning/ltig/ratatat.aspx> [Accessed: 15 May 2011].
- Swansea Metropolitan University (2011). *Our Gwella - Swansea Metropolitan University*. [pdf] Available at: http://elearning.heacademy.ac.uk/weblogs/gwella/wp-content/uploads/SMU_OurGwella2011.pdf [Accessed: 23 June 2011].
- Swansea Metropolitan University (no date). *Learning, Teaching and Assessment Strategy*. [pdf] Available at <http://www.smu.ac.uk/publicationscheme/images/stories/documents/3.3.%20Doc%201%20Learning%20and%20Teaching%20Strategy%202007-10.pdf> [Accessed: 23 June 2011].
- Swansea Metropolitan University eTutor - Education Through Ubiquitous Technologies and On-line Resources Project (Updated 27 July 2010). Available at: <http://www.jisc.ac.uk/whatwedo/programmes/usersandinnovation/etutor.aspx> [Accessed: 30 June 2011].
- Swansea University (2007). *Learning, Teaching and Assessment Strategy 2007-2010*. [doc] Available at: <http://www.swan.ac.uk/registry/qualityassuranceandenhancement/keydocuments/learningteachingandassessmentstrategy/download.9273.en.doc> [Accessed: 23 June 2011].

- Swansea University (2010). *Using Emotionally Intelligent Transaction Mapping to Reshape Student Lifecycle Interactions (EITM)*. [pdf] Available at: <http://www.jisc.ac.uk/media/documents/programmes/bce/swanseaeitmfinalreport.pdf> [Accessed: 23 June 2011].
- Swansea University (2011a). *Swansea University Gwella Project report*. [pdf] Available at: http://elearning.heacademy.ac.uk/weblogs/gwella/wp-content/uploads/Swansea_OurGwella2011_AbridgedTextVersion.pdf [Accessed: 23 June 2011].
- Swansea University (2011b). *Swansea University Our Gwella Projects*. [flash] Available at: <http://learninglab.swan.ac.uk/gwellastory.html> [Accessed: 23 June 2011].
- Swansea WebPA Project (2011). *Online Peer Assessment* [blog] January 10th, 2011. Available at: <http://webpaproject.swan.ac.uk/> [Accessed: 23 June 2011].
- The Quality Assurance Agency for Higher Education (2010), *QAA: Outcomes from institutional review in Wales*. [online] (Updated no date) Available at: <http://www.qaa.ac.uk/reviews/reviewWales/outcomes/default.asp> [Accessed: 21 March 2011].
- Trinity Saint David TEL Blog (Updated: 11 November 2010) Available at: <http://elearning.lamp.ac.uk/> [Accessed: 23 June 2011].
- University of Glamorgan (2006). *Learning, Teaching and Assessment Strategy, 2007-2012*. [pdf] Available at: <http://celt.glam.ac.uk/sites/default/files/LTA%20Strategy%202007-2012.pdf> [Accessed: 23 June 2011].
- University of Glamorgan (2009). *Work-Based Access to Learning through e-Services*. [online] (Updated 27 July 2010) Available at: <http://www.jisc.ac.uk/whatwedo/programmes/elearningcapital/heinfe/wales.aspx> [Accessed: 9 March 2011].
- University of Glamorgan (2010a). *JISC Business and Community Engagement G-Blog Project Final report and case study*. [online] (no date). Available at: <http://www.jiscinfonet.ac.uk/infokits/collaborative-tools/projects> [Accessed: 3 March 2011].
- University of Glamorgan (2010b). *Putting assessment at the heart of learning*. [pdf] Available at: http://www.jisc.ac.uk/media/documents/programmes/elearning/digiassess_puttingassess.pdf [Accessed: 23 June 2011].
- University of Glamorgan (2010c). *Scaffolding Learning with Twitter (SCALE) Final Report*. [online] (Updated 26 January 2011). Available at: <http://www.jisc.ac.uk/whatwedo/programmes/elearning/ltig/scale.aspx> [Accessed: 15 May 2011].
- University of Glamorgan (2010d). *Putting assessment at the heart of learning*. [pdf] Available at: <http://www.jisc.ac.uk/media/documents/events/2011/03/jisc11goodybag/workshops/2effectiveassessmentscasestudy.pdf> [Accessed: 3 March 2011].
- University of Glamorgan (2011a). *Building Capacity Report*. [pdf] Available at: http://celt.glam.ac.uk/sites/default/files/Building%20Capacity%20Case%20Study%20_final.pdf [Accessed: 23 June 2011].
- University of Glamorgan (2011b). *Building Capacity Website* (no date). Available at: <http://celt.glam.ac.uk/node/129> [Accessed: 23 June 2011].
- University of Glamorgan (2011c). *Good practice (Case studies)*. [online] (no date). Available at: <http://celt.glam.ac.uk/GoodPractice%20> [Accessed: 23 June 2011].
- University of Glamorgan (2011d). *Gwella Report January 2011: The Story of University of Glamorgan*. [pdf] Available at: http://elearning.heacademy.ac.uk/weblogs/gwella/wp-content/uploads/Glamorgan_OurGwella2011.pdf [Accessed: 22 June 2011].
- University of Glamorgan on iTunesU (no date) Available at: <http://itunes.glam.ac.uk/> [Accessed: 23 June 2011].
- University of Wales Newport (2010). *University of Wales, Newport: Learning & Teaching Strategy 2007 – 2011*. [pdf] Available at:

<http://policy.newport.ac.uk/UniversitySecretary/FOI/PublicationScheme/Documents/L+T%20Strategy%202007-2011.pdf> [Accessed: 23 June 2011].

University of Wales Institute, Cardiff (2009a). *e-Assessment in Wales*. [online] (Updated 27 July 2010) <http://www.jisc.ac.uk/whatwedo/programmes/elearningcapital/heife/eassesswales.aspx> [Accessed: 9 March 2011].

University of Wales Institute, Cardiff (2009b). *Technology enhanced learning to support a welsh centre for workforce development*. [online] (Updated 27 July 2010). Available at: <http://www.jisc.ac.uk/whatwedo/programmes/institutionalinnovation/workforcedev/wcwg.aspx> [Accessed: 23 June 2011].

University of Wales Institute, Cardiff (2010). X-CERP Project Website [online] (Updated 6 December 2010) Available at: <https://uwicjiscxcerp.wordpress.com/2010/10/11/hello-world/> [Accessed: 30 June 2011].

University of Wales Institute, Cardiff (2011b). *Technology-Enhanced Learning*. [pdf] Learning and Teaching Development Unit, University of Wales Institute Cardiff. Available at: http://www3.uwic.ac.uk/English/LTDU/Documents/technology_enhanced_learning.pdf [Accessed: 23 June 2011].

University of Wales Institute, Cardiff (2011c). *UWIC's GWELLA Initiative*. [pdf] Available at: http://elearning.heacademy.ac.uk/weblogs/gwella/wp-content/uploads/UWIC_OurGwella2011.pdf [Accessed: 23 June 2011].

University of Wales Institute, Cardiff (2011d). *UWIC's GWELLA Reports: Briefing papers*. [online] (no date) Available at: <http://gwellauwic.wordpress.com/project-2-2/> [Accessed: 23 June 2011].

University Of Wales Institute, Cardiff (no date). *Learning, Teaching & Assessment Strategy 2007-2010* [pdf] Available at: http://www.uwic.ac.uk/ltdu/docs/Learning_Teaching_and_Assessment_Strategy_2007_10.pdf [Accessed: 23 June 2011].

University of Wales Trinity St David (2010). *Information Services Strategy 2011-2012*. [pdf] Available at: http://www.tsd.ac.uk/en/media/uniweb/content/documents/departments/information/services/strategiesandpolicies/Information_Services_Strategy.pdf [Accessed: 23 June 2011].

University of Wales Trinity St David Learning and Teaching Strategy [online] (no date) Available at: <http://www.tsd.ac.uk/en/theuniversity/strategiesandpolicies/learningandteachingstrategy/> [Accessed: 23 June 2011].

University of Wales, Newport (2011) *Our Gwella – the University of Wales, Newport Perspective*. [pdf] Available at: http://elearning.heacademy.ac.uk/weblogs/gwella/wp-content/uploads/Newport_OurGwella2011.pdf [Accessed: 23 June 2011].

University of Wales, Newport Building Capacity Project (Updated 9 August 2010) <http://www.jisc.ac.uk/whatwedo/programmes/bcap/Newport.aspx> [Accessed: 23 June 2011].

University of Wales, Trinity Saint David (2011). *Gwella Final Report*. [pdf] Available at: http://elearning.heacademy.ac.uk/weblogs/gwella/wp-content/uploads/TrinityStDavid_OurGwella2011_28Mar11update.pdf [Accessed: 23 June 2011].

Wales Audit Office (2009). *Collaboration between Higher Education Institutions*. [pdf] Available at: http://www.wao.gov.uk/assets/englishdocuments/Collaboration_between_HE_institutions_Eng.pdf [Accessed: 20 March 2011].

Wales Initiative for Student Engagement (WISE) (no date) Available at: <http://www.nus.org.uk/en/news/Events/Wales-Initiative-for-Student-Engagement-Project--WISE/> [Accessed 30 June 2011].

Work-Based Learning Maturity Toolkit [online] (no date) Available at: <http://wbltoolkit.pbworks.com/> [Accessed: 23 June 2011].

Welsh Government (2002). Reaching Higher strategy for higher education. [online] (no date) Available at:

http://www.hefcw.ac.uk/about_he_in_wales/wag_priorities_and_policies/reaching_higher_strat_he.aspx [Accessed: 25 June 2011].

Welsh Government (2006). Beyond Boundaries: Citizen Centred Local Services for Wales. [pdf] Available at: <http://wales.gov.uk/topics/improving-services/strategy/beyondboundaries/?lang=en> [Accessed: 9 March 2011].

Welsh Government (2007). *The Report of the Independent Review of the Mission and Purpose of Further Education in Wales in the context of the Learning Country: Vision in to Action* [pdf]. Available at: <http://wales.gov.uk/topics/educationandskills/publications/wagreviews/webbreview/?lang=en>. [Accessed: 9 March 2011].

Welsh Government (2008). *Skills that Work for Wales* [pdf]. Available at: <http://wales.gov.uk/docs/dcells/publications/081217stfwstrategyandactionen.pdf> [Accessed: 9 March 2011].

Welsh Government (2009a). *For our Future - The 21st Century Higher Education Strategy and Plan for Wales*. [pdf] Available at: <http://wales.gov.uk/docs/dcells/publications/091125hedocen.pdf> [Accessed: 4 May 2011].

Welsh Government (2009b). *Transforming Education and Training Provision in Wales – Delivering Skills that Work for Wales*. [pdf] Available at: <http://wales.gov.uk/docs/dcells/publications/100301transformationpolicyen.pdf> [Accessed: 9 March 2011].

Welsh Government (2009c). *Universities of the Heads of the Valleys Initiative*. [online] (no date). Available at: <http://wales.gov.uk/publications/accessinfo/drnewhomepage/educationdrs2/educationdrs2009/univhdsvallyinitvestratgy/?lang=en>. [Accessed: 9 March 2011]

Welsh Government (2010a). *Delivering a Digital Wales: The Welsh Assembly Government's Outline Framework for Action* [pdf] Available at: <http://wales.gov.uk/docs/det/publications/101208digitalwalesen.pdf> [Accessed: 9 March 2011].

Welsh Government (2010b). *Delivering Digital Inclusion – a Strategic Framework for Wales*. [pdf]. Available at: <http://wales.gov.uk/docs/dsjlg/consultation/100617digitalinclusionen.pdf> [Accessed: 9 March 2011].

Welsh Government (2010c). *Foundation Degree Awarding Powers for FE Colleges in Wales* [pdf] Available at: <http://wales.gov.uk/topics/educationandskills/publications/guidance/foundationdegree/> [Accessed: 10 March 2011].

Welsh Government (2011). *HEFCW Remit Letter 2011-12*. [pdf] Available at: http://www.hefcw.ac.uk/documents/about_he_in_wales/wag_priorities_and_policies/2011-12_Remit_Letter.pdf [Accessed: 23 June 2011].

Welsh Government (no date). *ICT Strategy for the public sector*. [online] (no date) Available at: <http://wales.gov.uk/topics/educationandskills/allsectorpolicies/ictstrategy/?jsessionid=b2B1NLDG1xv8QsTTSZXDTHd8vc1hfNBn7q2BJb1yTyp7ZWhVTWgy!1989468226?lang=en>. [Accessed: 9 March 2011].

Y Porth (no date) Available at: <http://www.porth.ac.uk/en/> [Accessed: 22 June 2011].

XCRI: eXchanging Course Related Information Website (no date) Available at: <http://www.xcri.org/> [Accessed 30 June 2011].

Xerte (Updated 6 May 2011) Available at: <http://www.nottingham.ac.uk/xerte/> [Accessed 30 June 2011].

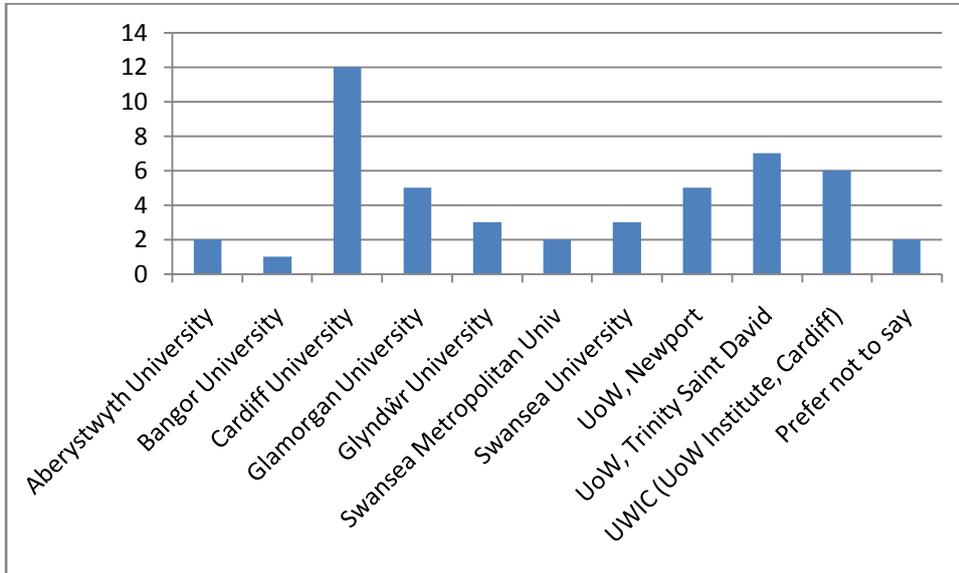
8 Appendices

Appendix 1. List of interviewees

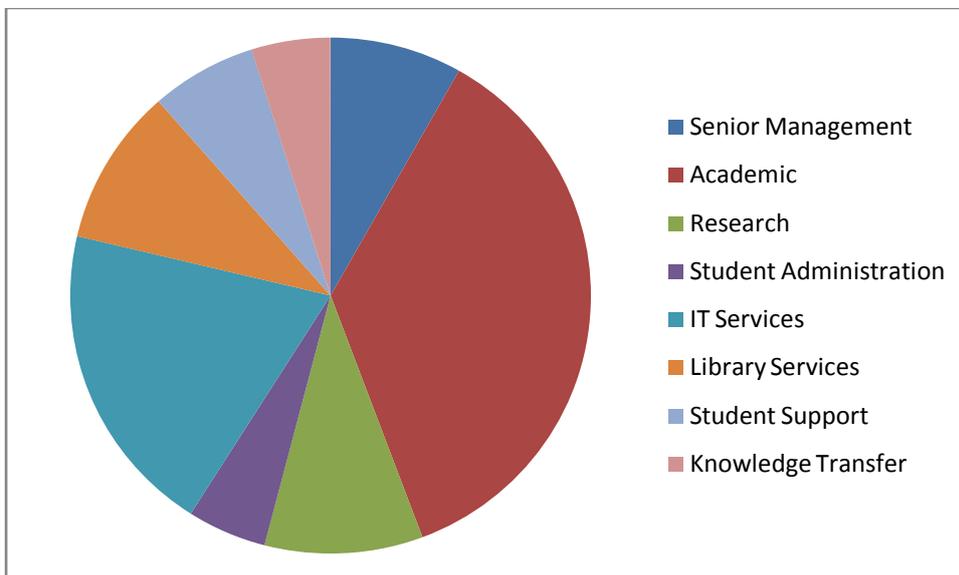
Name	Institution	Job Title
Rebecca Davies	Aberystwyth University	Pro Vice-Chancellor
Martin Jones	Aberystwyth University	Pro Vice-Chancellor
Kate Wright	Aberystwyth University	e-learning Team Manager
Colin Baker	Bangor University	Pro Vice-Chancellor
Julie Snelson	Bangor University	Director of IT Services
David Harrison	Cardiff University	Honorary Research Fellow
Martyn Harrow	Cardiff University	Director, Information Services
Jonathan Osmond	Cardiff University	Pro Vice-Chancellor
Sarah Williamson	Cardiff University	e-Learning Change Champion
Owain Huw	Coleg Cymraeg Cenedlaethol	Digital Technologies & e-learning Manager
Ioan Matthews	Coleg Cymraeg Cenedlaethol	Chief Executive
Terry Mayes	Glasgow Caledonian University	Gwella Critical Friend
Jane Plenderleith	Glenaffric Ltd	Gwella Critical Friend
Veronica Adamson	Glenaffric Ltd	Gwella Critical Friend
Helen James	Glyndŵr University	Executive Director
Graeme Wilkinson	Glyndŵr University	Pro Vice-Chancellor
Sarah Porter	JISC	Head of Innovation
Lis Parcell	JISC (RSC Wales)	Senior e-Learning Advisor
Paul Bacsich	Matic Media Ltd	Gwella Critical Friend
Nick Potter	Swansea Metropolitan University	Head of Learning, Teaching & Quality
Lyndon Shirley	Swansea Metropolitan University	Head of Information Services
David Warner	Swansea Metropolitan University	Principal
David Gill	Swansea University	Chair of e-Learning Sub-Committee
Chris Hall	Swansea University	e-Learning Support Officer
Judith James	Swansea University	Lifelong Learning Manager
Alan Speight	Swansea University	Pro Vice-Chancellor
Robert Humphreys	The Open University in Wales	Director for Wales
Haydn Blackey	University of Glamorgan	Head of CELT
Clive Mulholland	University of Glamorgan	Pro Vice-Chancellor
Danny Saunders	University of Glamorgan	Head of Lifelong Learning & FE College Partners
Colleen Connor	Univ of Wales Institute, Cardiff	Dean of Learning & Teaching
Jacqui Hare	Univ of Wales Institute, Cardiff	Deputy Vice-Chancellor
Peter Treadwell	Univ of Wales Institute, Cardiff	Dean of Academic Development & CCWL
Julia Ault	Univ of Wales, Trinity St David	e-Learning Support Officer
Kathyn James	Univ of Wales, Trinity St David	Learning Enhancement Officer
Wendy Xerri	Univ of Wales, Trinity St David	Director of Knowledge & Information
Bela Arora	Univ of Wales, Newport	Associate Director, CELT
Graeme Rogers	Univ of Wales, Newport	Deputy Vice-Chancellor
Michael Webb	Univ of Wales, Newport	Head of IT & Media Services
Phil Davison	Welsh Video Network	Video Network Manager
Alison Walker	Welsh Video Network	Learning and Development Co-ordinator

Appendix 2. Analysis of HE Survey Responses

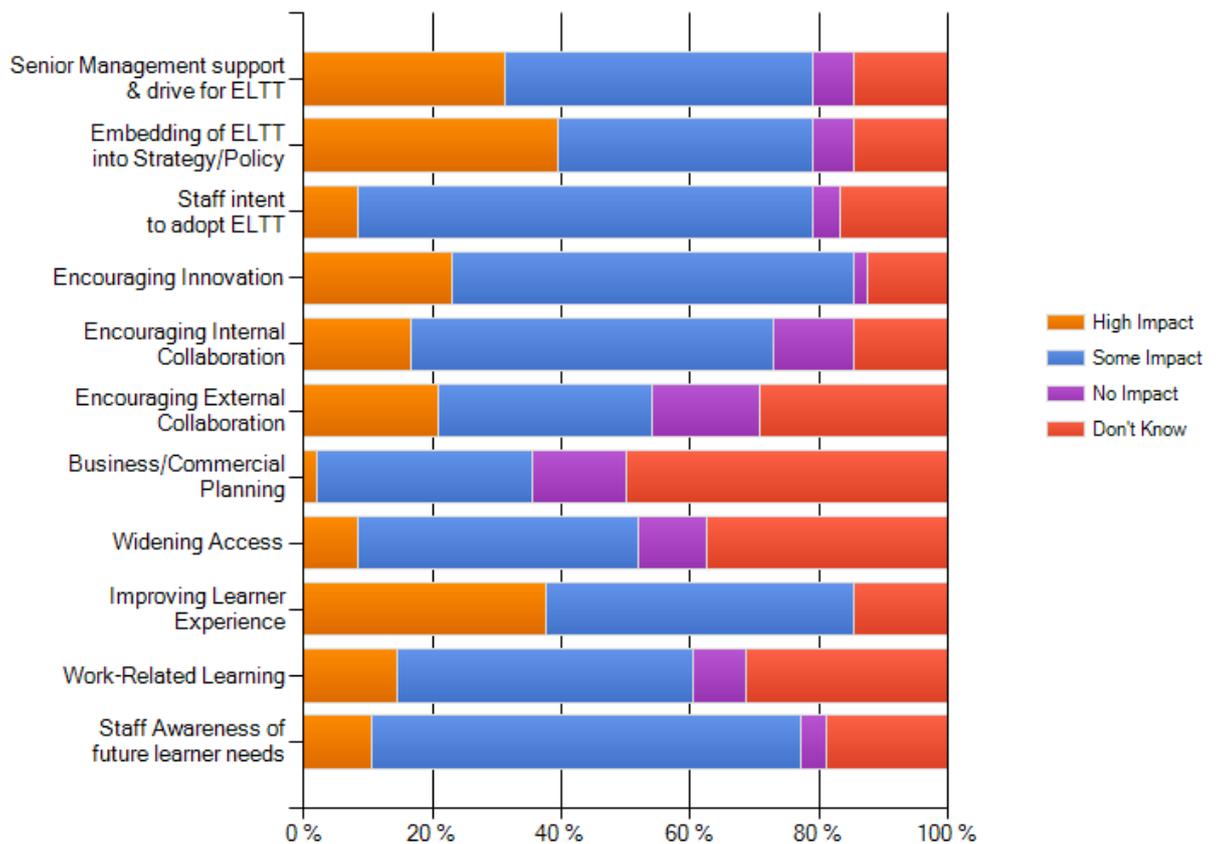
Total Responses 48 – see chart below for responses by institution.



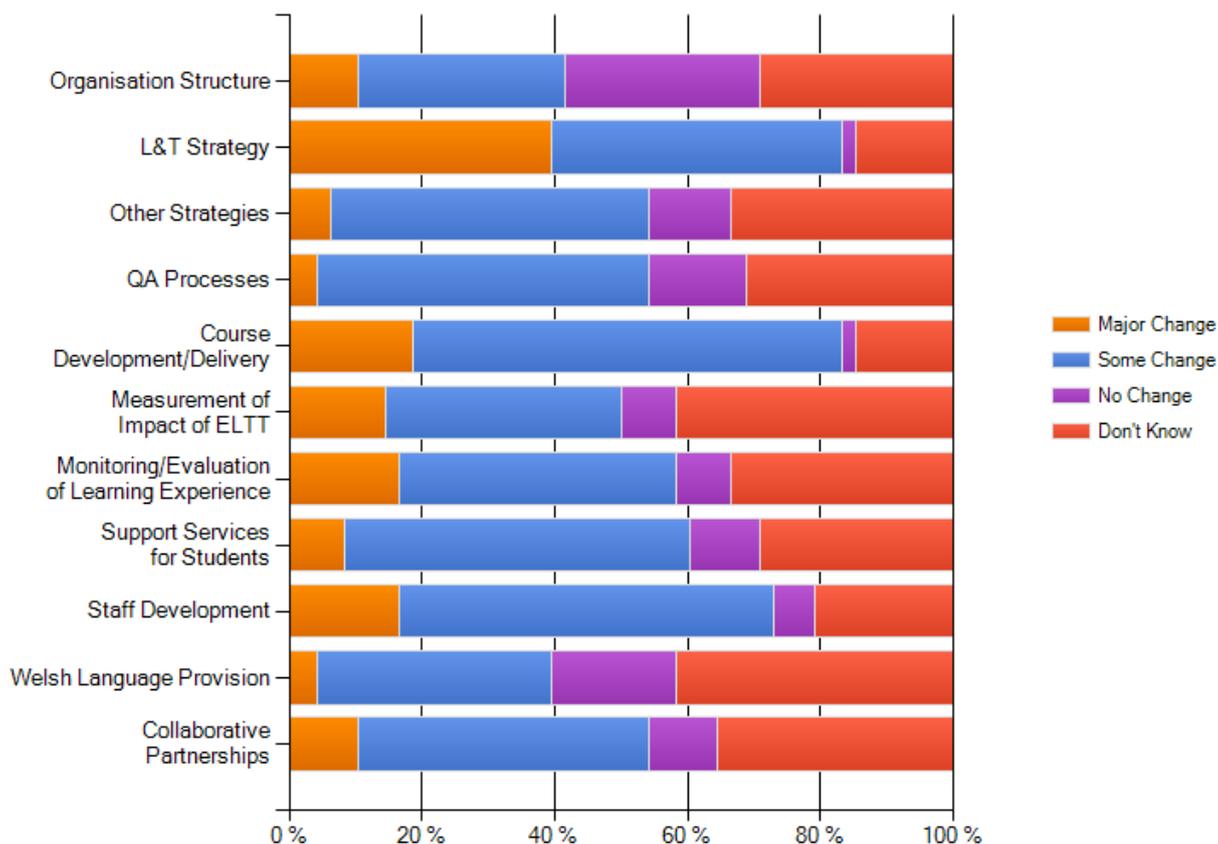
Respondents by job role



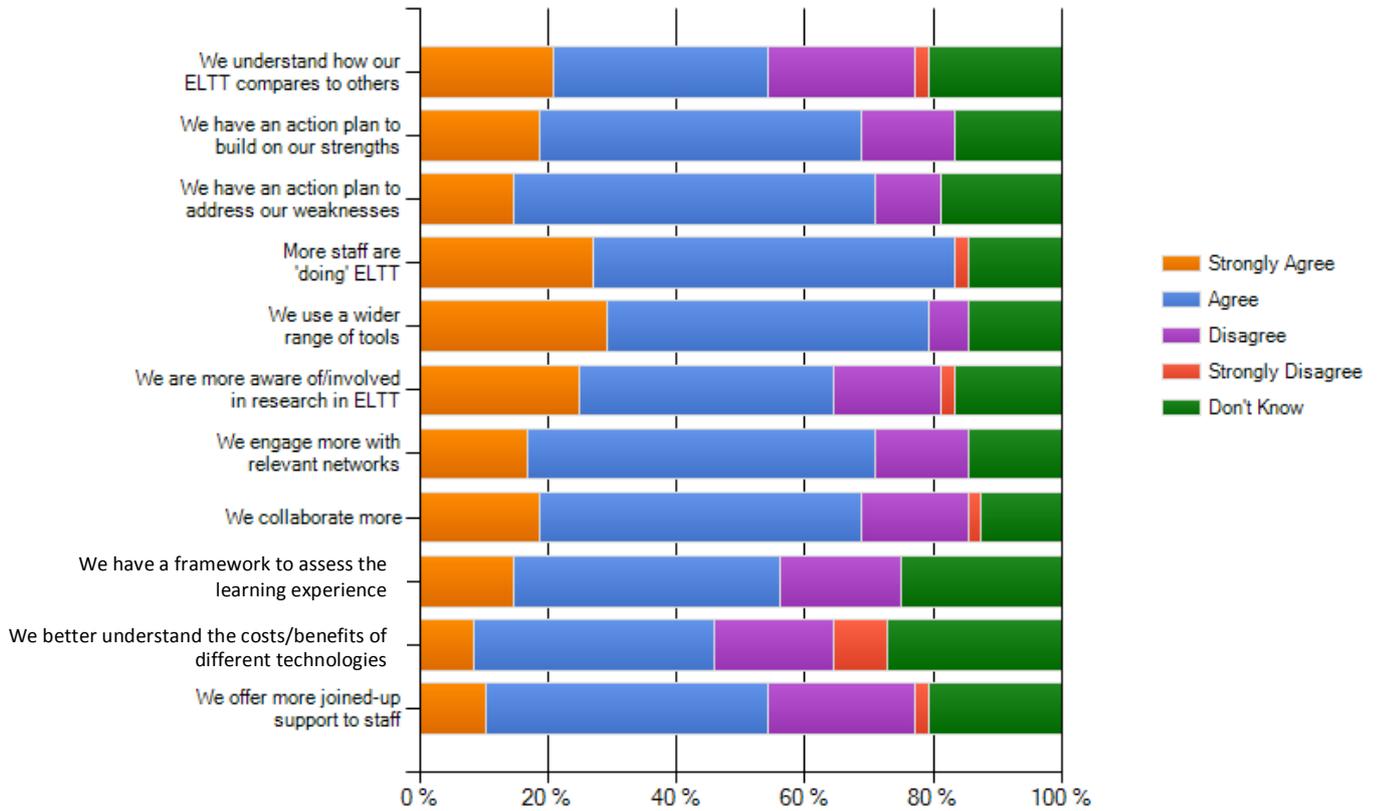
What level of impact has the HEFCW ELTT Strategy had on the following areas of your organisation?



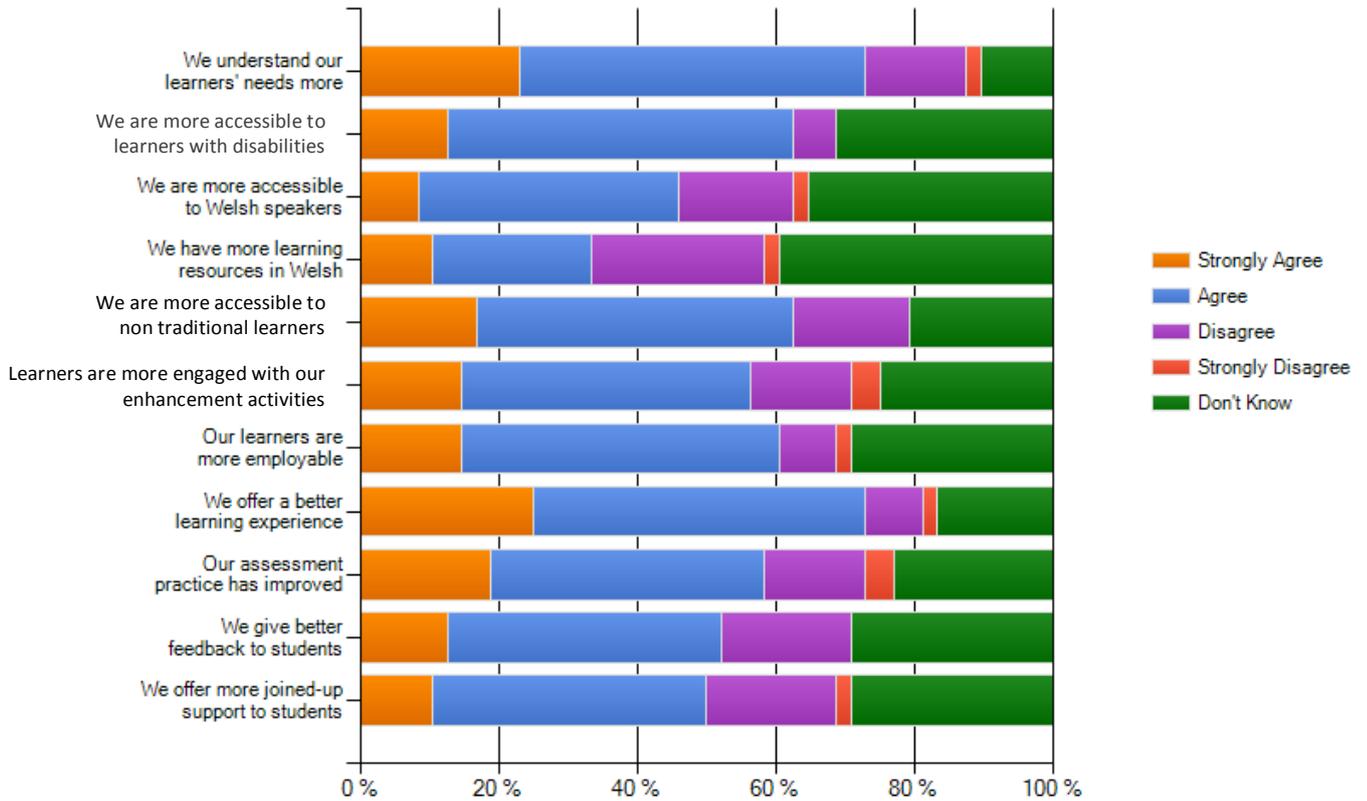
Have any of the following changed in your organisation as a result of implementing the HEFCW ELTT Strategy?



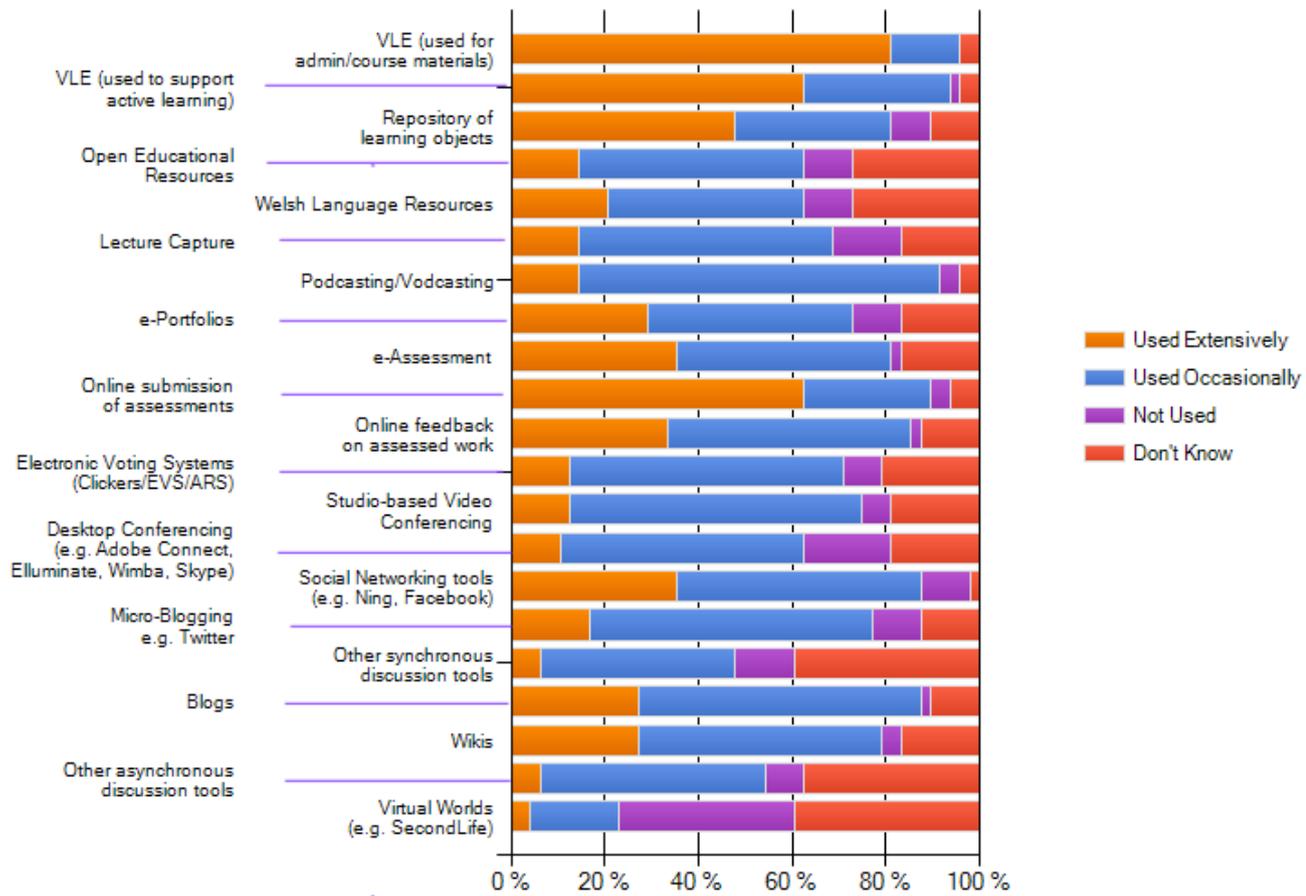
Thinking about ELTT since 2008 when your university began to engage with the strategy - please consider whether you agree that any of the following organisational benefits have been delivered. Please note that 'we' refers to the area of the organisation you feel you represent. As a result of engaging in ELTT:



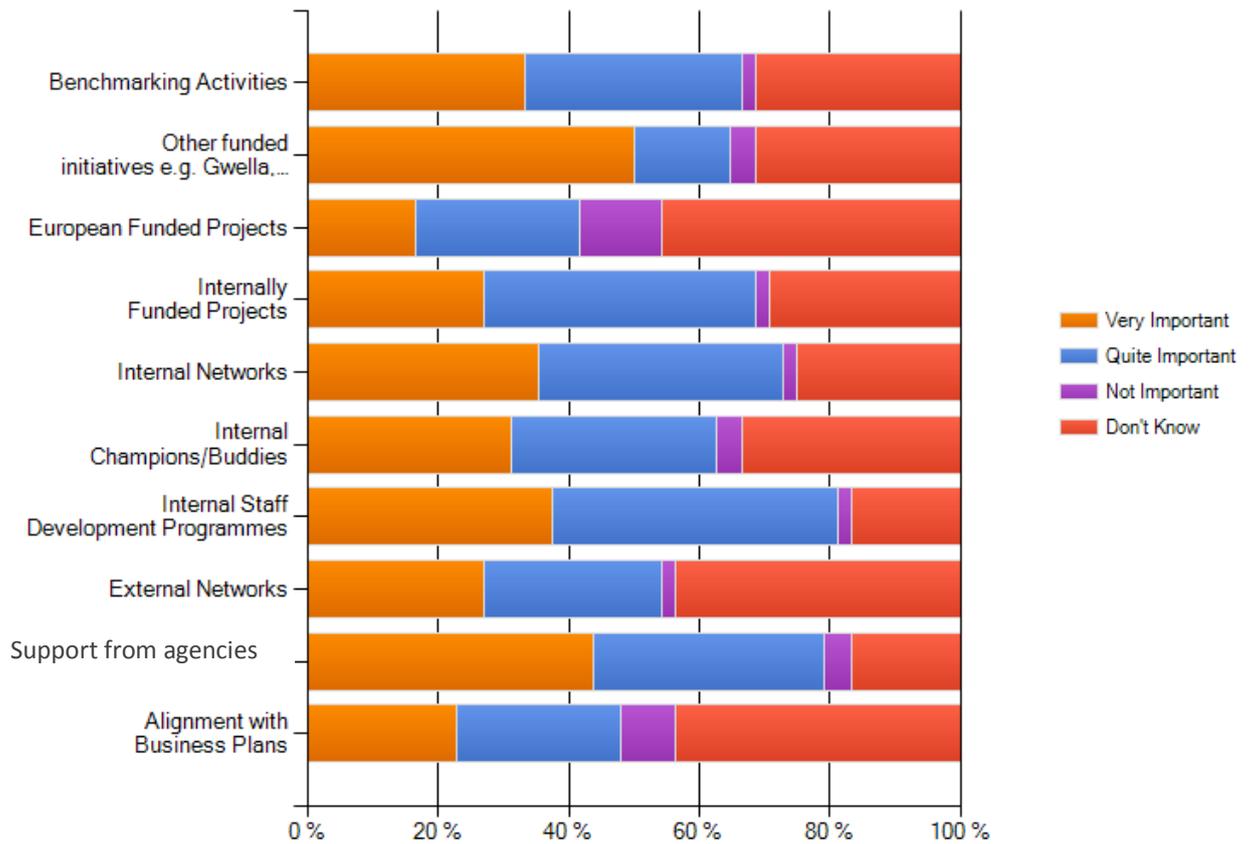
Thinking about ELTT since 2008 when your university began to engage with the strategy - please consider whether you agree that any of the following benefits have been delivered to learners. Please note that 'we' refers to the area of your organisation you feel you represent. As a result of implementing ELTT:



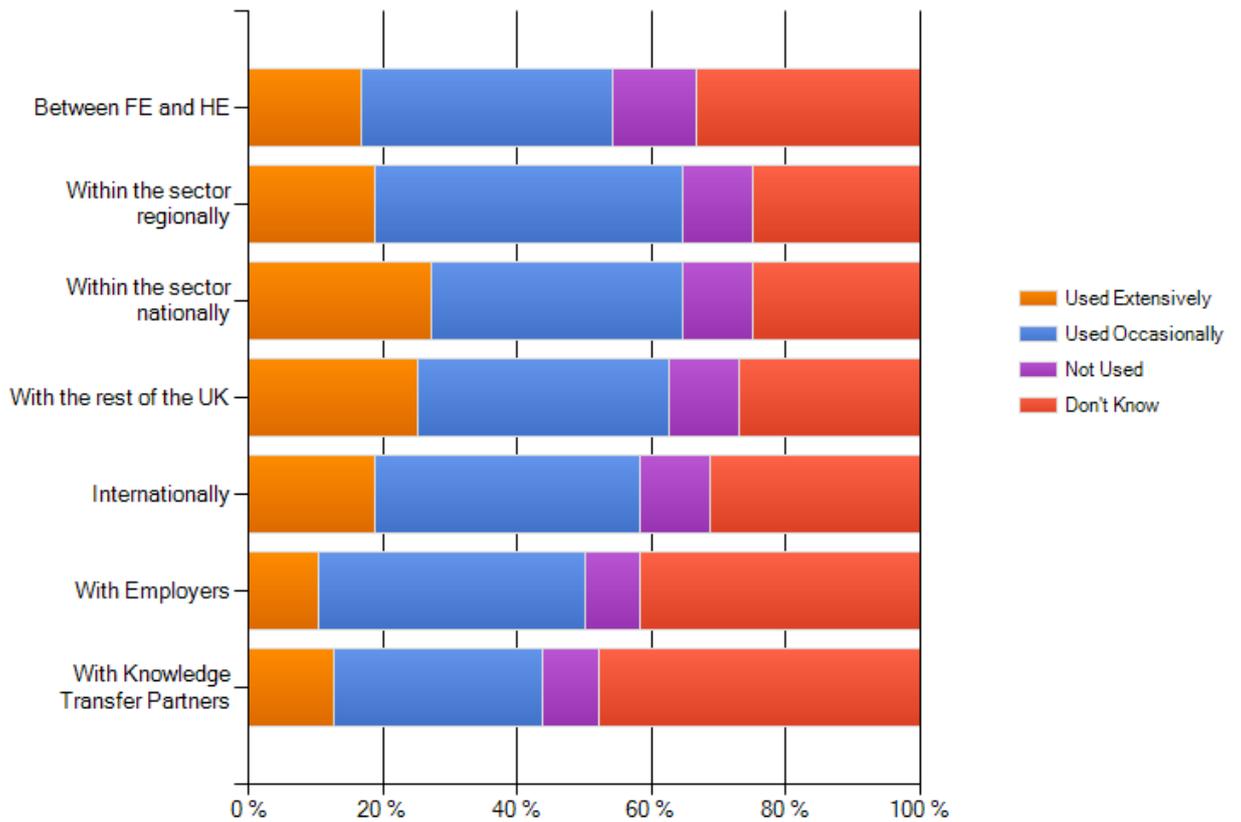
Please tell us about the range of technologies used to enhance learning in your organisation.



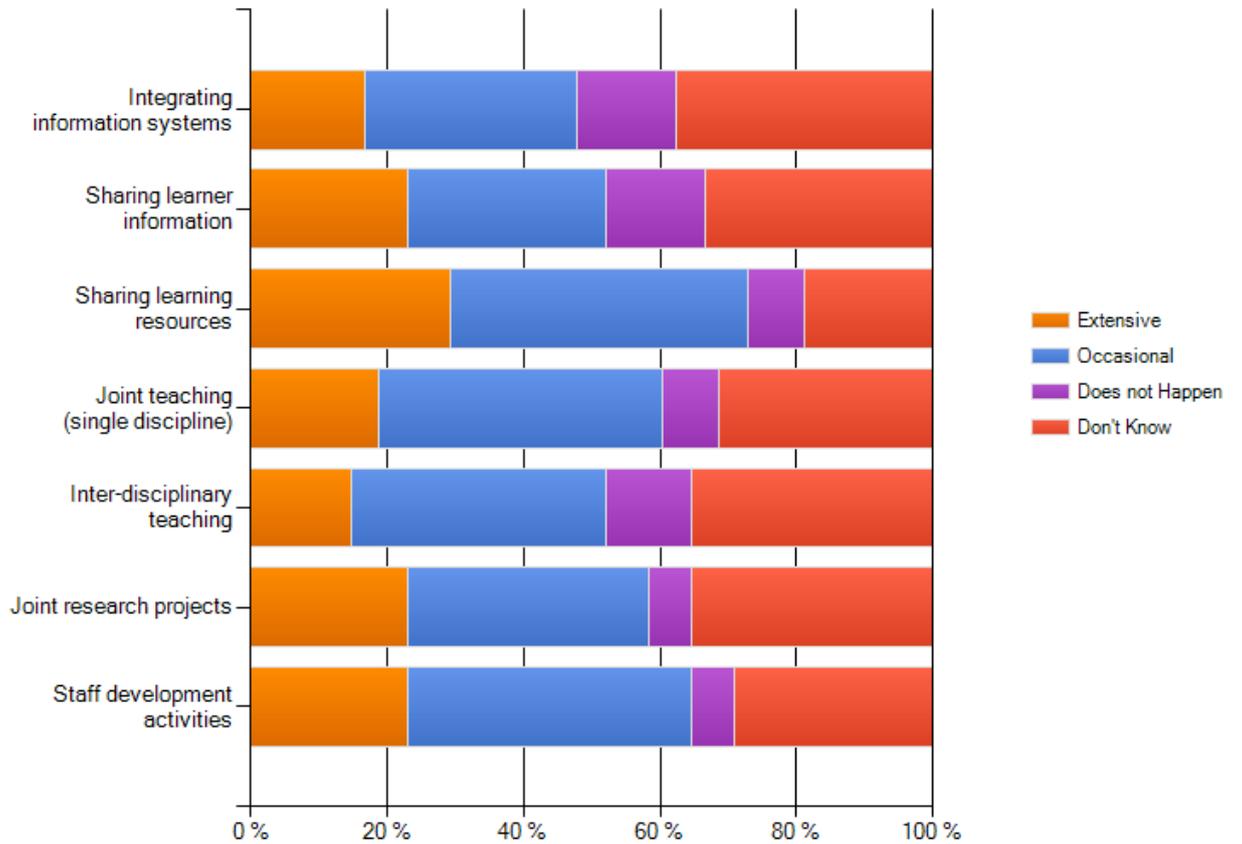
How important have the following implementation approaches been to ELTT in your organisation?



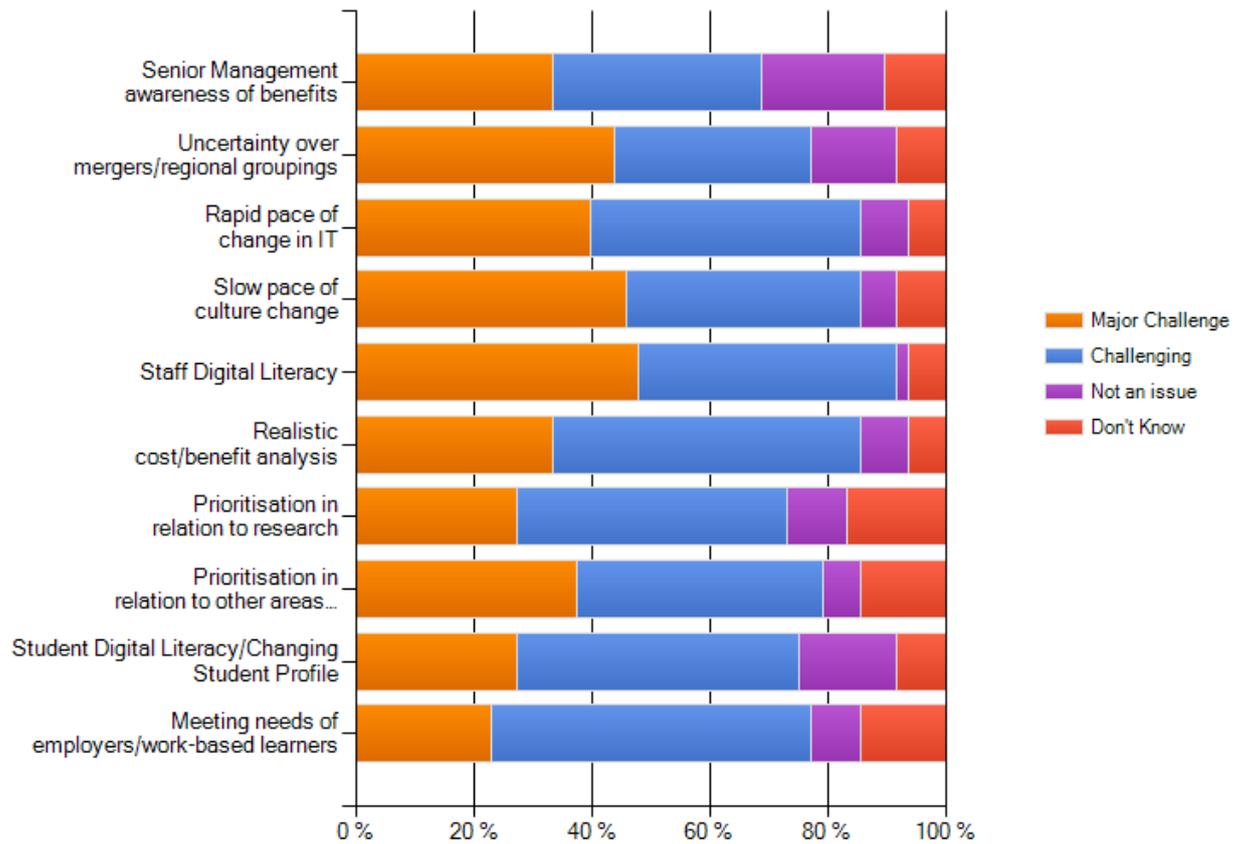
Please tell us about areas where technology is playing a role in enhancing collaboration with partners. Our use of technology to collaborate with partners is:



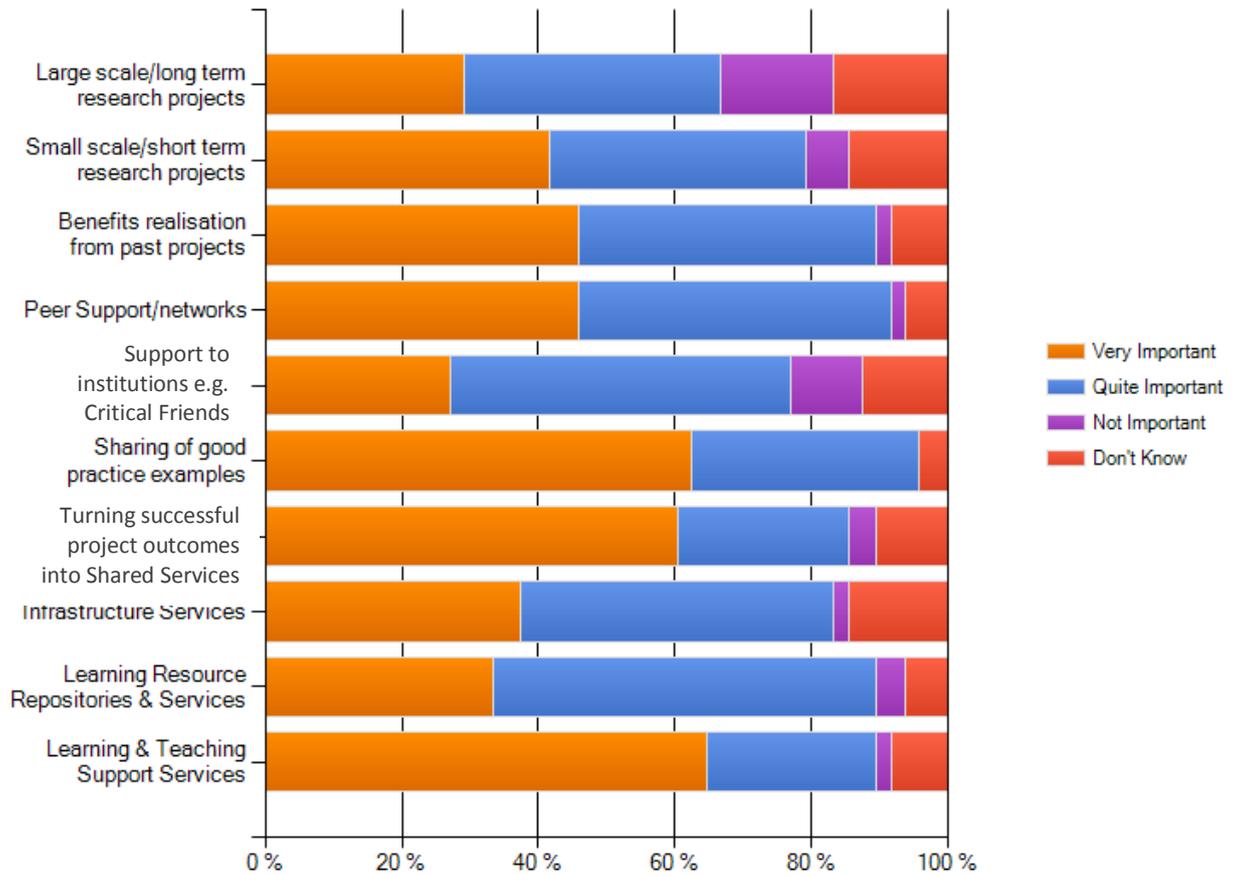
Please tell us about the types of technology-enhanced collaboration with partners



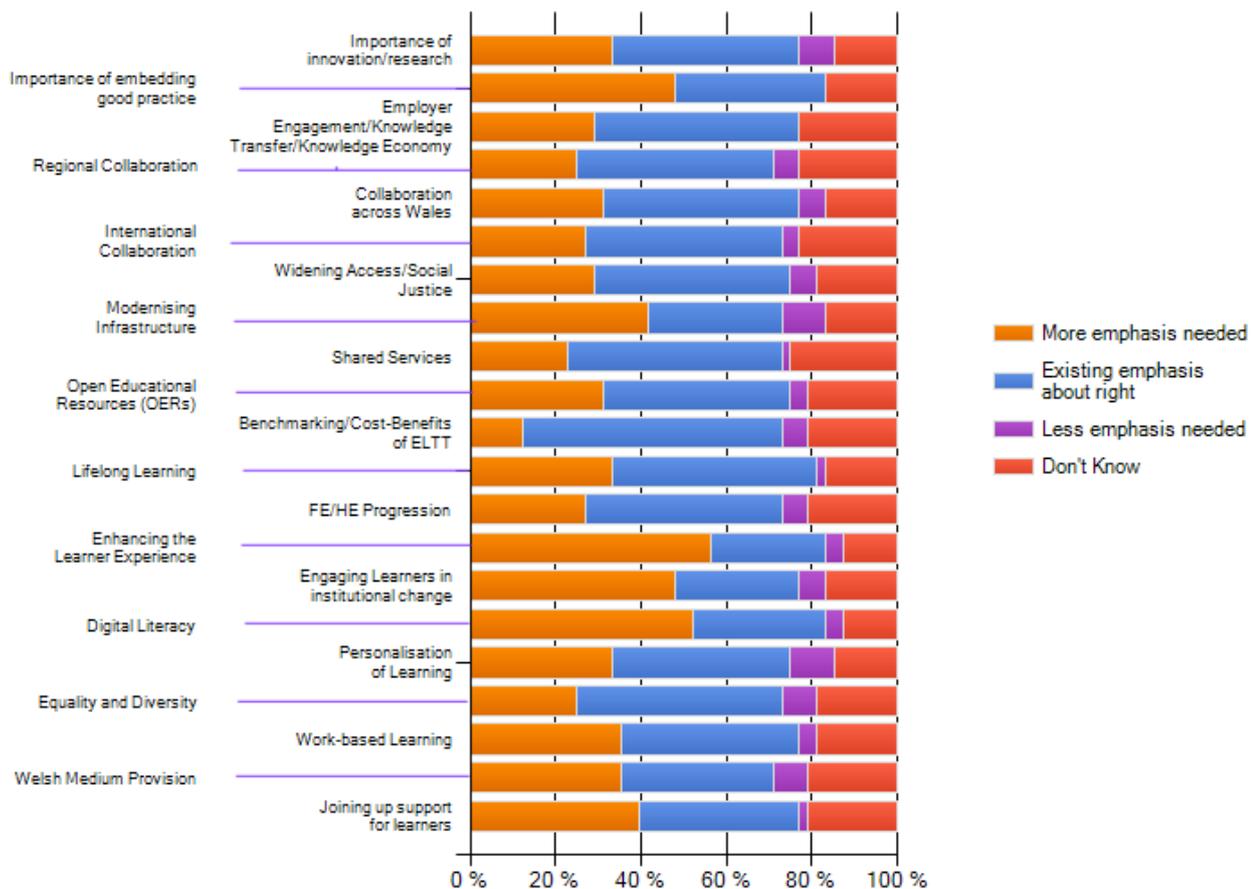
What in your view are the main challenges in terms of taking ELTT forward in the next few years?



What kinds of central support will be most important in the future?



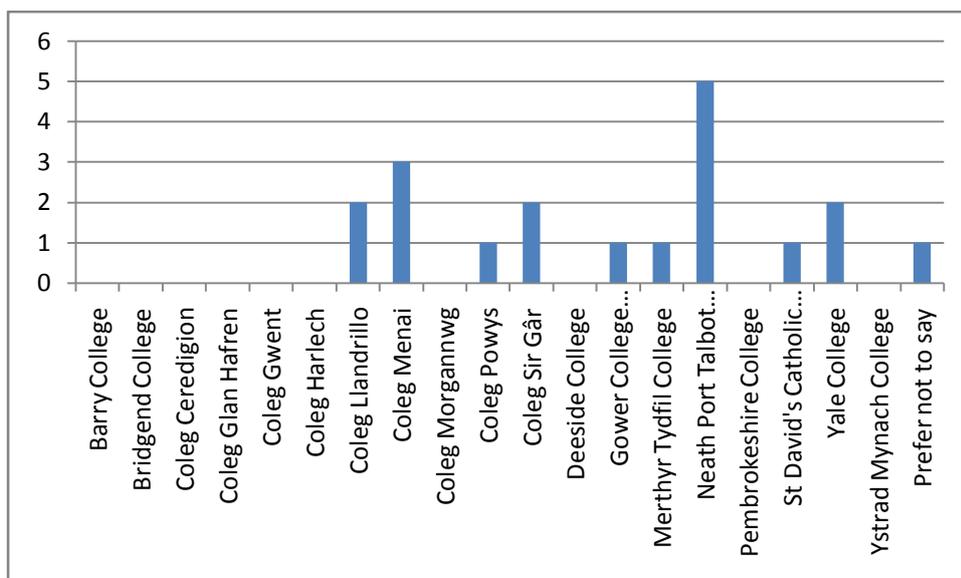
Please tell us how well the current strategy is likely to meet future needs



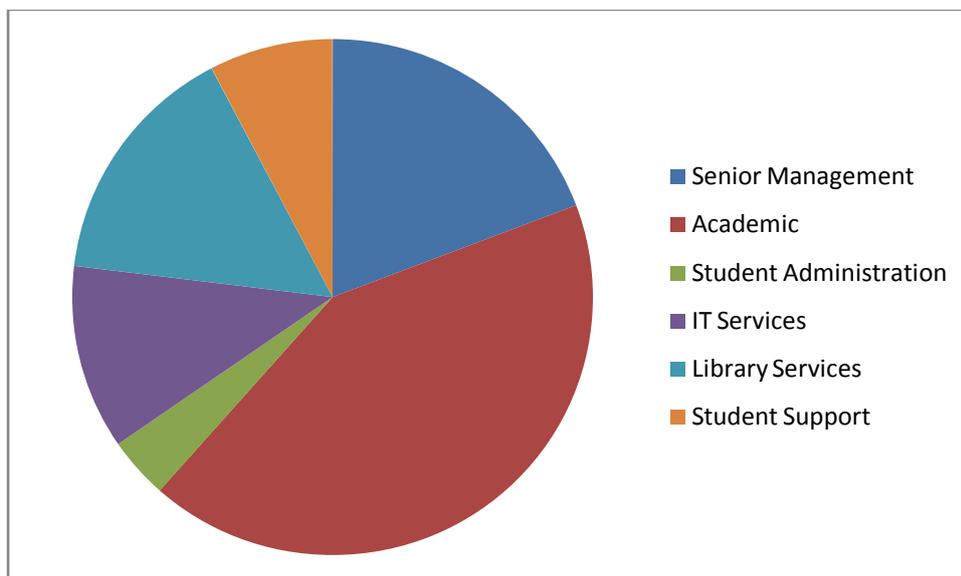
Appendix 3. Analysis of FE Survey Responses

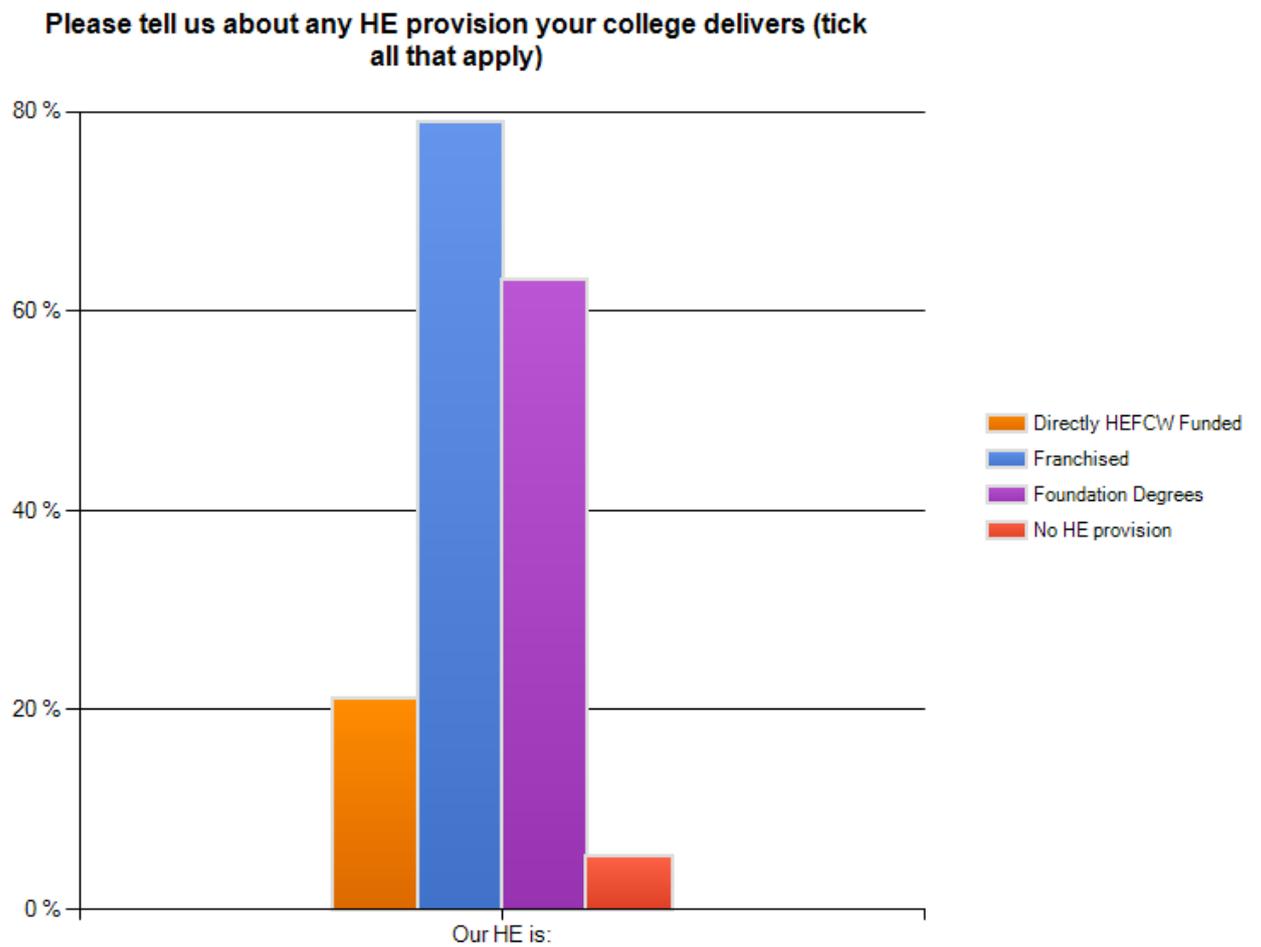
Total Responses 19 – see chart below for responses by institution.

N.B. The survey was distributed by the JISC Regional Support Centre (RSC) for Wales, based at Swansea University. Distribution to a range of JISC mail lists highlighted an intermittent problem with the RSC webmail account resulting in the survey link directing people back to a Swansea University login page. Attempts to resolve this were unsuccessful and, although some individuals reported the problem and were sent the correct link, this probably accounts for the low number of responses.



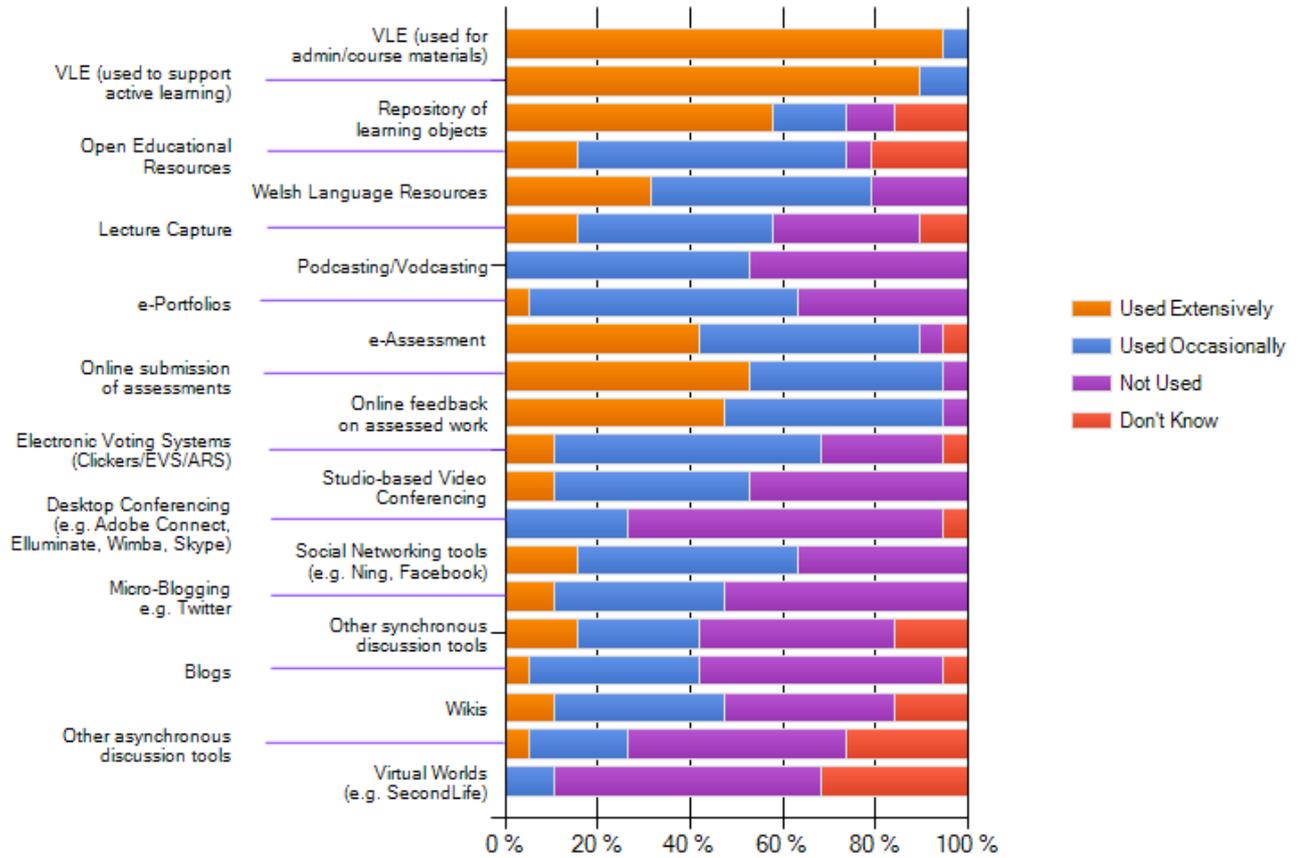
Respondents by job role



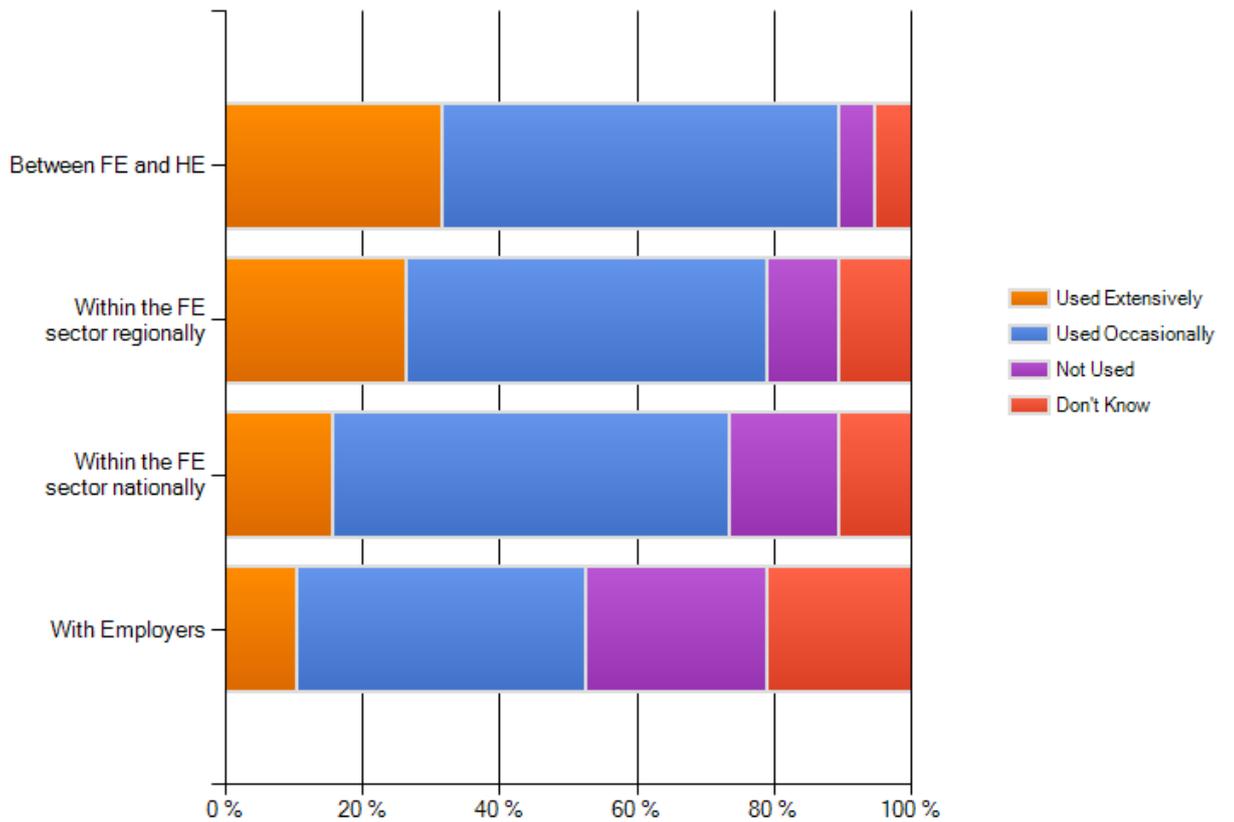


A further question asked about the nature of FE/HE partnerships and, despite the limited range of respondents/colleges, eight universities were named as having active partnerships with the respondents.

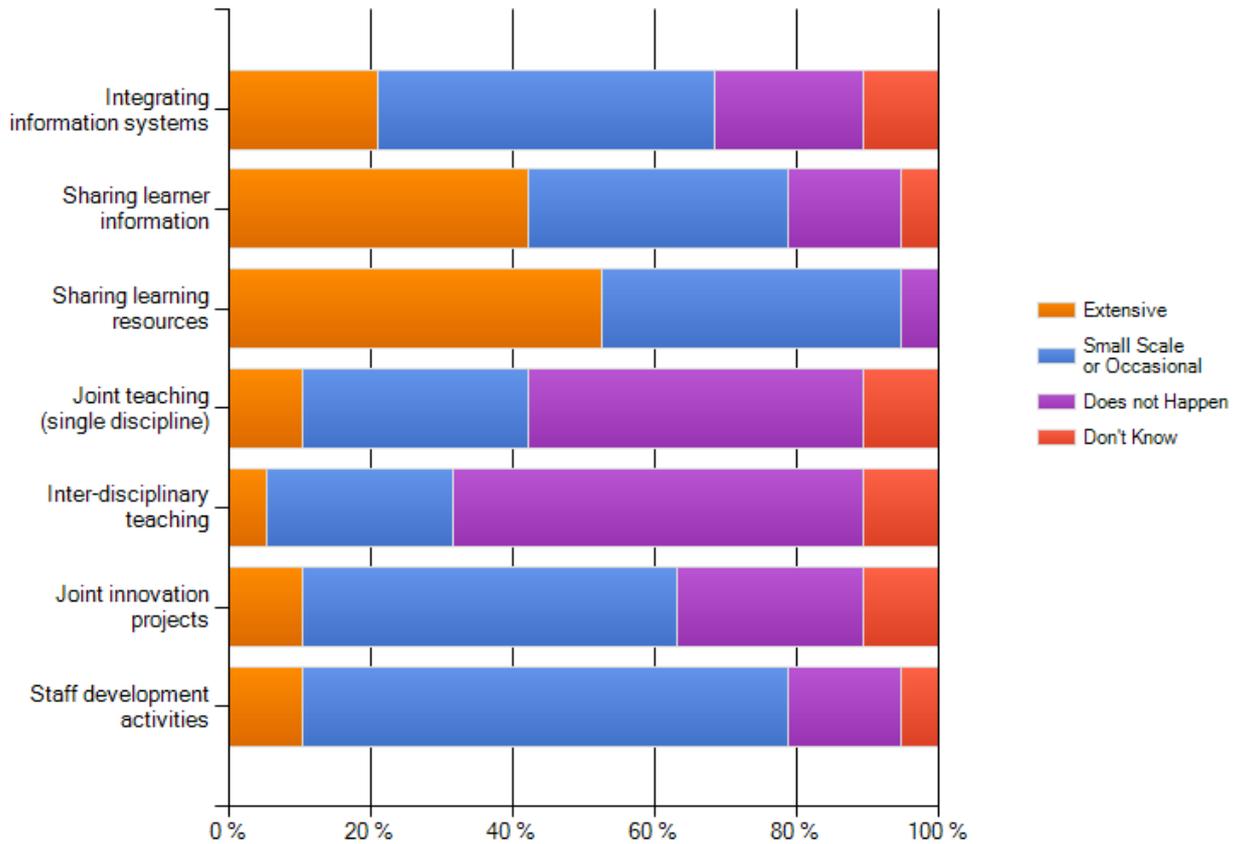
Please tell us about the range of technologies used to enhance learning in your organisation. N.B. We are interested in all learning not just HE level as this has implications for learners who progress to HE.



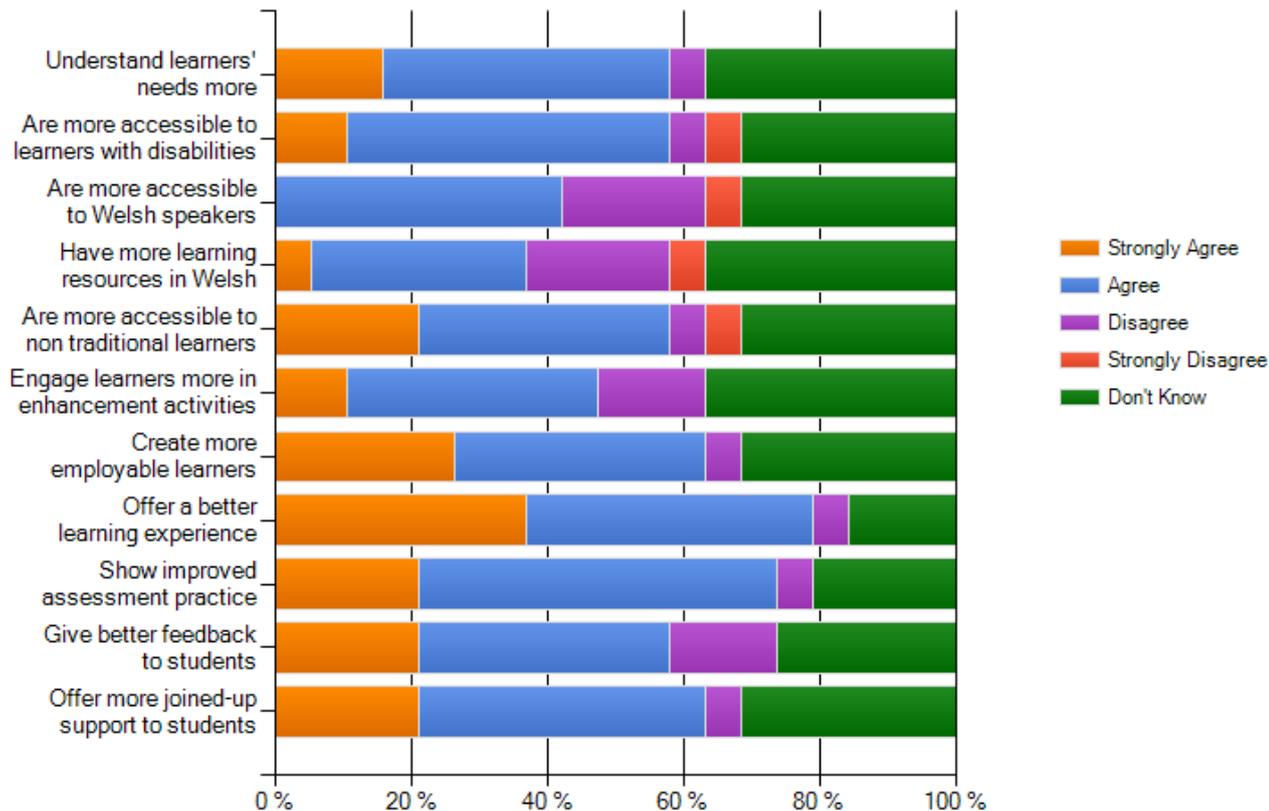
Please tell us about areas where technology is playing a role in enhancing collaboration with partners. Our use of technology to collaborate with partners is:



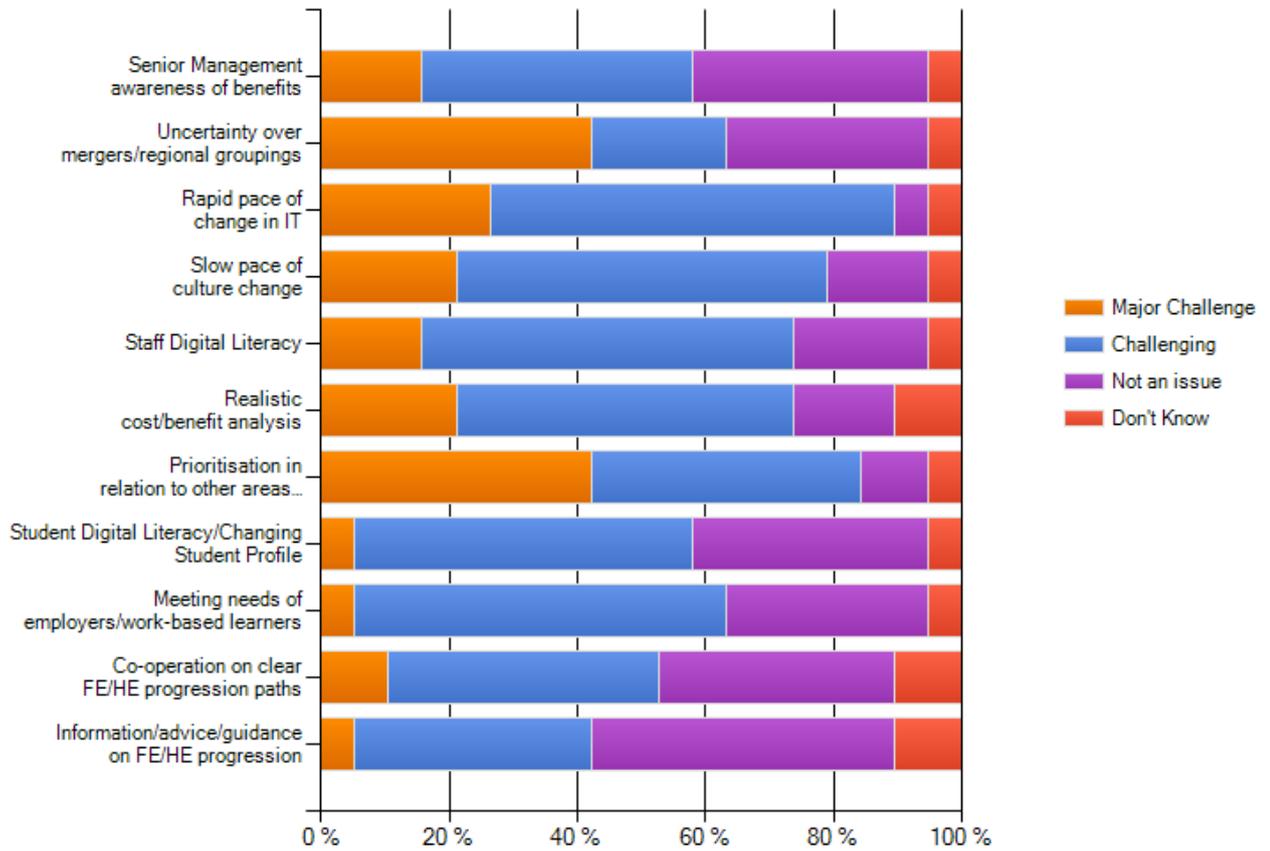
Please tell us about the types of technology-enhanced collaboration with partners



What differences have you noticed since 2008, when universities began to engage with the HEFCW ELTT strategy? We are looking at differences that may impact learners on HE courses at your college or learner progression to HE from your college. As a result of enhancing learning & teaching through technology Welsh universities:



What in your view are the main challenges in terms of taking ELTT forward to support a joined-up approach to lifelong learning across FE and HE in the next few years?



Thinking about the future, where do HE providers need to focus their efforts on enhancing learning through technology?

