

Cover Sheet for Proposals	JISC Capital Programme
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Name of Capital Programme:
(e-Learning; e-Infrastructure; Repositories and Preservation)

Name of Lead Institution:
University of Plymouth

Name of Proposed Project:
SHELL-FISH+

Name of Project Partners:
Falmouth Marine School, Cornwall College
Somerset College of Art and Technology

Full Contact Details for Primary Contact:

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Length of Project:
24 months

Project Start and End Dates:
September 2006 – August 2008

Total Funding Requested from JISC: £199,848

Funding Broken Down over Project Years:
Year 1 total: £112,715, funding requested from JISC = **£90,172**
Year 2 total: £137,095, funding requested from JISC = **£109,676**

Total Institutional Contributions: £49,962

Outline Project Description

SHELL-FISH was a DeL Tools Proof Of Concept project and a Pilot Code Development project which ran from October 2004 to March 2006. It has delivered a learning support system which enables teachers to mark electronically submitted coursework and give detailed feedback. Students receive courseworks with feedback and an Action Plan with links to supporting information.

This proposal aims to develop SHELL-FISH to draw together all instances of feedback to create an individualised skills profile for each learner. A methodology will be devised to enable learners to evidence their reflection on that profile, gain feedback on the process and be enabled to see their skills in a wider context. Teachers will be supported in their role by the creation of both materials and a virtual Community of Practice centred on the use of reflection by students. Additionally, it is proposed to investigate the applicability of deliverables from the FTDL (Phase 3) funded SPAT (Student Progression and Transfer) project as a means of enabling HE in FE learners see their skills profile in relation to progression to a bachelors degree and/or employability.

Team members Dr Neil Witt and Dr Anne McDermott have worked on the previous JISC-funded SHELL-FISH projects and both have a strong research interest in the use of reflection by students as an aid to learning and personal development.

I have read the Circular and associated Terms and Conditions of Grant at Appendix B (Tick Box)	YES ✓	NO
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1 INTRODUCTION

1.2 Rationale

SHELL-FISH was a DeL Tools Proof Of Concept project and a Pilot Code Development project which ran from October 2004 to March 2006. It has delivered a learning support system which enables teachers to mark electronically submitted coursework and give detailed feedback. Students receive coursework with feedback and an Action Plan with links to supporting information.

This proposal aims to develop SHELL-FISH to draw together all instances of feedback to create an individualised skills profile for each learner. A methodology, based on the team's experience of embedding reflection into undergraduate delivery and in a Faculty based Skills Summer School, will be devised to enable learners to evidence their reflection on that profile, gain feedback on the process and be enabled to see their skills in a wider context. Teachers will be supported in their role by the creation of both materials and a virtual Community of Practice centred on the use of reflection by students. Additionally, it is proposed to investigate the applicability of deliverables from the FTDL (Phase 3) funded SPAT (Student Progression and Transfer) project¹ as a means of enabling HE in FE learners see their skills profile in relation to progression to a bachelors degree and/or employability.

Team members Dr Neil Witt and Dr Anne McDermott have worked on the previous JISC-funded SHELL-FISH projects and both have a strong research interest in the use of reflection by students as an aid to learning and personal development.

1.3 Project Length

24 months: September 2006 – August 2008

1.4 Contribution to Program

SHELL-FISH+ would contribute to JISC's e-Learning Programme by:

- Creating an e-learning tool and methodology which can improve the quality of learning for students
- Exploring the use of a virtual Community of Practice in supporting teachers using an e-learning tool
- Create a resource which is suitable for use HE in FE as well as in HE and which can follow the learner progressing to HE or employment
- Providing the learner with an individual record of their electronically submitted work, feedback and reflection on that feedback.
- Building directly on the SHELL-FISH project funded by the JISC DeL Tools programme.

It also links to a number of the JISC priorities: assessment; e-PDP/e-Portfolio (as the learner's outputs can form part of a learner record); Collaboration and Discussion as the project will form a user community to share and discuss feedback issues.

The functionality provided will assist the JISC community in the creation of an e-Learning framework. It actively promotes links between schools, colleges and universities and supports learning across different organisations. SHELL-FISH has identified an effective approach to e-learning practice which is also an example of best practice in terms of pedagogy, technology and learning. This project will further develop SHELL-FISH into an innovative, open standards-based e-system to support learning and teaching and the project will enable the sharing of resources and practice across communities. SHELL-FISH+ will promote both good and innovative practice in the area of feedback to learners and help embed the promotion of and recording key skill development across each learner's education life course.

The SHELL-FISH+ project will map the FMS and associated data outputs to international open standards and specifications such as IMS LIP and Enterprise and UK LEAP. As the outputs will be open source and royalty free the project will enable institutions to exploit a technology that provides a critical teaching function.

2 PROJECT DESCRIPTION

2.1 Description

SHELL-FISH+ builds on and develops the functionality of SHELL-FISH to create an enhanced tool, applicable in both HE and HE in FE contexts, which will take the output from SHELL-FISH and create a

¹ <http://www.spat.ac.uk>

methodology to allow learners to develop a skills profile and reflect on it in relation to their progression to further study or employment.

SHELL-FISH moves away from the transmission and transactional model of feedback, and exploits a constructivist approach by providing opportunities to involve learners in the development and use of academic assessment criteria, integrating the learners' internal performance improvement processes with institutional curriculum-based performance management processes.

SHELL-FISH's functional relationships are shown in Figure 1.

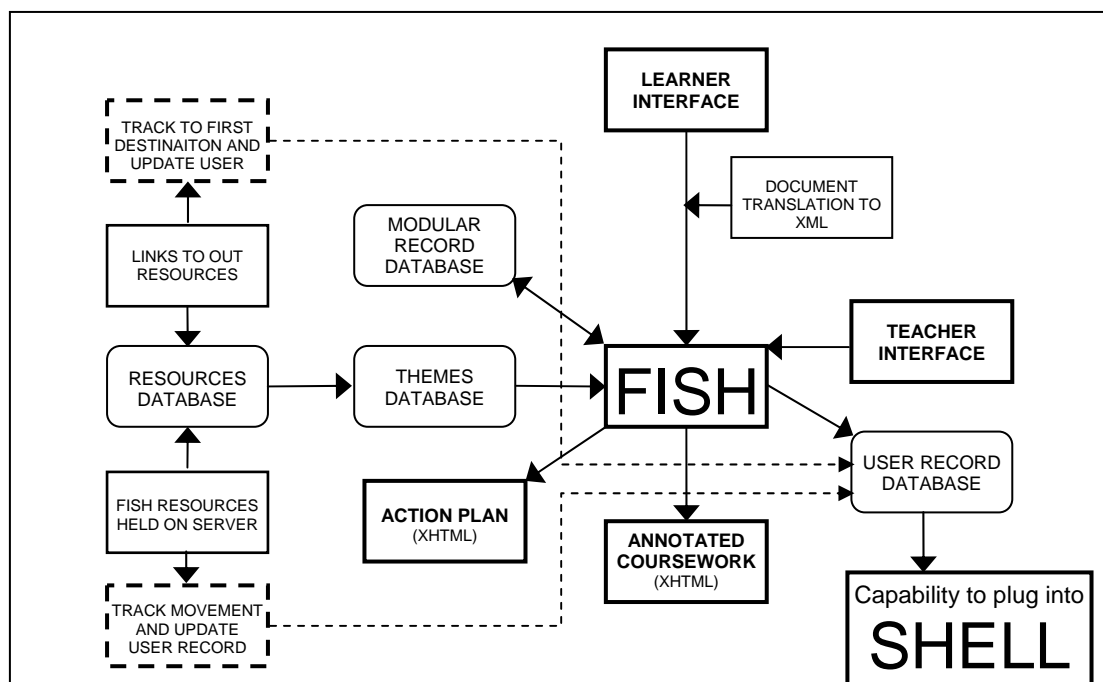


Figure 1. The SHELL-FISH Feedback Management System.

Depending on the software available to the user, learners can either upload their coursework as an XML file or as an RTF file which a document translator converts to XML/XHTML. It can then be assessed online using the FMS. At present SHELL-FISH enables a teacher to provide learners with feedback, either pre-existing or their own personalised comments, and an Action Plan linking to existing on-line learning resources. It also enables the accessing and updating of a learner's record of progress and previous feedback and the ability to monitor the impact of resource use on learners' academic performance

Previously annotated courseworks and Action Plans are available to SHELL-FISH users and can be referred to at any time by either the learner or the teacher.

2.1.2 The underpinning pedagogy of SHELL-FISH

The purposes of assessment and feedback automation include:

- enhancing students' learning through assessment and feedback;
- reducing the time that teachers² spend providing assessment and feedback.

SHELL-FISH sets out to move away from the transmission model of feedback, and to exploit the constructivist model described by Nicol and Macfarlane-Dick³, providing opportunities to involve students in the development and use of academic assessment criteria, integrating the students' internal performance improvement processes with institutional curriculum-based performance management processes. SHELL-FISH will enable an increasingly automated approach to assessment and feedback.

A number of difficulties typically restrict the learning opportunities presented to students by written feedback. These difficulties include:

² Teachers in higher, further and secondary education

³ Nicol, D. J. & Macfarlane-Dick, D. (2004) Rethinking formative assessment in HE: a theoretical model and seven principles of good practice. Paper Presented At Enhancing Student Learning Through Effective Formative Feedback, London, 7 June 2004.

- much feedback is hand written and difficult for students to read;
- handwriting comments is a tedious experience for teachers⁴;
- students often experience feedback comments as abrasive;
- responding to numerous similar fundamental mistakes often tests teachers' patience.

Automation via the SHELL-FISH FMS provides teachers with an extendable shared resource of standard feedback comments that:

- is grouped into themes such as spelling & grammar, discussion & analysis, and assignment-specific comments;
- contain links to existing on-line resources and interactive exercises such as exercises through which students learn punctuation rules;
- remain positive and helpful long after the teacher's sense of humour is exhausted;
- provide a permanent record of the student's feedback.

SHELL-FISH supports the learner's assessment through coursework and examinations:

- by accommodating detailed assessment criteria that can be applied for example by teaching assistants and students in peer assessment;
- by identifying trends in a single student's performance with respect to assessment criteria applied across a sequence of assessments;
- by measuring the impact of learning development interventions such as online subject specific resources;
- by measuring the performance of an entire student cohort across the learning outcomes for a programme of study in order to identify opportunities to improve teaching, or to measure the performance of innovative teaching;
- by rapidly completing statistical analysis of student cohort grades.

2.1.2 SHELL-FISH+

SHELL-FISH+ will create a skills profile for each individual student based on the Action Plan created in SHELL-FISH. Learners will be lead through a process of reflecting on their profile. In addition to carrying out eReflection, SHELL-FISH+ will assist learners in seeing their skills in a wider context and due the interoperable nature of the SHELL-FISH+ learners will be able to use the outputs if transition occurs to another institution.

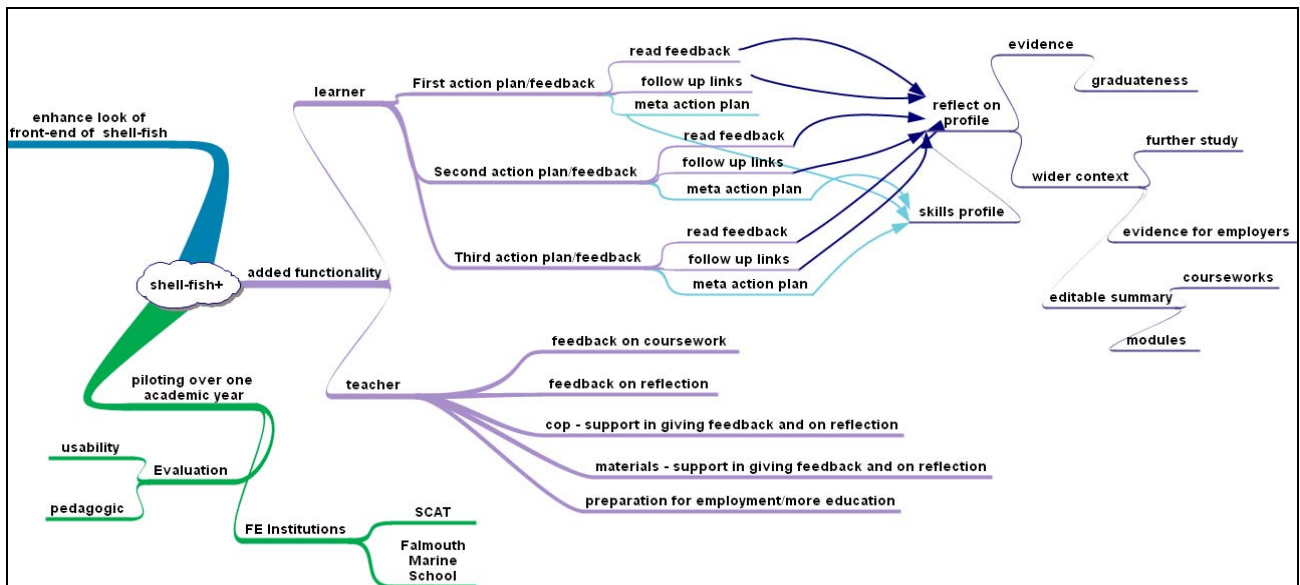


Figure 2. SHELL-FISH+ Feedback Management System.

There will be 3 elements to the work for SHELL-FISH+ and the anticipated functionality is shown in Figure 2. Firstly the look of the user interfaces for both teachers and learners will be improved to make it more visually appealing. A review of the functioning of the Administrative interface and technical improvements will be carried out.

⁴ Particularly where students persistently submit assignments containing errors that would have been removed had the student proof read their work.

Secondly, additional functionality in the form of e-Reflection will be integrated into the Learner Interface. At present learners can use their Action Plans for reference and to link to supporting information and exercises. It is intended to create a *meta Action Plan*, this would be a skills profile which pulls together feedback from a series of coursework. This will highlight areas in which the student is doing well and those where further work is needed. Linked to this will be a methodology for reflecting on the profile which will be structured to help the learner see it in a wider context and as part of a skills portfolio for use in further and/or higher education, and/or in finding employment. To support learners, teachers will be required to give feedback on learner's reflection; SHELL-FISH+ will also provide and develop supporting materials and a virtual Community of Practice (CoP) to support them in this role. The CoP will be hosted by the HELP CETL's knowledge management system, the *Knowledge Exchange*⁵, a system designed to support CoPs in a variety of settings including staff delivering HE in FE. It is also intended to investigate the applicability of deliverables from the FTDL (Phase 3) funded SPAT (Student Progression and Transfer) project¹ as a means of enabling learners undertaking HE in FE to see their skills profile in a wider context, that is in relation to progression to a bachelors degree and/or employability.

The third and final element of SHELL-FISH+ will be the piloting over one academic year at two different Further Education Institutions who are partner colleges of the University of Plymouth. Piloting will include both usability and a pedagogic evaluation of the tool.

Use Case Scenario

A learner receives feedback that, amongst other things, her coursework is not structured appropriately.

SHELL-FISH provides her with links to further information via an Action Plan. SHELL-FISH+ will lead her through a process of thinking about the comment received (What/descriptive), what she has learned from following the Action Plan links (So What/analytical) and what implications this might have for future work (Now What/Contextual). She will have been guided through each stage by questions designed to prompt thoughts about the wider application of what she has learned.

Her teacher will read what has been written and comment appropriately. Guidance and support for the teacher will come from the virtual Community of Practice and web-based materials

2.1.3 Benefits of Reflection for the Learner

Contrary to how it might seem, reflection is not about looking back (*post factum*) but about getting new insights and meanings from what is already known. Learners benefit by both deepening their knowledge and being able to show evidence of reflection to prospective employers and/or professional organisations who are increasingly coming to value this ability.

Educational authorities that have stressed the need for students to be able to reflect range from the Dearing Report to the QAA and is valued as part of a student's portfolio of learning. If included in the curriculum it also enables a tutor to identify learners who would benefit from additional support. Also, as Stewart⁶ notes, the practice of reflection encourages students to look beyond their academic learning and to value their past experience and skills. It can also provide evidence of critical thinking and personal development, qualities which are likely to be valued by future employers.

Traditionally, reflective thinking is a skill which has been developed by non-scientific professions such as nursing and teaching. Some of the common features of these professions have been identified: lack of incontrovertible theory⁷, the need to make quick decisions⁷, results more important than theoretical underpinning⁷ and close relationship between academic work and practical experience⁶

Reflection is less widely practised in what may be thought of as hard science disciplines where problems are dealt with by recourse to widely accepted and well defined methodologies⁸. However, when it comes to dealing with real life problems in professional life the same techniques will not always be sufficient⁹. By

⁵ <http://www.help-cetl.plymouth.ac.uk>

⁶ Stewart, M. (2001) Encouraging reflective practice, an introduction to a range of strategies. *JMU Learning Issues Press, Spring 2001*, 4-7.

⁷ Moon, J. A. (2001) *Reflection in Higher Education Learning*. LTSN Generic Centre.

http://www.ltsn.ac.uk/application.asp?section=generic&app=resources.asp&process=full_record&id=72 21/08/02

⁸ McDermott, A. (2002) Internet Delivery Mechanisms For The Continuing Professional Development Of The Marine Engineer. *Ph.D. Thesis*. University of Plymouth.

⁹ Schon, D. (1983) *The Reflective Practitioner: How professionals think in action*. Avebury, Ashgate Publishing Limited.

employing reflective techniques at an early stage of learning development it is possible to develop the techniques which help professionals deal with the indeterminacy and relational complexity of their work. In this sense it may be thought of as part of a toolkit to aid problem solving in later life. In this sense reflection is a both an *in situ* skill and a generic ability that can be applied in a variety of contexts.

Boud and Walker¹⁰ point out that one of the major difficulties for students attempting to reflect is that University is a place where assessment is based on what is known. Reflection, on the other hand, requires admitting not knowing, being willing to contest the basis of particular knowledge claims as well as being open to revealing gaps in knowledge. Barriers can be lack of motivation, lack of maturity, lack of skill⁷. Moon also feels that reflection is alien to most students and therefore mistrusted; other problems include a lack of time and lack of confidence in the tutor.

According to Race¹¹ reflection can be hard to learn, not least because some find it contrary to their nature. However, he argues the asking of appropriate questions set in the past, present and future can be of help. For example: What worked? Why do you now think it worked? What will you do as a result of this? This tactic fits well with the suggestions of Reed and Koliba¹² who suggest the basic strategy of asking descriptive, interpretive and contextual questions which are summed up as: What? So what? Now what?. As Figure 3 shows, this simple taxonomy encapsulates the past, present and future themes and moves the quality of reflection from shallow to deep.

LEVEL 1	LEVEL 2	LEVEL 3
WHAT?	So WHAT?	NOW WHAT?
<i>descriptive</i>	<i>interpretive</i>	<i>contextual</i>
the facts	analysis, lessons learned, others' views	application, goals for future

Figure 3 Simple reflection model taking elements from Reed and Koliba (1995)¹².

Each area of enquiry can be expanded by the addition of questions designed to get at specific issues scripts for this are not difficult to find but often pertain to those questions which have embraced reflection.

2.2 Deliverables

SHELL-FISH+ will deliver:

1. Code for the SHELL-FISH+ tool which incorporates guided reflection on the feedback generated by SHELL-FISH.
2. Two pilots involving students undertaking HE in FE. SHELL-FISH+ will be piloted at partner colleges with foundation degree students, one group will be undertaking work based learning.
3. Guidance for teachers on lessons learned in the use and promotion of eReflection.
4. Pedagogic and usability evaluations will be carried out.
5. An evaluation report on the SHELL-FISH+ project.
6. A report will be produced which will analyse the challenges and implications of electronic submission, marking and reflection in the HE in FE setting and this will be related to previous use within HE. This will provide an example of cross institutional delivery of eLearning which can be generalised to lifelong learning.
7. Use cases and case studies will be developed for wider dissemination and to be deposited in JORUM.

2.3 Performance Indicators

It is primarily the evaluation of the tool which will provide an assessment of performance. As SHELL-FISH+ will be used as part of the assessment for two groups of foundation degree students, levels of usage are not helpful. More revealing will be levels of satisfaction with the tool and the desire to use it in the future.

¹⁰ Boud, D. and Walker, D. (1998) Promoting Reflection in Professional Courses: the challenge of context. *Studies in Higher Education*, 23, 2, 191-206.

¹¹ Race, P. (2002) *Evidencing Reflection – putting the 'w' into reflection*. <http://www.escalate.ac.uk/exchange/Reflection>. 18/06/02.

¹² Reed, J. and Koliba, C. (1995) *Facilitating Reflection. A manual for leaders and educators*. http://www.uvm.edu/~dewey/reflection_manual. 10/06/2002.

Indicators of success will be

- The timely completion of each stage of code development listed in section 2.4
- The completion of piloting by 2 groups of foundation students over one academic year.
- The development and carrying out of pedagogic and usability evaluations
- The production of a report as detailed in section 2.2 number 4.
- The writing of at least 2 use-cases and case studies.

2.4 Methodology

SHELL-FISH has been developed to the Beta code stage. SHELL-FISH+ proposes to use a development cycle of:

- Stage 1 Review 1. A review of learner and teacher interfaces will take place and recommendations will be fed to the development team. The aim is to enhance the visual appeal of the tool.
- Stage 2 Review 2. A review of the administrative interface and functionality.
- Stage 3 Setup CoP. The HELP CETL developed the *UPC Knowledge Exchange*. This Knowledge Management System supports CoPs and provides a set of features designed to support community development and members' involvement and it enables the sharing of ideas, proposals, issues and good practice across subject disciplines and networks. This will be the template which we will use for the creation of a CoP based on supporting users of SHELL-FISH+.
- Stage 4 Develop Pedagogic methodology Based on the methodology created for the SHELL-FISH 2 project
- Stage 5 Development of Beta code to v1.4. To include revised user interfaces and administrative interface.
- Stage 6 Interface evaluation. An interim pedagogic review, including input from CoP, will take place alongside a review of SHELL-FISH functionality and the results fed back to the development team.
- Stage 7 Development of eReflection methodology template for reflection, including input from CoP.
- Stage 8 Development of code to v1.5. This will take allow SHELL-FISH+ to incorporate eReflection issues.
- Stage 9 Expert walkthrough. To identify any usability issues.
- Stage 10 Development of code to v1.6. To incorporate issues raised during the Expert walkthrough.
- Stage 11 Pilot 1. A pilot group of 20 learners (Foundation degree students via the HELP CETL) will use SHELL-FISH+ to submit reflective reports. This will be reviewed by the teacher (Falmouth Marine School) using SHELL-FISH+.
- Stage 12 Pilot 2. A pilot group of 20 learners (Foundation degree students via the HELP CETL) will use SHELL-FISH+ to submit reflective reports. This will be reviewed by the teacher (Somerset College of Art and Design) using SHELL-FISH+.
- Stage 13 Usability and Pedagogic Evaluations. The finding and outputs from the Review stages will assist in running a Pedagogic Evaluation. This evaluation will be undertaken to identify SHELL-FISH+'s pedagogic value, effectiveness (impact) and future development requirements/priorities.
- Stage 14 Development of Pilot Code based on Pedagogic Evolution. This multi staged iterative process will result in the final stage being devoted to developing the Pilot Code. The final development of the Pilot Code will take into account the outputs from all Pilots, reviews and the pedagogic evaluation.

2.5 Project Plan

The SHELL-FISH+ project is divided into 6 work packages (WP).

- WP1 Project Management
- WP2 Development of Code
- WP3 Pilots
- WP4 Reviews
- WP5 Pedagogic and Usability Evaluation
- WP6 Development of Production Code

2.6 Timetable

WP	Activity	Month																							
		S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A
WP1	Management																								
	PMG Meeting																								
	Reporting																								
WP2	Code Development																								
	Code Development to v1.4																								
	Code Development to v1.5																								
	Code Development to v1.6																								
WP3	Pilots																								
	Setup CoP																								
	Develop eReflection methodology																								
	Pilot 1																								
WP4	Reviews																								
	Review 1																								
	Review 2																								
WP5	Pedagogic Evaluation																								
	Agree Pedagogic methodology																								
	Interface evaluation																								
	Expert walkthrough																								
	Usability and Pedagogic evaluations																								
WP6	Production Code																								
	Production Code Development																								

2.7 Project Management

2.7.1 WP1 Project Management

This WP will be led by the Project Coordinator.

- The project consists of three sub-areas: (1) Code Development; (2) Piloting/Reviewing; (3) Pedagogic Evaluation. Figure 4 illustrates the management structure.
- Project Academic Directors (PADs) will be assigned to lead each sub-area, the Project Coordinator will interface between the PADs.
- A Project Management Group (PMG) consisting of the PADs and project staff will be responsible for overseeing strategy, operation and monitoring of Shell-fish. The PMG will meet at least every eight weeks and will be chaired by the Dean of the University of Plymouth Colleges (UPC) faculty. The proposed regional video conferencing infrastructure to be delivered by the HELP CETL will be used when applicable.

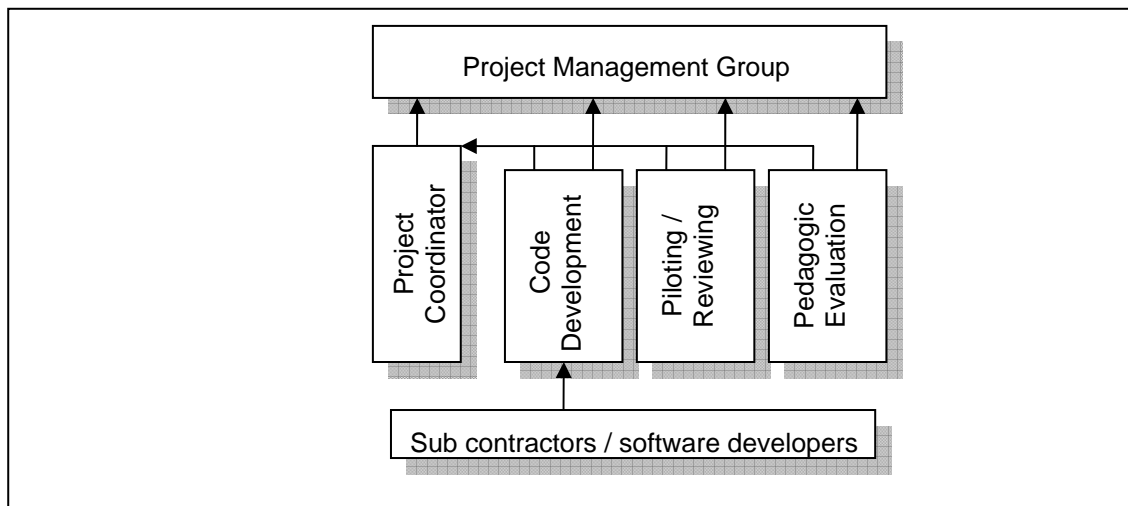


Figure 4. Project Management Structure.

2.7.2 WP2 Development of Code

This WP will be led by the Code Development PAD.

- This WP is responsible for developing the code from its current version through to the final code stage.
- The look of the user interfaces for both teachers and learners will be improved to make it more visually appealing. A review of the functioning of the Administrative interface and technical improvements will be carried out.
- WP2 will ensure that all code is open source, following the existing GNU GPL; upload all versions and associated documentation to Source Forge and further develop the existing RTF conversion and XML upload facilities.

2.7.3 WP3 Pilots

This WP will be led by the Piloting/Reviewing Issues PAD.

- A Learner User Group will be established.
- A Teacher User Group will be established.
- An user community will be established using the HELP CETL *Knowledge Exchange*
- Input relating to the FMS user interface will be obtained from teachers.
- The revised FMS user interfaces will be agreed.
- Input from teachers on format of reflective process will be obtained.
- The issues/resource upload facility will be further developed to allow each teacher involved in a pilot to upload their own feedback issues and links to associated resources.
- The format of reflective process will be agreed.
- Shell-fish will be piloted with learners.
- Shell-fish will be piloted with teachers.
- This WP will produce case studies and lessons learned from implementation.

2.7.4 WP4 Reviews

This WP will be led by the Piloting/Reviewing PAD

- The review process will take place throughout the project
- The expert walkthrough and pilot groups will be used to identify issues.
- A learner focus group will take place after each pilot to obtain feedback on the features and usability of Shell-fish from the learner's perspective.
- A teacher focus group (consisting of the academic and support staff involved in the pilot) will take place after each pilot to obtain feedback on the features and usability of Shell-fish from the staff perspective.
- A feature list / change list will be created after each review to be fed back to the development team.

2.7.5 WP5 Pedagogic Evaluation

This WP will be led by the Pedagogic Evaluation PAD.

- This WP will build on the format developed in association with the JISC pedagogic consultant during SHELL-FISH 2. Pedagogic value will be evaluated by teachers, learners and any other stake holders in relation to, amongst other issues, Shell-fish's role in achieving learning outcomes.

2.8 Analysis of Risks

This project is primarily an innovative blending of existing but discrete technological applications to create a pedagogically driven framework for student feedback and reflection. For this reason, and because it is a piloting and developing an already tested tool it is expected that the risks it will face will be minimal. The core of the project team has previously worked with each other successfully and all staff are in place to commence work on the project once funding is secured. Frequent user testing and evaluation will be used to ensure that the project does not deviate from its intended outcomes.

2.9 Dissemination

Project outputs will be made available, free at the point of use, to the UK HE, FE and school communities in perpetuity, and they will be disseminated widely by the project in partnership with JISC, and through other e-learning network organisations. The project web site (www.shell-fish.org.uk) will host a demonstration version of SHELL-FISH, and project documentation and contact details for project staff. A download of SHELL-FISH and supporting documentation will be obtainable from the Sourceforge web site (<http://sourceforge.net/projects/shell-fish/>).

The SHELL-FISH tool is being presented at an international elearning conference and within the University of Plymouth, as during SHELL-FISH 1 and 2, the tool will be promoted, for example at the annual Teaching and Learning Conference, where there was also a hands on demonstration. We will continue with these dissemination strategies as well as submitting at least one paper to an appropriate academic journal.

The use of SHELL-FISH+ will be promulgated the 18 partner colleges within UPC via the UPC Subject Forums and to relevant HELP CETL communities such as Blended Learning. HELP CETL will be used as a dissemination partner as it has relationships with external agencies such Foundation Degree Forward and other CETLS.

2.10 Evaluation

Piloting in two different but equally authentic contexts will allow the evaluation of the usability and pedagogic value of SHELL-FISH+. To achieve this we will utilise a variety of qualitative and quantitative measures. Stakeholder groups will be identified, relevant questions formulated and, from this, appropriate evaluation tools will be selected. In keeping with the principles of triangulation, every effort will be made to use a variety of measures for each evaluation question. The results will be used to refine the final development of the software code.

2.11 Sustainability

It is envisaged that SHELL-FISH+ will be used in an HE in FE context by the partner colleges after the piloting process is complete. An embedding strategy will be developed after the piloting process and presented to both UPC and the University. If applicable further funding may be sought from the forthcoming User Environments call to integrate SHELL-FISH+ with other tools

2.12 Intellectual Property

Project outputs will be made available, free at the point of use, to the UK HE, FE and school communities in perpetuity, and they will be disseminated widely by the project in partnership with JISC, and through other e-learning network organisations. The project team have experience of working with the within the JISC quality plan framework

Software components of the deliverables will be released under appropriate open source licences to ensure that they be freely shared with organisations and communities with which JISC has close working arrangements. All software that is developed will be made available free of charge to the education community in perpetuity and all code developed will be made available through open source models. Outputs will be licensed under an Open Source agreement that promotes their reuse.

2.13 The current maturity of the tool and evidence of meeting the funding criteria

SHELL-FISH has been developed to the Beta code stage and the project team has undertaken a series of focus groups and pilots to define and redefine the functionality of the system. It has been released as open source code (consisting of PHP5.0, MySQL, fully documented code and installation instructions for a range of platforms) and is available from Source Forge (<http://sourceforge.net/projects/shell-fish/> or <http://www.shell-fish.org.uk>) under the terms of the GNU General Public License (GPL). Shell-fish incorporates UK LEAP and IMS LIP standards and fits in with the JISC e-Learning priorities of Assessment, PDP/e-Portfolio and Collaboration & Discussion.

2.14 Institutional Value

The University operates one of the largest and longest established *HE in FE* partnerships in the country. It brings together the strengths of an increasingly research-informed University with the local and vocational focus provided by FE colleges across the South West. The Partnership currently has some 6,000 students undertaking 230 HE programmes at 18 college sites across the South West region. Over the last fifteen years, it has developed a genuinely collaborative approach to ensuring high quality learning for all HE students.

The University has introduced a unique organizational structure for its partnership, built around a new Faculty, **University of Plymouth Colleges (UPC)**. Formed in 2003, it has quickly established policies, a management structure and quality processes that recognise the importance of shared responsibility and open relationships between the Partners. The SHELL-FISH+ project will assist UPC in providing learners with access to the best possible learning experience. There is a requirement of sharing best practice (facilitated by the Community of Practice) and making learning materials available to students in a manner which places students' needs at the heart of their learning experience in both the college and work based learning environments. The SHELL-FISH+ allows learners to transfer relevant materials between institutions that could come part of a later portfolio. The lessons learned in delivering and using a tool such as The SHELL-FISH+ across a network of colleges would be easily transferable to other partnerships within the He in FE sector.

3 BUDGET

	DI staff cost	Travel	Other DI cost	DA staff cost	Estate cost	Indirect costs
Year 1 Project management				10568.50	4139.00	
Year 1 Code Development			37012.50			
Year 1 Piloting (setup and methodology development)	7532.83		8000.00			
Year 1 Review	7532.83					
Year 1 Pedagogic evaluation	7532.83					
Year 1 Travel & Subsistence		3750.00				
Year 1 total: £112715	22598.50	3750.00	45012.50	10568.50	4139.00	26645.50
Year 2 Project management				10568.50	4139.00	
Year 2 Code Development			14393.75			
Year 2 Piloting			55000.00			
Year 2 Pedagogic evaluation	22598.50					
Year 2 Travel & Subsistence		3750.00				
Year 2 total: £137095	22598.50	3750.00	69393.75	10568.50	4139.00	26645.50
Total costs: £249,810	45197	7500	114406	21137	8278	53291

Sponsor: JISC	% fEC = 80%			
	UoP costs	Total	Sponsor's contribution	Shortfall
Directly incurred costs				
Total staff costs	45,197	45,197	36,158	9,039
Travel	7,500	7,500	6,000	1,500
Other directly incurred costs	114,406	114,406	91,525	22,881
Total DI costs	167,103	167,103	133,683	33,421
Directly allocated costs				
Total staff costs	21,137	21,137	16,910	4,227
Estate costs	8,278	8,278	6,623	1,656
Total DA costs	29,415	29,415	23,532	5,883
Indirect costs				
Total indirect costs	53,291	53,291	42,633	10,658
		Total fEC	Sponsor's contribution	Shortfall
Total fEC	249,810	249,810	199,848	49,962

3.1 Institutional contributions

The University of Plymouth will be providing relevant IT equipment, office space and associated infrastructure. Support and assistance will be provided by the Department for Education Development and Learning Technology.

4 KEY PERSONNEL

Dr Neil Witt, Principal Lecturer – School of Earth Ocean and Environmental Sciences and Technical Director of HELP CETL

Dr Anne McDermott, Research Fellow – School of Earth Ocean and Environmental Sciences

Mr Mark Stone, Principal Lecturer and Director of the HELP CETL

Dr Glen Crust Learning Development Adviser and Careers Adviser, University of Plymouth.

All the project team have successfully worked together on both previous SHELL-FISH projects and two of the team have the roles of Director (Stone) and Technical Director (Witt) in the HELP CETL – the projects collaborating partner. Staff will be seconded (50% for one academic year) from the two partners, Falmouth Marine School Cornwall College and Somerset College of Art and Technology.

APPENDIX A - Curriculum Vitae

NEIL WITT, BSc(Hons), PhD, FRIN, ILTM

Role in SHELL-FISH: Project Academic Director and Project Coordinator

Present Employment

1995-present Senior/Principal Lecturer in Marine Communications and Telematics, School of Earth, Ocean and Environmental Sciences, University of Plymouth.

2001-present Director, ICO³ Ltd. A University of Plymouth spin-out company and providing Internet solutions for SMEs, microcompanies and the academic sector (www.ico3.com).

Teaching Activity

Current teaching and learning activities span all three years of the undergraduate and taught MSc programmes, giving a teaching load of approximately 14 hours per week. Also Director of the Faculty of Science Summer School.

Research Details

Coordinator of Communications and Learning Technologies Research Group (<http://www.colt.org.uk>)

National TechDis Associate funded through JISC, advising HE and FE on Web accessibility issues.

Technical Director for the Higher Education Learning Partnerships (HELP) CETL.

Member Advisory Board – SPACE Project.

Project Evaluation – Minerva Project

Research funding and project management - 35 funded projects, total value = **£797,267**

(8 European funded projects value €136,675 (£86,105); 14 Externally funded projects, value £582,444; 12 Internally (UoP) funded projects, value £141,042).

Selected examples

- Witt, N.A.J., Crust, G., McDermott, A.P. and Croot, D. **SHELL-FISH: an online feedback management system for electronically submitted coursework**. Awarded by the Joint Information Services Committee (JISC) E-learning Tools for Learners and Teachers Distributed E-learning Programme, **£98,053**, 2004.
- Witt, N.A.J. and McDermott, A.P. **University of Plymouth Teaching Fellowship, £5000**, 2003.
- Witt, N.A.J. **TechDis Associate award** Joint Information Services Committee (JISC) via the Technology and Disabilities Information Service (TechDis), **£2000 p.a.**, 2003.
- Jervis, J., Belt, S., Witt, N.A.J. and external collaborators **On-line assessment and feedback (OLAAF)** FDTL £249,000 (University of Plymouth, **£31,000**), 2002.
- Witt, N.A.J. **Evaluation of software tools to produce SENDA compliance**, Joint Information Services Committee (JISC) through the Technology and Disabilities Information Service (TechDis), **£5000**, 2002.
- Witt, N.A.J. and Stone, M. "**TAMAR 2 – Targeted Modules for the Marine Sector**", European funded project sub-contracted from WEGEMT, **€48,000**, 2001.
- Stone, M., Jelling, A., and Witt, N.A.J. "**SPAT - Promoting Effective Student Transfer and Progression through Partnership**", HEFCE, **£239,000**, 2000.

Selected Publications

- Witt, N.A.J. and Sloan D., (2004), Access as the norm, not an add on Times Higher Educational Supplement, ICT in Education, 20 April 2004, pp 14-15.
- Witt, N.A.J. and McDermott, A.P. (2004) Web site accessibility- what logo will we use today? British Journal of Educational Technology. 35,1 pp 45-56.
- Witt, N.A.J., Phipps, L., and McDermott, A. (2003) Web Accessibility, Proceedings of 4th ILTHE Conference, Warwick, UK, 2-4 July.
- McDermott, A.P., Witt, N.A.J. and Chudley, J. (2003) Continuing Professional Development needs for the Marine Industry. Proceedings of 6th UICEE Annual Conference on Engineering Education, Cairns, Australia, 10 - 14 February, pp301-304.
- Witt, N.A.J. and McDermott, A.P. (2002) Achieving SENDA compliance for an academic website: An art or a science? *Alt J: Special Edition 'Access All Areas*. University of Wales Press, pp42-49.

ANNE MCDERMOTT, BSc(Hons), PhD, RMN (Qualified)

Role in *SHELL-FISH*: Project Academic Director /Research Fellow

Sample Research Funding Awarded

- Witt, N.A.J., Crust, G., McDermott, A.P. and Croot, D. **SHELL-FISH 2: beta code development and piloting** Awarded by the Joint Information Services Committee (JISC) E-learning Tools for Learners and Teachers Distributed E-learning Programme, **£59,000** 2005.
- Witt, N.A.J., Crust, G., McDermott, A.P. and Croot, D. **SHELL-FISH: an online feedback management system for electronically submitted coursework.** Awarded by the Joint Information Services Committee (JISC) E-learning Tools for Learners and Teachers Distributed E-learning Programme, **£98,053** 2004.

Sample of Professional Experience

Member of the Communications and Learning Technologies Research Group ([http:// www.colt.org.uk](http://www.colt.org.uk))

Research Fellow – 2002 - present

- *SHELL-FISH 2*: an online feedback management system for electronically submitted coursework. (JISC funded)
- *SHELL-FISH*: an online feedback management system for electronically submitted coursework. (JISC funded)
- *LearnerAid*: An investigation into student needs and staff perceptions of the necessary skills of learning. (University of Plymouth Teaching Fellowship Award funded project).
- *MINERVA - Promotion of Open and Distance Learning - Information and Communication Technologies in the field of education.* (EU funded project).
- *Auditing of online materials to achieve compliance with SENDA* (University of Plymouth Learning and Teaching Fund project).
- *Appraisal of accessibility software tools* (University of Plymouth Learning and Teaching Fund project).
- *Using Outlook shared folders for student reflection (e-reflection)* (University of Plymouth Learning and Teaching Fund project).
- *An illustrative guide to demonstrate the concepts and processes in bringing web-based materials in line with SENDA legislation,* (GEES funded project).
- *Student Progression and Transfer Project (SPAT)* (HEFCE funded project under the FDTL initiative).

Part-Time Lecturer Short-term contract for University of Plymouth Faculty of Science Summer School.

Research Assistant/Project Worker - 1998-2002

Selected Publications

- McDermott, A. and Witt, N. (2006) *Experiences of developing and evaluating SHELL-FISH, a web-based marking and feedback tool.* Paper to be delivered at Australian Computers in Education Conference 2006, Cairns, Australia. 2-4 October.
- McDermott, A. P., Stone, M.A.J., Palmer, J. and Williams, R. (2004) *An investigation into the management of Information and Communications Technology supported learning in Higher Education.* Proceedings of the Education Participation Globalisation Conference: Key Contexts for Education and Democracy in Globalising Societies, Prague, Cz, 22-25 May. ISBN 80-86742-05-9
- Witt, N.A.J. and McDermott, A.P. (2004) *Web site accessibility - what logo will we use today?* British Journal of Educational Technology. 35,1, pp 45-56.
- McDermott, A.P. (2003) *The management of ICT based or supported learning in higher education.* MINERVA, EU Project number 100564-CP-1-2002-1-CZ-MINERVA-M, Doc ref D3.6A, June 2003.
- McDermott, A.P., Witt, N.A.J. and Chudley, J. (2002) *The marine engineer, continuing professional development and Internet based learning: the prospects for integration.* The Proceedings of The Institute of Marine Engineering, Science and Technology, Part B Journal of Marine Design and Operations, No B.1, pp31-38.

MARK A. H. STONE ~ Curriculum Vitae ~ e-mail: m2stone@plymouth.ac.uk

Employment

- 03/01 - date Non Executive Director of ICO³ Limited. A University of Plymouth spin-out company providing web technology to businesses and the academic community; specialists in accessible web technology.
- 12/04 - date Director, Higher education Learning Partnerships [HELP] Centre for Excellence in Teaching & Learning [CETL]
- 11/98 - date University Teaching Fellow & Principal Lecturer, University of Plymouth Business School.
- 03/01 - 02/04 Project Director, HEFCE FDTL 3: Student Progression And Transfer [SPAT]
- 09/92 - 11/98 Senior Lecturer, Seale-Hayne Faculty, University of Plymouth.
- 1992 - Member of the Chartered Institute of Personnel & Development (CIPD) by examination

Sample Research Awards, Grants & Contracts

- 2005 Stone M., Burkill S., Tunbridge I. & Witt N., et al. Higher Education Learning Partnerships [HELP] HEFCE Centre for Excellence in Teaching & Learning [CETL], £4,500,000. + 2006 Enhanced Capital Programme £350,000.
- Soffe R. & Stone M., Postgraduate leadership education research [Leading Across Generations within UK Military and Public Services], UK Defence Academy - Defence Leadership Centre, £15,000.
- 2002 EU Socrates, Minerva Project: Managerial Challenges if IT Based Learning, University of Plymouth, Czech University of Agriculture, and the universities of Thessalonica and Kosice, €116,000
- Stone M., Guyer C., Jellings A. and Witt N., Student Transfer and Progression, HEFCE Fund for the Development of Teaching and Learning (FDTL 3), £250,000. + 2004 Transferability Funding, £25,000.

Sample Publications

- 2005 Stone M., McDermott A., Palmer J. & Williams R., Guiding the Management of Information and Communications Technology supported learning in Higher Education: Results, insights and resources from an EU funded Minerva Project, Proceedings of the 3rd International Conference on Open and Distance Learning: 'Applications of Pedagogy and Technology' - Hellenic Network of Open & Distance Education, Hellenic Open University, Patra, Greece.
- Stone M., McDermott A., Palmer J. & Williams R., Results and Artefacts of an EU funded Minerva Project entitled 'Guiding the Management of ICT supported learning in Higher Education', Proceedings of the 4th European Conference on e-learning - Royal Netherlands Academy of Arts & Sciences, Amsterdam, Netherlands [refereed paper].
 - Stone M. & Soffe R., Generational Leadership; implications for developing and guiding future leaders. *Conference Proceedings*, NICS Command 2005: Preparing and Training Future Captains, University of Plymouth, 14-16 September.
 - Stone, M. Managing People. In Soffe, R. (Ed) *The Countryside Notebook*. Blackwell Science, Oxford. Chapter 21.
- 2004 Stone, M., McDermott, A., Palmer, J., and Williams, R., The management of ICT based or supported learning in Higher Education: 12 x Guides to the stages of embedding & 6 x Role specific guides for staff.
- 2003 Carter, C. & Stone, M. et al, Student Progression and Transfer, Universities of Plymouth & Ulster, ISBN: 1-84102-113-X.

Sample Conference & Event Papers

- 2006 Stone M., [Keynote paper]: Higher Education Learning Partnerships CETL Pedagogic Research & Development linked to the HLST Context, HEA HLST - Pedagogic Research and Development Day, University College Worcester, 28th April.
- 2005 Stone M. & Soffe R., Generational Leadership: implications for developing and guiding future leaders. NICS Command 2005: Preparing and Training Future Captains, University of Plymouth, 14-16 September.
- Stone M., The HELP CETL an FDF Perspective, FDF National Conference - Foundation Degrees: Working in Practice, Foundation Degree Forward, University of Nottingham 12-13 July.
- 2004 Stone M., Soffe R. & Col. Watters B. Leading Across Generations within UK Military and Public Services. 3rd International Studying Leadership Workshop, Centre for Leadership Studies, University of Exeter, December 15-16.
- Soffe, R. & Stone, M. Leadership education and development: is ambiguity OK for students and business? The 11th EDINEB International Conference: The Changing Face of Globalization: It's Impact on Educating Future Leaders, Maastricht, the Netherlands, June 16-18.
- 2003 Stone, M. & Gadd, D. The SPAT Project including how to use and customise SPAT materials for new users and how to disseminate and improve use of existing SPAT materials. Peer Assisted Learning and Progressing & Transferring Students Conference, Bournemouth University, 19th November.
- Stone, M. The Experience of Running an FDTL Project. FDTL 5 Briefing for Hospitality, Leisure, Sport & Tourism, Birmingham, 3rd October.
 - Stone, M., Student Progression and Transfer: the SPAT Project as a SoTL case study, 3rd Annual International Conference on the Scholarship of Teaching and Learning (SoTL), City University, London, June 19-20.

2004-5 Associate reviewer for Electronic Markets, Routledge [Taylor & Francis Group], ISSN: 1019-6781 (Paper) 1422-8890 (Online) www.electronicmarkets.org

GLEN CRUST BSc PhD Dip Couns. ILTM
Role in *SHELL-FISH*: Project Academic Director

Substantive post: Learning Development Adviser and Careers Adviser, University of Plymouth.

Current Responsibilities directly associated with this proposal:

Developed computer-aided assessment and feedback for undergraduate geography programme at university of Plymouth

- Ten years experience of developing learning in HE and FE students and teaching staff through individual tutorials and counselling, through facilitating and directing work with student groups, and through curriculum development. Detailed practical understanding of a broad range of students' experience of learning.
- LTSN workshop facilitation: automating assessment and feedback
- Substantial teaching and assessment experience in HE (Open University, University of Plymouth, College of St Mark & St John), public and private sector FE, and UK and overseas secondary and teacher education.
- Ten years experience of developing students' and graduates' career management through individual interviews and counselling, through facilitating and directing work with student groups, and through curriculum development. Detailed practical understanding of the role of self-regulated lifelong learning in graduate professional development.
- Two years teaching in a rural West African secondary school. Excellent practical understandings around issues that influence the sustainability of education development, and the benefits of developing technologies that are, in users' experience, appropriate.



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16 June 2006

Joint Information Systems Committee
JISC Executive
Northavon House
Coldharbour Lane
Bristol
BS16 1QD

Dear Sirs

This letter confirms the University of Plymouth's support for the 'SHELL-FISH+' bid under the JISC Capital Programme. The project will be central to the e-learning strategy of the university and is related to one of the key priorities in the institution's learning and teaching strategy 2006-7.

'To ensure that the modes of learning, teaching and assessment are effective in meeting learning outcomes and use new technology appropriately' (5.3)

The project will also be nested in the Higher Education Learning Partnerships (HELP) CETL. We also welcome the opportunity to further enrich our relationships with the Falmouth Marine School, Cornwall College and Somerset College of Art and Technology.

The University is therefore fully supportive of the project and will ensure that the timelines are appropriate and that the deliverables are assured.

Yours faithfully

Professor Peter D. John
Deputy Vice-Chancellor (Academic)
BA, MA, MSc, PhD, FRSA

VP – Planning and HE
Direct line: 01209 616130



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16 June 2006

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TO WHOM IT MAY CONCERN

Dear Sir or Madam

JISC Capital Programme: e-Learning; e-Infrastructure; Repositories and Preservation

I am pleased to be able to fully support the SHELL-FISH+ bid for the above programme.

This college will be happy to take part in piloting for one academic year as SHELL-FISH+ will potentially benefit our students by developing their learning and critical thinking skills.

Yours faithfully

Ken Woodcock (Dr)
Vice Principal – Planning
and Higher Education

A handwritten signature in black ink that reads 'Ken Woodcock'.

Head Office
Cornwall College
Tregonissey Road
St Austell
Cornwall
PL25 4DJ

CEO and Principal:
John Latham
Corporation Board Secretary:
Janet Cormack



15 June 2006

Dear Sir or Madam

JISC Capital Programme: e-Learning; e-Infrastructure; Repositories and Preservation

I am pleased to be able to fully support the SHELL-FISH+ bid for the above programme.

This college will be happy to take part in piloting for one academic year as SHELL-FISH+ will potentially benefit our students by developing their learning and critical thinking skills.

Yours faithfully

Jo Matthews
Deputy Principal and
Dean of Higher Education