E-embedding E-nhancing E-valuating - Students’ perspective on the use of e learning to develop study/information literacy skills

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Abstract: Developing competent study/information literacy skills is a key component in the concept of supporting student learning in Higher Education and generic modules to support this development are often offered alongside academic modules in universities. However, for mature part-time students who may have considerable professional and life experience, traditional study/information literacy skills programmes designed for 18 year-old school leavers may not be appropriate. Furthermore, for students on vocational programmes the link between academic study and practical application in the workplace may need, at least initially, to be made explicit.

This study centres on the experiences of students on a Foundation Degree in Professional Development (FDA PD) designed as continuing professional development for support staff in schools studying part time at a university in the North West of England. This programme has developed an embedded e-learning approach which locates the development of academic skills within the curriculum contextualised within subject modules with explicit links to practice. The university’s discrete study skills programme, Springboard, has been adapted for use on the degree. Students are directed to activities to support their taught sessions using on-line material on the university VLE (WebCT) designed to link academic theory with practice (Carr, 1987). This also introduces students to the concept of e learning and by means of a skills audit allows identification of need at an early stage in their academic career. This type of e delivery has been shown to improve learning and deliver enhanced learning outcomes for students (Oliver, 2001). There is also the opportunity for self-regulated learning (Perry et al, 2006), for the student to move from dependence to independence (Bach et al, 2007) for participation to develop self-confidence, relieve anxiety and self-doubt which is often present in mature non-traditional learners (Richardson, 1994, Grow 1991) and for competency based feedback at an individual level which can help students understand their unique bundles of competencies (Dooley & Lindner 2002).

The paper focuses on initial findings from the first cohort of students on the FDA PD and reports from their perspective in terms of the usefulness of Springboard in developing their academic study skills. Experiences are reported using questionnaires, assignment evidence and e-learning measurements. Data has been gathered using qualitative methods and the experience of these learners is reported in terms of the following key questions:

Does embedding key skills within subject specific context promote academic development for mature students?
Does adopting this approach encourage independent learning?
Can using this approach encourage the link between the abstract and the concrete, ie theory and practice?
What are the drawbacks of using predominantly on-line tools in this way?
Are students evidencing additional learning other than that expected by the learning outcomes?

Keywords: part-time, mature-student, e-learning, study-skills, self-regulated learning

1. Background

With the decline of manufacturing and heavy industries globally and the emergence of the concept of knowledge transfer as vital for national economic success, the role of and site for a higher education system able to capitalize on these changes is much debated (Ball, 2007, Boud & Solomon 2001, Gunter, 2001). For example, the vocationalisation of undergraduate and postgraduate education in the UK has been challenged, but has been justified in terms of the economic benefits to individuals and society of developing a knowledge economy within a globalised system (Boud & Solomon, 2001). Furthermore, research by the Institute of Employment in the UK suggests that in the future 70% of all jobs in Europe will require people with professional skills (quoted in Day, 2000) but how and where these skills are developed is open to debate. It is suggested that for organizations to survive within this environment they, and their workforces, must be flexible, far sighted and develop a culture of continuous learning (Watkins & Marsick 1993). However, this raises issues of access to educational environments for those
in full-time work, and concepts of where learning occurs have been altered by the recent growth in the privileging of contextual and experiential learning (Symes & McIntyre 2000). Moreover, the growth of online and distance learning compounds the issue and may lead to what McIntyre and Solomon (2000) have termed the 'de-institutionalisation of education' and the increasing legitimisation of the workplace as a locale for higher learning. In the UK the introduction of the Foundation Degree (FD) in 2002 with its emphasis on work-based learning, employer involvement and its part-time nature is seen as part of this move towards new ways of enabling higher learning for those in work. FDs are also part of the Government's Widening Participation Agenda (DfES, 2003) and as such attract students who have not taken the traditional academic route into HE. For this reason there are often tensions around the support of students who may find the academic work on an FD particularly challenging and may require additional support in this area.

The Foundation degree which is the focus of this study was designed to address the continuing professional development needs of support staff in schools, that is all those who work within the school environment whose primary responsibilities are not teaching and learning. This group of staff have not traditionally been required to have degree level qualifications, but workforce reform (DfES 2003) within the school sector is increasingly requiring higher level skills for new and expanding support roles being created within schools. With this audience for the foundation degree in mind, the university team utilized the concept of ‘andragogy’ (Knowles, 1980) when developing the foundation degree and a learner-centred approach was employed in the design as opposed to the more teacher-centred transmission model (Kember, 1997) commonly associated with Higher Education teaching. Andragogy seeks to develop a learning environment more suited to adult learners by adapting a learning strategy which takes account of learners’ experiential learning – viewing the learner as resource-full rather than resource empty. It also draws on the work of Rogers (1969) whose experiential, self-directed approach to learning emphasises the significance of inner autonomy when he states:

‘The individual who sees himself and his situation clearly and who freely takes responsibility for that self and for that situation is a very different person from the one who is simply in the grip of outside circumstances’ (Rogers, 1969 p271)

The aim, particularly given the rapidly changing work environment which these students are experiencing, is to equip them with the tools needed to develop meta-cognitive abilities, to learn to learn and to develop as lifelong learners.

In terms of developing academic study skills on the programme it was felt that using an embedded structure would correspond with the andragogical approach described above and could perhaps provide a bridge between the academic learning and the workplace. The university provides an on-line study skills programme for all students, Springboard, and it was thought that this could be adapted as a bespoke programme embedded into the modules on the Foundation Degree. The stand-alone Springboard programme has been used for the last two years with traditional undergraduate students and the next section looks at how it has developed to this point.

2. Supported on-line learning at Edge Hill

Edge Hill University is located in the north-west of England, with over 9,000 students on a range of degree and diploma courses and a further 6,000 on continuing professional development courses. It has a strong vision of itself as a 'learning-led' university, seeking to promote enquiry, enhance learning and teaching, learning environments and the learner experience. A large Learning Services department comprises learning resource centres, learning support, ICT user support for teaching and learning, media services, e-learning development, study skills and dyslexia support. To assist learners in developing information literacy and study skills the Learning Services unit created Springboard in Summer 2006. It aimed to provide students with a more flexible approach to individual academic study skills and to develop further knowledge skills and applications. Originally a 15 credit module it focused on enhancing skills through an eight week on line programme consisting of 10 units. Any university student could join the programme, participants were grouped into communities using generic content and led by Learning Services facilitators.

Using e-learning can mitigate some of the undesirable consequences of university life in the 21st century (eg equity of access for working students who are in the majority with the advent of tuition fees) and may improve and enhance learning outcomes for some students (Oliver, 2001). It is particularly useful in terms of students becoming an independent learner (a premise of current education reforms) as it provides the conditions for them to become reflective and confident learners (Bach et al: 2007). Adopting a flexible learning approach emphasises the student’s central role in the responsibility for their own learning and online learning can take students on a trajectory from dependence to independence
allowing for individual experience/needs. Indeed using an on-line flexible approach to learning can aid the lecturer in acknowledging that each student is at a different stage with their personal levels of confidence in terms of both subject and the use of technology (Bach et al: 2007).

The Springboard programme embedded within the subject specific module provides the opportunity for self-regulated learning, which is linked to academic success (Pintrich, 2000, Winne & Perry, 2000). The self-regulated learner engages in planning, monitoring and evaluation of their own learning and within the Springboard sessions students are given the opportunity to practice these skills whilst developing subject knowledge. The intention is that linking the development of academic skills to subject knowledge will motivate students and enable them to assess their own strengths and weaknesses and develop a range of strategies to overcome the latter (Perry et al, 2006). It has been suggested that mature students often exhibit issues around self-confidence, anxiety, self-doubt and skills in directed learning (Richardson, 1994). For this reason it is important for tutors to develop modules which meet individual students' levels of competency and self-directedness in order to help them to move towards independent learning. It is also beneficial to engage students in a pre-assessment of their strengths and weaknesses and provide competency-based feedback in order to develop them as self-directed learners (Grow, 1991). In the case of Springboard, the module begins with a skills audit, offering personalised advice and interactive activities as feedback to encourage students to take responsibility for their own learning and development.

**Skills audit**

Students come to higher education with a wide range of learner experience. This often includes prior ICT knowledge and an awareness of study and information techniques. However, many in the case study cohort lacked the necessary skills to enable them to study effectively at this level. Some were returning to study after a long absence, all were part-time, working students. The world these students were entering was rapidly expanding in terms of available information for example:

- It is currently estimated that the total of all printed information doubles every five years.
- 206,000 books are published yearly in United Kingdom 2006 (Institute of Statistics, 2006), one book every 4 seconds in the United States (Business Wire, 2002).
- Using search engines to research can result in a plethora of information, for example 'dyslexia' as a Google search yielded 7,970,000 hits.

Moreover familiarity with and use of search engines such as Google does not alone develop the critical and reflective skills for high achievement but linking development of these skills to subject knowledge and experiential and practice learning by embedding within the programme may be more useful.

**Embedded approach**

The initial remit introduced needs analysis through four audits:

- Time management.
- Information literacy.
- Study skills.
- Learning styles.

Gaps and deficiencies in individual student's skills set were identified and addressed through completion of an action plan which was embedded into the assignment and in this way engagement with the Springboard on-line material was encouraged. Assessment for the module required student personal reflection on their research and study approaches together with monitoring of the action plan to address identified needs and in this respect the skills transmitted through Springboard were crucial to success at the end of the module.

Embedding, although always desirable needs careful management. In this programme it was achieved by considering:

- Delivering of the material – as part of the curriculum.
- Organisation of the units – to match module tasks.
- Content of the units – this was upgraded and tailored.
- Task demands – these were reduced and adapted.

One of the useful approaches taken was to use and strengthen the concept of the new academic team. Drawn from Faculty and Service areas, staff collaborated to create solutions to match the needs of the 21st century student. The team aimed to use a design process which created the optimum conditions for
learning and avoided the acknowledged error of replicating classroom content in a digital area. Springboard itself had addressed this (Roche and Martin, 2008) and therefore the team looked to bring together three skill sets – ICT, study and information literacies in an appropriate way for the audience. The module structure was divided into 10 discrete e-learning sessions as follows:

Students do undoubtedly seek guidance from the start of their lifecycle in higher education, many concerns centre around their initial assignments in which time poor, curriculum overloaded programmes often struggle to offer support. Learning Services has sought to work to embed the necessary skills within programmes and to offer a menu of options according to student need.

Delivered through the University VLE (WebCT) each unit contains a series of activities linked to the week's academic input and interactive content plus a discussion board. The aim is to begin the process of creating the critical practitioner and reflective learners and the whole may be revisited as many times as required (Toohey, 1999). As will be seen, this access continued long after the module itself had finished. The online content was designed to enhance the academic input, not to be disembodied from it or to overpower the educational information. This proved to be a challenging concept in practice and considerable skill was need to achieve it in terms of balancing the demands of Springboard with those of the module 'knowledge base' in order to enable students to strengthen the skills they brought to the Programme and permit the development of new ones.

The team tried to capture the concept of the value of academic dialogue through the discussion board and class time approach (Jarvis et al, 2003). This also allowed a gradual transition to full e-learning, a benefit to those students to whom online study was a new experience and was which features strongly in most university undergraduate programmes.

3. Methodology and data collection:

The research is conducted within a constructivist/interpretive paradigm as assumptions are made regarding the importance of the social context within which participants are engaged in terms of how they use and interpret situations for their own learning and how meaning is constructed in different ways even in relation to the same phenomenon (Chia, 2002). All of the participants in the study work within the wider workforce in English schools. However their academic backgrounds, experiences and current job role are influenced not only by the social and professional contexts within which they work and live, but also their own and colleagues' interpretations of these contexts.

The empirical and analytical framework for this study is necessarily based on the analysis of the attitudes and experiences of part-time, non-traditional, mature students undertaking a Foundation Degree who will be tracked over the duration of their degree studies. The sample is a purposive one and comprised 17 students who studied during one academic year. Qualitative data was elicited through open ended questionnaires, student module evaluations and analysis of end of module reflective assignments. To
generate detailed insights it was felt important to use a qualitative methodological enquiry giving the potential to explore processes in action (McCracken, 1988, Oppenheim, 1992) and to seek to understand how individuals and groups interpret meanings within their own context to enable them to make sense of complex and ambiguous situations (Cohen & Mannion 1996). As an evaluative tool the research sets out to portray events within the natural setting, describe and interpret what is happening in order to inform thinking (Bassey, 1999) in terms of the changes taking place particularly in terms of the development of academic and study skills for specific learners. It is hoped that plausible inferences on events and processes which arise from this study may also inform further research, but claims to causality or generalisability will not be made as the context is too complex, diverse and interdependent for this (Lincoln, 1985).

4. Data Collection

The first cohort of students attending this new foundation degree used a blended learning approach in the first module, where Springboard was studied during part of the four hour session each week. There were 17 students, two male and 15 female, ranging in age from mid 20s to late 50s. All were working within support roles in schools or educational settings within the North West of England.

Data was collected via:

- Mid-module questionnaire asking their views on Springboard as a way of learning study skills
- Online evaluation as part of the last Springboard unit – some open-ended questions
- Content analysis of the reflective assignment – students were asked to reflect on the development of their information literacy skills.

4. Findings and discussion from the first cohort:

Thematic codes were generated from the conceptual framework of the case study and the student responses to the assignment brief. The data was scrutinised and responses categorised according to the themes. Once the data had been organised into themes, a process of reflection and interpretation was undertaken. Two broad themes were identified – reflections on study skills development and reflections on other aspects of learning. Within these various sub-themes were identified, some of which fit into both of the main categories. This is represented in the following diagram, which summarises the main findings related to student reflections on their experience of using Springboard.

![Student reflections diagram]

- Study skills development
  - Information Gain
  - Critical Skills Development
  - Audit of Needs
  - Writing Skills Enhanced
- Other aspects of learning
  - Effect on Success
  - Practising Skills
  - E Learning Introduced
  - Confidence Developed
  - Transition to Higher Education Easier
  - Peer Support Relationships
The following quotes illustrate student reflections within these themes and sub-themes and these are discussed in relation to the background literature.

Reflections on study skills development:

Students found the following to be particularly beneficial aspects of Springboard:

- Skills audit and action plan: they liked discovering they had strengths as well as weaknesses and having a plan of action boosted confidence. Some of the comments made include the following:

  “…and through this I was able to highlight my weaknesses and devise strategies to combat them.”

  “I found the first unit on identifying skills and weaknesses really useful, especially the skills self-audit.”

This illustrates the importance of assessing strengths and weaknesses as a key characteristic of self-regulated learners.

- Information searching/finding: some of these students have not studied in this computer era before and this is a new way of finding information Comments included:

  “Carrying out different kinds of searches proved very useful…”

  “Carrying out a Boolean search helped me to find a document I had mislaid”

  “…a weakness highlighted for me was that I did not have sufficient skills to enable me to access different kinds of information sources

These comments highlight how e-learning can overcome some of the difficulties of modern life in that it has enabled people who have to fit their studies around full-time employment to access academic resources very quickly and students were able to adapt to a relatively new way of searching for information.

- Identifying credible sources: students reported moving away from information sources such as Wikipedia and towards more academic sources, including the electronic library resources Typical comments included:

  “I have changed in that I can look at other resources for research and extended the areas in which I look other than books such as newspaper articles etc.”

  “…as a result of this Springboard unit I was able to retrieve information using credible sites via the academic subject gateways such as Inute…over the weeks I have become more effective at discriminating between a bewildering array of journals, books and articles.”

One thing that these students have needed to learn is to use more academic, unbiased sources of information and this is related to the next point:

- Thinking critically: most felt that this was a new approach for them

  “As a result I have developed an awareness of my particular learning style and have progressed with developing my critical analysis skills.”

There were several comments about evaluating the sources of information and not just accepting that provided in literature and websites produced by government agencies.

- Assignment planning & writing: many had not written essays for a long time and this was their biggest source of worry and lack of confidence at the beginning of the course

  “I found the task in Springboard on the subject of assignment writing extremely beneficial…it stuck in my mind when compiling the assignment so I ensured I had a printout of this to hand.”
For mature, part-time learners there is often a lack of confidence about their academic skills and this was one of the sub-themes identified in the second theme which is not specifically about study skills.

Reflections on other aspects of learning:

Students’ reflections also included more general aspects of learning and being a student:

- Support: the discussion forums for some were a valuable source of support, contact and help
  
  “I decided to put my information on the discussion board which then gave me the confidence to chat to other students and tutor at any time.”

Support is particularly important for distance learners of this nature on time-poor programmes. These students only receive 4 hours per week of face-to-face tuition time and attend after completing a full working day. The Springboard forums allow them another source of help via peers as well as tutors.

- Success: they reported a sense of success when new skills were mastered. This cohort had a 100% retention rate and 100% pass rate for the first assignment, which is extremely positive given the demographic of this group.
  
  “I felt successful and happy having completed the session.”

- Confidence:
  
  “Springboard has definitely increased my confidence as a learner because it helped me acknowledge skills that I already had but did not realise”

  “I am a lot more confident within myself as a mature student. I do feel like I have a lot more to learn”

  “As the weeks progressed I began to feel more settled and confident in my ability to cope…”

Success and feelings of confidence are probably closely linked. Some students reported a sense of success after learning that they do in fact have strengths, were able to successfully complete the tasks and confront their fear of technology. Anxiety and self-doubt are strongly felt by mature learners and flexible e-learning can increase their self-confidence.

- Transition: students felt that Springboard had helped them make the transition to level 4 study eg. learning about Harvard referencing and using journals as sources
  
  “I was able to find information about Harvard referencing…I had not heard of Harvard referencing prior to the course…”

  “In the beginning I was very unsure of how to go about writing a reflective account…after completing the Springboard units I felt confident enough to start planning how I would structure the assignment”

This provides support for the idea that e-learning places students on a trajectory from dependence to independence.

- Individual learning: advice given to match their learning style was particularly valued
  
  “I now realise that this reluctance to read can partly be due to being a kinaesthetic learner, which I need to address.”

  “I was amused when the programme suggested that I sing my notes when revising because I am an auditory learner.”

Springboard takes account of prior experiential learning and provides the conditions for students to become reflective learners.
Interactive tasks: students enjoyed learning actively by “doing” and receiving immediate feedback

“The main benefit of Springboard was the interactive testing.”

Immediate feedback is competency-based and these comments emphasise the importance of providing such feedback in order for students to grow.

Practice and re-visit opportunities: students felt that knowing the Springboard units were there and easy to access at any time was a real benefit. They could re-visit them and keep practicing the skills, especially if they found it difficult the first time;

“I found using Boolean operators difficult and will need to keep returning to practice this in the future”

This is linked to several of the above in that students could be said to be repeatedly self-assessing their own competency in a way which will further enhance their feelings of confidence and success as their understanding grows.

Comparing e-learning of study skills with other methods:

As part of the mid-module questionnaire students were asked how this method of learning study skills might compare with taught sessions and text books:

- Springboard was rated favourably against both study skills textbooks and taught sessions.
- It was rated as easier to re-visit than either of the above alternatives.
- Interactive tasks & flexibility of use were highly valued compared with other approaches

Challenges:

Challenges reported by the cohort were as follows:

- Dedicating one hour of face to face time to an essentially on-line, self-directed study module – some students suggested that they would have preferred a wholly distance model
- There was an issue of lack of confidence in using information technology for some students. However, the fact that they were required to use Springboard did in fact have a positive impact on their confidence in this area
- Late registering students did encounter issues with access as administrative challenges prevented passwords being issued promptly

5. Conclusions:

The measurement of impact is as Blagden & Payne (2006) identified, a notoriously complex and challenging area. It was hoped at the outset that the model of embedded skills would impact on the student success of this cohort and indeed the success of this cohort in terms of retention and pass rates for the assignment could be deemed to illustrate how the e-learning of study skills has impacted upon the development of information literacy skills for these mature, part-time learners. However the question must be asked ‘what was the role of Springboard in this success?’

The fact that the skills audit and action plans were considered particularly valuable supports the importance of pre-assessment measures as advocated by Grow (1991). Skills audits give an indication of strengths & weaknesses - a key characteristic of self-regulated learners who are academically successful (Perry et al 2006). With Springboard the skills audits and resultant action plan encourage students to take steps to tackle weaknesses. Success and failure is seen as within their control and participants gain a repertoire of strategies to tackle academic tasks. Advice for improvement takes individual learning styles into account. Equally it may be argued that other factors were making the difference- the ability of this particular group, their prior experiences etc.
There is no doubt that competency-based feedback provides a foundation for student-centred learning plans, indeed, Dooley et al (2002) emphasise that pre-assessment measures are necessary for students to know their competency at the beginning of a course. This can increase satisfaction, motivation, learning and success. A post-assessment should also be completed so that they can see their growth in competency. This will encourage reflection – an important aspect of adult learning and self-development. Of particular interest were the less tangible outcomes emerging from the embedded module. Students were reporting a growth in academic confidence, increased motivation and assistance with the transition to higher education level study. Although the interaction with the students throughout the module and feedback mechanisms afforded a deeper awareness of reactions to the content, nevertheless it could be argued that the timeframe has been too short to permit valid and meaningful measurement. Impact in this case could certainly take the researchers through the student lifecycle. A demonstrable and causal link between such a skills module and student success will always be problematic in an area of multiple possibilities. What this study evidenced was that students valued the opportunities to develop new skills, identify gaps in their knowledge and understanding and to begin to change the learning processes. How can this not impact on their studies may be a more realistic question? The original springboard was designed for students at the end of their first or second year in higher education and certainly produced highly positive feedback based on a greater understanding of need. It may be as McAteer et al (2006) argue that impact can only be fully achieved by students’ own appraisal and articulation of their success in their studies. However the value placed on their model by students and tutors does suggest that it is worthy of further research. As these students enter the second year of the course they will be encouraged to repeat the Springboard skills audits as a post-assessment measure and to devise a new action plan for that academic year. This will highlight where competencies have grown and maintain the focus on strengths and weaknesses which is part of self-regulated learning.

References


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