

Linking Learning to Practice

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Abstract

This paper presents action research which was initiated with professional support staff during the Working in Higher Education Award, an accredited, work-based course at the University where they were employed. The research participants perform a variety of roles within the University and have diverse educational experiences. Two interventions, use of e-portfolio tools and a critical friend, were integrated into the initial module, and their impact on participants' capacity to link learning to practice was investigated via primarily qualitative methods.

The connection between learning and professional practice is an area of particular pertinence for work-based learners. Literature on this topic indicates three significant domains in relation to fostering the linkage between learning and work: the work environment, the learning environment, and the learner. The research findings contributed to the further elaboration of these domains, and an additional key theme, labelled "social", was identified; this represented the impact of support from others, particularly colleagues and line managers, on participants' confidence, motivation, and reflective capacity.

Insightful recommendations emerged from the findings which may be of relevance to work-based learning practitioners, for example the significance of fostering social engagement in the learning and work environments, the alignment of the curriculum to disparate professional roles, and the use of the interventions developed as a vehicle to promote reflection.

Background

The Award

The Working in Higher Education Award is a 30 credit (first year undergraduate level) Certificate of Continuing Professional Development aimed at professional support staff in HE. The Award consists of two modules: during the first, Contemporary Issues, participants explore the contemporary context of HE and the implications for their practice. The second module, Personal Development, invites participants to consider

their own competences and make linkages between these and the issues raised in the previous module. On completion, participants also have the opportunity to progress to a customised Foundation Degree.

The participants

A range of staff, such as faculty administrators, help desk personnel and personal assistants, are recruited to the Award. These participants are from diverse backgrounds, and for a considerable proportion this is their first experience of study at HE level, or there has been a substantial gap since their previous experience of studying. The participants face challenges to engagement with learning, which could include competing demands on their time and concentration, and confidence in their academic ability. One area with which a significant number experience difficulty is the linkage between the learning on the Contemporary Issues module and their professional practice.

The research

In the light of the needs of the participants and the demands of the curriculum, the research engaged with the impact of specific interventions, the use of e-portfolio tools and a critical friend, on participants' ability to link their learning with their role. A secondary aspect was to investigate the impact of these interventions on participants' motivation and confidence to engage with learning. The research was conducted by the Award leader, who is also the module leader for the Contemporary Issues module, working in collaboration with course participants.

The goals of the research are consistent with national agenda for UK HE. Flexible and lifelong learning is a key priority identified by the Higher Education Funding Council for England (2007, p. 21), and in particular the need to reinforce the links between the workplace, learning and productivity is highlighted. Alongside this there is a focus on continuous development of the people who work in the HE sector.

Literature Review

Perceived relevance to practice is of particular pertinence to work-based learners (Wenger, 1998; Gallagher and Holland, 2004; Graves & Jones, 2006; Costley, 2007; Costley & Armsby, 2007; Gustavsson et al, 2004); furthermore, critical reflective capacity is central to promoting the connection between learning and work (Brodie & Irving, 2007; Walsh, 2007). Nonetheless, varying definitions, or at least emphases, in relation to reflection and work-based learning are apparent from the literature. Some scholars focused more on the individual learner and developing their capacity to engage in reflective practice (e.g. Stephenson, 2001). Others highlighted academic practice and implications for the learning environment (e.g. Walsh, 2007; Brodie & Irving, 2007).

Further researchers emphasise the work environment, investigating the impact of reflection on the workplace (e.g. Costley & Armsby, 2007), and the significance of the workplace as an environment which may foster or hinder a reflective approach (e.g. Wenger, 1998).

Biggs' (2003) "3 P" model identified two "presage" factors: the learner and the teacher. An examination of contemporary literature which encompasses work-based learning and reflection revealed a third "presage" factor of relevance to this group: the work environment. These three key dimensions, which impact on the reflective capacity of work-based learners, are indicated in figure one.

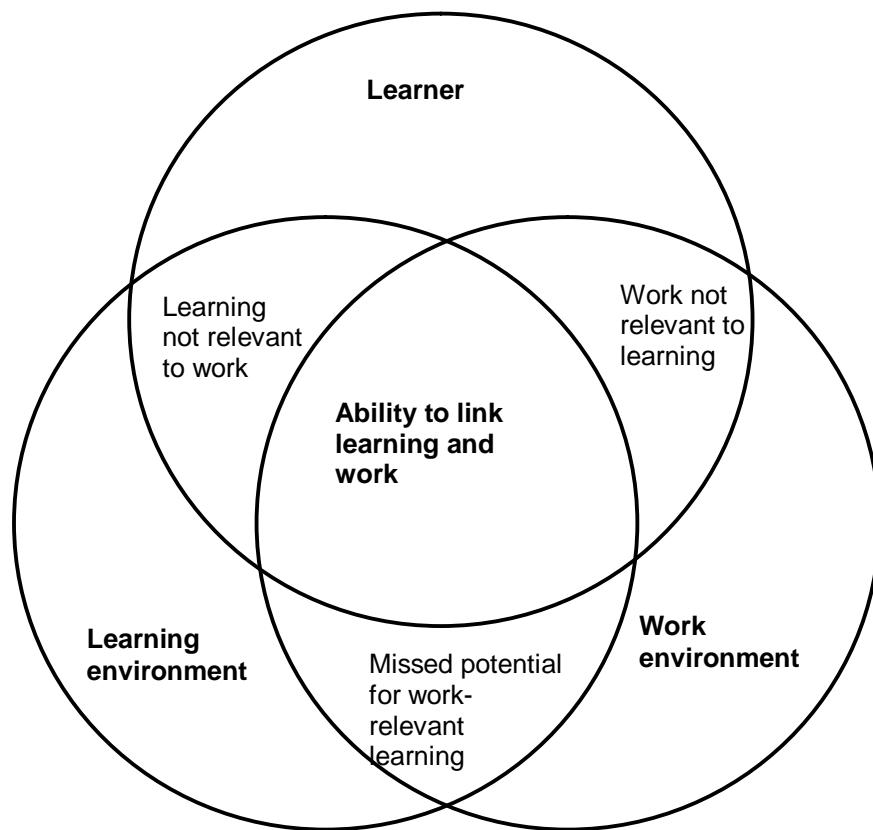


Figure 1: Factors which impinge on ability to link learning and work.

The three dimensions

The learner: certain characteristics of the learner are likely influence their capacity and motivation to reflect on the linkage between learning and work. These characteristics might include prior experience (positive and negative) of reflection, approach to learning (Biggs, 1993), learning style (Honey & Mumford, 1986), extrinsic and intrinsic motivation (Biggs, 2003), and external factors (Tierney & Slack, 2005).

The learning environment: a number of features of the learning environment may influence learners' capacity to link learning and work. These could include the integration of reflection into the curriculum (Costley, 2007; Brodie & Irving, 2007; Walsh, 2007), the inherent attitudes to knowledge amongst facilitators of learning (Moon, 1999), the learning and institutional climate (Biggs, 2003), and the extent to which a student-centred approach is fostered (Ramsden, 1992; Prosser & Trigwell, 1997; Samuelowicz & Bain; Yuen & Hau, 2006). To develop higher order learning processes such as reflection, it can be inferred that a student-centred approach is likely to have the greatest efficacy.

The work environment: a variety of facets of the workplace are likely to influence learners' capacity to link learning to their own practice. The workplace climate, the nature of the work (Billett, 2006), the schedules and pressures faced by employees (Moon, 1999), and organisational design (Wenger, 1998) are all pertinent.

The closer the relationship between the three elements, the larger the central overlap (ability to link learning and work) becomes. The overlap between "learner" and "learning environment" which does not coincide with "work environment" indicates learning which does not relate to the workplace. It may be particularly important that learners can perceive the relevance of learning to current or potential future roles. The overlap between "learner" and "work environment" indicates areas of work which are not related to learning. While it has been argued that all work involves some learning, this learning may be of a trivial nature (Beaney, 2004, cited by Sorkin, 2006). The final overlap, between "learning environment" and "work environment", indicates areas which the learner did not engage with, which had the potential to link learning to the learner's role. The intermediate overlaps should be minimised in order to maximise the potential to link learning and work.

Thus three key dimensions to consider (the learner, the learning environment and the work environment) emerged from the literature, and this has been used to inform subsequent research interviews for this study.

Strategies used to promote reflective practice

The approaches used to foster the development of critical reflective capacity amongst work-based learners are diverse. Moon (1999) suggested a variety of strategies to facilitate reflection on short work-based courses, including the use of structure as a stimulus to initiate reflection, and the value of critical friends. The interventions which were implemented and evaluated as part of this research are aligned to this approach. During the Contemporary Issues module, from January to April 2008, the impact of two interventions, e-portfolio tools and critical friends, was evaluated, with a particular focus on participants' reflective capacity.

PebblePad, the e-portfolio tool selected, provides a structure to guide learners through the reflective process (Pebble Learning website, accessed 26.3.08). Participants were encouraged to use specific tools (or paper-based alternatives) to reflect on their learning following weekly sessions on the module. Furthermore, dialogue enhances the process of reflection, and PebblePad offers the potential for learners to share their reflections with others.

Tierney and Slack (2005) identify support from other people as a key source of motivation for learning. Participants were encouraged to identify critical friends to promote understanding and action (Holden 1997). Critical friends could be identified from their peers on the Award, their colleagues or line manager. There is a variety of definitions of the term "critical friend". Swaffield (2005) cites Costa & Kallick's (1993) definition:

"a trusted person who asks provocative questions, provides data to be examined through another lens, and offers critiques of a person's work as a friend." (p. 44).

It was felt that this external perspective would act as a stimulus to reflection, promoting the connection between learning and own practice.

The following research question was investigated:

How do Working in HE Award participants use "PebblePad" and "critical friends" to link learning with practice?

Research Methods

Action research was identified as the appropriate methodology because of its transformational potential (Carr and Kemmis, 1986), and its alignment to the nature of

the project. The factors involved in enabling work-based participants to engage in effective, relevant learning are multi-faceted, resisting simple explanation, and this would appear to align with practice in the “swampy lowland” (Schon, 1983). Improvement of practice is at the heart of action research (e.g. Kember, 2000) and this matches the nature of the research, which focuses on enhancing the delivery of the Award through active experimentation (Levin and Greenwood, 2001).

Choice of data collection tools

Evidence to indicate the current situation prior to the intervention was gathered through existing qualitative data from previous participants. This was available in the form of evaluation questionnaires, assessment results, Annual Course Committee minutes and focus group notes. A variety of research methods were used to evaluate the interventions developed, and these are outlined below.

Pre- and post-module questionnaires: the pre-module questionnaire aimed to identify participants' initial perceptions of potential barriers to learning, and views on reflection. A post-module questionnaire was designed to explore movement from initial views by the end of the module. In practice the response to the questionnaires was limited, therefore the potential for quantitative analysis was restricted.

E-journals: a collaborative blog was shared with all participants on the Award; this included a specific strand on the action research. The same medium was used to track researcher observations, views and experiences during the research, and this was shared with critical friends.

Participants' use of electronic reflection tools: participants were encouraged to use two tools in PebblePad, and to share their reflective writing with the tutor, both as a means for them to gain formative feedback, and to facilitate the exploration of the impact on reflective capacity.

Semi-structured interviews: five semi structured interviews conducted with volunteers during a fixed period were a particularly significant source of data. The volunteer sample included graduates and non-graduates, with recent and non-recent experiences of education, in student and non-student facing roles, which is broadly representative of the Award cohort. The five interview participants were all female, although it should be noted that the cohort was 85% female.

Other methods: other sources of data which were consulted for triangulation included: an evaluative focus group, conducted by an impartial colleague as part of the final session on the module; the Course Committee; and trends in assessment results.

Validity of research

It is necessary to consider the validity of this primarily qualitative research. Golafshani indicates that reliability is a consequence of validity, so it is sufficient to demonstrate that a qualitative study is valid. Maxwell (1992, cited in Cohen et al, 2007) argued that understanding is a more suitable term than validity in qualitative research. It was anticipated that the combination of research tools would facilitate the development of understanding to increasingly deep levels, from the initial “surface” response to a questionnaire, through evidence of actual practice via blogs and the e-portfolio tools, to “deeper” responses to detailed interview questions. Furthermore, Cousin (2000) argued that:

“Traditional researchers keep checking their facts, action researchers keep checking their people.” (p.7)

The continuous returning to participants (via questionnaires, interviews and a blog) would constitute “checking the people”.

Ethical framework

Volunteers were sought to participate in the research, and anonymity was ensured by removal of references which could identify participants. It was made clear that all Award participants would benefit from the research, regardless of whether they contributed. Data was available from additional sources as outlined above, for example the group blog, assessment results and evaluation materials. Since much of this would be provided by course participants who were not also participants in the research, care was taken to ensure that this data was only used in a general sense, for example to identify overall trends.

Initial research findings

Questionnaires

The response to the questionnaires was disappointing (7 out of 20 completed the pre-module questionnaire, and 4 out of 20 completed the post module questionnaire), nevertheless, certain trends were indicated. Although changes in motivation and confidence pre- and post-module were generally not significant, 3 individual participants decreased their rating for motivation, which may indicate a slight trend towards declining motivation. The response indicated that confidence and time to focus on study were also significant.

Electronic reflection tools

The action research strand of the collaborative e-journal elicited four contributions, all pertaining to participants’ use of PebblePad. While this was a limited response, it did serve to further illuminate participants’ experiences of using this tool. 17 PebblePad

"assets" were shared with the tutor, which provided further insights into the impact on participants' reflective writing. Meanwhile, 27 contributions to a researcher e-journal were made; these elaborated reflections on the perceived impact of the interventions and the experience of analysing the data gathered whilst seeking to maintain impartiality.

Other methods

The response to the end-of-module evaluative focus group and the Course Committee was generally positive. Views on the use of critical friends were mixed; while some participants did not use a critical friend or had not understood the idea, others found this approach of value. In terms of assessment results, generally the grades for the first module were high (81.25% of the participants from the sample of 16 who submitted assessed work gained a merit grade or higher); an analysis of the assessment comments against the learning outcomes indicates that there was a slight tendency for participants to be more successful in linking learning to their role compared to previous participants.

Semi-structured interviews

While the response to some data collection methods was disappointing, this was more than compensated by the rich data generated by the interviews. Each interview was taped, transcribed and analysed. The superordinate themes identified were: affective domain; social; work environment; the learning experience – including two significant ordinary themes, "suggestions to enhance the learning environment" and "PebblePad e-portfolio".

The limited response to some of the research tools used suggests that alternative approaches to collaborating with research participants who are work-based learners with a multitude of demands on their time could be explored in future, for example gaining their permission to use existing structures, such as work submitted for assessment and participant feedback. In the context of action research, documentary analysis would need to be complemented by more participative forms of research.

Discussion and integration of findings

Below is an analysis of the data from all sources used, organised under the superordinate themes identified through analysis of the interviews.

Affective domain

The theme "Affective domain" was used to describe areas identified by the participants which pertain to emotions, attitudes and feelings. In relation to the initial model developed through the literature review, this theme equates to "the learner". Confidence

and motivation were key aspects, as well as the pressures of combining learning and work.

Perception of motivation towards the module varied between participants, influenced by external factors, such as workload; internal factors, such as confidence; the learning environment; and the linkage between learning and work. For example, one participant stated that the module "*fuelled my enthusiasm and ideas*", while another reported a mixed reaction to the first session, followed by declining motivation as the module progressed. While this was partly attributed to a major project at work, the lack of perceived relevance to her needs appeared to be a major factor, as well as her perception that she had little choice about pursuing the module. There is some linkage between the reported experiences of the participants, and Feather's (1982) expectancy-value theory of motivation (cited by Biggs, 2003). Belief in own ability to succeed was a highly significant factor for two participants. The perceived value of the learning had a major impact on motivation, tending to have a negative impact on two participants, and a positive impact on the motivation of two others. Meanwhile, the fifth participant struggled to perceive the relevance of the learning at the outset, and this had a negative initial impact on her motivation; however, her use of critical friends and PebblePad fostered her ability to make links between learning and own practice, so that, eventually, the module had a perceived value for her, which contributed to her motivation.

Social

"Social" was a new theme which emerged through the interviews. This theme straddles all three original themes identified by the literature review. The significance of support from work, the social element of the learning environment, and their impact on motivation, engagement and capacity to link learning to work, were emphasised in all interviews conducted. Although many participants did mention the importance of tutor support at some stage in their interview, support from others was much more prominent. The importance of social support features to some extent in the literature reviewed. Tierney and Slack (2005) identified support from family members, colleagues, managers and mentors as a key source of motivation for learning, although much of the support outlined is practical (doing the housework, paying fees). The findings of this research indicate that support from significant others contributed to participants' affective and cognitive capacities. This is an area of work-based learning where further research could be of value.

In terms of the specific use of "critical friends" as one of the interventions, participants engaged with this idea through formal mechanisms (e.g. fortnightly meetings) and informal approaches (e.g. email, talking to colleagues in the office). There was a tendency to use critical friends to explore links between learning and own role. The main hindrance to using a critical friend was time due to busy work roles, while the stimuli to use a critical friend were varied, and included seeking a link between learning and own practice, assessment, to find answers to questions or clarify confusion, enthusiasm for the module, and proximity of the critical friend to own work base.

The Learning Experience

This theme links to the “learning environment” on the diagram developed through the literature review. The name of the theme has been changed to reflect the reality that all participants experienced the learning environment differently; for example, while interaction was essential to some, for others it provoked anxiety.

The majority of the descriptions of the learning environment focus on social aspects – the connection to other learners in the group, and the impact on learning and confidence (both positive and negative) of, for example, other participants’ understanding of own role. This links to the previous theme, “social”; interaction with other group members was both significant and memorable for the participants in the research. For one participant, the diverse nature of the group and the opportunity to make contacts across the University was a major benefit of the module:

“I think the opportunity of meeting different people across the board from the University has been a real gain - aside from the academic side of things, I think that has been really influential and important to me.”

Whilst another initially felt unsettled by interacting with other participants:

“I ... felt like I was surrounded by people who knew more than I did, or who perhaps had more experience, both with working in this environment, and perhaps with studying...”

Participants made a number of suggestions relevant to the learning experience; a parallel can be drawn between these, and Maslow’s Hierarchy of Needs (Maslow, 1987). Physiological needs featured significantly, for example the impact of timetabling the module close to a lunch break. Belonging featured in many of the suggestions, for example the need for a longer ice-breaking period at the start of the module. Participants commented on a need for more time to reflect and more interaction during sessions, and possibly this could be equated to Maslow’s self actualisation; these participants were suggesting approaches which would enhance their capacity to learn from the sessions. As indicated previously, reflection should be integrated into the curriculum for work-based learners (Costley, 2007; Brodie & Irving, 2007; Walsh, 2007). This integration can be identified in the Contemporary Issues module at assessment; however, the integration in terms of face-to-face sessions has always presented problems due to demands on time, and the interventions developed for this research were an attempt to redress that balance. However, it would seem that space in face-to-face sessions for reflection would nevertheless be valued by participants, whose time outside the classroom is highly pressured.

PebblePad

This theme, which is encompassed within the learning experience, comprises participants' use of PebblePad, and the stimuli and hindrances to its use. Some participants used the electronic tools to encapsulate their thoughts after face-to-face sessions, whilst others found paper-based alternative available at sessions of greater value because of its immediacy in terms of capturing their thoughts and reactions. Barriers to effective PebblePad engagement include lack of familiarity with the package, the way in which it was introduced, the perceived lack of linkage to assessment, and the time available for participants to access it outside face-to-face sessions. The main stimulus to use PebblePad – both the package itself, and the paper-based equivalent – was a desire to note thoughts and ideas:

"...it has helped to sit there after a session, when things are still fresh in your mind, and just bash out a few things."

For most participants, the structure provided by PebblePad (either via the electronic version or the paper equivalent) did indeed serve as a stimulus for reflection (Moon, 1999). However, it was anticipated that the sharing function would be a further stimulus, and while some sharing took place, this would appear to be less well received by the sample. Furthermore, participants responded differently to the electronic version of PebblePad, expressing a preference for alternative tools within the package. This could potentially be explained by exploring participants' differing learning styles (Honey and Mumford, 1986); possibly this is a topic for a further research cycle.

Work environment

The participants can be placed along an approximate continuum in terms of their capacity to link learning to own practice, and initially this would appear to be influenced by the extent to which they interact with students and the intensity of work demands on their time. The relationship with the rest of the institution also appears to be of significance; some participants seemed to feel marginalised, at least in part due to a general lack of awareness of their role. It could be inferred that the content of the module was more likely to engage participants in student-facing roles which are central to the institution's "core business". However, since two participants in the study who had minimal contact with students were in fact positive about their experience of linking the learning to their role, it is important to consider other influences. It would seem that certain work environments have features which more readily lend themselves to enabling participants to explore connections with learning. While some participants described flexible, supportive environments with scope for new initiatives, others appeared to work in a more fraught environment, with limited time for discussions which are not immediately relevant. This corroborates Moon's (1999) description of employees returning to work after courses to face a backlog of tasks, and the consequent negative impact on ability to link learning to own practice.

Costley (2007) indicated that learning should have a close relationship with work, and should result in enhanced practice; Costley & Armsby (2007) advocated that work-based learners should become change makers. This is illustrated by the reactions of two participants, who used the opportunity to research external practice and work towards implementing enhancements. A third, on the other hand, who was also able to connect the learning to her role, was hesitant to suggest ideas to her line manager due to the lack of support she had experienced.

Furthermore, the literature examined raised the question of definitions of reflection in terms of depth. This can be explored through the experience of the participants; while some participants' ideas for improvement, such as modifying reporting and recording systems, could be identified as reflection leading to enhanced practice suggested by Costley and Armsby (2007), others' experiences are closer to Boud and Solomon's (2001) deep critique of work situations leading to transformation. It could be inferred that positioning on the notional "linking learning to work" continuum has some impact on depth of reflection and impact in terms of individual or organisational enhancement.

Application of findings: a proposed model

Whilst conducting the analysis of the interviews and other data, the model constructed as a result of the literature review was revised, and a further model was developed. A Venn diagram was produced based upon the model in the literature review, although as can be seen, there are some key differences (see figure 2 overleaf):

Firstly, linking learning with work is the overarching theme which connects all the data, so this is now represented as a circle whose perimeter encompasses the entire Venn diagram. Secondly, the "learning environment" has become the "learning experience", since all learners had a different experience within this environment. "The learner" has become "affective", as the main topics for discussion in relation to individuals focused on feelings. "Work environment" remains a key theme which had a major impact on capacity to link learning with work. "Social" emerged as a superordinate theme of significance to all participants, and has been placed in the central intersection; interaction and support from both learning experiences and work, or their perceived absence, had a major impact on participants' confidence and motivation.

There are also differences in terms of the intersections, based on ordinate themes identified within the interviews. "Alignment of course to work" has been placed in the intersection between "the learning experience" and "work environment". Participants' perceptions of the extent to which the learning was relevant to them was a major influence on their capacity to link learning with work. "PebblePad" has been placed at the intersection between "the learning experience" and "affective"; PebblePad (both the electronic version and the paper-based equivalent) was a part of the learning experience, which had an impact on participants' confidence and capacity to link learning with work. "Reaction to learning environment" is placed at the same

intersection; participants' reactions to the learning environment varied and had a major impact on their motivation and engagement. "Critical friend" has been placed at the intersection between "work environment" and "affective"; "critical friends" were identified from within the work environment and played a significant role in promoting motivation and confidence.

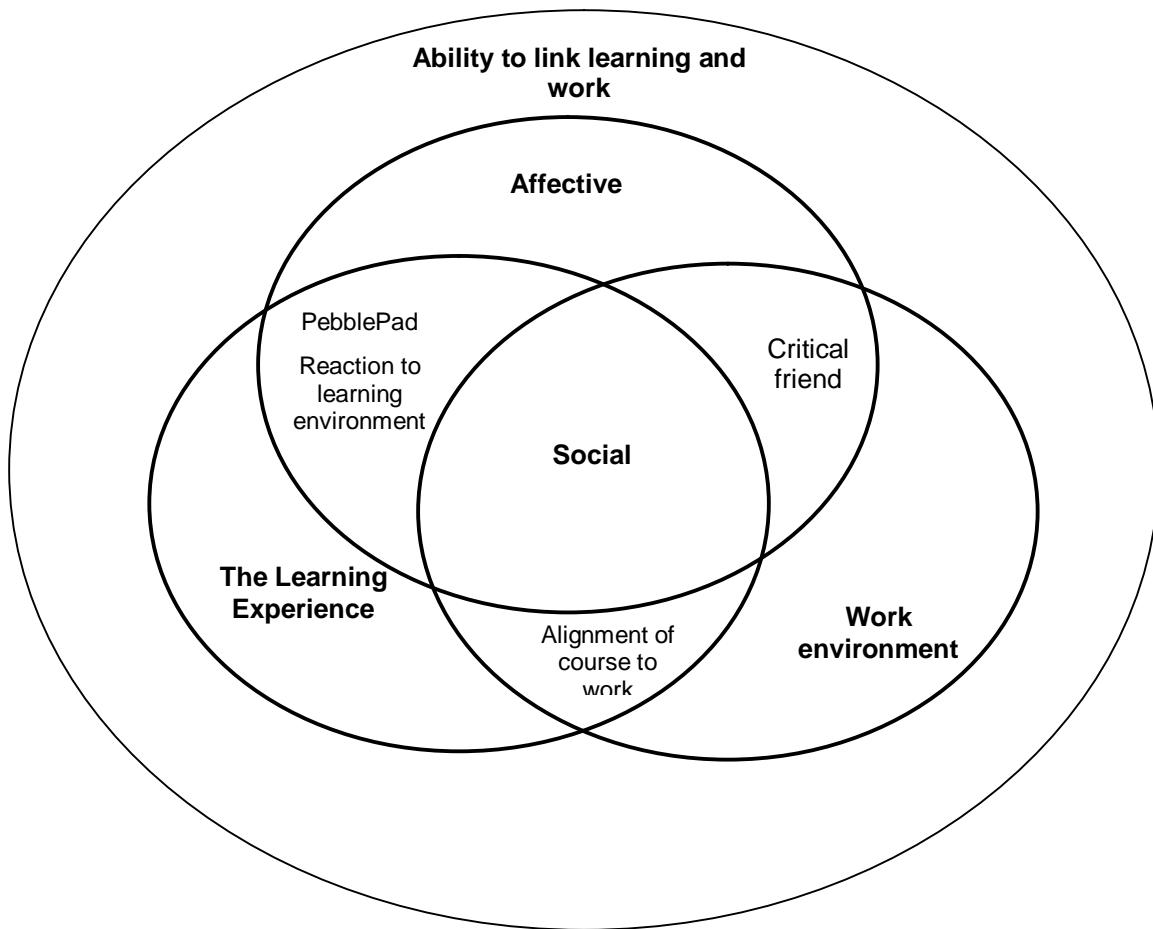


Figure 2: Factors which impinge on ability to link learning and work, post data analysis

Recommendations

The findings have presented a rich source of recommendations, mainly focused on the learning experience, and also on the two interventions introduced – PebblePad and critical friends.

Interventions: critical friends and e-portfolio

The use of critical friends seems to have had a significant impact, not only on participants' capacity to link learning with work, but also on their motivation and confidence. While this intervention could therefore be considered for other related courses, the findings indicate that a clear explanation is needed to enable participants to engage with the notion of a critical friend, including the purpose of the interaction, and the flexibility of its implementation. Some interview participants initially stated that they had not used a critical friend because their perception was that formal meetings were a requirement; the potential for a range of approaches should be highlighted.

The scaffolding provided by prompt questions in both PebblePad and the paper-based alternatives were highly significant in facilitating linkage between learning and work. Again, the use of this intervention could be extended to other courses. Key issues to consider in relation to promoting its use include clarity of initial introduction, starting with simpler tools, and possible integration into assessment.

Course participants should be encouraged to choose the approach to reflection which they personally find most effective. The findings indicate that learners are more comfortable with differentiated approaches to reflection, depending on a number of factors (such as time, technical proficiency, support available and learning style).

Changes to the learning experience

A significant proportion of the recommendations pertain to aspects of the learning experience. The provision of refreshments during sessions were recurring themes during interviews; although apparently trivial, many interview participants mentioned increased energy and also a sense of feeling welcomed. All participants highlighted the benefit of networking during the module; this should continue to be fostered, for example through ice breaking activities and developing participants' understanding of the work roles of other members of the cohort. Although reflective exercises were given as take-away activities, for participants working in highly pressured environments such an approach can be of limited utility. Reflective elements should be embedded within face-to-face sessions. Certain participants felt marginalised as the topics explored focused on specific areas which seemed initially to be less relevant to their role. This indicates the need to consider further customisation of work-based courses to learners.

Despite a proactive approach by the tutor, participants suggested that enhanced tutor support would highlight potential problems and discrepancies between learning and own practice. Another participant identified a potential barrier to seeking support from the tutor – the “*fear of looking silly*”. Individual support would seem to be of particular significance for this group, and strategies to develop this could include electronic feedback facilities provided by PebblePad.

Work environment

As indicated above, the nature of the work environment has a significant impact on participants’ capacity to link learning with work. While ostensibly developing such an environment may appear beyond the influence of tutors, certain strategies are already integrated into this course. A “Guide to Line Managers” is produced and emailed to line managers of participants on the Award at the start of each iteration of the module, and this will be enhanced to highlight the findings of the research. A further strategy could include regular contact (for example via email) with line managers to keep them informed of topics explored during the Award.

Conclusion

The aim of this study was to explore the impact of specific interventions – the use of critical friends, and the PebblePad e-portfolio – on work-based learners’ capacity to link learning and work. The research findings suggest that factors which influence the development of this capacity include the learning experience, the affective domain, social integration, and the work environment. The recommendations which emerged focused on the further use and adaptation of the interventions, as well as changes to the curriculum and delivery style.

In the immediate future, the focus will be on refining the interventions developed and investigating their impact on subsequent cohorts. However, there are a number of ways in which the research could be taken forward, for example a further examination of the significance of the social element of learning, the influence of learning style on approach to reflection, or the impact of enhanced reflective capacity on individual and organisational competence.

References

- Beaney, P. (ed) (2006). *Researching Foundation Degrees*. Lichfield: FDF Publications.
- Biggs, J (2003) *Teaching for Quality Learning at University* (2nd Edition). SRHE and Open University Press: Buckingham.
- Billett, S (2006) Learning Practice: Conceptualising professional lifelong learning. In: *Professional Lifelong Learning: beyond reflective practice*, Trinity and All Saints College, Leeds, 3 July 2006, pp 11.
- Boud, D and Solomon, N (2001) (eds) *Work-based Learning: A New Higher Education?* Buckingham: Society for Research into Higher Education and Open University Press.
- Brodie, P and Irving, K (2007) Assessment in Work-based learning: investigating a pedagogical approach to enhance student learning, *Assessment and Evaluation in Higher Education* 32(1), pp 11 – 19.
- Carr, W and Kemmis, S (1986) *Becoming Critical: Education, Knowledge and Action Research*. London: The Falmer Press.
- Cohen, L, Manion, L and Morrison, K (2007) *Research Methods in Education*. 6th ed. London and New York: Routledge, Taylor and Francis Group.
- Costa, A. & Kallick, B. (1993) Through the lens of a critical friend, *Educational Leadership*, 51(2), 49-51.
- Costley, C (2007) Work-based learning: assessment and evaluation in higher education, *Assessment and Evaluation in Higher Education*, 32(1), pp 1-9.
- Costley, C and Armsby, P (2007) Work-based learning assessed as a field or a mode of study. *Assessment and Evaluation in Higher Education*, 32(1), pp 21-33.
- Cousin, G (2000) Strengthening Action Research for Educational Development, *Educational Developments*, SEDA, 1(3) pp 5-7.
- Gallagher, A and Holland, L (2004), Work-based learning: challenges and opportunities, *Nursing Standard* 19, pp 14 – 16, 39 – 42.
- Golafshani, N (2003), Understanding Reliability and Validity in Qualitative Research, *The Qualitative Report*, 8:4, pp 597-607.

- Graves, S and Jones, M (2006), Evaluating the Use of Action Learning Sets to Develop Reflection on a Foundation Degree. In: *British Educational Research Association Annual Conference*, University of Warwick, 6-9 September 2006.
- Gustavsson, M, Ekholm, B, Ellstrom, E and Ellstrom, P (2004) Fostering Work-Based Learning in Teams Through an Educational Intervention. In: *European Conference on Educational Research*, Crete, Greece, 22 – 25 September 2004.
- Higher Education Funding Council for England (HEFCE) (2007) *HEFCE Strategic Plan 2006-11*. Available at: <http://www.hefce.ac.uk/aboutus/stratplan/> [accessed 27.3.08]
- Holden, G (1997) "Challenge and Support": the role of the critical friend in continuing professional development. *Curriculum Journal*, 8(3), pp 441-463.
- Honey, P. and Mumford, A. (1986) *The Manual of Learning Styles*, Peter Honey. Peter Honey Publications.
- Kember, D (2000) *Action Learning, Action Research: Improving the Quality of Teaching and Learning*. London: Kogan Page.
- Kemmis, S and McTaggart, R (1988) 3rd Ed. *The Action Research Planner*. Victoria, Australia: Deakin University.
- Levin, M and Greenwood, D (2001) Pragmatic Action Research and the Struggle to Transform Universities into Learning Communities. In: Reason, P. and Bradbury, H. *Handbook of Action Research: Participative Inquiry and Practice*. London: Sage, 2001, pp 103-113.
- Maslow, A. (1987), *Motivation and Personality*. London: Harper & Row.
- Maxwell, J. A. (1992) Children and childhood. In Hood, S Mayall, B and Oliver, S (eds) *Critical Issues in Social Research: Power and Prejudice*. Philadelphia, PA: Open University Press, 10-24.
- Moon, J. A. (1999) *Reflection in Learning and Professional Development*. Oxon: Routledge Falmer.
- Pebble Learning Limited, *PebblePad*. Available from <http://www.pebblelearning.co.uk/> [accessed 26.3.08].
- Prosser, M and Trigwell, K. (1997) Using phenomenography in the design of programs for teachers in higher education. *Higher Education* 33, pp 331-349
- Ramsden, P. (1992) *Learning to Teach in Higher Education*. London: Routledge.
- Reason, P. and Bradbury, H. *Handbook of Action Research: Participative Inquiry and Practice*. London: Sage, 2001, pp 103-113
- Samuelowicz, K. and Bain, J. D. (2001) Revisiting academics' beliefs about teaching and learning, *Higher Education* 41, pp 299-325.
- Schon, D. A. (1983) *The Reflective Practitioner: how professionals think in action*. London: Temple Smith

- Stephenson, J. (2001), Ensuring a Holistic Approach to Work-based Learning: The Capability Envelope. *In* Boud, D and Solomon, N (2001) (eds) *op cit*
- Swaffield, S (2005), No sleeping partners: relationships between head teachers and critical friends. *School Leadership and Management*, 25(1), pp 43-57.
- Tierney, S and Slack, K (2005) Learning Journeys: the experiences of students working towards a Foundation Degree, *Journal of Vocational Education and Training*, 57(3), pp 375 – 388.
- Walsh, A. (2007) An exploration of Biggs' constructive alignment in the context of work-based learning, *Assessment and Evaluation in Higher Education*, 32(1), pp 79 – 87.
- Wenger, E. (1998) *Communities of Practice: Learning, Meaning and Identity*. Cambridge: Cambridge University Press.
- Yuen, K. and Hau, K (2006), Constructivist teaching and teacher-centred teaching: a comparison of student learning in a university course, *Innovations in Education and Teaching International*, 43(3), pp 279 – 289.