Surrey Award : A Design for Integrative Learning

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'Developing students' ability to integrate and apply learning [in different contexts] is an important piece of what makes higher education relevant to today's world. On any given day newspaper headlines point to the need for graduates who are sophisticated in their thinking, able to discern complexity in situations, and motivated to continuously seek better, more responsible, solutions to problems encountered in work, in life and in society… The current context also requires graduates who are creative; who can anticipate the not-yet-known, and negotiate rapid technological, cultural, and global shifts.' Association of American Colleges and Universities (2009)

Curriculum challenge: How can we improve students' ability to integrate and apply learning that is relevant to the challenges and opportunities afforded by life and society?

University of Surrey solution: to create an Award that will value integrative learning and encourage students to show how they are developing, integrating and using their learning in a range of contexts.

Meanings of integrative/integrated learning and education

Integrated and integrative are synonymous
Integrated [adjective] formed or united into a whole
Integrative [adjective] tending to combine and coordinate diverse elements into a whole.

To **integrate** [verb]
- to bring together or incorporate (parts) into a whole
- to make up, combine, or complete to produce a whole or a larger unit
- to unite or combine.
- to combine that which was previously separate into one unified system

Integrated learning involves whole person development and capabilities and dispositions through which the learner connects and makes greater sense of their understandings developed through different experiences (study-work-social) coupled to the capability to adapt and transfer learning and behaviours to new contexts and situations.

Integrated education is based on designs, facilitation and support mechanisms that seek to enable and empower learners to integrate their experiences and learning from and in different contexts and transfer, apply and adapt their learning to new situations and contexts.

 'Integrative learning is an understanding and a disposition that a student builds across the curriculum and co-curriculum, from making simple connections among ideas and experiences to synthesizing and transferring learning to new, complex situations within and beyond the campus.' (AACU 2009)

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Higher education institutions develop their own definitions or what they mean by integrative learning. The *Statement on Integrative Learning (AACU 2009)* identifies four areas of integration "connecting skills and knowledge from multiple sources and experiences; applying theory to practice in various settings; utilizing diverse and even contradictory points of view; and understanding issues and positions contextually."

Institutional context

The University of Surrey has been committed to integrated/integrative learning from its inception in the 1960's when it adopted a model for its undergraduate education which sort to integrate disciplinary study and learning through year-long professional work placements. In adopting this work integrated learning (WIL) model it was claiming that the outcomes from an undergraduate education are best served through educational designs and learning experiences that integrate campus and work-based contexts and require learners to integrate codified subject-based knowledge, self-study and 'experiential knowing' gained from performing professional roles in the real world. We believe that this is a powerful educational model that gives our students the edge in the competitive employment market and the statistics for graduate employability show that Surrey students have the highest rate of employment six months after graduation. But the university has embarked on an ambitious plan to expand to examine the feasibility to expand opportunity for integrative learning through a new Award that would recognise learning and achievements gained in contexts outside the academic curriculum. The university is calling this a life-wide curriculum and this paper describes the conceptual ideas and design thinking for the award.

An initial proposition

In UK higher education we usually begin with designing a disciplinary curriculum formed around the content and academic skills that we believe as teachers it is important to master. Typically, we try to integrate the real world into our designs by making connections to our disciplinary designs. More rarely we chose a context like work and create a design to enable learners to learn through the work placement experience then seek to re-integrate learners back into the disciplinary curriculum.

But what if we were to begin with the learner and his life, and **see the learner as the designer of an integrated meaningful life experience**. An experience that incorporates formal education as but one component of a much richer set of experiences that embrace all the forms of learning and achievement that are necessary to sustain a meaningful and productive life. Integration suggests the bringing together of separate entities to make a new and more connected whole. We mentally separate study, work and other activities because that is the way our culture sees them, but the reality is that these different experiences are intermingled and integrated into our daily lives. Although the balance of activity changes over time, we develop into the people we are through the unique combinations of experiences we create or co-create and what we learn from and through such experiences.

And **what if we were to see 'work' as the more inclusive context for integration rather than 'education'?** While for many people work is synonymous with having a job, the notion of 'work' can also be defined in terms of purposeful co-ordinated activity aimed at producing something useful (Morin 2004). Using such a broad definition of work incorporates the purposeful activity of studying in order to learn as well as more traditional notions of work in which learning is more typically a bi-product of the work enterprise.

Seeing 'work' as the more inclusive context for integration connects activities that are often treated as separate entities in life. Another advantage of adopting work as the context for integration is that 'work', in the sort of professional domains our students aspire to, generally involves a far richer conception of knowledge and people's role in producing knowledge, and a more complex set of learning situations than students' generally encounter in formal education (see for example Michael Earut's work reported on pages   ).

At the heart of our life-wide learning / life-wide curriculum idea is the deep moral purpose of fostering learners' will or the spirit to be and become who they want to be (Barnett 2004, 2009). Common sense tells us that an individual's life-wide enterprise contains far more opportunity for learners to exercise their will to be than the parts of their lives that are only associated with an academic programme. But will alone is not enough, alongside this intentionality learners must have the agency (ability to think, capability to act, self-awareness and self-regulating capacity) to engage in ways that will enable them to act, influence events, achieve their goals and learn

through their experiences. They must be, or learn to be, agentic learners (Bandura 2001 and Billett 2009). A life-wide learning enterprise contains far more opportunity and potential for the development of human agency than a formal education programme alone and this connects both the moral and educational arguments for implementing these notions of integrative learning.

Seeing the learner as the agent for integration (rather than the educator) and utilising the concept of work (purposeful activity) as our overarching context for learning, we begin to create a new paradigm for developing a curriculum for integrative learning.

Learning for a complex world

'Higher education is faced with not just preparing students for a complex world, it is faced with preparing students for a supercomplex world. It is a world in which we are conceptually challenged and continually so…. This supercomplexity shows itself discursively in the world of work through terms such as flexibility, adaptability and self-reliance. In such terminology, we find a sense of individuals having to take responsibility for continually reconstituting themselves through their life span….. The curriculum might be understood as a set of more or less intentional strategies to produce – in each student – a set of subjectivities…but the required set of subjectivities (required for this supercomplex world) is unlikely to be made clear to higher education….. What is clear however are the essential features of performance namely - understanding (how do we develop the knowledge to learn?), self-identity (what are the unique set of qualities, abilities, attitudes, behaviours and beliefs that we bring to our engagements with the world?) and action (what repertoire of actions give us control over our own destiny?)' (*Ron Barnett*, 2000).

That traditional forms of discipline-based higher education curricula do prepare us for this world of supercomplexity is undeniable, in so far as so many people are able to take on and be successful in rolls that are far removed from their initial disciplinary training. Peter Knight (2001) suggests that this is because learning in higher education is itself complex. 'Amongst other things it is about unending disputes, subtle concepts, large amounts of information to be organised and remembered, and *emerging* understandings of the nature or structure of the subject area itself'.

Looking beyond higher education to the professional worlds to which most of our students aspire we can see the sorts of qualities, skills, dispositions, agencies, ways of knowing and being that are required through the study of professionals doing what they do in their work environments (eg Eraut 1994, 2007 and 2008, Raelin 2007, Dreyfus and Dreyfus 2005, Billett 2009). While higher education has always sort to prepare learners for these professional worlds, we think we can create educational designs that will enable learners to be better prepared for these ways of learning if our practice is informed by research into the nature of learning and knowing in real world environments.

These influences and ways of thinking underpin SCEPTrE's work and led us to form our enterprise around the idea of 'learning for a complex world': the perpetual 'wicked problem' that everyone involved in higher education faces. Our work contributes to the university's educational project which not only prepares learners for the first steps into their chosen careers but will help them think with sufficient complexity so that they can engage with the professional challenges and wicked problems that they will encounter throughout their lives.

Of course humans have always had to deal with complexity (e.g. Figure 1) and we have become who we are because over and over again someone has mastered complexity and created wisdom that has then been incorporated into the social consciousness. Such wisdom is full of integrative (connected, synthetic and relational) thinking and learning. But the challenges today are not the same as they were twenty years ago and in twenty years time they will be significantly different again. We have to prepare students not just for the complexity they face here and now but lay the foundations for dealing with the complexity they will grapple with thirty years in the future.

Figure 1 The human condition: understanding situations searching for better solutions, integrating information and knowledge, thinking with complexity and creating and sharing wisdom through the cultures we inhabit! Complex thinking must involve integrative learning and applying such thinking to the solution of problems or the exploitation of opportunity is applying integrative learning.

It is not easy to represent the complexities we are preparing learners for. The way we chose to convey some of the complexities of the learning, personal and professional development required to 'perform, invent and adapt' in an uncertain, ever changing and perpetually challenging world, was through a symbolic wall drawing (Figure 2).

Figure 2 SCEPTrE's symbolic image of learner as the designer, creator and integrator of their own learning and experiences : a visual metaphor for integrative learning. The image is a metaphor for the way we have to integrate our learning in order to perform. Any complex performance requires integrative thinking.

This image provides us with a powerful metaphor for the integrated nature of human agency as performance in the world often involves many of the things (and more) that are depicted in the image. It is a visual metaphor for the way we as human beings engage in complex thinking and behaviour in response to the situations we encounter and how we utilise and integrate our learning (beliefs, values, knowledge, skills, dispositions, ways of being and experience) in order

to perform in a complex world. This image prompts many questions but two we will try to address in this paper are:

1) *What epistemologies are necessary for learners to cope with future complexity and uncertainty?* Such epistemologies will have to be relevant to students' current lives (the epistemology of relevance) if they are to be successful. Indeed what will unlock learners' potential to cope with the future is their ability to recognise relevance in their lives and engage with it. This is a real challenge for higher education which through its academic traditions has always considered that it new what was relevant. In a fast moving world, where knowledge production and change are so rapid higher education needs to be more open to what is relevant.

2) *What sort of curriculum will enable learners to develop the epistemologies, values and dispositions to engage with the complexity they will encounter in their lives – and we must see life as an integrated whole?* Again the emphasis will have to be placed on relevance. A curriculum that only focuses on the intellectual development of the learner, may stimulate complex thinking but it will do little to recognise that for such thinking to be valuable it needs to be grounded in relevance and meaning making.

Implicit in this visualisation is the notion of people (and most importantly for us our learners) as the great integrators of learning from life-experiences with the capabilities to seize opportunity, adapt and evolve to and in new situations and circumstances. This notion of integration not only embraces what has gone before (the concept of life-long learning) but also what is happening in parallel during any stage of a person's life (our concept of life-wide learning). We coined the term life-wide curriculum to embrace the idea of an educational design that empowers and enables learners' to integrate learning from any aspect of their lives into their higher education experience. We want learners to see themselves as the architects and implementers of their own designs for their personal and professional development: the agents for making their own education (learning experience) more complete.

Our thinking has been influenced by the thinking and writing of Ron Barnett (particularly Barnett 2000, Barnett and Coat 2004 and Barnett 2005). At the heart of our concept is the notion of 'will' the willingness to learn through the whole of life's experiences and the willingness to see self-development as a holistic and integrated process which evolves through participation in life and the choices that individuals make. Stephen Covey's expression of human agency (Covey 2004: 4) is relevant here. 'Between stimulus and response there is a space. In the space lies our freedom and power to choose our response. In those choices lie our growth and our happiness.' We would say in that the freedom to choose space includes involves decisions about who we want to be and become for example the desire to be creative or enterprising and behave ethically and with integrity. We will focus later on what actually happens in this space but first and foremost we believe that our educational designs must nurture the will to be and become and provide people with the opportunity and spaces to make decisions about who they want to be and become. Without this there is no sustained self-motivated grappling with the complexities and challenges of a modern world.

In thinking about the sort of curriculum that would embrace all the forms of learning and being necessary for preparing learners for the complexities and challenges of what lies ahead, we concluded that it had to embrace the whole of a learner's life. In April 2008 SCEPTrE began a programme of work aimed at developing our idea of *life-wide learning through a life-wide curriculum*. This way of thinking moves us from the study-work contexts for the integration of learning that currently underlies the University of Surrey's approach to undergraduate education to a life-wide context for the integration of learning (Jackson 2008, 2009). We created a second wall picture to help us represent and explain this concept (Figure 3).

Learning potential of a life-wide curriculum

The idea that higher education is one component of a life-long process of learning is well established in educational policy and practice. The term *life-wide* learning was proposed by the author (Jackson 2008a and b) to highlight the fact that while a learner is engaged in higher education their life contains many parallel and interconnected experiences outside the

academic curriculum that make a significant contribution to their personal and professional development. The term life-wide curriculum was proposed (Jackson 2008a and b) to highlight the potential for integrating learning from the combination of formal and informal learning experiences that a learner participates in during their higher education experience.

Figure 3 SCEPTrE's symbolic wall drawing representing the concept of life-wide learning through a life-wide curriculum
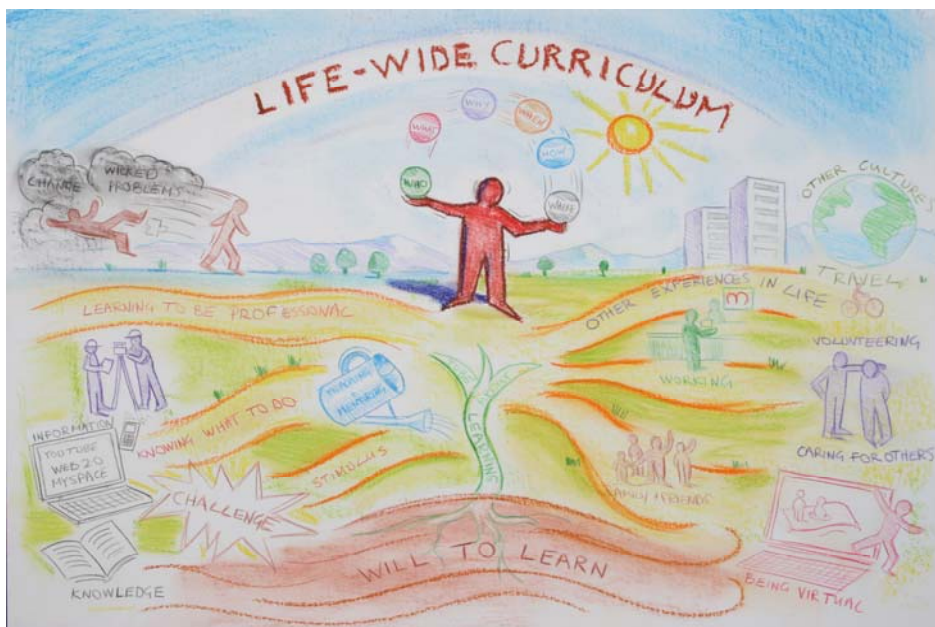
From an educational perspective, the most powerful argument for a life-wide curriculum is that it contains more potential for learning than any other curriculum! Adopting the idea of a life-wide curriculum changes the paradigm of what counts as learning and where learning occurs. It shifts higher education into a more experience-based model of learning. The distinguishing feature of experience-based learning (Andreason et al 1995) is that the experience of the learner occupies central place in the learning process. This experience may comprise earlier events in the life of the learner, current life events, or those arising from the learner's participation in activities implemented by teachers and facilitators. A key element of experience-based learning is that learners analyse their experience by reflecting, evaluating and reconstructing it in order to draw meaning from it in the light of prior experience. An experience-rich curriculum that engages with the full breadth of a learner's life provides an environment within which a more holistic conception of learning and individuals' sense of being in the world can be appreciated. We can appreciate much more (Beard and Wilson 2006) 'learning through being, doing, sensing, feeling, knowing and changing'. Experience of working and learning in different environments is essential to developing a repertoire of 'ways of knowing' and 'being able to come to know'. Experiential knowing is part of action and it lies at the heart of the epistemology of practice. It complements but is different to explicit and tacit knowledge and can only be gained through acts of doing and being (Cook and Brown 1999).

By reframing our perception of what counts as learning and developing the means of recognizing and valuing learning that is not formally assessed within an academic programme, we can help learners develop a deeper appreciation of how, what and why they are learning in the different parts of their lives. Heightened self-awareness is likely to help learners become more effective at learning through their own experiences and being an effective experiential learner should be an essential outcome of a university experience that prepares people for the complexities of an ever changing world.

The epistemology of relevance

How learners understand the way they develop knowledge that is relevant to their needs and ambitions and the needs of the societies they live and work in, is of fundamental importance as we rethink our strategies for preparing them for future learning. The question of learner epistemology is of higher order significance than questions about pedagogy which should follow.

Learning that is grounded in experience, especially when it is a rich, meaningful and immersive experience has the potential to contribute to all forms of learning identified by Marton et al (1983 p283-284) and most importantly, support development of the most elaborate forms of learning. Experience of working and learning in different environments is also essential to developing a repertoire of 'ways knowing' and 'being able to come to know'. Knowing is part of action and it lies at the heart of the epistemology of practice. It complements but is different to explicit and tacit knowledge and can only be gained through acts of doing and being (Cook and Brown 1999).

Baxter Magolda (1992 and 2001) identified four qualitatively different *ways of knowing*. These are:
- *Absolute knowing*: knowledge exists in an absolute form, it is either right or wrong
- *Transitional knowing*: knowledge is certain in some areas and uncertain in other areas
- *Independent knowing:* knowledge is uncertain. Everyone has their own beliefs
- *Contextual knowing*: knowledge is contextual. One judges on the basis of evidence in context.

If a learner only possesses a way of knowing that is absolute, then he or she is unlikely to cope well with problem-solving in conditions of uncertainty i.e. the real world. However, a student who possesses an independent way of knowing is likely to feel more confident, and be more effective, in such a situation. A student who has learnt in lots of different experience-based contexts will realize that knowledge, in real world problem working, is often strongly situated and contextual. A way of knowing is more than an academic cognitive skill that can be "developed" through carefully designed learning activities. It is firmly a part of who you are – your identity. In other words, changing one's way of knowing is to change as a person.

If we want to support the development of learners as integrative thinkers and performers who can develop and use knowledge that is relevant to a particular situation then we need to understand the epistemology that connects learning and practice (using the idea that practice is about people working on purposeful activity to achieve their goals regardless of whether they are studying or in a job).

The main problem with traditional higher education as a vehicle for preparing learners for the complexities of the world ahead of them is that it seems to take such a narrow view of what learning and knowledge is. Higher education is pre-occupied with codified knowledge and with its utilisation by learners in abstract hypothetical problem solving. This is not to say that handling complex information in this way is not useful – far from it: it is an essential process for enabling students to learn how to think about and work with complexity.

> 'In universities knowledge is primarily associated with publication in books and journals, and subject to quality control by editors, peer review and debate. This *codified knowledge* is then given further status by incorporation into educational programmes, examinations and qualifications. The model of knowledge creation is that of an organised, socially constructed knowledge base, to which individual authors and groups of co-authors add new contributions. Each discipline has editors and referees controlling the *acceptance of publications*, using agreed criteria. Journals use the criterion of *truth* according to the norms of the community from which they draw its readership. Some people in higher education regard these criteria as problematic, but those outside higher education are more likely to be concerned about its relevance. Practical work in science, engineering and vocational education involves learning knowledge that has been shown to work, but cannot be fully described in books; and *cultural knowledge* that has not been codified, plays a key role in most work-based practices and activities' (Eraut 2009 p1).

If we return to the idea that *work* is our overarching context for integrative learning and we take Michael Eraut's rich conception of personal knowledge we can gain a better understanding of the scope for the sources of knowledge that learners draw upon in their integrative processes.

'I argue (Eraut 2009:2) that personal knowledge incorporates all of the following:
- *Codified knowledge* in the form(s) in which the person uses it
- *Know-how* in the form of *skills and practices*
- Personal *understandings of people and situations*
- Accumulated *memories of cases* and episodic *events* (Eraut, 2000, 2004)
- Other aspects of personal *expertise*, *practical wisdom* and *tacit knowledge*
- *Self-knowledge*, *attitudes, values* and *emotions*.

The evidence of personal knowledge comes mainly from observations of performance, and this implies a *holistic* rather than *fragmented* approach; because, unless one stops to deliberate, the knowledge one uses is already available in an *integrated form* and ready for action.'

Constructivist epistemology

If we are to develop learners who are able to appreciate that their personal knowledge is a combination of these different forms of knowledge and that they are capable of developing knowledge for a purpose and in different contexts, and that they integrate their learning drawing fro past experiences and adapting what they know to new situations, then HE has to give greater consideration and value to constructivist epistemology. This would recognise that integrative learning is at the heart of an individual's process of personal meaning making, and developing, acquiring and using knowledge to achieve particular purposes in particular contexts, and also co-creating knowledge for and through work, when working with other people.

So much of higher education is positivist in its approach to learning and about telling learners what we think they need to know in contrast to the rest of their lives where they usually have to determine what they need to know and find out for themselves. It is not by accident that we highlight in our symbolic image of learning for a complex world (Figure 2) the need for learners to be able to formulate good questions to guide their own learning and problem solving.

What is so significant about pedagogies for integrative learning (Klein 2005:3) is that:
'traditional teaching functions of telling, delivering, directing and being a sage on the stage are (substantially) replaced by the models of mentor, mediator, facilitator, coach and guide…..The process is constructivist at heart. Students are engaged in 'making meaning'. Applications of knowledge takes precedence over acquisition and mastery of facts alone, activating a dynamic process of question posing, problem posing, decision making, higher-order critical thinking and reflexivity. A set of core capacities emerge from the intersection of these two concepts:
- asking meaningful questions about complex issues and problems
- locating multiple sources of knowledge, information, and perspectives
- comparing and contrasting them to reveal patterns and connections
- acknowledging and negotiating their contradictions
- creating an integrative framework and a more holistic understanding.
- understanding issues and positions contextually.
- being able to use information by integrating into their existing knowledge and adapting it so that it can be used in other situations.'

Many of these core capacities for being an integrative learner can be related to the process of inquiry which John Dewey considered to be 'the controlled or directed transformation of an indeterminate situation into one that is so determinate in its constituent distinctions and relations as to convert the elements of the original situation into a unified whole.' The idea of 'productive inquiry' (Dewey 1922 discussed by Cook and Brown 1999) lies at the heart of our symbolic learning for a complex world representation (Figure 2). The ability to pose and form good questions and be able to find things out

in order to make good decisions about what to do is an essential capability to be developed if we are to help learners become integrative thinkers and doers.

Productive inquiry is another unifying concept for integrative learning because it can be applied to all situations : from scientific investigations to situations that crop up in our daily lives. It is a capability we need in all working contexts. 'Productive inquiry is not a haphazard, random search; it is informed or disciplined by the use of theories, rules of thumb, concepts and the like. These tools for learning are what Dewey understands the term knowledge to mean and using knowledge in this way is an example of that form of knowing which Dewey called productive inquiry' (Cook and Brown 1999:62).

At the heart of the integrative learning process is the space where people assess situations, recognise problems, challenges and opportunities, form questions and strategies to find out things so that they can make better decisions about what to do, make plans about what to do and then go and do it, all the time being conscious of the effects of their actions. This is fundamentally a process of proactive self-regulation. Self-regulated learning involves self-determined processes and associated beliefs that initiate change and sustain learning in specific contexts. It is fundamentally linked to (Schunk and Zimmerman 1998, Zimmerman 2000, Zimmerman and Schunk 2003):

- metacognitive processes such as planning, organising, self-instructing, self-monitoring and self-evaluating one's efforts to learn;
- behavioural processes such as selecting, structuring, and creating environments for learning;
- processes and beliefs that motivate self-regulated people to learn – such as beliefs about their own capabilities to learn, beliefs that the outcomes of learning will be worthwhile, intrinsic interest in the task and satisfaction or dissatisfaction with their own efforts to learn.

In a self-regulated learning system created by an individual the processes for learning and the beliefs that motivate learning are constantly being adjusted in response to three sources of control (Zimmerman 2000). Each source must be self-monitored (observed and understood) using self-determined feedback loops. *Behavioural self-regulation* involves self-observing and strategically adjusting motoric processes e.g. the physical responses to a particular situation. *Environmental self-regulation* involves observing and adjusting the environmental conditions or outcomes e.g. removing things that are a distraction. Covert self-regulation involves monitoring and adjusting cognitive and affective states such as using imagery to remember or relax. Highly self-regulated people are strategically flexible, environmentally resourceful and perceptive of personal age.
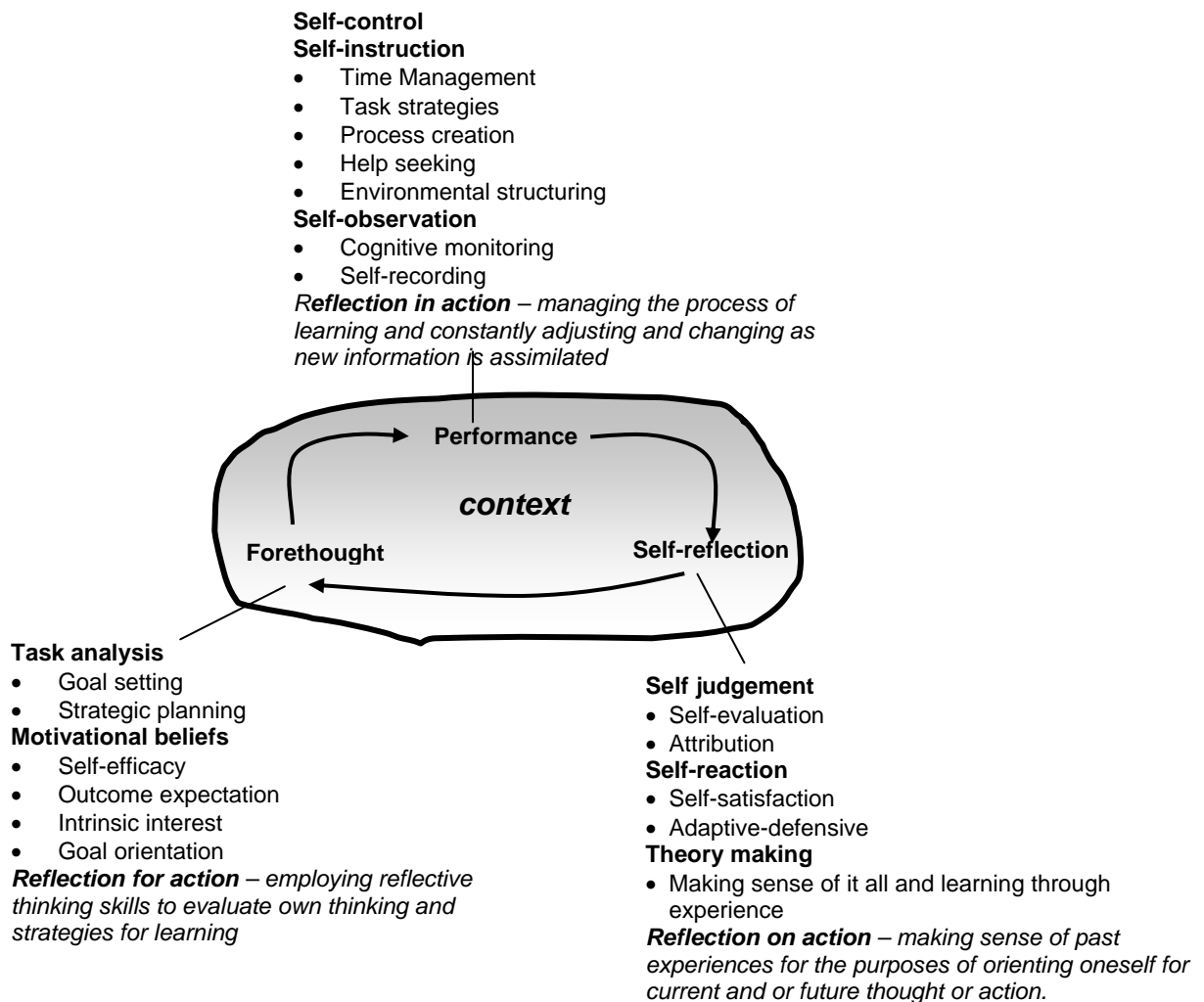
Self-regulation can be represented as a continuous process involving forethought (planning and decision making) – performance – self-reflection on performance operating within a context specific environment that is structured by the learner to provide resources to enable them to achieve what it is they want to achieve (Figure 4). Self-regulation provides an explanation for the way learners acquire knowledge and make it their own and integrate their learning through the diverse experiences that make up their lives. dinate categories – task analysis and self-motivational beliefs – the will to do something and the will to do something in a particular way. People do not engage in tasks or set learning goals and plan and work strategically if they are not motivated by strong personal agency (Zimmerman 2000 p.226). In particular, self-efficacy – personal beliefs about having the means to learn or perform effectively and outcome expectations – personal beliefs that the outcomes will be worthwhile are key features of personal agency.

Performance – includes the capabilities and dispositions to instruct self and seek help to learn, the self-management of tasks, the production of creative processes and the structuring of the environment to optimise my learning. These processes enable learners to optimise their effort. A second set of subordinate processes used during the performance phase is self-observation. It involves the cognitive monitoring of performance and the conditions which surround and influence it.

Self-reflection – involves both self-judgements and reactions to those judgements. The two key self-judgement processes are self-evaluation and attributing causal significance to the results. Self-evaluation involves comparing own performance with a standard, criteria or goal. It might also involve comparing own perceptions of performance with the feedback given from students or peers. Attributional judgements are pivotal to self-reflection because attributions to a fixed ability prompt learners to react negatively and discourages efforts to improve. By contrast attributions of poor performance to inappropriate learning strategies sustains perceptions of efficacy.

Self-reactions include self-satisfaction and adaptive inferences. Self-satisfaction involves perceptions and associated effects regarding ones own performance. Courses of action that result in satisfaction and positive effect are pursued. Whereas actions that produce dissatisfaction and have negative effects are avoided. Self-regulated learners condition their satisfaction on reaching their goals, and these self-incentives motivate and direct their actions.

Figure 4 Model of self-regulated learning Zimmerman (2000 p. 226) coupled to notions of reflection Ertmer and Newby (1996).

Self-control
Self-instruction
- Time Management
- Task strategies
- Process creation
- Help seeking
- Environmental structuring

Self-observation
- Cognitive monitoring
- Self-recording

Reflection in action – managing the process of learning and constantly adjusting and changing as new information is assimilated

Performance

context

Forethought

Self-reflection

Task analysis
- Goal setting
- Strategic planning

Motivational beliefs
- Self-efficacy
- Outcome expectation
- Intrinsic interest
- Goal orientation

Reflection for action – employing reflective thinking skills to evaluate own thinking and strategies for learning

Self judgement
- Self-evaluation
- Attribution

Self-reaction
- Self-satisfaction
- Adaptive-defensive

Theory making
- Making sense of it all and learning through experience

Reflection on action – making sense of past experiences for the purposes of orienting oneself for current and or future thought or action.

Concepts of self-regulation developed through empirical studies of students engaged in learning can be directly related to the processes through which professionals develop knowledge and learn through work. This provides us with a theory for integrative learning that explains how people learn in these different contexts.

Michael Eraut (Eraut 2007, 2009) defines the basic epistemology of practice in professional work situations as:
- *Assessing situations* (sometimes briefly, sometimes involving a long process of *investigation and enquiry*) and continuing to monitor the situation;
- *Deciding what, if any, action to take*, both immediately and over a longer period (either on one's own or as a leader or member of a team);
- *Pursuing an agreed course of action*, performing professional actions - modifying, consulting, evaluating and reassessing as and when necessary;

- *Metacognitive monitoring of oneself*, people needing attention and the general progress of the case, problem, project or situation; and sometimes also learning through reflection on the experience.

Figure 5 The epistemology that enables us to learn as we perform and through the experience of doing things in an uncertain and challenging world. The simple representation is not intended to convey that what happens in the process of assessing situations (which may be continually changing), deciding what to do (which might be provisional in order to learn what to do), doing (which may change as we realise that what we are doing is not having the desired effect) and reflecting on performance in order to gain deeper understandings, is simple and linear. The metaphor of juggling is apt to adapt and create is apt.

This basic epistemology used by professionals to evaluate a situation – decide how to respond – do something and change what we do when we see and understand its effect – is also the basic epistemology we use in other areas of our lives where the onus us in us to decide what to do and act (like when students are confronted with an assignment that they have to complete). It seems reasonable to infer that we can develop and practice this epistemology through life experiences outside a professional work context (a learner's life-wide curriculum).

But being able to begin to engage with a situation and then follow through with appropriate actions requires capability, defined by Michael Eraut in terms of "what individual persons bring to situations that enables them to think, interact and perform" (Eraut 1997, 1998), and " it is everything that a person (or group or organisation) can think or do" (Eraut 2009 p6). Developing capability is a never ending (life-long and life-wide) story and it has both generic transferable dimensions and highly specific situated dimensions that may or may not be transferable. Being an integrative thinker and being able to integrate learning are important dimensions of capability for professional people. Michael Eraut has developed a concept of professional capability based on the learning trajectories he has witnessed when observing professionals working (Eraut 2009:5). SCEPTrE is attempting to develop tools from this model of capability for to use as an aid for thinking about learning and capability within the award we are proposing.

Personal and Professional Development Planning:

Helping learners develop deeper awareness and understanding of this epistemology of practice (learning for performance and learning through performance) and creating lots of opportunity for students to practise this way of developing personal knowledge and co-creating knowledge with others, is central to the way we are approaching integrative learning through our concept of life-wide learning through a life-wide curriculum. We need to embed these ideas of self-regulation and the spaces for students to exercise their choices and practice self-regulation into our educational designs and we are aided by the adoption in the UK of an

approach to learning that is being promoted through a UK-wide policy called Personal Development Planning (PDP[1]).

PDP processes contain a set of interconnected activities (Jackson 2003) namely:
- thinking about and planning – how to do / achieve something;
- doing something / acting on plans – learning through the experience of doing with greater self-awareness – and modifying improvising plans through the experience of doing;
- recording – thoughts, ideas, experiences, both to understand better and to evidence the process and results of learning;
- reviewing – reflections on what has happened, making sense of it all;
- evaluating – making judgements about self and own work and determining what needs to be done to develop/improve/move on;
- using – the personal knowledge and sense making derived from PDP to do something different and / or change behaviours or future actions

From this we can generate a process-based definition of PDP i.e. Approaches to learning that connect planning (specific goals for learning), doing (aligning actions to learning goals), improvising (because we come to realize that some actions are better than others within a given situation), recording (self-evidencing learning), reflection (reviewing and evaluating learning and actions) and becoming more aware of self in the process.

Underlying this conceptualisation of PDP is the belief that it is helping to build self-identity, self-awareness and self-efficacy. But regardless of the rhetoric that surrounds PDP, the primary objective is to broaden the repertoire of students' skills and capabilities to learn so that they are able to:
- learn in a wider variety of ways and a wider range of contexts and be conscious of the way that they are learning;
- recognise, judge and evidence their own learning and the progress they are making;
- draw upon and use their expanded personal knowledge to achieve particular goal;
- review, plan and set new goals;
- action their learning in ways that are consistent with their planning: their planning being a source of energy and motivation;
- create new opportunities for themselves as a result of their new personal knowledge.

The learners own narrative of learning, achievement and experience is represented through a variety of media for example diaries, journals, written stories, photographs, drawings, other artefacts, audio stories, digital stories, blogs, video clips on You Tube and more. Certain tools and spaces encourage the telling and archiving of these narratives for example e-portfolios and Wikis, virtual spaces like YouTube, MySpace, FaceBook, BLAST and a hundred more.We cannot stop the creativity of people in expressing themselves and creating meaning, but we can and often do in higher education make people use certain tools rather than others. At Surrey we are using e-portfolio as the tool of choice to support the recording and archiving of evidence of learning and achievement although other technologies may be used to demonstrate the learning and incorporated into or connected to the e-portfolio.

The self-determined, self-managed and self-regulated process that learners engage in through the our proposed Award is fundamentally PDP in action.

Emergent paradigm for integrative learning
Putting all these things together we have an emergent paradigm for integrative learning in a modern world that aims to prepare learners for future learning in an unknowable ever more complex world. It involves an appreciation that:
- the learner is designer, creator and producer of an integrated meaningful life experience expressed through their own life-wide curriculum. It is the learners own experiences that create a favourable environment for complex learning and achievements.
- the role of the university is to encourage, support, value and recognise learners' life-wide learning enterprise – learning in all the environments that are relevant to them and create

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[1] At the University of Surrey we call this Personal and Professional Planning to link it to our strong commitment to developing professional capability.

designs that enable learners to practice and develop further their epistemology of relevance. Higher education needs to pay more attention to the pedagogies, curriculum designs and infrastructures that support experiential learning.

- self-regulation and productive inquiry lie at the heart of this epistemology of relevance. They are the fundamental to integrative learning and applying such learning: these forms of being, knowledge creation and doing are fundamental to successful learning and performance in all work environments. At Surrey PDP is the practical embodiment of the theory of self-regulation.
- 'work' defined as purposeful coordinated activities aimed at producing or achieving something useful and not 'education *per se*', is the most useful way of framing the context for nurturing integrative learning.

Integrating learning from the USA integrative learning movement

In N America, the integrative learning movement appears to have grown from a number of reasons:

- The desire to create greater coherence for the learner of curricular experiences that appear to be highly fragmentary – combinations of major/minor/service components. In the UK, because of the curriculum regulatory frameworks we operate with strong emphasis on single honours undergraduate degrees and far less interest in learning outside the academic curriculum this reason is far less pronounced.

- A concern to make academic learning more relevant and connected to the real world.

    'Fostering students' abilities to integrate learning—across courses, over time, and between campus and community life—is one of the most important goals and challenges for higher education. Initially, students connect previous learning to new classroom learning. Later, significant knowledge within individual disciplines serves as the foundation, but integrative learning goes beyond academic boundaries. Indeed, integrative experiences often occur as learners address real-world problems , unscripted and sufficiently broad, to require multiple areas of knowledge and multiple modes of inquiry, offering multiple solutions and benefiting from multiple perspectives. Integrative learning also involves internal changes in the learner.' (AACU Value Statement 2009)

    This reasoning is valid for any higher education system.

- An appreciation of the challenges of the modern world and the need to develop students' capabilities for, and commitment to, life-long learning and to the process of continual renewal, adaptation and re-invention that their working lives will necessitate.

    'These internal changes, which indicate growth as a confident, lifelong learner, include the ability to adapt one's intellectual skills, to contribute in a wide variety of situations, and to understand and develop individual purpose, values and ethics. Developing students' capacities for integrative learning is central to personal success, social responsibility, and civic engagement in today's global society. Students face a rapidly changing and increasingly connected world where integrative learning becomes not just a benefit...but a necessity.' (AACU Value Statement 2009)

    This would also be a valid reason for developing more integrative approaches in UK HE.

- An appreciation of the pedagogies and learning capabilities required of a trans-disciplinary world that must transcend discipline-only contexts. But also a recognition that there needs to be a connection between disciplinary and real world study.

    'Because integrative learning is about making connections, this learning may not be as evident in traditional academic artifacts such as research papers and academic

projects unless the student, for example, is prompted to draw implications for practice. These connections often surface, however, in reflective work, self assessment, or creative endeavors of all kinds. Integrative assignments foster learning between courses or by connecting courses to experientially-based work. Work samples or collections of work that include such artefacts give evidence of integrative learning. Faculty are encouraged to look for evidence that the student connects the learning gained in classroom study to learning gained in real life situations that are related to other learning experiences, extra-curricular activities, or work. Through integrative learning, students pull together their entire experience inside and outside of the formal classroom; thus, artificial barriers between formal study and informal or tacit learning become permeable. Integrative learning, whatever the context or source, builds upon connecting both theory and practice toward a deepened understanding.' (AACU Value Statement 2009).

This would also be a valid reason for developing more integrative approaches in UK HE.

- An attempt to address the issue of emergence in complex social systems (Seel 2004) which is a characteristic of everyday work (that's inside and outside higher education) but which traditionally formal education pays little consideration to.

  'The importance of real world integration is nowhere more evident than in emergent pedagogies that grow out of students' need for engagement with an occasion or an issue that trumps whatever might be on the syllabus' (Gale 2005:3)

- The need to make better use of the resources we have available within a university environment for educating learners as whole people.

  'Learning Reconsidered is an argument for the integrated use of all of higher educations' resources in the education and preparation of the whole student. It is also an introduction to new ways of understanding and supporting learning and development as intertwined, inseparable elements of the student experience.' (NASPA & ACPA 2004).

  This argument put forward in 'Learning reconsidered: a campus-wide focus on the student experience' provides another cogent reason for adopting a more integrated approach to the development of students as whole people working in learning environments that have organised themselves in an integrated way, is an important consideration in the development of our new Award framework.

- To this we might add the need to make better use of resources for learning in environments outside the university. Learners are the great integrators and it is within their power to unlock opportunities and resources for learning in the wider world that Universities and Colleges cannot achieve. This is another important consideration in the development of our new Award framework.

Co-creating new institutional practices

But it is one thing to have ideas and another to create meaningful and useful practices that give concrete expression to the ideas. At this point in time (October 2009) we are less than half way in a four year development and implementation plan, the first half of which is spent developing the design and persuading the University to embrace the design. Figure 6 provides a representation of this part planned part emergent process.

Bringing about organisational change on this scale is a complex process involving huge amounts of integration and integrative learning. It illustrates well (to me) what learning for a complex world is all about and reinforces my beliefs in why we are trying to do this. The change project can be represented in terms of simultaneous development in four broad domains of action.

- political, managerial and collegial: without the support of leaders, managers and colleagues in many parts of the university we will not gain the authority, resources or buy in to change
- conceptual and communication : without the ideas and their presentation in ways that people find compelling we will not get the buy in to change
- research and networking : without the knowledge for practice particularly gained from what other universities and doing we will not be able to design a good system and persuade colleagues that it is worthwhile
- practice and infrastructures : without developing, piloting and evaluating our designs and infrastructures in our own contexts with our own students we wont know whether they will work.
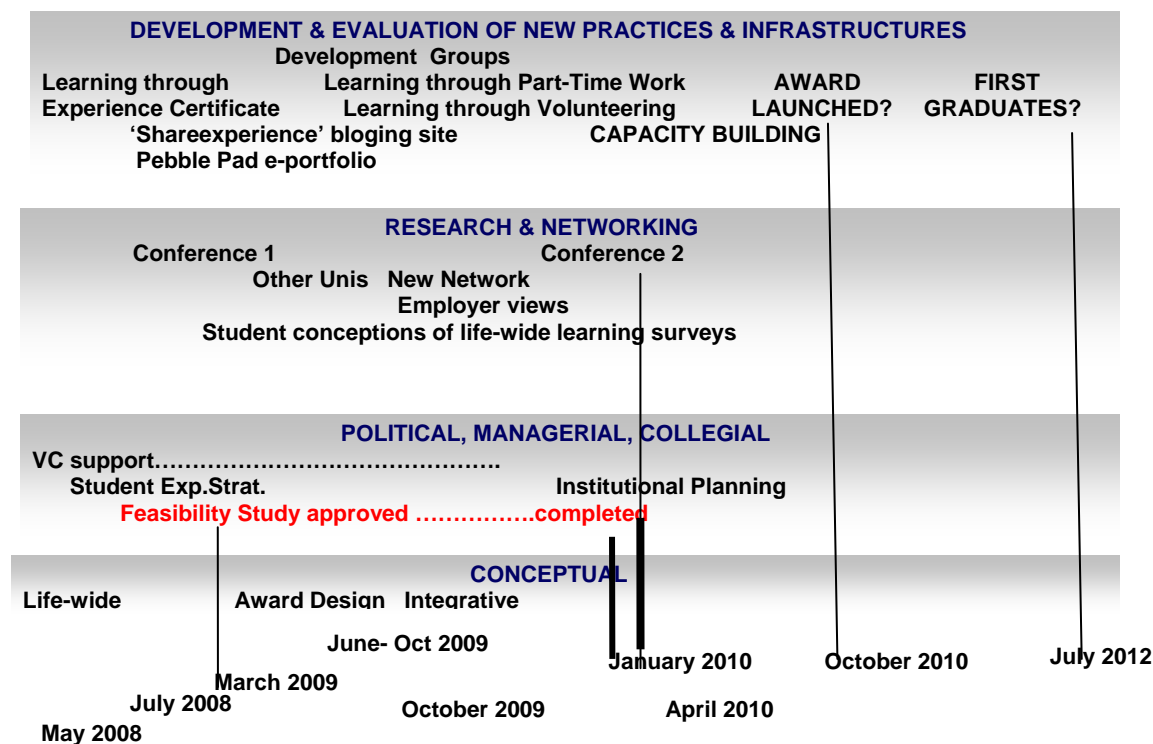
The process began in April 2008 with an ideas paper (conceptual thinking) and what we hoped would be a compelling story of enhancing our existing excellent model of integrative education. The Vice-Chancellor's backed our ideas with an explicit statement of support that helped us launch the process.

Realizing that idea of life-wide learning through a life-wide curriculum stood little chance of implementation unless it was embedded in the University's policies for learning and teaching we tried to influence the architect of a new Student Experience Strategy which was being formed in 2008 around what the university considered was its brand distinctiveness – come to Surrey for 'a more complete education'. The life-wide learning idea helped the people who were creating policy to explain their concept more fully and an alliance of ideas and interests was formed. The life-wide curriculum idea was incorporated into the strategy and SCEPTrE given the role of developing the idea.

In November 2008 we embedded our vision within our Fellowship policy which provides small grants to talented teachers and encourages further innovation in line with SCEPTrE's educational mission. Our vision-building process was boosted by a statement from the Vice Chancellor in the foreword to the programme for the University's Teaching and Learning conference in March 2009.

'We are inspired by a vision of a higher education experience that recognizes that students are engaged in learning in all aspects of their lives throughout their time at Surrey…..it is this 'whole of life' learning that enables students to develop through a combination of academic study, professional placement, co-curricular opportunity and learning through life, their unique identity and spirit to be who they want to be and help them realize their full potential as a human being.'

Figure 6 Surrey Award development process. Real April 2008 – October 2009, imagined beyond this date.

DEVELOPMENT & EVALUATION OF NEW PRACTICES & INFRASTRUCTURES

Development Groups

Learning through	**Learning through Part-Time Work**	**AWARD**	**FIRST**
Experience Certificate	**Learning through Volunteering**	**LAUNCHED?**	**GRADUATES?**
	'Shareexperience' bloging site	**CAPACITY BUILDING**	
	Pebble Pad e-portfolio		

RESEARCH & NETWORKING

Conference 1   **Conference 2**

Other Unis   New Network

Employer views

Student conceptions of life-wide learning surveys

POLITICAL, MANAGERIAL, COLLEGIAL

VC support…………………………………….

Student Exp.Strat.   **Institutional Planning**

Feasibility Study approved ……………completed

CONCEPTUAL

Life-wide   **Award Design Integrative**

June- Oct 2009

March 2009   **January 2010**   **October 2010**   **July 2012**

July 2008

October 2009   **April 2010**

May 2008

In February 2009, SCEPTrE sought and gained the approval of the University's Learning and Teaching Strategy committee to undertake a Development and Feasibility Study for an Award that would recognize and value learning gained outside the academic curriculum. This provided SCEPTrE with both a policy and a strategic mandate for its development work on the idea of a life-wide concept of integrative learning – we are calling this the Surrey Award.

The primary purpose of an Award would be to provide a framework to encourage, recognise and value students' attempts to make their own educational experience more complete by demonstrating that they had integrated into their higher education learning profile**,** learning and achievements from different aspects of their lives – notably Work, Voluntary Service and an area or areas of Personal Choice. A description of the development process to date can be found in Jackson (2009).

> 'Two challenges faced by those who help others learn are that: some people don't take responsibility for the direction of their own development and some people don't learn from the experiences that they have. In other words, some people won't plan and some people can't grasp and use their emergent experiences. Others, of course can do both of these things' (David Megginson 1994:29). One of our objectives is to ensure that Surrey graduates can and want to do both of these things.

Our provisional design for the integration of life-wide learning

Before explaining our provisional design it is worth re-iterating here that the University of Surrey has always been committed to the idea of integrative learning through its model of undergraduate education. SCEPTrE is trying to create the conditions (institutional will, ownership for the ideas and practices, resources and buy in from the students and staff) for the next stage of development. Our suggested solution to the problem called 'how can we improve *all of our* students' ability to integrate

and apply learning in different contexts?' is to introduce an award that recognises and values such learning in the context of students' life-wide learning enterprise.

Such an award would serve a number of purposes. The *common sense purpose* is to recognise and value learning and achievement gained outside the academic curriculum or professional training experience. There is significant pressure in the UK to prepare students for the world of work and the pragmatic purpose of such a framework is to encourage learners to develop a better understanding of the knowledge and skills they have gained from various experiences in order to be better prepared for presenting themselves to employers.

A useful bi-product of adopting such an award framework would be to encourage the appreciation amongst Faculty, support service staff and students of a more comprehensive and complex view of learning and the nature of knowledge and how it is constructed and used in different contexts.

The *deeper purpose* which underlies both of these purposes is to provide opportunity for learners to practice using and developing the epistemology they will need when learning becomes the bi-product rather than the primary focus of work. The framework is designed to enable students to integrate their learning and experiences from different aspects of their lives notably University experiences, Work, Voluntary Service and experiences of Personal Choice (Figure 6).

A student entering the award scheme would be making a commitment to:
1) a sustained process of personal and professional development and integrative learning
2) a self-managed process taking responsibility for creating a personal & professional development plan and periodically reviewing progress within the framework of opportunities embraced by the Award Framework.
3) demonstrating learning and achievement in four Learning through Experience Certificates covering Life Skills, Work, Volunteering and an area of Personal Choice.
4) maintaining an e-portfolio to gather and store evidence of learning and achievement showing how skills that have been learnt and applied in a range of contexts.
5) participating in conversations about learning.
6) creating synthesising and integrating accounts of the learning and achievement gained through participating in the award.

Typically an undergraduate might engage with the award over about two years but this would be open to negotiation. The framework would allow students to integrate other qualifications into their achievement record to substitute for the University's Learning through Experience Certificates (for example nationally recognised certificates in Volunteering).

The **Life Skills Certificate** supports the self-managed planning, reviewing and integrative learning process. Within the framework of the Life-Skills Certificate participants:
• Are introduced to the Award though a workshop during which they prepare their initial personal and professional development plan and the technology to support their records of experiences, learning and achievement
• Engage with opportunities for life and employability skill development in line with their development plan, through the many opportunities available on- and off- campus recording and integrating their experiences, learning and achievement in their e-portfolio
• Periodically review their progress and refine their personal and professional development plans, integrating the learning and achievement they have demonstrated through their experience-based Work, Voluntary Service and Personal Choice Certificates.
• Synthesise and representation of learning, personal and professional development demonstrated through participation in the Life-Skills, Work, Volunteering and Personal Choice Certificates.

Achievement of the Life Skills Certificate is dependent on demonstrating an appropriate level of engagement with the process outlined above (recorded in the e-portfolio and personal development plans) and the evidence of learning demonstrated in the integrating accounts for the Life-Skills, Work, Volunteering and Personal Choice Certificates.

Figure 6 Provisional design for an award to support integrative learning that would expand our ability to recognise and value such learning beyond the current undergraduate model of

education. It would also provide us with the means of recognising and valuing such learning for our undergraduate students.
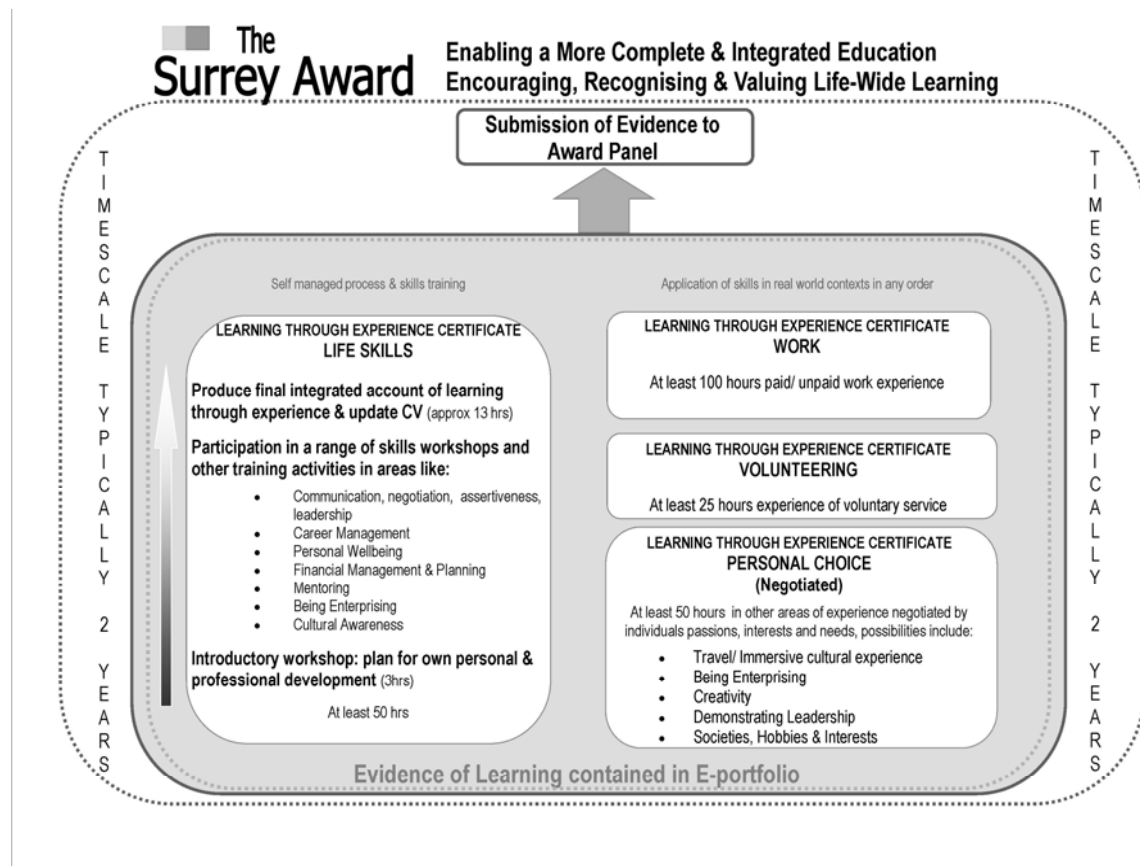
Learning through Experience Certificates

The fundamental pedagogy we are using is intended to promote responsible self-regulation and productive inquiry described in the previous sections of this paper. We call this personal and professional development planning at Surrey.

In line with the student's overall development plan, the student will participate in one of the three contexts for learning (work, volunteering or personal choice). They create a learning agreement setting out the key expectations (Appendix 1). They engage in their work and create a weekly entry in a blog or diary and their coach engages encourages them, through their comments, to think about their learning and the personal and professional development they are gaining.

Students are encouraged to reflect on their experiences through a tool that is being developed and evaluated based on Michael Eraut's Learning Trajectory model of professional capability Figure 7. We have developed a website to support reflective blogs and diaries (our shareexperience site) and adapted the software to enable students to categorise their blogs using the Michael Eraut capability framework, so that they can see and show that any story of an experience usually involves performance in several dimensions of the capability profile. This is a good way of helping students understand the integrative nature of the work-learning process.

Figure 7 Learning through Voluntary Service aid to reflection and evaluation of personal and professional development. Adapted from the Learning Trajectory model of professional capability framework developed by Professor Michael Eraut (Eraut 2009:5)

Your motivations/values? • Why did you undertake a volunteering role? • Why did you seek a role within this particular organization? **Finding and getting a voluntary position** • *What is the nature of your voluntary position?* • *How did you find this role?* • *What did getting the position involve?* • *What did you learn about finding and getting a volunteering position through this process?* **Understanding the organization / enterprise in which you work** • *What sort of organization do you work in?* • *What is its purpose?* • *How is it organized? – departments/units/teams* *How is it managed? managers/plans/meetings/teams/team leaders* • *How are priorities determined?* • *Who do you work with? (colleagues, customers, managers)* • *What sorts of things happen day to day in your volunteering environment?* **Work – what you do** • *What sort of tasks do you perform?* • *What do these tasks involve in terms of knowledge, skill and competency?* • *How have you developed these skills and competencies?* • *What forms of communication are involved in undertaking these tasks?* • *Who do you need to collaborate with when undertaking these tasks?* **Use / adaptation of University acquired knowledge and skills in your work** • *Have you been able to use your volunteering experience in any of the knowledge or skills you have gained through your university course?* • *Have you been able to use your volunteering experience in any of the knowledge and skills gained through other activities at university eg DAVE skills sessions, membership of societies, part time work* **Decision making and problem solving** *In what contexts do you:* • *Have to assess a situation?* • *Gain information/knowledge to decide what to do?* • *Decide a course of action?* • *Undertake the action and monitor the effects you are having?* • *Change the action if necessary?* • *Reflect on and learn from the experience?* *This sort of process is fundamental to many professional and non-professional jobs. Employers are interested in your experiences of doing these things so good examples of personal experiences are very useful.* • *What sort of problems or challenges arose during your volunteering activity?* • *What are the risks involved in your volunteering activity?* • *What sorts of decisions do you have to make?* • *Does anybody help you make decisions?* • *Who do you turn to for help in making decisions?* • *Do you gain the views of others in making decisions?*	**Teamwork** • *Do you work in a team? If yes, who is in the team? How is it structured and organized?* • *How is the team made to feel and act like a team?* • *How does the team decide what needs doing / or how to tackle a problem?* • *How do members of the team help /support each other?* **Communication** • *Who do you communicate with and for what purpose?* • *What forms of communication do you use in your volunteering environment?* • *What communication issues have you encountered?* • *What sorts of things happen when everyone is communicating well?* **Role Performance** • *What responsibilities do you have in your volunteering position?* • *Who are you accountable to? How do you make yourself accountable?* • *How do you manage these responsibilities / how do you prioritise?* • *Do you have you helped others? How?* • *Have you had to supervise others? What was the context and what did it involve?* • *Have you had to delegate any of your volunteering tasks?* • *Have you led anything? discussion/new ideas/demonstration/new practice/changing the way people see things* • *Have you encountered any ethical issues or challenges in your volunteering experiences? How did you handle them?* • *Have you had to deal with unexpected problems? How did you deal with them?* • *Does anyone appraise you? If yes how is it done?* • *Who gives you feedback on your performance? How do they do it?* **Personal development through voluntary work** • *What sort of behaviours have you had to learn to fulfil your role?* • *What have you learnt through working with the people you work with?* • *What sort of emotional experiences have you encountered in your volunteering environment and how have you dealt with them?* • *How would you say you have changed or developed through your voluntary service?* • *How do you decide that what you are doing is good enough?* • *Are you expected to discuss difficult or challenging incidents and your response to these situations?* • *What do you do to improve your own performance in the voluntary position?* • *Where do you go to get help or advice?* • *Who helps you improve and how do they help you?*

We also use concept mapping to reveal changes in understanding (new learning) as a result of engaging in these work-learning processes. Towards the end of their experience students complete a questionnaire which provides the organisers with structured and systematic feedback on students self-reported learning and development and encourages the student to reflect further on their learning.

The final act in the integrative work-learning process is the production of a short synthesising account which enables the student to describe and evidence the learning, personal and professional development that has been significant to them. We are experimenting with digital story telling as a way of enhancing the making of meanings from this process. The student's personal account together

with their categorised blogs and concept maps are the ways in which students demonstrate that they have assimilated and integrated their learning and achievements.

Evaluation of integrative learning and complex achievements

We have benefited enormously from Peter Knight's expert thinking (Knight 2007a and b)

> 'Higher education is 'higher' education because it expects students to master lots of information, to use complicated procedures accurately and to apply difficult concepts and theories. But, more than this, it is 'higher' education because it should make fresh demands. Consider, for example, Engeström's (2004) position that education should certainly induct learners into ways of doing things but it should also help them to apply established knowledge in fresh, often-messy settings and it should help them with 'radical exploration', through which old knowledge is transformed. It is easy to see that the curricula, pedagogies and assessment practices that support induction into ways of doing things are quite different from those that make for radical transformation' (Knight 2007a)

This statement captures the justification for creating an award framework that fosters the sort of indeterminate and complex achievements that Peter Knight claims should be a feature of a higher education. We might also appreciate Knight's (2007a and b) reasoning that there are radical differences in what it takes to assess student learning in the top and left-hand cells a taxonomy for learning, teaching and assessment (Figure 8) and what it needs to evaluate a person's metacognitive knowledge developed through experience about creativity. And if we juxtapose Michael Eraut's notions of personal knowledge[2] such as we are encouraging through the Learning through Experience process, assessment (in the sense of measuring the achievement of a determinate outcome) becomes even more problematic and futile.

Figure 8 A taxonomy for learning, teaching and assessment (after Anderson and Krathwohl, 2001: 28)

The knowledge dimension	The cognitive dimension					
	1 Remember	2 Understand	3 Apply	4 Analyze	5 Evaluate	6 Create
Propositional knowledge: 'Knowing that'						
Procedural knowledge: 'Knowing how'						
Metacognitive knowledge						

Knight (2007a:4-5) argues that 'we need assessment approaches that do not jeopardise attempts to foster complex learning…..Secondly, assessment should encourage the behaviours that favour complex learning: the formation of more propitious self-theories, a metacognitive cast of mind, 'real' transfer; 'deep' approaches to study and collaborative work.' He goes on to say –

> 'Better suited, by and large, to the assessment of complex learning are learning-oriented assessment practices…..I am referring here to assessment practices that are designed to generate information about performance (feedback) and about ways of improving future performance on similar tasks (feedforward). The name of the game is to stimulate deliberation and, often, discussion about performance. It is important to be careful and fair in these assessments but there is not the need to be reliable and precise…..The aim is not to describe achievement with final accuracy but to comment on it in ways that stimulate further learning. Freed of the need to try and produce a perfect verdict on

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[2]   Codified knowledge in the form(s) in which the person uses it
- Know-how in the form of skills and practices
- Personal understandings of people and situations
- Accumulated memories of cases and episodic events (Eraut, 2000, 2004)
- Other aspects of personal expertise, practical wisdom and tacit knowledge
- Self-knowledge, attitudes, values and emotions.

achievement, learning-oriented assessment can be used to stimulate conversations and deliberation about "authentic", divergent and 'in the wild" tasks. Since the goal is not to produce an authoritative warrant to achievement, there is no need to imagine that only teachers can assess. On the contrary, we can plan programmes to develop skill at peer- and self-assessment and, in the process, take advantage of psychological research that shows that we engage better with judgements made by our equals than we do with ones handed down to us by our superiors; peer-assessment can lead to better learning that high-stakes assessment does.'

I cannot create a more useful set of propositions than are communicated through these words of Peter Knight. They capture the beliefs and practices that underlie our approach to evaluating the complex and indeterminate learning and achievements that emerge through the process of learning through experience. Perhaps the only additional feature I would add is our concern to create knowledge-based tools that help learners focus on and understand the areas in which they are developing their complex achievements. Much depends on their readiness and ability to describe the situations they encounter and their responses to such situations. Without their stories their can be no evaluation. Without their appreciation of the integrative nature of their learning their can be no recognition of such learning. Evaluation and learning become an integrated and co-created process with learner and mentor playing their respective roles in helping to explicate complexity.

Dedication
It is fitting to close this paper with extensive reference to Peter Knights work. Sadly, Peter died well before his time in 2007 and I would like to dedicate this Paper to his memory and to his thinking that influences our work. I would have liked very much to have talked to Peter about our development work. I like to think he would have thought that we were on the right tracks but I am also sure he would have added his own ideas to our thinking.

ADDITIONAL INFORMATION
http://lifewidelearning.pbworks.com/ - provides information about our development work
http://lifewidelearning.pbworks.com/Integrative-Learning - background paper on how and why the award encourages and supports integrative learning
http://learningtobeprofessional.pbworks.com/ - the learning to be professional context for our work

I welcome feedback on our ideas.

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Appendix 1 Example Learning Agreement for Learning through Experience Certificates

Surrey Centre for Excellence in Professional Training and Education

Learning through Voluntary Service Certificate

UNIVERSITY OF
SURREY

Learning Agreement

The University of Surrey is committed to helping students learn through the experience of doing things and to the idea that relevant learning experiences can be gained from all aspects of a learner's life. This Agreement is between you a and the University of Surrey represented by your Life-wide Learning Coach.

Name
Programme
Address
Email Address
Contact telephone
Your Life-wide Learning Coach

VOLUNTARY SERVICE EXPERIENCE : *Your context for learning*

TIME SCALE This agreement covers the period XXXXX to –XXXXX (the anticipated period covered by 25 hours of voluntary service)

REASONS FOR PARTICIPATION
What are your motivations for wanting to do this?

ANTICIPATED EXPERIENCES FOR LEARNING
A brief outline of the types of experiences you are likely to encounter and the types of learning and personal development that you think and hope to gain

METHODS FOR RECORDING EXPERIENCES AND PERSONAL DEVELOPMENT
I will maintain a weekly log of the hours I work / and record my experiences and the learning gained in my volunteering role in a blog or diary in my electronic portfolio. I will use the Learning through Voluntary Service Reflective Tool to help me focus on and evaluate my personal and professional development. My Life-wide Learning Coach will review my stories of learning and encourage me to think about my development providing feedback and comments.

Please tick to confirm ☐

SYNTHESIS STORY OF MY LEARNING EXPERIENCE AND PERSONAL DEVELOPMENT
On completion of my volunteering activity I will summarise and synthesis what I have learnt through my voluntary experience in a personal account using the Learning through Voluntary Service Reflective Tool as an aid to structuring my account and my regular blog/ diary as a source of evidence.

Please tick to confirm ☐

Name ……………………………………………………………..

Life-wide Learning Coach ……………………………………

Date …………………………………………