



Developing student and graduate competences for the 21st Century



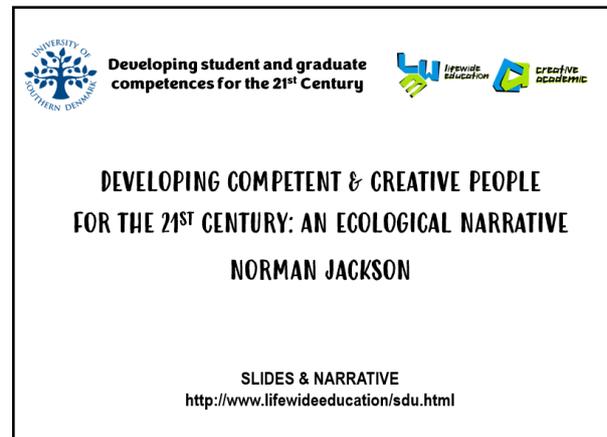
Developing Competent, Creative People for the 21st Century: An Ecological Narrative

Norman Jackson

1 Introductory remarks

It's a pleasure and honour to be given this opportunity to contribute to your conference which is trying to explore and develop new perspectives on how we might help students of today prepare for long and challenging learning lives that will unfold throughout this century and perhaps beyond. This narrative explains the thinking and the sources of ideas underlying my presentation which I am calling an ecological narrative. The powerpoint slides and narrative can be found at

<http://www.lifewideeducation/sdu.html>



A common criticism of higher education, at least in the UK, is that we don't try to develop people as whole people, rather we value individuals' academic/ cognitive achievement at the expense of other important qualities that are necessary to survive and flourish in a turbulent, fast changing world. My educational interest, for many years, has been in the holistic and creative development of people through all the experiences their life affords and these themes will be woven into my narrative. I argue that there is an opportunity for higher education to do more to develop learners in a more holistic way and in particular, encourage them to develop their creativity and inner psychological core that they will need to cope with the turbulence and adversities in their life and to take advantages of the opportunities that will emerge.

The conference theme uses the idea of 'competence(s)' as an educational organising principle, but I have to admit that while it is implicit in my own understanding of performance, I have preferred to use the concept of capability which Michael Eraut defines as 'what individual persons bring to situations that enables them to think, interact and perform' (Eraut and Hirsch 2008 p6). What appeals to me about this concept is it treats performance personally, holistically and situationally which I think you are trying to do in the Learning for Life approach you are developing at SDU.

My narrative and talk has five parts. I will start by considering what we mean by competence and competencies and then speculate on what life might be like as we move deeper into the 21st century. I will then encourage us to think about what competence means in our own life before exploring the proposition that learning, practice and therefore competence are ecological phenomenon, and finally offering some ideas on the how higher education might make use of these ideas.

2 Some perspectives on competence

Robert White (1959, p. 297) was the first to define the term 'competence' as '**... an organism's capacity to interact effectively with its environment.**' In other words, competence is an agency that organisms must possess in order to flourish in their environment. Perhaps this is the wisdom we need to guide us through the rest of the century.

According to Hyland (1994), ‘competence’ attaches to the person and describes their broad qualities in relation to a particular standard or expected norm of behaviour or performance i.e. competence is ultimately a social judgement. Competencies, on the other hand are narrower, atomistic elements that attach to a task or activity. I will adopt Hyland’s suggestion that we should use the term ‘competence’ for “broad groups of general capacities [agency or capability]” and competency(ies) “as a label for specific performances or aspects of activities” (Hyland, 1994, p.21). Competent practice and performance in a complex, unfolding situation over time will therefore involve the use and integration of a repertoire of competencies. General competence is therefore the perceptive and skilful weaving together of competencies so that a person can *interact effectively with [their] environment*. What this actually means then boils down to effective interaction. Higher education must be concerned with specific competencies but perhaps its most important role is to develop competence at the general level in order that people are able to interact any environment they encounter in an effective manner.

CONCEPT OF COMPETENCE

First definition of competence White (1959)
 ‘...an organism’s capacity to interact effectively with its environment.’

Competence broad qualities exhibited by a person in relation to an acceptable standard of behaviour or performance
[inferred - as they interact with their environment]

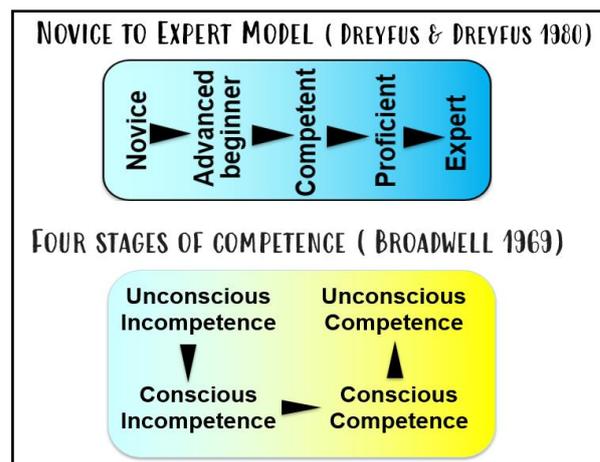
Competencies - specific aspects of behaviour that attach to a task/activity in relation to a particular standard of performance

Hyland (1994)

3 Competence is a journey
From Novice to Expert

Competence is often framed as an unexceptional but *good enough* level of performance in a particular situation. The classic model of the journey from novice to expert in the context of work, proposed by the Dreyfus brothers (Drefus and Dreyfus 1980), puts competence in the middle of the performance continuum with the following characteristics.

- Knowledge* - Good working and background knowledge of area of practice
- Standards of Work* – Fit for purpose, though may lack refinement
- Autonomy* – Able to achieve most tasks using own judgements
- Complexity* – Copes with complex situations through deliberate analysis and planning
- Perception of context* – Sees actions at least partly in terms of longer term goals



Novice to Expert Model (Dreyfus and Dreyfus 1980)

	Knowledge	Standard of work	Autonomy	Coping with complexity	Perception of context
1 Novice	Minimal, or ‘textbook’ knowledge without connecting it to practice	Unlikely to be satisfactory unless closely supervised	Needs close supervision or instruction	Little or no conception of dealing with complexity	Tends to see actions in isolation
2 Beginner	Working knowledge of key aspects of practice	Straightforward tasks likely to be completed to an acceptable standard	Able to achieve some steps using own judgement, but supervision needed for overall task	Appreciates complex situations but only able to achieve partial resolution	Sees actions as a series of steps
3 Competent	Good working and background knowledge of area of practice	Fit for purpose, though may lack refinement	Able to achieve most tasks using own judgement	Copes with complex situations through deliberate analysis and planning	Sees actions at least partly in terms of longer goals
4 Proficient	Depth of understanding of discipline and area of practice	Fully acceptable standard achieved routinely	Able to take full responsibility for own work (and that of others where applicable)	Deals with complex situations holistically, decision making more confident	Sees overall ‘picture’ and how individual actions fit within it
5 Expert	Authoritative knowledge of discipline and deep tacit understanding across area of practice	Excellence achieved with relative ease	Able to take responsibility for going beyond existing standards and creating own interpretations	Holistic grasp of complex situations, moves between intuitive and analytical approaches with ease	Sees overall ‘picture’ and alternative approaches; vision of what may be possible

Stages of competence

Martin Broadwell (Broadwell 1969) identified four stages of competence. The model was originally developed to explain the journey of a teacher but it has been widely adopted by trainers as a model for training in all fields.

STAGE 1 Unconscious incompetence

The individual does not understand or know how to do something and does not necessarily recognize the deficit. They may deny the usefulness of the skill. The individual must recognize their own incompetence, and the value of the new skill, before moving on to the next stage. The length of time an individual spends in this stage depends on the strength of the stimulus to learn.

STAGE 2 Conscious incompetence

Though the individual does not understand or know how to do something, they recognize the deficit, as well as the value of a new skill in addressing the deficit. The making of mistakes can be integral to the learning process at this stage.

STAGE 3 Conscious competence

The individual understands or knows how to do something. However, demonstrating the skill or knowledge requires concentration. It may be broken down into steps, and there is heavy conscious involvement in executing the new skill.

STAGE 4 Unconscious competence

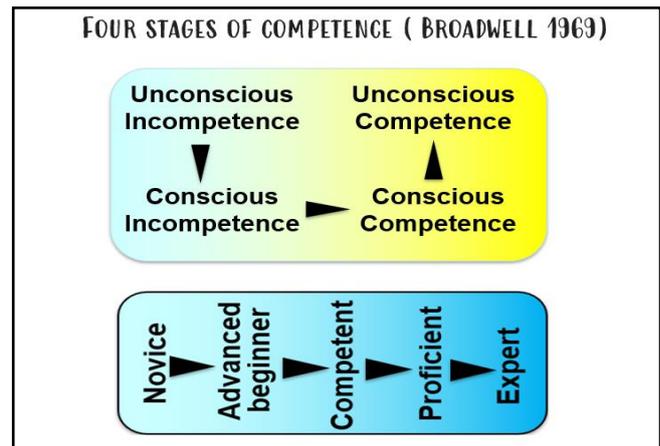
The individual has had so much practice with a skill that it has become "second nature" and can be performed easily. As a result, the skill can be performed while executing another task. The individual may, or may not, be able to teach it to others, depending upon how and when it was learned.

It is tempting to relate the 4 stage model to the novice to expert model proposed by the Dreyfus brothers and while in a general sense it might equate, the reality is that the relationship is likely to be more complex. For example even at the upper levels of the novice to expert model, people may still encounter situations where they are unconsciously incompetent. However, because at these levels people have learnt the value of self-awareness they are more likely to become conscious of their needs and address them quickly.

Higher education has an important role to play in encouraging and supporting critical self-reflection in order to understand our own competence. It is an important skill in our own general competence for all aspects of our life.

4 A useful definition for education

The concept of competence was developed in the work environment where jobs were broken down into tasks and competencies were created around the knowledge, skill and behaviour necessary to complete the task to a satisfactory standard. This idea of competencies works well in some aspects of higher education when particular skills and related behaviours can be defined, developed and assessed. But there are aspects of education where such definition is problematic so there is a need for a more general concept of competence that can be widely adopted.



In their review of the idea of competence for educational settings, Vitello, Greatorex & Shaw (2021) begin to sketch out a concept of competence that is useful in terms of the more holistic development of people that a higher education seeks.

“Competence is the ability to integrate and apply contextually-appropriate knowledge, skills and psychosocial factors (e.g., beliefs, attitudes, values and motivations) to consistently perform successfully within a specified domain” (ibid p.4)

HOLISTIC CONCEPT OF COMPETENCE

Vitello, Greatorex & Shaw (2021)

“Competence is the ability to integrate and apply contextually-appropriate knowledge, skills and psychosocial factors (e.g., beliefs, attitudes, values and motivations) to consistently perform successfully within a specified domain”

my suggestion for a learning orientation

with the will, confidence, self-regulatory habits, ability and resilience to learn, develop and achieve, even in conditions of uncertainty,

This way of viewing competence highlights the importance of qualities, values and attitudes that are needed to apply knowledge and skills in appropriate ways. Ways that require a situation to be read and understood and motivations that enable actions to be initiated and sustained. Such behavioural, emotional or thinking tendencies – such as having confidence and belief in our own capability, are what makes us who we are. The characteristics of our performance will reflect this and this makes competence a personal matter. I also maintain that the definition is ecological in the sense that it relates, connects and shows the interdependency of the person, the context and the action.

But our competence does not sit still, it is always on the move. The concept proposed by Vitello et al (2021) recognises the psychological traits that make us the unique human beings we are – the strong inner self..that motivates us to do more and go beyond the good enough when it is appropriate to do so. I will argue, like many others, that it is this strong inner core that is key to our own survival and flourishing as we journey deeper into the 21st century.

I would however like to propose an additional clause to this definition to recognise that competence involves a commitment to learn and develop through our experiences of trying to perform and achieve so that our evolving competence becomes integral to our formation as a human being. It also means that having this form of general competence in which a commitment to learning is embedded we are more likely to be able adapt to new and novel situations and learn to perform in an expanding range of contexts in the domain.

Pause to reflect – is this definition of competence, adapted from Vitello et al (2021) a useful way of viewing competence in higher education? How might it be improved?

Competence is the ability to integrate and apply contextually-appropriate knowledge, skills and psychosocial factors (e.g., beliefs, attitudes, values and motivations) to consistently perform successfully within a specified domain, with the will, confidence, self-regulatory habits, ability and resilience to learn, develop and achieve, even in conditions of uncertainty.

5 Patterns of cognition & action underlying competence

After several decades of studying professionals learning and performing in the workplace (Eraut 2004 p259) identified the fundamental cognitive, action, learning and meaning making process that underlies competent performance in any setting, namely:

1. assessing clients and situations (sometimes briefly, sometimes involving a long process of investigation) and continuing to monitor their condition;

2. 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);
3. pursuing an agreed course of action, modifying, consulting and reassessing as and when necessary;
4. managing oneself, one's job and one's continuing learning in a context of constrained time and resources, conflicting priorities and complex inter- and intraprofessional relationships.

**COGNITION / ACTION UNDERLYING COMPETENT PERFORMANCE
"EPISTEMOLOGY OF PRACTICE" MICHAEL ERAUT**

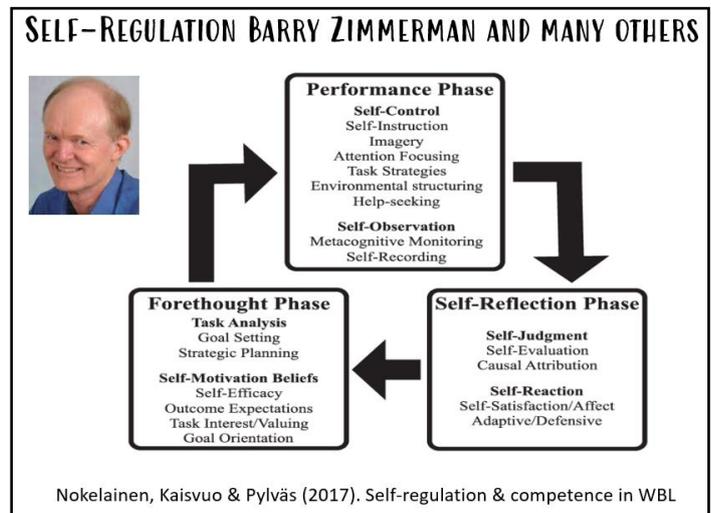


- Assessing situations
- Deciding what, if any, action to take, both immediately and over a longer period
- Pursuing an agreed course of action, performing actions – modifying actions as and when necessary
- Metacognitive monitoring of oneself, people needing attention and the general progress of the case, problem, project or situation

Eraut recognises, that performing competently is a dynamic process involving a person interacting with their environment and that a transaction takes place between the person and their environment (see Dewey pt 17 below). *"A great deal of competent behaviour depends not only on being able to do certain things (output) but also on the correct reading of the ongoing situation (input) so that the appropriate action can be taken.....The performer is an actor who affects their environment, not always in totally predictable ways. So another role of input is to provide feedback on the effect of one's own performance."* [So that it can be adjusted if necessary] (ibid p257).

This perspective reveals that competence is ecological in nature involving people continually trying to interact in an effective way with their environment – which connects us back to the original definition of competence.

6 This pattern of perceiving a situation, creating meaning in order to decide how to act, performing and monitoring effects to feedforward into future actions, is identical to the well researched pattern of thinking and action known as self-regulation. From a social cognitive perspective, self-regulation has been defined as *"self-generated thoughts, feelings and actions planned and cyclically adapted based on performance feedback to attain self-set goals"* (Zimmerman 2000). When people have self-regulatory skills and habits, they are able to modify their performance based on their personal characteristics and environmental conditions (ibid). Self regulated learning and practice can occur wherever learning - both formal and informal - takes place. The cyclical model of self-regulation includes three general phases: forethought, performance and self-reflection (see Zimmerman 2000; and the Figure from Zimmerman and Schunk 2011).



Nokelainen, Kaisvuo & Pylväs (2017) provide an excellent summary of the concept of self-regulation and relate it to competence. They argue that self-regulation plays an important role in the development of competence, as it is needed to acquire new competencies, unified sets of knowledge, skills and views. Learning is most natural and effective when it is experienced as meaningful and relevant and when the learning environment supports the learning and encourages self-regulation and selfcontrol. According to Zimmerman (1994), self-regulation and its further development is only possible in a context that allows people to make their own choices and be in control. If learners are not given the opportunity to exercise

control and the freedom to choose their own strategies, they will not learn to regulate their own behaviour and they will not develop enthusiasm for taking initiative. The ability to regulate our thinking and practice is an important competence in its own right and must be an important element of any general concept of competence for the future.

Pause to reflect

- Do you recognise the ability to self-regulate as a core competence for the future?
- How do you encourage learners to develop their self-regulatory habits in your educational practices?

What Does the Future Look Like?

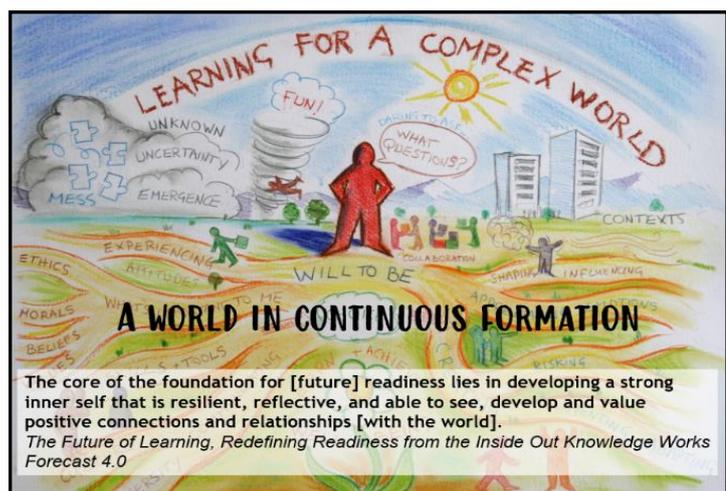
7 Competence for a messy, turbulent and highly uncertain world

The focus for the conference is on the next 78 years that will contain the lives of the students who are now at university. The wicked challenge for all universities is to help students develop and prepare themselves for their immediate future post-graduation, but we also have a responsibility to help young people prepare themselves as best they can, for a more distant future that is difficult to imagine. In my view it will require a broader view of what learning and development mean than is generally accepted in the HE curriculum.

Of course we have no idea what the world will be like in 50-80 years time but if the past few years are anything to go by then we are in for a rough ride. The contemporary world is full of turbulence and disruption and the future according to some forecasts might be disturbingly challenging for humanity. Higher education has a significant and profound task to help young people prepare themselves as best they can for a more distant future that is difficult to imagine. In my view it will require a broader view of what learning, development and competency mean than is generally accepted in the HE curriculum.

I want to try to develop what I am calling an ecological narrative in the context of a rapidly changing world in which notions of sustainability and regeneration will, slowly but surely become the dominant discourse for education, lifelong learning and human development.

We drew this picture on the wall of the SCEPTRe Centre at the University of Surrey in 2006. It symbolically represents the dynamic, turbulent and complex environments we are immersed in everyday. Another way of expressing the idea of complexity that is constantly emerging through social, political, technical and economic interaction is a world in formation in which everything is forming and we are participating in and contributing to its formation. At the same time we are also continuously forming through our interactions with the world.



Barnett (2004) used the term supercomplexity to describe this state of flux and argued that the traditional focus on academic content and skills was not enough to cope with this environment. We came to the same conclusion believing that we needed to think about education and learning more holistically

in the way that pioneering adult educator Eduard Lindeman (1926) did a century ago when he said - ‘the whole of life is learning therefore education can have no ending.’ His vision became the vision for our exploration of the idea of a more complete education.

Our drawing shows the learner embedded in their world. I didn’t realise it at the time but this picture is deeply ecological - full of relationships, interactions and interdependencies. The world and our participation in it provide us with our contexts and situations, resources, problems and challenges, opportunities and affordances – the possibilities for us to act, achieve, create. Our world and the things in it stimulate our imaginations and our emotions creating powerful feelings that motivate us to do all manner of things including trying to be creative.

Our relationships and interactions with the world around us are fundamental to our learning, our identity and continued development as a person throughout the whole of our life. It’s our relationships with the ever changing world that creates the will to learn and to keep on learning or conversely suppress our desire to learn. And it’s our relationships and interactions with the world that are the source of our creativity.

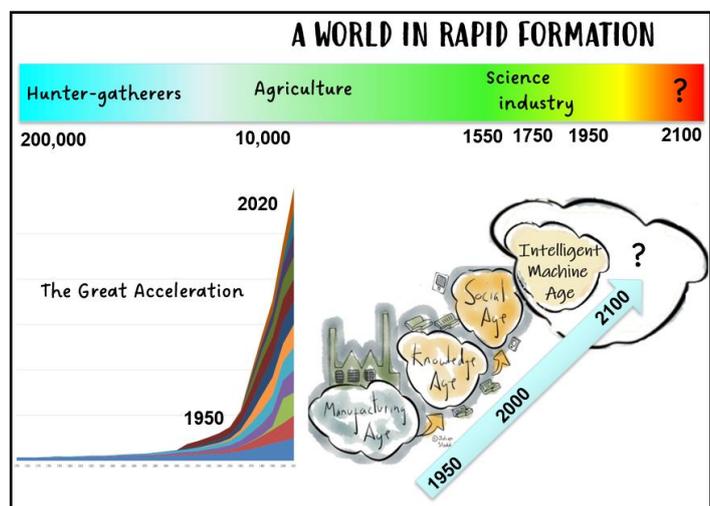
A few years ago I discovered this quotation in a foresight report that gets close to what I want to talk about - *The core of the foundation for [future] readiness lies in developing a strong inner self that is resilient, reflective, and able to see, develop and value positive connections and relationships [with the world] (Prince 2017).* It speaks to the development of a whole thinking, feeling acting person who can sustain and, when necessary, regenerate themselves, who is self-aware and able to act upon the affordances in the world around them. This is an ecological concept of human competence and development which recognises that we cannot separate ourselves from our relationships, involvement, actions and experiences in the world. The proposition is also consistent with the definition of competence proposed by Vitello et al (2021) with my suggestions for extending the definition (slide 4), which incorporates the idea of a strong inner self and ecological mindfulness.

8 A world in increasingly rapid formation

is an apt metaphor for the fluidity and turbulence of the world of work, and it’s gathering pace. If we look at the relatively slow progression of our species from hunter gatherers, through farmers we are looking at an enormous time span in terms of technological advancement but once the scientific revolution began about 400 years ago, the pace of change and the growth and impact of humanity on the planet has accelerated.

In my lifetime I’ve witnessed massive changes in the evolution of work. I was

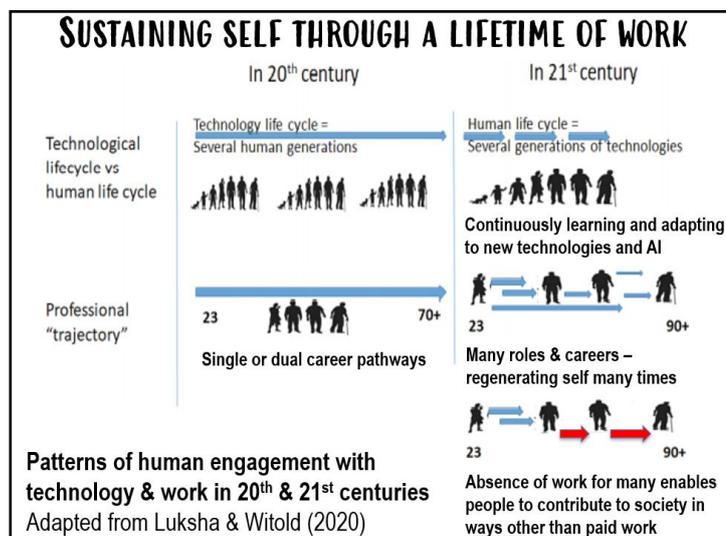
born in 1950 at the end of the industrial / manufacturing age. There was even a working cotton mill at the end of the road where I lived. I didn’t know it at the time but this date marked the start of what has become known as the Great Acceleration - the dramatic, continuous and roughly simultaneous surge in growth rate across a large range of measures of human activity (McNeill 2014). Within the concept of the Anthropocene, these measures are specifically those of humanity's impact on Earth's geology, atmosphere and hydrosphere and its ecosystems.



I began my career as a PhD student at the start of the information and knowledge age using a mainframe computer, five years later I had my own desktop computer and 10 years later I was using the internet. We are now in the social age as mobile communication technologies and social media technologies have been universally adopted. In 30 years thanks to the internet and associated technologies the way we do many things, including learning, has changed beyond all recognition.

But ahead of us we are facing our greatest challenge as we enter the 'intelligent machine age'. We are already living alongside machines but machines and associated AI will become increasingly important to the point where humans themselves may become part machines within the lives of our students. My proposition is that we also have to make the transition to an a new Ecological Age in order to survive as a species. We need to rediscover, in a way that our hunter-gatherer ancestors understood – our connectivity and interdependency with and on the world.

9 Changing patterns of work There is an underlying assumption that by equipping students with the knowledge and skills to perform in the present they will automatically be able to adapt to and cope with new situations in the future. But for the first time in human history we are approaching a future that will be fundamentally different from our present. According to futurist commentators like Daniel Susskind (2020) and Pavel Luksha (Luksha and Wittold (2020) the pathway to the future involves increasingly rapid introductions of new technologies, ever expanding information flows, decreasing shelf-life

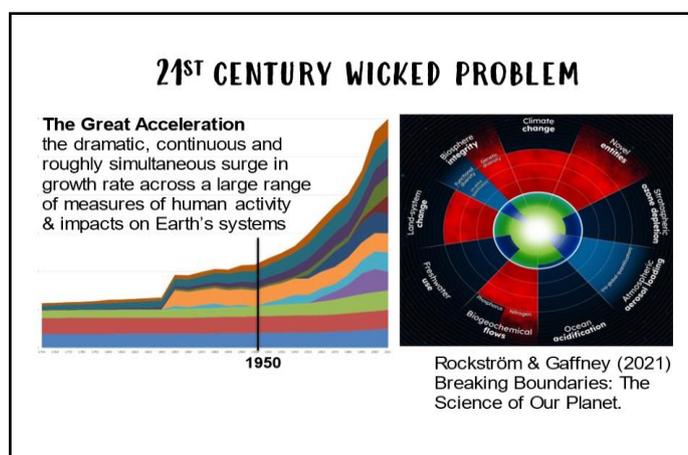


of knowledge, more automation and less work for most people. People will increasingly need to co-exist with intelligent machines and AI and humans themselves are likely to be part machines and incorporate AI posing profound questions on what it means to be human and profound questions for how we equip young people today to undertake this journey.

What will employability mean when large parts of a population will not have access to employment in the ways which we currently understand? In the UK, we had a foretaste of this scenario with the furlough scheme during covid lockdowns (Bernal 2021), when a large proportion of the population were forced to stay at home, some worked from home but many could not fulfil their job roles from home. A world with less work speaks to developing people as whole persons motivated and able to access affordances, other than work, which give them meaning and purpose, across the whole of their lives.

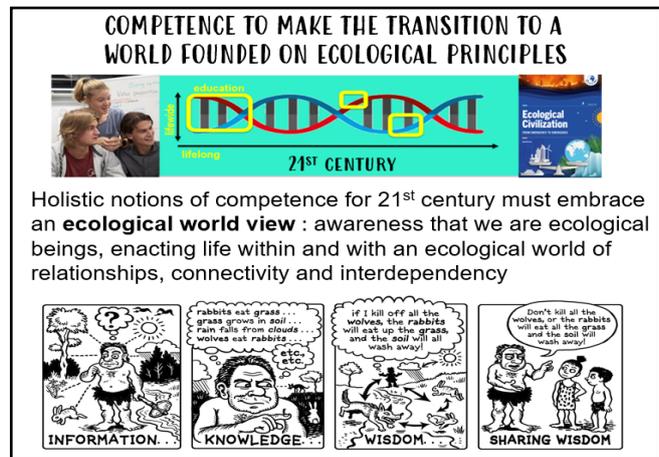
10 Competence for a sustainable future?

The conference is considering the idea of competence for the future in a world that is in rapid formation. An important and highly disturbing aspect of this formation is the extent to which we are destabilizing the very planet that supports our existence.



The rapid population growth and economic/ technological prosperity of humans has been achieved at the cost of destabilising the planetary systems that enable all forms of life to flourish. It's all very well developing people with competence to survive and flourish into the later part of this century but the message is clear, humanity is facing an existential threat if we do not change our consumptive, wasteful and destructive habits.

11 The Great Transition As we exceed key planetary boundaries (Rockström et al 2009, Rockström and Gaffney 2021) upsetting the fragile balance that has characterised the last 10,000 years of human existence, we are creating for ourselves the most challenging and costly wicked problems humanity has ever had to deal with. We need to change the way we live if we are to have a future and that involves changing the way we think about ourselves in relation to everything else. Like David Korten who wrote 'Ecological Civilisation from Emergency to Emergence' (Korten 2021), and Jeremy Lent who authored 'The Web of Meaning' (Lent 2021a&b), I believe that that we must evolve towards a civilisation that is based on ecological principles. Broadly construed, ecological civilization involves a synthesis of economic, educational, political, agricultural, and other societal reforms that lead us to a sustainable regenerative future.



The foundation for such a transition is the development of an ecological world view - the way we see and understand the world and our being in the world. While a world view is grounded in the experiential world of living it's also a philosophical view, an all-encompassing perspective on everything that exists and matters to us. It shapes what we believe and what we're willing to believe, how we interpret our experiences, how we behave in response to those experiences, and how we relate to others. Our thoughts and our actions are conditioned by our worldviews.

As his brilliant cartoon. Tom Chalkley reveals our hunter gatherer ancestors developed a world view that is grounded in their interactions and relationships with the world around them. Our ancient ancestor made sense of his world as he experienced it through being and acting in it by taking in information through his senses, using his reasoning and imagination to connect, integrate, synthesise and make sense of and see beyond the obvious to create wisdom that he could share with others. In this way knowledge gained through personal experience becomes cultural knowledge shared by others. The cartoon reveals the ecological nature of thinking in the sense that new meaning is related to and drawn directly from our experiences as we interact with our environment and our past experiences of interactions as we reflect and draw out deeper meanings.

Far from our ancestor merely seeing himself as a *being* existing independently from the world around him he sees himself as an *interbeing* (Hanh 1992) deeply related and connected to and dependent on his natural world.

Higher education rarely tries to develop learners' ability to see and discover for themselves the ways in which the world is so deeply and profoundly connected. It's preference is to develop a more reductionist analytical world view. It is not a question of either or – we need to integrate both ways of seeing and understanding the world into forms of education that will enable this and future generations of learners to enable us to transition to a civilisation founded on ecological principles. This is why I believe that any general concept of competence for the 21st century should include the idea of being "*mindful that we are*

ecological beings, enacting life within and with an ecological world of relationships, connectivity and interdependency” (slide 4).

12 Developing competence for a supercomplex world

The conference frames the idea of developing competence for the 21st century as the focus for the pedagogical task in higher education. It's based on the belief that if we can identify the things that matter in a competence profile then we can create educational designs that will enable learners to develop these things. While this is true upto a point I believe we need a more radical and holistic view about the development of learners in and for a world in rapid formation.

In writing about 'learning for an unknown future' Barnett (2004 p250) argued that learning has to cope with two forms of uncertainty. The first arises from sheer multiplication of entities in the world, the world of information and misinformation overload, and the sheer unpredictability in the environmental response to any interventions we make. Alongside this is a more personal form of uncertainty that arises out of a sense that we can never hope to describe the world let alone act with assuredness in it. Anxiety, fragility, confusion and chaos are characterisations of an inner sense of a destabilised world, and this requires a strong inner psychological self to deal with and make use of such feelings, particularly in the face of adversity.

Barnett argued under such conditions of uncertainty it was pointless filling students heads with knowledge that had little relevance to the world of supercomplexity and identifying a set of skills that would equip learners for uncertain futures was also a fairly futile act. He argued the pedagogical task is ontological – it is one of enabling learners to learn to live with uncertainty (ibid p.252).

“So rather than a knowledge or skill-based curriculum we need a curriculum

that also engages deeply with the ontological dimension of being human, of being human in a world of great uncertainty that is constantly reforming, and of undergoing – of becoming different as we engage with this constantly emerging world.” (Barnet and Coat 2005).

But there is all too often a mismatch between the way higher education provides opportunities for learning, which seek to create stable, well structured environments in which certainty prevails, which contrasts with the more emergent, unstructured and unpredictable and uncertain environments of the turbulent world outside HE. And this is one of the challenges that HE has to overcome if it is to enable young people to prepare for the uncertain futures of the rest of this century.

THE ONTOLOGICAL TASK OF LEARNING FOR A SUPERCOMPLEX WORLD



“Under ... conditions of uncertainty, the educational task is in principle, not an epistemological task; it is not one of knowledge or even knowing per se. It is not even one of action, of right and effective interventions in the world... it is primarily an ontological task”

“Learning for the future has to be a learning understood neither as knowledge or skills but of human qualities and dispositions” Barnet (2004)

Pause to reflect – Can you think of a time when you have been faced with great uncertainty.

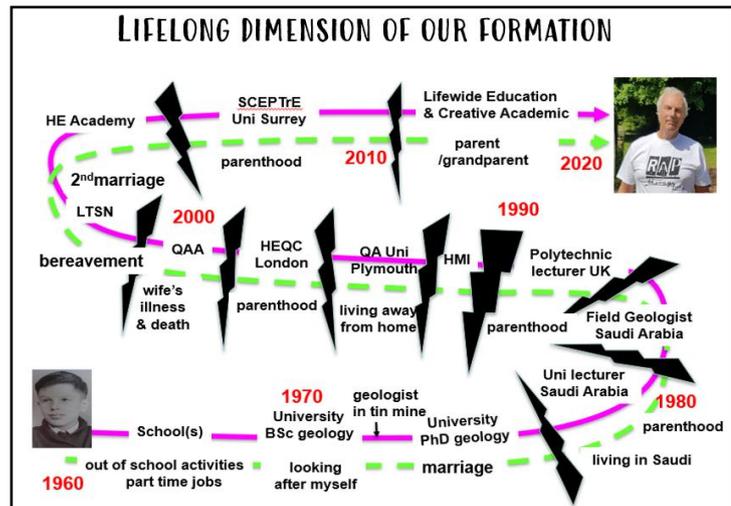
- How did it make you feel and how did it affect you?
- What aspects of yourself or your competence enabled you to navigate through and deal with the situation(s)?
- How did you develop these aspects of your competence to deal with the situation?

What can we Learn about Competence for the Future from our Own Life?

13 Lifelong dimension of formation

What can we learn about competence for life, from our own lives?

I want to connect the idea of a world in formation with our own formation as unique human beings. There are few benefits to being old but one thing we can do is look back on a lot of experiences that we can treat as a resource for learning. When we make a map of our life such as this one we can see many points and events that changed the course of our life and influenced our formation.



As a 10 year old I had no idea what I was capable of doing or achieving. I had potential but the competence I had was only for living the life I was living as a 10 year old in my particular circumstances. But perhaps there is an important point here – we have to grow new competence from where we are now. Our potential is only realised and our competency developed when we encounter new situations and challenges and learn how to deal with them. Whether we are successful or not we learn from our experiences, but the most important thing is to try to do and achieve new things. In this way we can see that our competency for being and becoming in the world is always a work in progress.

We get a sense of how we have used our potential when we look back on our own life and map the twists and turns as we reflect on the decisions we made to pursue particular jobs or careers, form relationships and perhaps get married and raise a family, relocate and experience traumas such as bereavement, divorce, serious illness, redundancy or other significant setback. Sometimes, perhaps often, our competency fails us, we are illequipped to deal with the situations we encounter and it is only through the experience of trying to deal with them that we develop new competency and self-belief.

This **lifelong** dimension of our formation gives us a sense that life is a journey, more accurately an entanglement of many journeys and many transitions with all the uncertainties they bring, from one role, identity or set of circumstances to another. The longitudinal map makes explicit just how important and all-encompassing learning for our own development has been to enable us to travel from A to B. As far as competence is concerned it reminds us that we have had to make the journey from beginner or dadvanced beginner to competence and beyond many many times. It is not surprising therefore that at the core of competence are the psychological qualities, values and beliefs that motivate us to try.

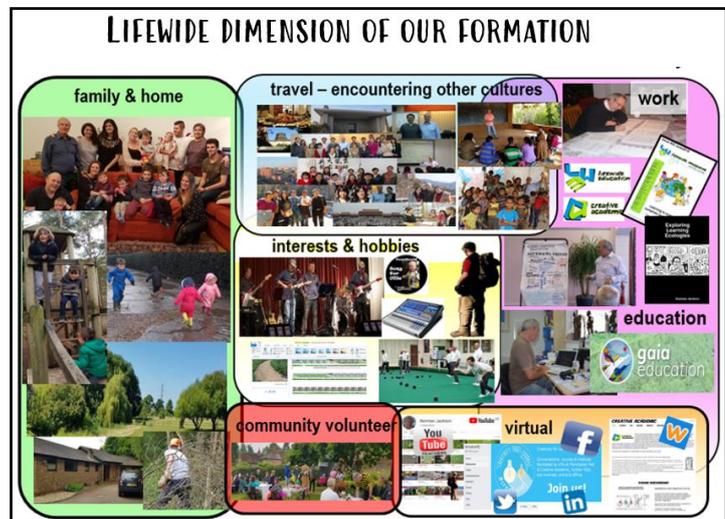
Pause to reflect – Looking back over your life, think of a challenging transition you have had to make, when you didn't feel fully competent to deal with the situations you were in.

- How did it make you feel and how did it affect you?
- What aspects of your own competence enabled you to navigate through and deal with the situation(s)?
- How did you develop these aspects of your competence to deal with the situation?
- What aspects of yourself do you think were important to enabling you to make the transition?

14 Lifewide dimension of formation

But there is an important dimension to our lifelong journey that is rarely explicit when we talk about lifelong learning. It's the horizontal or lifewide dimension of everyday life in which we are participating in many different contexts and environments more or less simultaneously (at the scale of days or weeks).

Lifewide learning and development adds important detail to the lifelong learning pattern of human development by recognising that most people, no matter what their age or circumstances, simultaneously inhabit a number of different spaces - like work or education, being a member of a family, being involved clubs or societies, travelling and taking holidays and looking after their own wellbeing mentally, physically and spiritually. So the timeframes of lifelong learning and the multiple spaces of lifewide learning will characteristically intermingle and who we are and who we are becoming are the consequences of this intermingling. So recognising lifewide learning is important for understanding our ontological journey. We learn, develop (become) as a person in every part of our life and our ontological journey of becoming is made up of our becoming across these domains of our life.



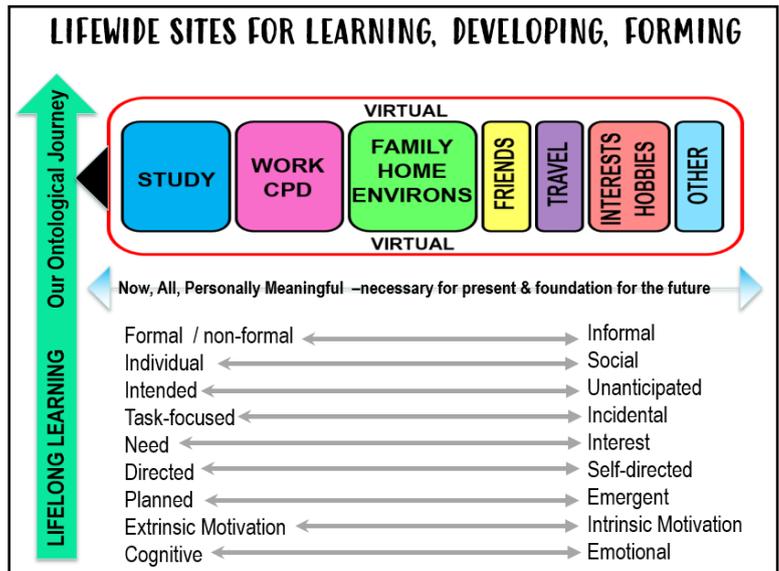
This is a map of the lifewide dimension of my life. Each one of the contexts shown in the map requires certain competency – to apply knowledge, skill, beliefs, values and more to act and achieve appropriately and successfully in the situation. It is the combination and integration of all these experiences and how we learn and develop new competence from them that enables us to grow as a whole person into our future.

Reflective pause – Sketch a simple map of your everyday life with the different domains in which you work, learn, socialise, play or volunteer. In which you interact with different people in order to do and achieve different things.

- What does competence mean in these different settings?
- What aspects of your competence are specific to particular domains?
- What aspects of your competence do you feel are common to more than one domain?
- Are there situations in any of your domains where you do not feel completely competent to deal with the situations you encounter? How does this affect you and how are you trying to develop this aspect of your competence?
- Are there any situations in any domains where you have had to develop your competence from a beginner? What steps did you take to develop new competency?

15 Lifewide perspective on learning & formation

The concept of lifewide is the most comprehensive and inclusive framework within which we can understand learning, personal development (formation) and competence for life. Which makes it the most useful and powerful concept for education (Jackson 2011, Barnett 2011). The lifewide dimension contains all the circumstances of our current life that determines who we are. But because we can change or add to these circumstances the lifewide dimension enables us to become who we would like to be. It provides the affordances for us to practise our competence and to develop new competence.



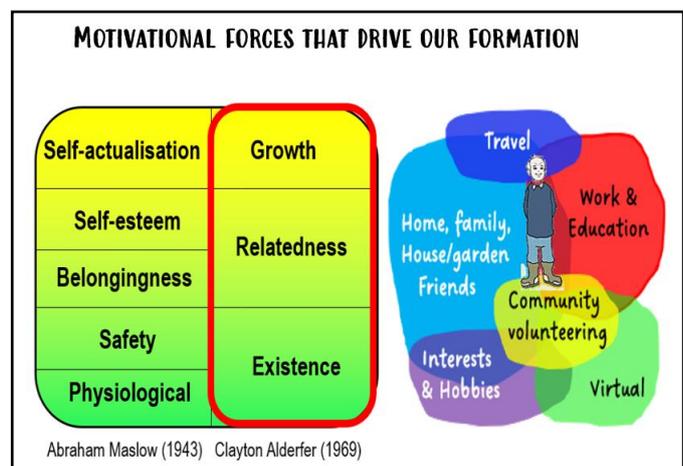
In the time frame of 24 hours when we are not asleep, we might inhabit spaces relating to work, the classroom or self-study, we might inhabit a family environment or our own home, we might go shopping or go for a walk, socialise with friends, travel on public transport or by car, play some sport and do any number of things in different sorts of physical spaces, not to mention the virtual spaces we access through our smart phones, computers or other devices.

Each of these activities has their own rhythm; fast and slow time jostle and compete and we have to manage our time and determine priorities as the various responsibilities are heeded. So lifewide learning helps us develop capability to manage ourselves and our lives. Banks et al in a report for the NSF Funded Life Centre Learning In and Out of School (2007) tell us that lifewide learning includes: *'experience in the management of ourselves and others, of time and space, and of unexpected circumstances, turns of events, and crises. This learning brings skill and attitudinal frames for adaptation. Here we figure out how to adapt, to transport knowledge and skills gained in one situation to another, and to transform direct experience into strategies and tactics for future use.'*

So it is through our lifewide activity and experiences that we learn to manage our busy lives, cope with the unexpected, adapt to situations as they emerge and transfer our understandings and capabilities between different contexts, and use this self-knowledge in planning for the future. So the timeframes of lifelong learning and the multiple spaces of lifewide learning will intermingle and who we are and who we are becoming are the consequences of this intermingling.

16 Motivational forces that drive participation & formation

I have mentioned several times the need to develop our inner self and this relates to our psychological needs. Through our participation in the lifewide dimension of our life we try to satisfy our psychological and physical needs (Maslow 1943) and Alderfer



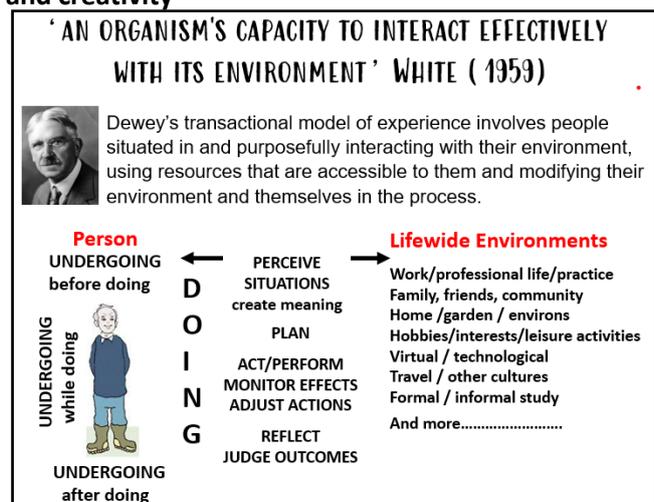
(1969). Clayton Alderfer developed Maslow’s Hierarchy of Needs into a three factor model of motivation known as the ERG model. In this model the letter E, R, & G each stand for a different human need: existence, relatedness and growth. Alderfer’s model says that all humans are motivated by these three needs and they are the most important forces that drive our participation in every part of our life. Our most fundamental need is to exist – our need for food, shelter, economic independency, health. Beyond this we need relationships that give us purpose, love, friendships feelings of belonging and a sense of who we are and then there are needs that relate to our own growth and development as a person, providing us with a sense of fulfillment and of achieving our potential.

Are Learning, Creativity & Practice (Competence) Ecological in Nature?

17 In search of an ecology for learning, practice and creativity

In the next part of my presentation I want to explore competence from an ecological perspective by trying to show that learning, practice and achievements like creativity are themselves ecological phenomenon.

The foundations for an ecological concept of learning and practice were laid down over a century ago in John Dewey’s philosophical examination of the nature of experience. Dewey understood that experience was brought about through our intimate relationship with our environment. The diagram summarises his interactional model of



experience and the changes (which he calls undergoing) that result in the person through their interactions (Dewey 1916, 1934). He explains that experience is always a dynamic two-way process, “An experience is always what it is because of a transaction taking place between the individual and, what at the time, constitutes the environment” (1934 p.43). “When we experience something we act upon it, we do something; then we suffer or undergo the consequences. We do something to the thing and then it does something to us in return” (1916 p.104). Dewey argues that experience involves both ‘trying’ and ‘undergoing’. ‘Trying’ refers to the outward expression of intention or action. It is the purposeful engagement of the individual with their environment or in Dewey’s words, “doing becomes trying; an experiment with the world to find out what it is like”. Through action an attempt is made to have an impact on the world. ‘Undergoing’, the other aspect of the ‘transaction’ in experience, refers to the consequences of experience on the individual. In turn, in attempting to have an impact, the experience also impacts on us.

Dewey’s transactional view of experience involves people situated in and purposefully interacting with their environment, using resources that are accessible to them and modifying their environment and themselves in the process. If we integrate Eraut’s epistemology of practice into this model ie when encountering a new situation we perceive it and create meaning – assess what we have to do and plan how we are going to act – act on our plan being aware of the effects and adjusting actions where necessary and then – reflecting on and analysing the whole experience and the effects we have had and judging our own effectiveness in terms of what we were trying to achieve. This way of understanding “an organism’s capacity to interact effectively with its environment.” (White 1959) lays the foundation for an ecological perspective on learning and practice – including competent creative practice.

A person’s creativity plays into this interactive model through the individual’s unique history, agency, ways of seeing the world, their values and beliefs that drive motivations, the environments they choose

for action and the nature of their actions and interactions that modify their environments and themselves (see pt 22 below).

18 How might this model of human-environment interaction be applied to real practice?

Here we have the wonderful sight of a teacher in her classroom with her children immersed in an activity for the purpose of learning. She, and her pupils, are living and experiencing the moral purpose of education – to enable people to develop and achieve their potential, and there is joy on the faces of all participants.

The teacher perceives her environment and makes sense of the situation. Through years training and practical experience she has undergone in order to be in this situation. Furthermore, she will have planned her lesson before she enters the classroom – further undergoing. From her learned repertoire of actions she selects the actions that are most likely to engage her students, she monitors the effects and adjusts her actions where necessary. Learning and other achievements – like creative thinking, actions and products emerge through the interactive process. After the class she will use her memories of her experience to reflect critically on her actions and their effects and learn from her reconstructed experience and newly imagined possibilities. Through the totality of these experiences she continues to learn and undergo. She has expressed her competence through her performance and in the process of learning, perhaps developed some aspect of her competence for the future.

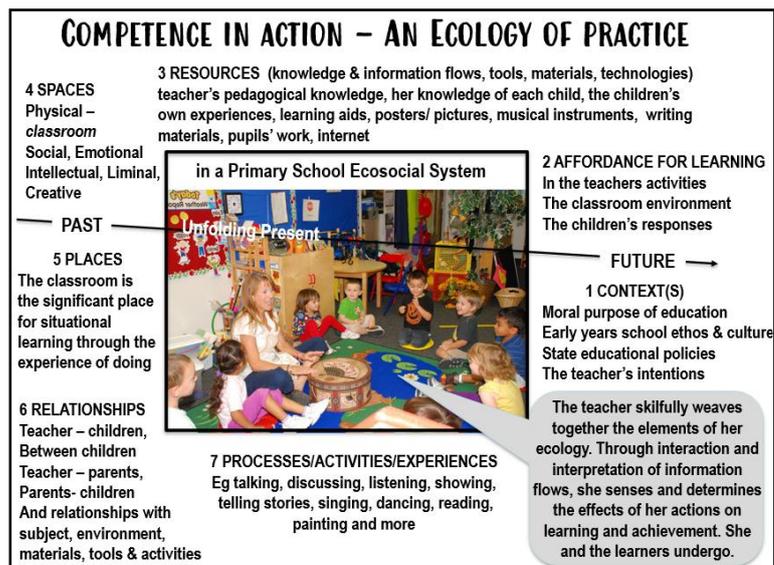


of

Her actions are consistent with Michael Eraut’s epistemology of practice (slide 5). When someone encounters a new situation they 1) Assess it 2) Decide what to do 3) Do it, monitoring effects and adjusting where necessary and 4) Reflect on and learn from the whole experience.

19 Competence as weaving together in a unique way, aspects of self, others and the environment in a situation to achieve something of value

By studying the nature of the relationships and interactions in this situation we can create a map of the dynamic world the teacher is, creating, inhabiting and changing and being changed by. I am calling this presence, relationships, interactions and effects - an ecology of practice (Jackson 2016, 2019, 2020a).



Her ecology of practice has a past – her own life experiences and particularly those experiences that have enabled her to undergo and become a teacher. The knowledge and skills she brings to the situation is the result of her past

undergoing. Her ecology of practice has a present as it unfolds in her classroom as she causes or interacts with each new situation. In her near future she is likely to reflect on her experiences and learn from them. And in her more distant future she will draw on the experience and what she learns as she plans new actions.

The teacher’s thinking and actions are shaped by many things. Her motivations for doing a good job (competence) and the care she takes to enable her pupils to learn, and her need for personal growth by perhaps trying something new. She is embedded in a number of contexts- for example the ethos and culture of the school, the various policies that affect what and how she teaches and the particular educational context of what she is trying to achieve. She takes in the information flows resulting from activity through all her senses, she perceives new affordances – opportunities for action in real time as the children participate in the activities she has created. There are abundant resources in this environment to stimulate and support learning but the most important resource is the teacher and the children. The classroom is a special place for learning in a school that is also a special place for learning. The children expect to learn when they come to this place. They co-inhabit a physical space but the teacher also creates cognitive, psychological, emotional and playful spaces for interaction and learning.

Everyone and everything in this environment is related and these relationships are used and developed through the particular activities that are orchestrated and facilitated by the teacher. Activities that are intended to cause interactions with potential for learning and development.

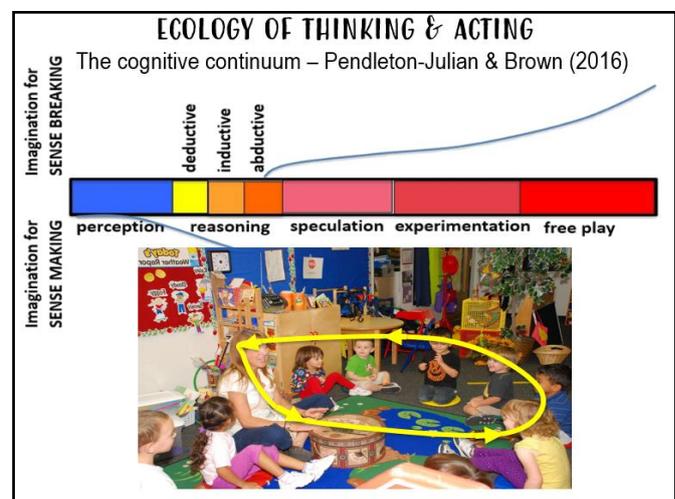
The components of this ecology for practice in which the intentional outcome is learning and development, are woven together by the teacher in a part deliberate, part opportunistic act. The teacher is creator but she only comes to understand the effects of her ecology as it unfolds and so she monitors the effects and adjusts her actions where it is appropriate. Through her actions, the tools she uses and the feedback she gains through her senses, the teacher extends her mind and body into his environment so that she becomes indivisible with it and the ecology she is creating. Within the ecology meanings are shared and co-created and the totality of the experiences enable both the teacher and the children to UNDERGO – through this ecological process they are becoming incrementally different people.

20 Thinking for and in action

The ecological concept of perception argues that we access information flows from our environment through our senses and create meaning from those flows that guide or determine our actions. In this way an organism (eg a person) recognises the affordances (possibilities for action) in their environment and what the likely consequences of those actions are (Gibson 1979).

Thinking involves the whole of our cognitive capability which Pendleton-Julian and Brown (2016) neatly summarise in their cognitive spectrum.

The initiation of a person’s interaction with the world in which they are situated is via perception – we perceive and try to comprehend our world through the flows of information we access through our senses. In this process of perceiving and comprehending we engage the whole of our cognition – perception, reasoning and imagination which work together in a pragmatic way with our memory and emotions to try to understand the



situations in which we are immersed in order to act.

When we explore and try to understand and solve a challenging problem or encounter a situation that is new to us, we use our perception, reasoning and imagination in a productive interplay. This can be represented as a continuum in which imagination has the potential to connect to both perception and reasoning in a pragmatic and productive way (Pendleton-Jullian and Brown 2016).

They identify three forms of reasoning within their model of pragmatic imagination.

- *Deductive* reasoning starts with a proposition or fact and proceeds to a guaranteed specific conclusion. If the original assertions are true then the conclusion must also be true.
- *Inductive* reasoning begins with observations that are specific and limited in scope, and proceeds to a generalized conclusion that is likely, but not certain, in light of accumulated evidence. Much scientific research is carried out by the inductive method: gathering evidence, seeking patterns, and forming a hypothesis or theory to explain what is seen.
- *Abductive* reasoning typically begins with an incomplete set of observations and proceeds to the likeliest possible explanation for the set. Abductive reasoning yields the kind of daily decision-making that does its best with the information at hand, which often is incomplete. A medical diagnosis is an application of abductive reasoning: given this set of symptoms, what is the diagnosis that would best explain most of them?

Imagination suffuses the whole spectrum. In the perception and reasoning part of the spectrum it is used to make sense of situations and problems, and beyond this part of the spectrum it engages in speculation, experimentation and playfulness that create entirely new senses and meaning. We also use our imagination when we create visual memories of experience in order to re-perceive and analyse them to trying to try to learn through the process of reflection. Again the full cognitive spectrum can be involved in this practise.

It is likely that different disciplines and professional roles utilise different parts of the imagination spectrum – for example some professional roles encourage experimentation and improvisation while others do not.

The cognitive continuum conceptual framework helps us understand the way in which perception, reasoning and imagination are entangled in a productive dance that enables us to have creative ideas or mental visualisations, evaluate them and make decisions about how to act upon them. Through this process we become motivated to act in particular ways and then try to execute our rough plan adjusting to what happens and reflecting on the whole experience in order to learn deeper lessons. In this way creative thinking and action emerge from and through our epistemology of practice. *“When someone encounters a new situation they 1) Assess it 2) Decide what to do 3) Do it monitoring effects and adjusting where necessary and 4) Reflect on and learn from the whole experience.”*(Eraut and Hirsch 2008).

21 Emergent transformational concept of creativity

The image of a teacher engaging her students moment to moment in a partly pre-planned, partly improvised engaging her cognition in a real time merry dance lends itself to an ecological view of creativity. The teacher’s creativity emerges in the course of her actions and interactions as she fulfills her role both inside and outside of the classroom.

The standard psychological definition of creativity contains two ideas – originality and value which often takes the form of usefulness (Runco and Jaeger 2012). The notion of originality/novelty has come to dominate western thinking about creativity which focus attention on products. The idea of *originality* is dominant in artistic and scientific contexts and the idea of *innovation* dominates contexts such as business, industry, technology, engineering and education.

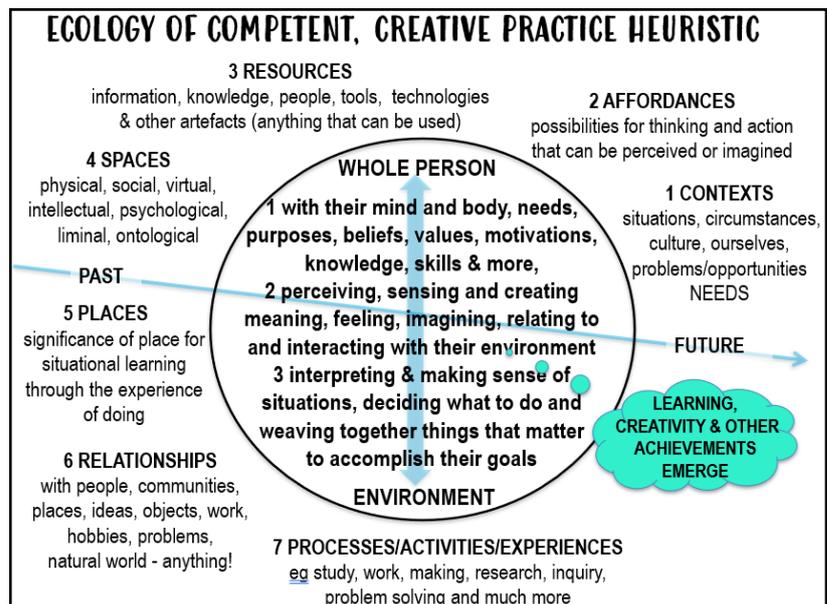
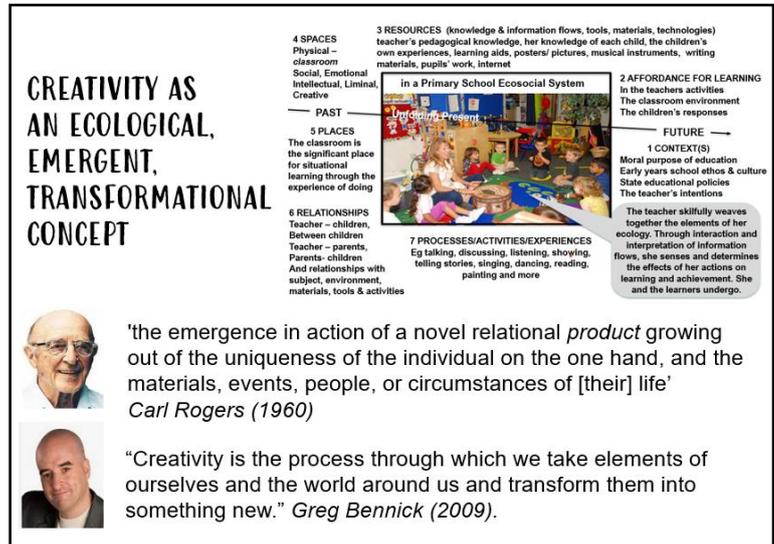
Based on my story of an ecology of practice, I want to try to open possibilities of another way of thinking about creativity – as an **emergent, transformational ecological concept** - a process that involves a person using and weaving aspects of themselves – their thinking, actions and relationships into situations to transform materials, ideas, people, activities and situations themselves into new forms that have utility or other forms of value.

Carl Rogers’ concept of a creative process “the emergence in action of a novel relational product growing out of the uniqueness of the individual on the one hand, and the materials, events, or circumstances of their life” (Rogers 1961:350) is a good fit with the transformational idea. I would however stress that *product* should not only be viewed as material objects, rather they should be viewed as products of effort which could take many forms for example – a conversation, a dance or other performances.

Greg Bennick expresses similar ideas in a slightly different way but adds to Rogers concept by showing how we weave ourselves into the environment and our creation and in the process we are changed. “*Creativity is the process through which we take elements of ourselves and the world around us and transform them into something new....In the process we transform the world and ourselves*” (adapted from Bennick, 2009 1min 20s). The power in the transformational concept of creativity is that it embraces products, processes and the uniqueness of human beings, emerging through the relationships, interactions and interdependencies of everyday life.

22 Ecology of competent practice within which achievements like creativity emerge

From this simple example of a school teacher fulfilling her role in a competent and creative way, demonstrating her competence - *her capacity to interact effectively with her environment*, we can devise a tool or heuristic that we can use to examine and interpret any practice within which learning emerges (Jackson 2016, 2020a).



The creator of an ecology of practice draws on and weaves together aspects of themselves and their environment in an ecology of practice. Their ecology of practice enables them to extend their mind and body into their environment, a process that is assisted by the tools and techniques they use. It is the means by which they become indivisible with their environment or as Tim Ingold so eloquently put it, “*‘organism plus environment’ should denote not a compound of two things, but one indivisible totality*”, “*this totality is not a bounded entity but a process in real time: a process, that is, of growth or development*” (Ingold 2010).

Pause to reflect:

In order to make use of this idea in our own life we must dive in and experience the messiness of learning as we practise and perform in our everyday environments, and pay attention to ourselves as we interact with the world in order to achieve something. We must become cartographers of our own experiences mapping our practises and their effects, and the changes that happen to us as we perform and learn.

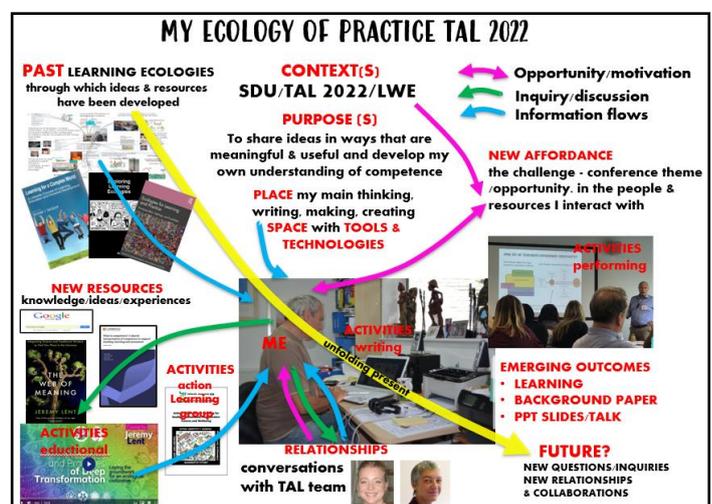
Think of a significant challenge that you have taken on in the last 6 to 12 months that has required you to learn. It can be a challenge at work or in any part of your life. Make an annotated sketch of your ecology of practice using the framework as a guide to reveal how you wove together aspects of yourself and your environment to achieve your goals. Using the heuristic as an aid to reflection consider the nature of your ecology of practice.

Prompts to aid reflection

- What purpose(s) or need(s) did your ecology of practice serve? What were you trying to achieve?
- What were the important contexts in which you were working? What new understandings of context did you have to develop in order to achieve?
- What opportunities did you find or create for yourself that enabled you to achieve your goals?
- What resources and tools did you draw upon to achieve your goals, and what new resources did you create?
- What sort of physical, intellectual or emotional, spaces did you need or create in order to achieve your goals?
- What important relationships did you form in order to achieve your goals? What did you learn through these relationships?
- What processes/activities/practices did you engage in order to achieve/perform?
- How did you have to adapt what you intended to do as circumstances changed?
- What challenges did you have to overcome and what did you learn from engaging with these challenges?
- What mistakes did you make that you learnt something useful from?
- What learning and other achievements emerged from your ecology of practice?
- How/where and when was your creativity involved in your ecology of practice? How was your creativity manifested?

23 How might we use this heuristic to understand the ecological nature of our own practice/competence?

The heuristic provides the foundation for developing an ecological perspective on competent practice, in which learning and creativity are embedded. By using the tool as a reference point to map our own practices we reveal the relationships, connectivities and interdependencies between ourselves and our environment as we try to achieve something and learn and create in the process. It helps us appreciate that we are fundamentally



ecological beings – thinking and acting in an ecological – relational and interdependent manner with the world around us – and our existence, success and wellbeing depends on this. We can take any significant challenge and use the experience to map the ways in which we tried to accomplish the challenge. To illustrate, I have mapped my experience of preparing for and presenting at TAL 2022.

My map provides me with insights into my own competence by helping me appreciate how I have tried to *interact effectively with my environment* in order to achieve my goals. Or, using our expanded concept of competence, how I tried to *integrate and apply contextually-appropriate knowledge, skills and psychosocial factors (e.g., beliefs, attitudes, values and motivations) to.....perform successfully within a specified domain, with the will, confidence, self-regulatory habits, ability and resilience to learn, develop and achieve, even in conditions of uncertainty.*

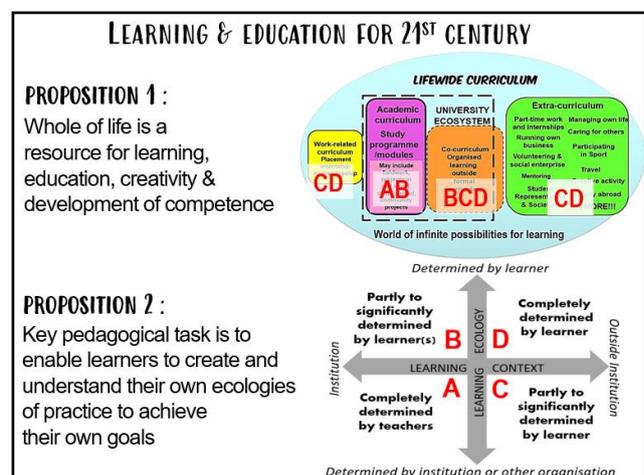
Developing Competent Creative People for the 21st Century: Propositions & Suggestions for Higher Education Practices

24 Propositions for learning and education for 21st century

Emerging from this way of thinking, I offer two propositions which if accepted could form the basis for educational designs founded on ecological principles to help people develop themselves as competent creative people for their journey into the 21st century: a journey that would contribute to the transition we need to make towards a civilisation that is founded on ecological principles and values.

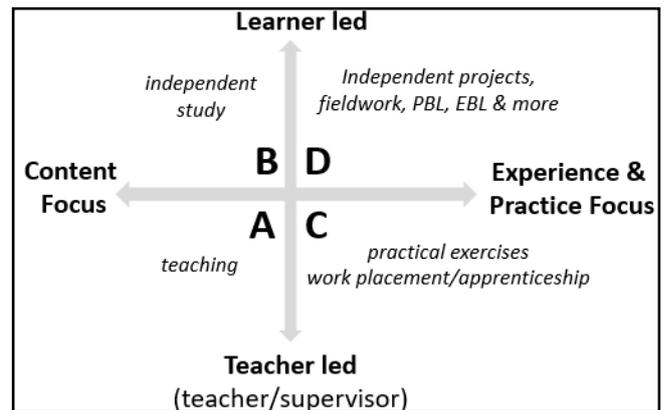
Proposition 1 argues that competency for the future is developed across the whole of our lives throughout the whole of our lives and if higher education is to fully embrace the idea of enabling learners to develop competency for their future lives it should embrace the whole of their life through a lifewide curriculum. Such a curriculum embraces a multitude of contexts and 4 different domains of activity namely: 1) academic curriculum – academic programme, 2) work-related curriculum – work integrated learning, work placements, apprenticeships, 3) co-curriculum (activities outside the academic curriculum but organised by the institution) 4) extra-curriculum (activities in which the learner participated in their own time outside their programme and typically outside the institution).

Proposition 2 argues for an expanded view of learning, development and competency that embraces an ecological world view and maintains our activities and actions to accomplish something of significance are created through complex ecologies of practices within which our learning, creativity and other achievements are embedded. Therefore a key pedagogical task for HE is to develop learners’ understanding of learning as an ecological phenomenon and of how to create their own ecologies of practice. The proposition is consistent with theories of learning that maintain learning is an active process through which experiences are created within which learning is embedded – “*there can be no learning without action and no action without learning*” (Revans, 1998, p. 83), and

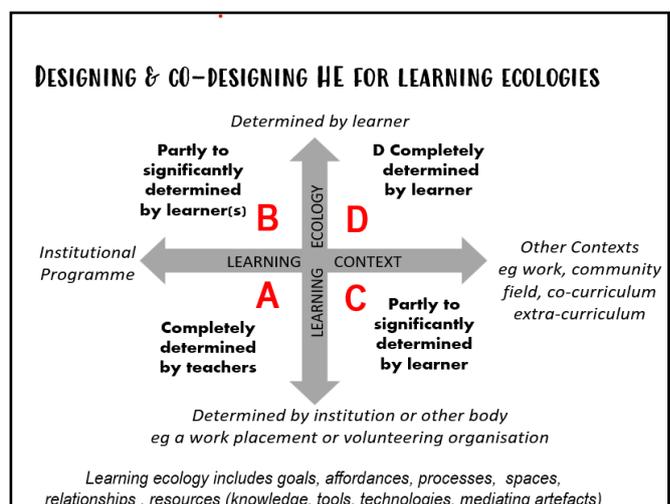


Higher education enables learners to create their own ecologies of practice – where practice is concerned with learning in the context of a subject-based higher education programme but it is by default rather than design. The argument here is for making this more explicit within the design and teaching process.

Higher education programmes are typically dominated by content – codified knowledge including propositional and conceptual that has to be learnt, remembered and applied in ways that are appropriate for the discipline and programme. Richardson (2002) characterised the academic curriculum using a 2x2 matrix. All segments of the matrix hold potential for learning – teachers and institutions create ecologies which provide stable and resource rich environments full of activities for learning. But some segments of the matrix hold greater potential for learners to develop their competence to create and co-create their own ecologies of practice (C&D) in which learning, creativity and other achievements emerge. Not surprisingly these are in the experience and practice dimensions of the curriculum (C&D).

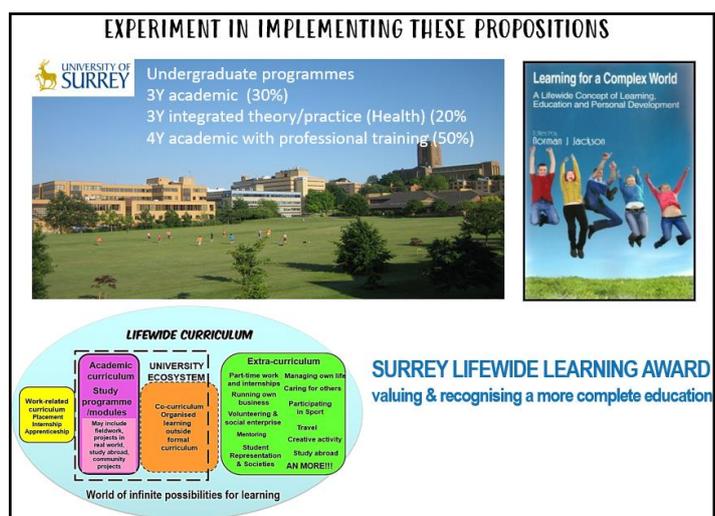


We can use the same reasoning to develop a conceptual tool to see where, in the totality of a students' experiences they are able to create and implement their own ecologies for practice in which learning and creativity are embedded. It shows 4 domains in which learners have either little or no control (A), partial to significant control (B&C) and complete control (D) over the elements that make up an ecology of practice where learning is the purpose of practice (Jackson 2020a).



25 Experiment in implementing these propositions

A decade ago, as Director of the Surrey Centre for Excellence in Professional Training and Education, I was involved in an experiment at the University of Surrey to develop and apply the idea of lifewide learning and education to demonstrate how a university may encourage, support and recognise learning and development gained by learners across the whole of their lives (Jackson 2011a). At that time I had not developed the idea of ecologies for learning and practice but, without having this as a design intention, learners were creating and co-creating their own ecologies of practice in which learning, creativity, personal development and other achievements were embedded.



Our experiment to explore and implement the idea of a more complete education that embraced informal as well as formalised learning, involved the adoption of a lifewide curriculum (Jackson 2011b) that embraced the whole of a learner's life and the creation of a Lifewide Learning Award (Jackson et al 2011) to encourage, appreciate and recognise learning and personal development in every aspect of a learner's life. The following slides illustrate how it worked.

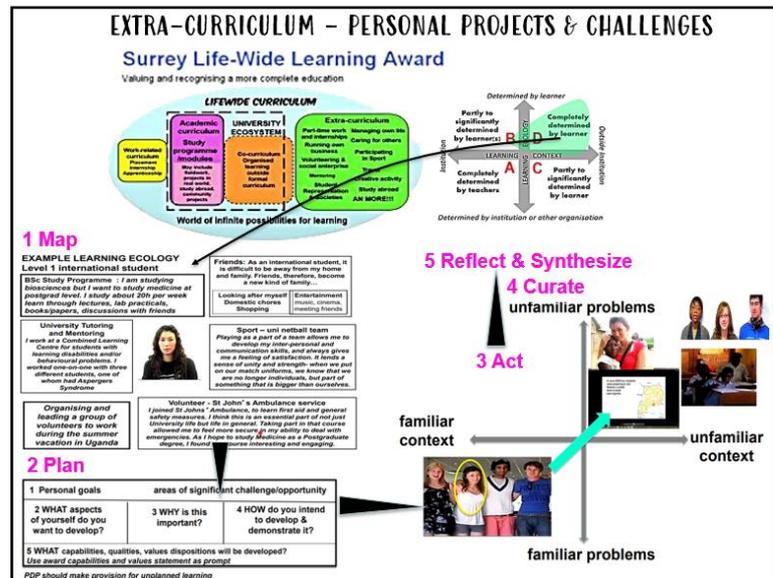
26 Life as learning through action. Our strategy was based on the idea that living is a form of action learning if we treat our experiences as a resource for learning.

Learners were introduced to the idea of lifewide learning and action through a workshop in which they:

- 1 Mapped the different parts of their life in which they had different sorts of experiences and described the activities and actions they were involved in when they participated in these domains.

They were then 2) encouraged to identify ways in which they would like to develop aspects of themselves and to look at their life to discover new affordances or opportunities to achieve this. At the most basic level, they all wanted to create better versions of themselves which invariably meant finding and engaging in new experiences – often pushing themselves outside their comfort zones.

3) Over the next 6 to 12 months they implemented their plan changing it where necessary. The requirement was for a minimum of 150 hours of experiences (typically it involved much more than this).
 4 While they were engaged in their personal development project they kept a record of their experiences and development – eg diary, blog, scrap book.



27 Reflection & synthesis

When they felt ready, they produced a written account (2000 words) that enabled them to reflect on their experience, synthesize what they had learnt and make claims for how they had developed. A capability and values statement was provided as a prompt.

The award encouraged participants to learn and recognise their development through:

- heightened self-awareness of the significance of situations and experiences through which they are learning and developing across their lives

SYNTHESIS ACCOUNT OF EXPERIENCES & DEVELOPMENT

Award Capabilities & Values Statement

- 1 Managing and evaluating my own development
- 2 Being able to deal with situations, solve problems, work with challenge and uncertainty and take advantage of opportunity
- 3 Being able to find out what you need to know to do what you need to do
- 4 Being creative and enterprising
- 5 Being an effective communicator
- 6 Being able to work with and lead others
- 7 Behaving ethically and with social responsibility
- 8 Other areas of personal development that are important to me
- 9 My will to be and become who I want to be
- 10 My values and the value I add to my enterprises
- 11 My growing confidence in my own ability

- use of the Capability and Values Statement to draw attention to forms of learning and development that are particularly relevant to understanding and performing effectively in situations
- planning (more like a rough design) for future situation-based learning
- observing and recognising this emergent learning and development and recording of experiences and insights gained through a diary, sketchbook, blog, portfolio, video or other representation
- reflecting on experiences and situations and making more sense of and creating deeper meanings from these experiences
- revealing their meaning making through an integrative account of experiences, learning and development.

28 An ontological curriculum requires learners to record and make sense of their experiential journey and make claims for their own development.

Creating ecologies to learn, develop and achieve something significant is identity work. The process of recording, reflecting on and narrating the experience and what was learned reveals the nature and extent of 'undergoing'. At Surrey we adopted the position that students could simply fill a shoe box with artefacts that represented their learning and development and as long as they could communicate their journeys and the transformations that they made we would validate and recognise their learning and development through an award – Surrey Lifewide Learning Award. Students chose a variety of media but one of the favourites was a scrap book. They wanted something material and physical to touch as they recounted their stories. In this way students were learning to develop a learning biography. The whole process could be conceptualised as a type of PDP (personal development planning) in which identity development is central.

LIFE AS CURRICULUM

Narratives of becoming within which ecologies for practice, learning and creativity reside

CATCHING STORIES
Shoe box
Blog
Scrapbook
E-portfolio
Video diary
Digital story
Movie
Slide show



Using life as curriculum enables students to reflect on their own ontological journey to reach self-awareness – the sense of authoring their life and how they construct themselves. *Pharr Sharrah*

29 Action -learning in the co-curriculum. The co-curriculum contains many opportunities for active participation in all sorts of enterprises. Our project explored the idea of action-based learning in three main areas – culture (we had a multicultural campus) and also in the creation of business and social enterprises – we called them academies.

Most were one semester long. They involved some sort of challenge – e.g. put on an event, create a business, help an existing social enterprise. Students from all backgrounds and levels self-

CO-CURRICULUM – ACTION- & CHALLENGE-BASED ENTERPRISES

Surrey Life-Wide Learning Award
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LIFEWIDE CURRICULUM
World of infinite possibilities for learning



Determined by learner
Determined by institution or other body eg a work placement or volunteering organisation

Cultural enterprise – adding value to campus life



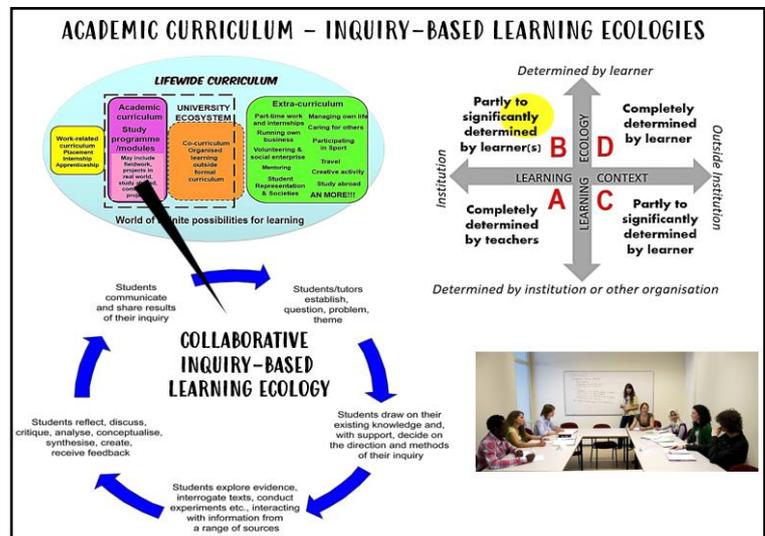


Cultural Academy (also business & social enterprise)

- Challenges – organise multicultural 'bash' & conference
- Individual, team & group discussion, action, inquiry – share cultural perspectives
- Curate activity & learning - film/audio records
- Reflect individually and collectively on how, what and why you learnt

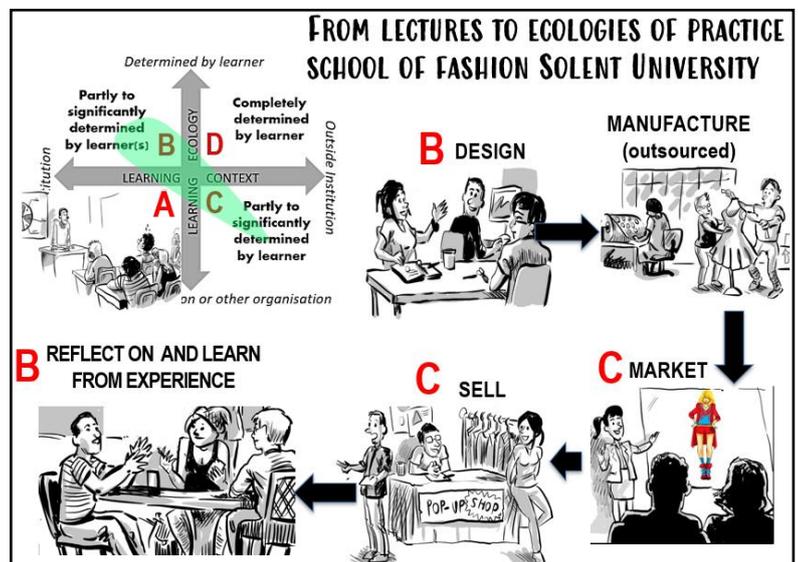
organised into teams. They discussed and planned their project, implemented it and kept records of activities and then engaged in a reflective process to understand what they had learnt and share how they had developed through their experiences. Our role was to support the process and facilitate the reflective process.

30 Active & action learning in the academic curriculum. SCEPTrE tried to influence the academic curriculum in two ways. The first was through a Fellowship scheme that gave teaching staff time to design and pilot entirely new educational designs that were consistent with our active & action learning mission (over 30 Fellowships were made). The second was to encourage, through a Faculty-based programme, the adoption of inquiry-based learning methods in whatever form was appropriate for the discipline (over 20 departments in all disciplines participated in this developmental project).



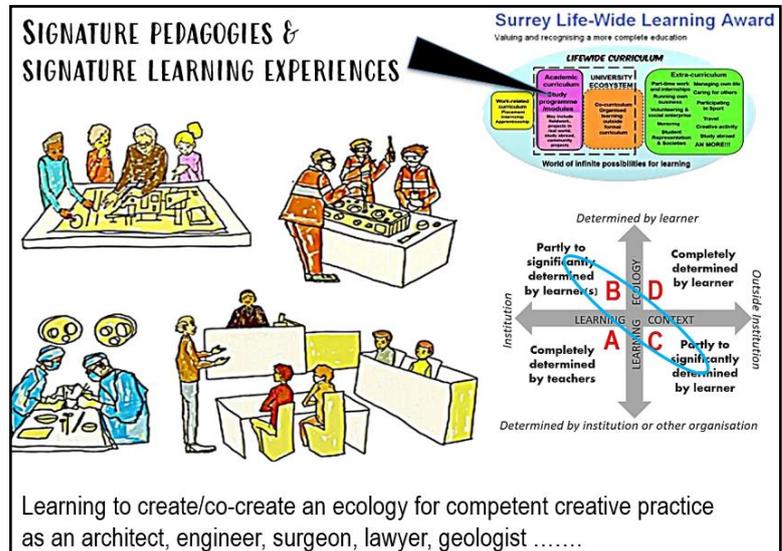
31 Transforming didactic teaching into action learning: One of the best examples I came across of shifting from didactic transmission-based teaching to action learning was at Southampton Solent University where I conducted a research study of a 3 year strategic change programme which attempted to encourage bottom-up innovations in active learning.

Two HE teachers, both with commercial experience, who taught two modules in the School of Fashion, transformed their didactic teaching into opportunities for experiential action learning with the help of seed funding from the university (Baker et al 2014). Instead of two modules of lecture-based content, students and teachers worked in teams to design to industry standards a collegiate range of garments, the manufacture of which was outsourced, and then students modelled, marketed and sold the garments in pop up stores on and off campus. In making this transformation the teachers moved their practice from the domain A to domains B & C in our typology of learning experiences and moves the teacher from stage to meddler in the middle pedagogic stance (McWilliam 2009). This example of transforming practice illustrates how we can create what might be termed a signature pedagogy for a subject that has direct application in the world of work.



32 Signature pedagogies and learning experiences are the modes of teaching and learning used in the preparation of people for a particular profession such as law, medicine, engineering, teaching, architecture, geology and more. They are forms of action learning that integrate knowing, doing and being, and learning, in the context of performing a particular role and consequently learners do create their own ecologies of practice within which learning and creativity are embedded.

Shulman (2005) defines signature pedagogies as “the types of teaching that organize the fundamental ways in which future practitioners are educated for their new professions”. They involve ‘close to real world simulations’ and on-the-job training and learning in professional workplace situations and environments – like the student geologists in the example above. Signature pedagogies and associated experiences comprise a synthesis of three apprenticeships— a cognitive apprenticeship wherein one learns to think like a professional, a practical apprenticeship where one learns to perform like a professional, and a moral apprenticeship where one learns to think and act in a responsible, ethical and value-based manner that integrates across all three domains.



Signature pedagogies of academic disciplines: Gurung et al (2009) and Chick et al (2012) argued that signature pedagogies are not unique to professional/ vocational education and training: academic disciplines also have distinctive habits of mind that are reflected in the pedagogic practices adopted by teachers in the discipline. These authors explore how 29 disciplinary and interdisciplinary fields foster deep learning and help students think like disciplinary experts. These “signature pedagogies” reflect the deep structures of the discipline and attempt to answer questions such as: “What does our pedagogy reveal, intentionally or otherwise, about the habits of head, hand, and heart as we purport to foster through our disciplines?”

33 Illustrating development of a competent creative practitioner
The competence of a field geologist is demonstrated by the way he is able to interact with his environment in an effective way to transform information he receives from the environment into knowledge-rich artefacts.

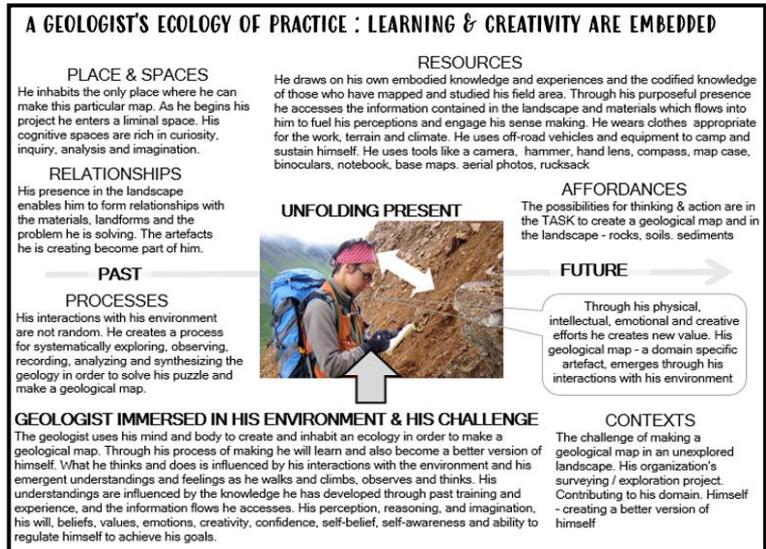
A geologist enters his field area often knowing little about it. He has to extend his body and his mind into the environment to access the information flows that enable him to work with his problem. He uses a



range of tools and patiently and accurately perceives and reasons to comprehend what he sees. He records his observations building a picture as he goes. His imagination helps him speculate and conceptualise his problem to help him understand and solve his problem. Each step determines where he will go next. His domain specific artefacts emerges through this process.

34 The geologist’s ecology of practice (Jackson 2020b) comprises himself, his mind and body and all he can bring to the situation as he relates to and interacts with his environment. His ecology of practice must be invented and performed in this place– the only place in the whole world where this particular map can be made. It contains the materials (rocks) and other resources including the tools he needs to make the map.

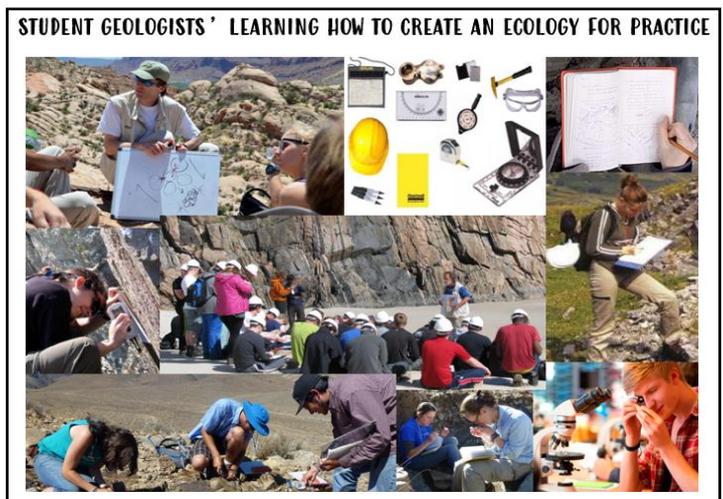
As he begins his project he enters a liminal space with all the uncertainty of not knowing. His ecology of practice affords the means of working in this liminal space and all the other intellectual and psychological spaces he needs in order to progress to a higher level of understanding.



His ecology of practice includes his work activities and the methodologies he employs using specific tools and technologies. His main source of information is from the environment itself – the landscape, rocks and structures he is able to observe. Before they enter the field environment they will conduct research into what is already known. He will need to physically cover the ground, gathering and processing lots of information through skillful actions and observations. Through careful recording, deliberation and the construction of a map and report he creates new meaning which is embodied in the geological artefacts he produces. When completed he will have “take[n] elements of [himself] and the world around [him] and transformed them into something new...”.(Bennick, 2009).

35 Learning to become a competent creative geologist

So how does a person learn to become a competent creative geologist – how do they learn to create their own ecology of practice that enables them to create a geological map? We come back to the idea of an ontological curriculum that enables a person to be and become a certain sort of person, in this case a geologist. In order to think an act like a geologist with the competence to make creative artefacts like a geological map, a person must participate in a structured programme of education and training to develop the knowledge to be able to identify rocks, minerals and structures and know what they mean. They must place themselves in field environments where they are able to engage with the problems a geologist engages with and learn how to observe, measure and record features using the

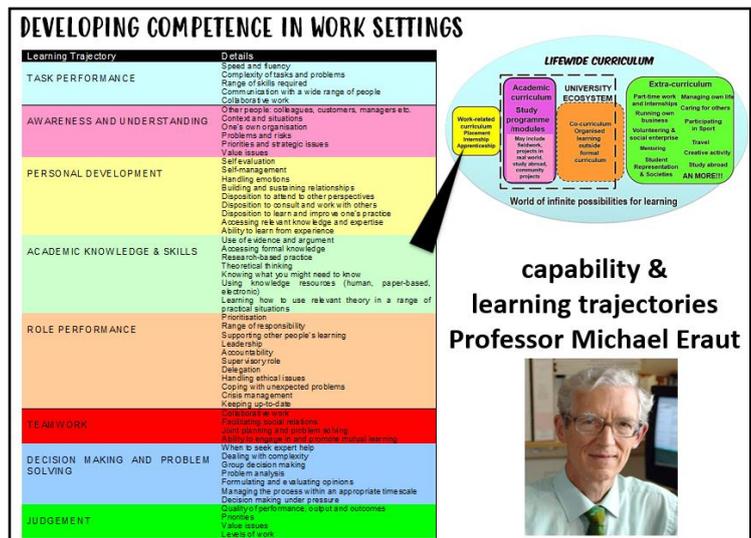


tools that enable them to extend themselves into the environment. Then, under supervision, they must try to make their own geological map – making many mistakes along the way until they have the expertise and confidence to do it by themselves. This is a good example of an ontological curriculum that enables people to become a certain sort of person able to think and act like a geologist and ultimately to be creative like a geologist. It is a cognitive and practical apprenticeship and it is known as a signature pedagogy (Schulman 2005) and signature learning experience and it's the way a person learns how to create an ecology of practice for the purpose of understanding the geology of a particular landscape and creating new understanding in the process.

36 Developing competence in work environments.

The practicum or workplace provides a dynamic environment for action-based learning. I would like to conclude by offering a perspective drawn from the practicum based on some research we did at SCEPTRe with our students on year long work placements.

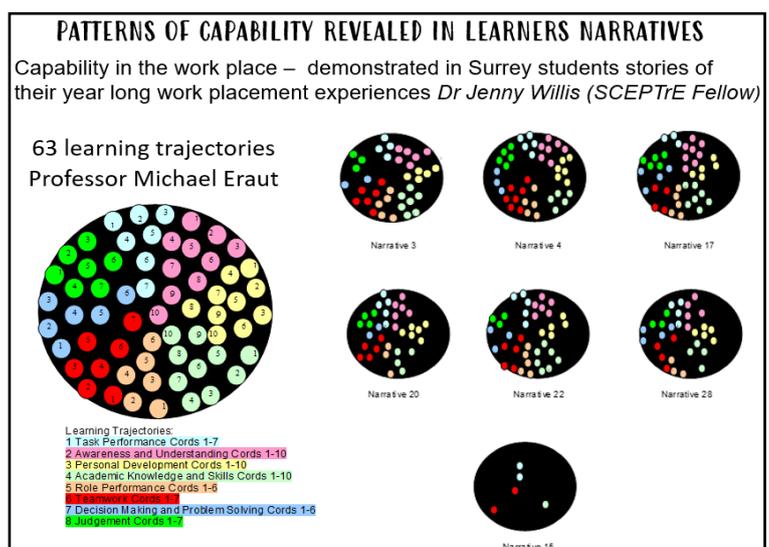
We were fortunate to have Professor Michael Eraut as one of our research collaborators. He had spent several decades conducting empirical research in professional work environments and we drew on this research in our work with placement students.



His model of capability in the workplace (he preferred capability as an all round term rather than competence) identified 8 domains of competence, each containing many dimensions along which people developed – he called these learning trajectories and he identified 63 in total. For example the 'Task performance' domain of capability included: speed and fluency; complexity of tasks and problems; range of skills required; communication with a wide range of people; collaborative work.

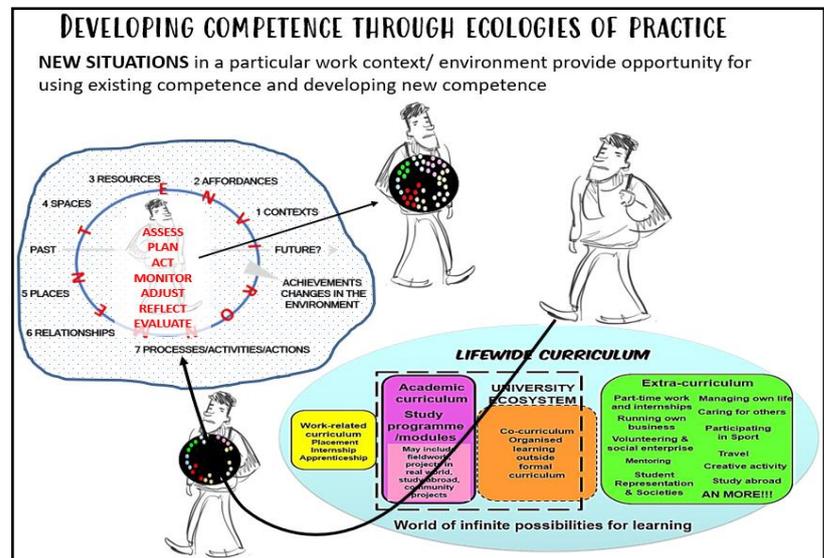
37 A second SCEPTRe Fellow (Dr Jenny Willis) conducted interviews and invited narratives from work placement students across many disciplines and tried to deduce from these sources of information the ways in which students had developed their capability (or competence) during their work placement.

She envisaged the colour coded trajectories as 8 strands of a multi-coloured rope of professional capability: the overall capability being the whole rope working together rather than the sum of the individual strands. Within each coloured strand, there were threads of the same colour (5 for Task Performance, 6 for Awareness and Understanding, etc. An individual developing competence across all 63 learning trajectories would be



represented by the image on the left. The actual patterns of development are shown on the right. While most placement students demonstrated some capability development across all domains and a significant number of the learning trajectories a few seemed to develop a very narrow range of capability. This pattern of development was considered to be the combination of three different factors. 1) Restricted opportunities for development within the work environment 3) lack of learner engagement with the opportunities provided 3) Lack of self-awareness as to how the learner had developed.

38 Our competence never stands still. Michael Eraut's studies show that the work place contains a wealth of opportunity for early career professionals and for higher education students involved in significant work placements to develop existing and new competence. New competence is developed in work place settings through structured training and mentoring but it is also developed informally as people engage in work practices and create or co-create their own ecologies of practice to achieve their goals.



Whenever someone encounters a new situation and they are expected to act on their own – they assess the situation, decide what to do, act on their plan monitoring the effects and adjusting their actions where necessary and then reflecting on their whole experience. For simple tasks they employ routine procedures but for complex challenges unfolding over time they must develop an ecology of practice within which their learning (including new competence) will emerge. In this way we continually develop new competence through the use and adaptation of existing competence, then learning through the experience of trying.

39 This concludes my ecological narrative and I hope you have found some of these ideas interesting and of practical value.

These websites host free resources that relate to the ideas and practices I have been talking about.

- <http://www.lifewideeducation.uk/>
- <http://www.creativeacademic.uk/>
- <https://www.learningecologies.uk/>
- <http://www.lifewideaward.uk/>

Thank you

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