



# Exploring the idea of learning ecologies, it's value and use in understanding students' lifewide learning, development and achievement

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## Introduction

Eduard Lindeman writing 90 years ago said, *'the whole of life is learning therefore education can have no ending'*. The *whole of our life* involves the diverse physical, social, virtual, intellectual and psychological spaces, contexts and cultures in which we learn, develop and achieve. *Our life* involves *the whole of us* in a complex, ever unfolding interactive relationship with the diverse physical, social, virtual, intellectual and psychological spaces, contexts and cultures in which we learn, develop and achieve. This eternal interactive relationship between *the whole of us, our whole life* and *all the environments, contexts and situations we inhabit* can be holistically represented as an ecological relationship.

The purpose of my talk is to introduce the idea of learning ecologies and explore the proposition that people individually and collectively build ecologies that embrace all these dimensions of life, in order to learn, develop and achieve the things they value. I want to explore what this might mean for educational institutions that embrace a lifewide concept of student formation.

## Lifewide learning

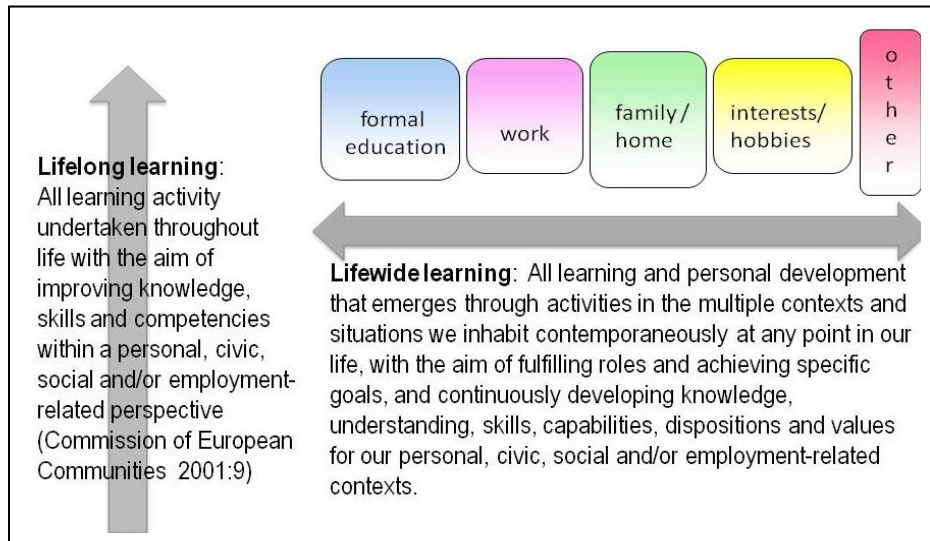
My exploration of the idea of learning ecologies has grown from exploring the potential that lifewide learning and education hold for students' holistic development (Jackson 2011a). Most people are familiar with the idea of lifelong learning - the learning we gain as we progress through our lives from childhood and school, to college and university and through our career and beyond. Viewed at the scale of an individual's life course, for most people, formal education occupies only a relatively small part of their lifelong learning activity. The vast majority of their lifespan pre- and post school, college and university, is conducted in the domain of informal experiential learning and personal development: something that higher education has tended to ignore. It is ironic that one of the most important things higher education can do to prepare learners for learning in the rest of their lives is to pay more attention to the informal dimension of their learning lives while they are involved in formal study in higher education. By equipping them with tools and strategies that enhance their self-awareness, by encouraging attitudes that view life experiences as opportunities for learning and development and by valuing and recognising learning and development gained through life experience, universities and colleges can greatly enhance individuals' preparedness for learning through the rest of their life.

'Lifewideness' adds value to 'lifelongness' dimension of learning (Jackson 2011) by recognising that most people, no matter what their age or circumstances, simultaneously inhabit a number of different contextual spaces - like work or education, running a home, being a member of a family and or caring for others, being involved in a club or society, travelling and taking holidays and looking after their own wellbeing mentally, physically and spiritually (Figure 1). We also inhabit different psychological (cognitive and emotional) spaces within and across these different physical spaces. We live our lives in this multitude of spaces each with its own temporal rhythm for the activities we perform so the *timeframe* of our lifelong journey and the multiple *spaces, places and timeframes* of day to day existence across our lives, intermingle and connect and as we accumulate and learn from our experiences, who we are and who we are becoming are the consequences of this complex intermingling and sense making.

In the different spaces we inhabit we make decisions about what to be involved in, we meet and interact with different people, have different sorts of relationships, adopt different roles and identities, and

think, behave and communicate in different ways. In these different spaces we encounter different sorts of challenges and problems, seize, create or miss opportunities, and aspire to live and achieve our purposes and our ambitions. These different spaces also provide affordances for our creativity. Affordances that we can seize because we are motivated and inspired by our interests and the possibilities they hold. So the spaces that provide the contexts for our life enable us to create the meaning that is our life and develop the purposes and values that motivate or inspire us to lead a certain sort of life.

**Figure 1** The lifelong and lifewide dimensions of living and learning



Lifewide learning is a powerful educational concept because it embraces all types of learning - learning that is developed in formal educational environments which is directed or self managed, learning that is intentional or unintended, learning that is driven by our interests and its intrinsic value, as well as our needs, and learning which just emerges during the course of our daily activity. To be a competent lifewide learner requires not only the ability to recognise and take advantage of opportunities and the will and capability to get involved in situations arising from these opportunities, it also requires self-awareness derived from consciously thinking about and extracting meaning and significance from the experiences that populate our lives. It is the understanding of what it means to be a lifewide learner that individuals use in future imaginings, decision making and activity and it is this consciousness or awareness that lifewide education seeks to develop: what Rogers (2003) calls learner conscious learning but within contexts that are not overtly for learning in task, performance or experience-oriented learning situations.

## Learning ecologies

In exploring of the idea of lifewide learning it seemed to me that the relationship *individuals' learning was related to* their needs and purposes, their contexts and the people and social interactions that took place, in fact all manner of things. In other words individuals' learning is a relational or ecological phenomenon and the idea that we create ecologies for learning began to form.

In nature an ecosystem comprises the complex set of relationships and interactions among the resources, habitats, and residents of an area for the purpose of living. Each organism within an ecosystem has its own unique ecology within the ecosystem through which it lives its daily life, so the whole ecosystem is made up of many individual ecologies competing or collaborating for resources and contributing to the system as a whole so that the whole system is maintained and sustained.

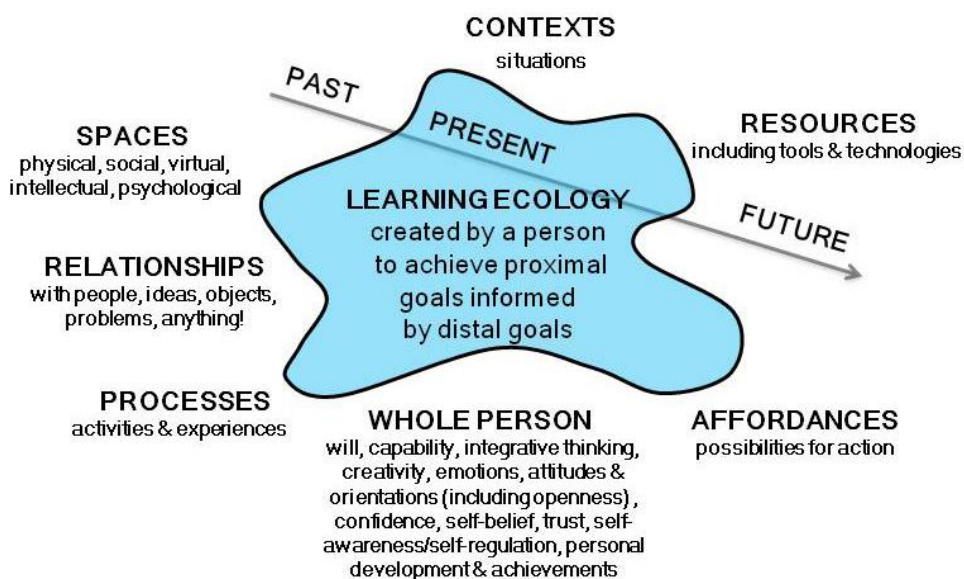
A similar conceptualisation can be applied to human ecological systems or ecosocial systems - the set of relationships and interactions among the people, resources, habitats, and other residents of an area for the purpose of living (Jackson 2016). While all ecosystems are complex adaptive systems that learn to live with, and when necessary adapt to, their environment, the making and meanings and sharing of understandings (learning) are a primary interest and purpose of human ecosocial systems together with their continuous development and improvement (Lemke 2000).

Every organism has an environment: the organism shapes it's environment and the environment shapes the organism. So it helps to think of an indivisible totality of 'organism plus environment' - best seen as an ongoing process of growth and development (Ingold 2000). From an environmental perspective it does not make sense to talk about the environment in which we are learning without reference to ourselves as the organism that is perceiving and interacting with the environment we inhabit in order to learn.

Formalised education tends to treat learning as something separate from the rest of life. Applying the idea of ecology to learning, personal development and achievement is an attempt to view a person their purposes, ambitions, goals, interests, needs and circumstances, and the social and physical relationships with the world they inhabit, as inseparable and interdependent. The idea of ecology encourages us to think more holistically and more dynamically about the way we inhabit and relate to the world. It encourages us to think in a more holistic way about our life: how we connect up the moments in our lives to form experiences and achievements that mean something to us.

Growing out of the exploration of this idea is a belief that our ecologies for learning embrace all the physical and virtual places and spaces we inhabit in our everyday lives and the learning and the meaning we gain from the contexts and situations that constitute our lives. They are the product of both imagination and reason and they are enacted using all our capability and ingenuity. They are therefore one of our most important sites for our creativity and they enable us to develop ourselves personally and professionally in all aspects of our lives. To promote discussion I developed a model to explain my conception of a learning ecology. (Figure 2) and the purpose of my talk is to explore what these ecological ideas might mean for educational practices used to encourage and support students' lifewide learning and development.

**Figure 2 Important components of a learning ecology (Jackson 2016)**



## University ecosystems

Ellis and Goodyear (2010) develop a compelling narrative for viewing the university (or any other educational institution) as a complex ecosystem involving the relationships and interactions of all the inhabitants - students, teachers, researchers, support and administrative staff, managers and leaders, and their connections with employers and society more generally, and the resources, physical spaces and virtual environments, processes and practices that are played out day to day. They used the term, 'ecology of learning' to represent the educational practices and learning activities that promote students' learning stating, 'we feel it best represents the nature of the phenomenon which has students at its centre, and includes all legitimate stakeholders including teachers, university service providers and university leaders.' (Ellis and Goodyear 2010:51). In a companion article (Jackson and Ward 2016) I also explore the idea of higher education ecosystems. These perspectives on the university as a complex ecosystem located within large complex societal ecosystems provide a useful foundation on which to develop and apply the concept of learning ecologies at the level of teachers and student learners.

All universities and colleges will contain within their ecosystem the know how, capacity, capability and culture to create a diverse range of ecologies containing programmes, teachers and teaching and assessment activities, spaces, resources etc) within which students are encouraged, enabled and supported in order to learn. But the types of ecology that a particular student encounters will reflect such things as: the educational aims and objectives of their programme, the norms and traditions of the discipline they are studying, the range of curriculum designs and pedagogic practices they are exposed to, the learning environments they encounter and the social dimensions of their experience. the affordances for students to learn, develop and achieve through experiences that lie outside their academic programme, for example through work or community placements, and the extent the student involve themselves in such experiences.

## University ecosystems to encourage & support lifewide learning

An organisational ecosocial system does not happen by chance it is the product of intention and design, and the emergence of culture and practice as the members of the organisation try to interpret and implement designs. An institution that embraces a lifewide concept of students' learning, development and achievement might be expected to have developed certain cultures, policies, strategies, infrastructures and educational practices to create an ecosystem within which such learning, development and achievement flourishes for example:

- A culture, stemming from the educational mission of the institution, that values and recognises all the ways in which students learn and develop while they are studying at university
- Learning and teaching, and employability policies and strategies that place high value on the development of so called soft skills and dispositions as well as traditional academic skills
- As part of learning and teaching policies - personal development planning (PDP) policies and practices that encourage and help students to plan for their own development, act on plans and reflect on how they have developed.
- The development and pervasive use of technological tools like e-portfolios that enable students to record/curate their experiences (both academic and non academic) and record their reflections and evaluations of the development they have gained regardless of the context in which it was gained
- Institutional award schemes and perhaps badge system for encouraging and recognising students' development and achievement through co- and extra-curricular experiences as well as the academic curriculum. These might be supplemented by other schemes for recognising
- The use of a comprehensive record of achievement that enables learners to represent the diverse range of achievements they have accomplished - not just their academic achievements.

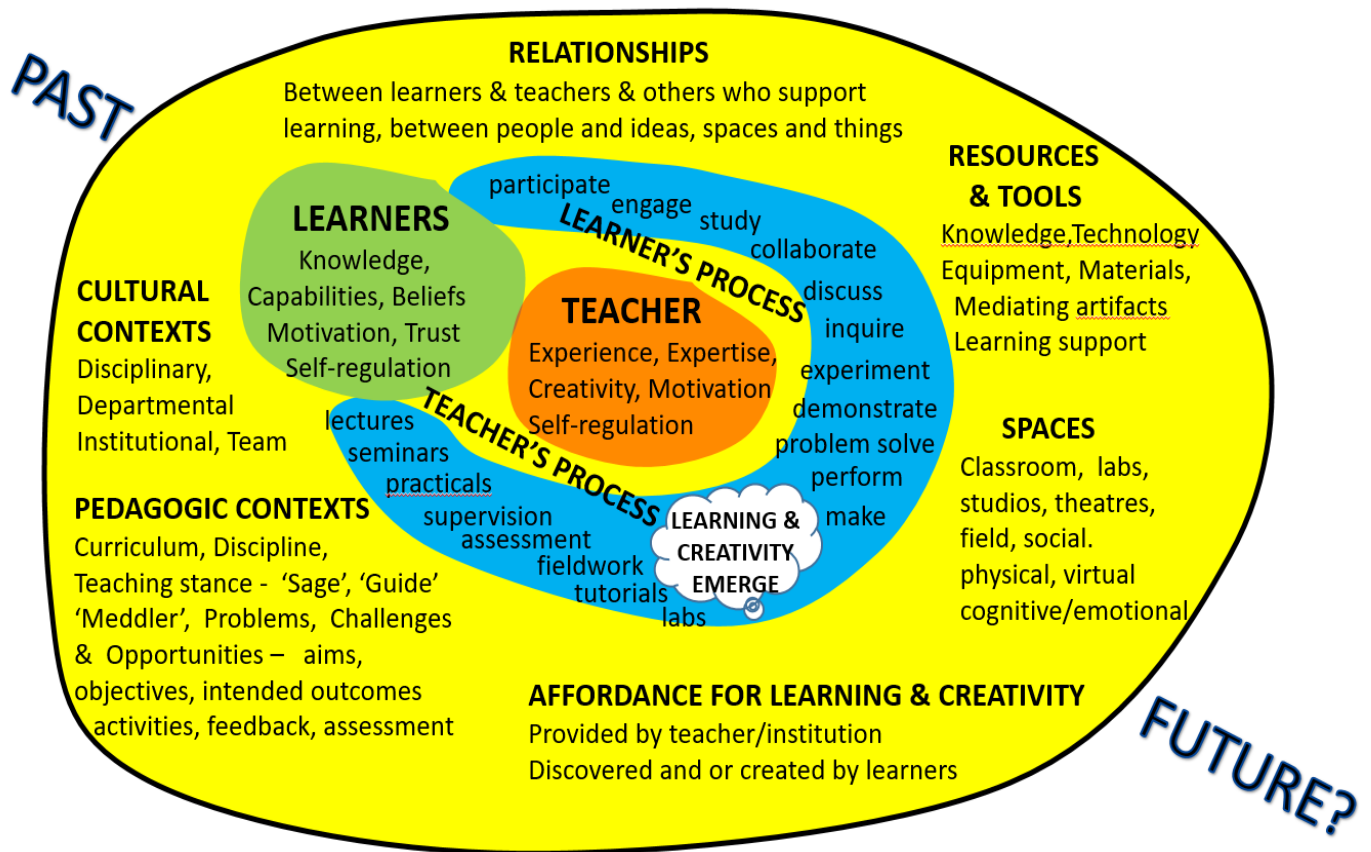
- Encouragement and professional support for staff to develop their teaching and learning, and other student development practices in ways that encourage students' to recognise more fully the nature of their learning, development and achievements while they are involved in higher education.

From this list it can be appreciated that a university has to make significant investments in order to develop the capacity, capability and culture in its ecosystem to encourage, support and recognise the lifewide learning, development and achievements of its students.

### Ecologies created by teachers within a university ecosystems to enable learning

A traditional university course taught face to face is designed, organised and implemented by one or more academic teachers who have both disciplinary and pedagogic expertise, within an institutional socio-cultural environment that is full of support and resources to aid learning. There is a structure (timetable/lecture schedule/credit structure) and procedural framework (rules and regulations) within which learning takes place. Programmes are organised into units or modules with explicit objectives, content, resources and processes that engage learners in activities through which they learn, and some of their learning is assessed using one or more methods determined by teachers. The institutional ecosystem for learning includes people - learners, teachers and other professionals who help learners, a physical environment including classroom spaces, social spaces, resources centre and virtual spaces where learners and teachers interact for the purpose of learning. Figure 3 identifies the components of a typical course-based learning ecology that is designed and taught by a teacher.

**Figure 3** Typical learning ecology associated with a taught course and created by a teacher with support from the institution to encourage and support students' learning



The *affordance* for learning *within the context of an academic programme* is everywhere. It is contained in the course, programme or module content, in the activities that teachers organise and facilitate for learners, in the *physical and virtual spaces* that are provided which support particular activities (both academics and social) and in the *intellectual spaces* that the pedagogic activities promote. Affordance for learning and development is also found in the *resources* including books, journals, computers, software and other tools and mediating artefacts that are used, and in the teaching and learning *processes* and practices that are used to engage learners and encourage them to form relationships for learning with these resources. Affordance for learning is also found in the additional support and advisory services the university provides, and in the *relationships* and interactions between teacher and students, and student peers, and in learners own responses to all of these things. Furthermore, some academic programmes also contain affordances for learning in contexts and environments that lie outside the institution for example through work placements and internships, community-based projects, fieldwork and study visits and more.

### **Ecologies for learning, development and achievement created by students**

But the university ecosystem contains many other affordances for learning outside a learner's academic programme. These affordances are accessed and utilised by learners creating their own ecologies for learning. They can be found in the co-curricular spaces organised by teachers and others who support student development. There are also affordances in myriad of opportunities provided in university's student societies which organise hundreds of activities and events, and in the opportunities for students to work or volunteer on campus and even, perhaps in the campus residency communities where students live.

The university ecosystem sits within an even bigger ecosystem that is also full of affordance for learning in such social practices as work, volunteering and community-based activities, playing sport or participating in the activities of a drama or musical group, travelling and experiencing new places and any number of experiences. This larger ecosystem is available to students who have the will to participate in such activities and learn and develop through their involvement.

Each of these affordances for learning that lie outside an academic course might stimulate a new learning ecology to develop and/or involve students in ecologies for learning and achieving that others have created. A university that values learning, development and achievement gained through these informal learning experiences can encourage and facilitate the process through the cultures, policies, infrastructure and practices outlined in the previous section.

### **Creating a personal curriculum**

The reality is that a student will personalise/customise their higher education experience through the way they utilise the affordances in their life. How they achieve this is a complex matter involving - circumstances, affordance (their perceptions of opportunity for action), interests, responsibilities and priorities, orientations and dispositions (fundamentally their willingness to get involved) and ability to self-direct and regulate (manage) their life. In fact for students living an independent life for the first time, the very act of managing a complex life and juggling all the things that have to be juggled - is essential preparation for the rest of their life.

### ***Illustration of how a student personalizes his curriculum through his learning ecologies***

This story is told by Michael soon after he graduated from his 3 year archaeology course, as he tries to make sense of his experience using the idea of a learning ecology.

[In going to university] my core aim was to develop my understanding of archaeology to the highest possible level I could achieve. I wanted to become an archaeologist and that ambition caused me to get involved in many things outside my course that I thought would help me become an archaeologist.

The most obvious process I engaged with to learn and understand archaeology was the timetabled and structured university course. This involved the reading of set course material much of it accessed through on-line journals and participation in lectures. This structure that was designed and taught by my teachers allowed me to follow a very clear process of learning, helping me to fully understand what information I had to know within the course. My degree course formed the backbone to my learning about archaeology. It provided me with contacts with people who were also interested in my subject and enabled me to develop a mind-set that encouraged me to engage with archaeology in many different ways.

The one experience in my course where I feel I had to create my own learning process was my final year dissertation which required me to create a learning project around something I found interesting and challenging. I had taken a module in my second year which involved a technique called ZooMS for analysing collagen in animal bones to identify animal genus. The academic responsible for developing the technique wanted someone to try the technique on erasure rubbings from bones. I thought this was interesting so I wrote my proposal and created a process that involved me sourcing samples, experimenting using different rubbing and collagen extraction techniques, analysing the collagen using a Mass Spectrometer, then processing the data and writing up the results. Although the process for achieving my goal was not particularly smooth it was one that I had largely created based on my past experiences of academic research gained throughout my three years at university. A lot of different people helped me including my supervisor, laboratory technician, two of my peers who were involved in similar work, a museum curator, and a PhD student within the department. I drew on a range of resources and facilities including collections of ancient animal bones, specialist laboratory, processing software, and articles. The research process was not straightforward and I was forced to modify my process as I realised that certain methods did not give me the results I was hoping for.

Some of the best opportunities for me to learn how to be an archaeologist lay outside my degree course. For example, in my second year I joined a group of students that acted as an editorial team for a monthly archaeology journal called The Posthole, which published articles by archaeology students. I acted as a coordinator and also tried to attract writers. Working within this team was an important learning curve, ensuring that the team operated together smoothly to achieve a goal while bringing together the priorities of different individuals within the team.

Being an archaeologist involves 'digging' to expose artefacts through which we can interpret the past. Unfortunately, my course only provided a four week introductory fieldwork course so I joined a number of 'digs', six in total run by two different PhD students, a member of the academic staff, a commercial company, and an external public organisation. Overall I probably spent over three months on excavations which gave me valuable insights into how to organise and conduct a dig, how to conduct various types of surveys, how to prepare, identify and display artefacts and beyond this how to work as a member of a team. The commercial digs I undertook introduced me to the world of commercial archaeology and the different approaches and mindsets that are used in the commercial world.

One of these projects had a particular significance for me. Homeless Heritage was started in 2009 by a PhD student at the University of Bristol. It is dedicated to working with homeless communities in order to understand and value the spaces used by such communities using archaeological methods. But it is more than archaeologists just applying archaeological techniques to the study of spaces that a particular group of people use: it involves working *with* homeless people in order to understand the relevance of what is found. In this way I was able to form friendships with people I would never have come into contact with in my student life. I began to appreciate the problems of homeless people and to see the world through their eyes. The experience enabled me to understand the value of contemporary archaeology, but I also began to see a new relevance of what I was doing, through it I became interested in the ways archaeology can be used to engage communities. The excavation was only the first stage of our project, the next stage involved telling people what we had learnt. After carefully cleaning, describing and cataloguing the artifacts we had discovered we organised a week-long exhibition, in which everyone was able to get involved and introduce the project to a wider audience.

Through the Homeless Heritage project I developed an interest in using archaeology as a means of involving people in a community project and I made this the subject of a seminar I had to give at the end of my course. In my final year I began to imagine myself working in the field of 'community archaeology' and I discovered that the Council for British Archaeology (CBA) offered a number of Community Archaeology Training Placements. I decided that I would apply for one of these and to give myself a better chance of securing this position I volunteered to help the local organiser of the Young Archaeologists Club (YAC) and was able to assist her with the running of a number of Saturday trips for school children which I really enjoyed.

Unfortunately, because of illness, I was not being able apply for the Community Archaeology Training Placements but the experience provided me with a useful insight into archaeology as a possible career, outside the more traditional roles of archaeologists.

Throughout the three years of my course I was fortunate enough to attend a number of conferences organised by the Theoretical Archaeology Group. I had to pay for these and they were outside the academic term. I thoroughly enjoyed the experience and it was a great opportunity to be exposed to people working in the field who presented the results of their research. This experience gave me the idea that we could perhaps run a conference for archaeology students nationally . With two other students I spent a significant part of my final year organising and marketing the two day conference which we held in July 2013. It was a great success with over 60 participants. Throughout the months of organising the conference a whole range of problems and issues were raised from working out the live streaming of the conference through to booking rooms and organising payments. Each of these challenges required us as a team to find contacts and resources that would help us to overcome each challenge allowing us to fully develop the conference into the successful project it was.

Looking back over my higher education experience I can now see that my course provided me with the basic knowledge I needed but that my attempts to learn archaeology and become an archaeologist involved much more than turning up for lectures and studying the reading list. I believe that the choices I made in getting involved in these wider experiences personalised my experience and the learning I gained from it. Most of these experiences were connected not so much to my course but to the bigger context of being amongst, and putting myself amongst, like-minded people interested in archaeology. The relationships I formed with some members of staff and doctoral students in particular opened new opportunities for me and enabled me to find the help I needed when I needed it. Since finishing my course, circumstances have meant that I probably will not pursue archaeology, other than for my own interest, but what I will carry with me is the belief that there are always opportunities to learn and develop if you look for them and if you are willing to get involved.

Michael's narrative demonstrates how the idea of learning ecologies can be applied to undergraduate higher education. It shows that the process of learning, being and becoming is not simply confined to the structure, content and assessment of a course. Rather we see how his intrinsic motivations, his desire to become the sort of archaeologist he wanted to be, combined with his willingness to search for and get involved in lots of experiences outside his programme form lead to the creation of several self-determined learning ecologies.

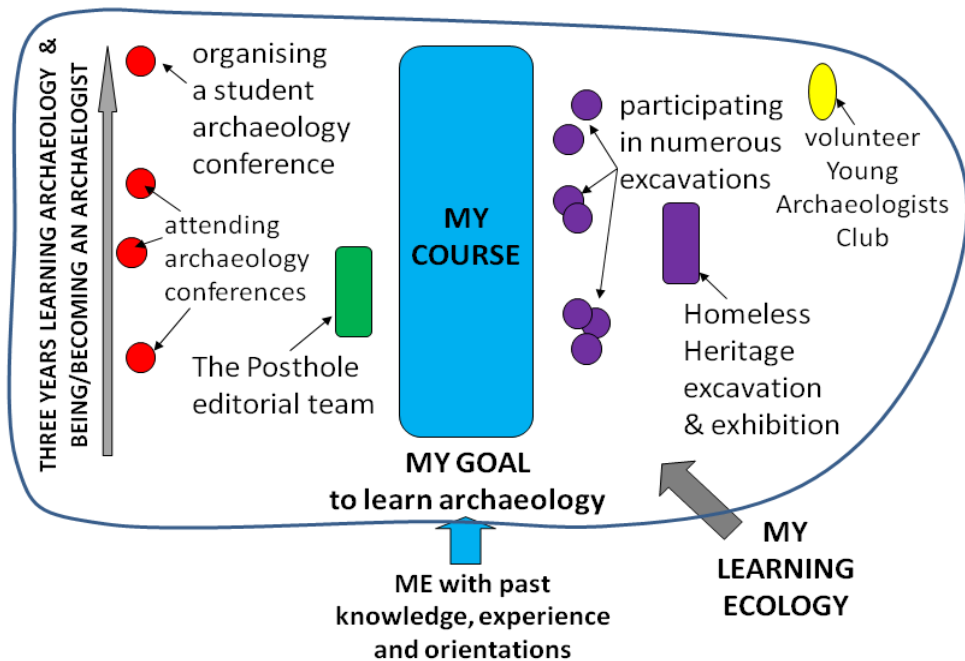


Michael had a clear distal goal - to learn archaeology and become the best archaeologist he could be and gain a good degree. That goal sustained his motivation over the three years he was studying for his degree but it was the particular projects he embarked on that gave him his proximal goals through which he created his own understandings of what it meant to be an archaeologist.

Michael's story shows how he found *affordance* to be and become an archaeologist in many different contexts many of which grew from the immediate circumstances of his life but some of which he searched for and found beyond his everyday living. His story reveals an unfolding and sustained process to access and utilise these affordances. Figure 4 was constructed with his help. It attempts to capture the main features of his ecology for learning.



**Figure 4** Michael's overarching ecology for learning to become the archaeologist he wanted to be. Within this are the ecologies for learning created by his teachers and several substantial and significant self-determined learning ecologies formed around his own projects (see figure 6)



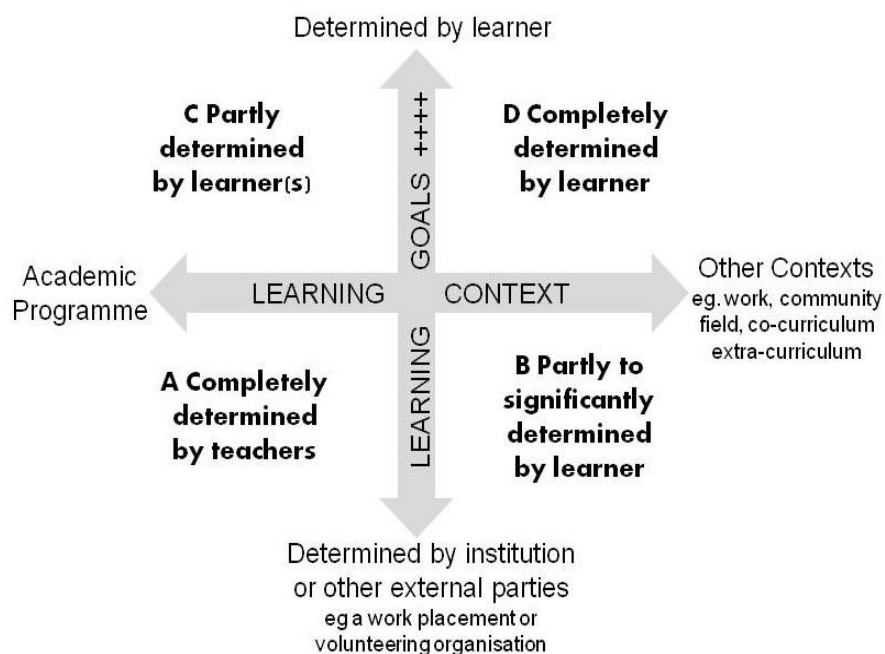
Within the boundaries defined by the three years of his course and the significant things he did that relate to his being and becoming an archaeologist, we see a multitude of learning projects each with its own purpose and proximal goals, connected by his overarching goal. He also experienced a multitude of *contexts* within which learning, development and achievement were accomplished and experienced and constructed a multitude of *processes* to accomplish his goals. He experienced a multitude of *relationships* involving people associated with the course and the university, and some people in the world outside the university, including people he met at conferences and on digs. Through these different contexts he accessed and utilised an enormous range of *resources* eg codified and experiential knowledge and archaeological artifacts and tools such as specialist equipment. We see his learning ecology being used not just to learn about archaeology, or even to be an archaeologist, but to become a certain type of archaeologist and beyond this we see Michael discovering that what he really enjoys doing is working with people. The narrative reveals how he discovered the particular aspects of being an archaeologist that he enjoyed and valued, and in that process how he found a possible way of continuing the ways of being that he valued through employment after university.

### Mapping students' learning ecologies

It is clear from Michael's story that his higher education experiences involved him in ecologies for learning that his teachers and others created, but that he had over the three year span of his course opportunities to create his own ecologies for learning, development and achievement. I have developed (Jackson 2014, 2016) a framework (Figure 5) to help visualise the relationship between individuals' learning ecologies and educational and other social practices that support and recognise the outcomes of learning from such ecologies. The conceptual tool was created to imagine the affordances for learning provided by a lifewide concept of curriculum. The 2x2 matrix is defined by: 1) *contexts for learning* i.e. whether the contexts are formally constituted and structured within an academic programme or whether they are informal and unstructured opportunities for learning and development, and 2) whether the *institution or the learner* determines the what and why, the how, where and the when of learning, and ultimately determines what counts as learning. The key question is who determines the goals and

purposes, knowledge and skill content, processes, resources, tools and technologies outcomes and achievements. Four different scenarios are imagined to represent the different conceptual spaces in Figure 5 (Table 1)

**Figure 5** Conceptual tool for evaluating the affordances for learning available to students while they are studying at university based on the idea of a lifewide curriculum. These affordances occur in the institutional ecosystem and in the ecosystems beyond the university. The affordances are such that a students' learning ecology may be located in any of the conceptual spaces. The different spaces have different levels of affordance for students to determine and create their own ecologies for learning ( $D > B/C > A$ ). The Goals++++ axis contains the dimensions of goals and purposes, intended learning, knowledge and skill content, process, resources including tools and technologies, relationships and recognition of achievement.



**Table 1** Four different types of learning ecology within students' higher education experiences

*A) Traditional lecture-based learning ecology*

Teachers working with a pre-determined curriculum or syllabus containing specific knowledge and opportunities for skill development and supported by an appropriate set of resources, engage their students in a process for learning. The main activities undertaken by learners are attendance at lectures, perhaps supplemented by seminars, essay-based coursework assignments, and revision for examinations. Learning and achievement reflect mastering the content of the course, determined through teacher assessment. In this type of learning ecology the learner has little or no involvement in the design of the ecology they merely participate in one that has been designed for them. They have little or no control over the goals, tasks, content, process, resources and what counts as learning and achievement. Their learning is likely to be geared to gaining the best grades in their coursework and examinations.

*B) Teacher designed active learning ecology*

Pedagogies that lead to extended processes for learning and contexts within which particular forms of learning are situated will engage learners in very different forms of participatory activity. Problem-, project-, inquiry-, event-, design and make, and field-based learning all actively encourage learners to define and explore their own problems, build and utilise relationships for learning, be resourceful and discover for themselves the knowledge they need to produce possible solutions, sometimes in contexts that are unfamiliar. In these types of learning contexts teachers operate as facilitators, guides, supervisors and coaches rather than didactic transmitters. Such pedagogies and practices help learners develop the will, capability and confidence to create their own learning ecologies for learning and achieving. Students will still want to gain good grades in their coursework and examinations, but in engaging in these sorts of processes they are gaining much more. They are learning through an experience that learning involves a process that has to be created. That involves assessing a situation, defining problems and seeing opportunities, setting goals, planning and executing tasks, discovering and applying relevant knowledge and other resources and forming new relationships. Although ultimately the teacher will determine what counts as learning and achievement and they may

give little or no recognition for learners' processes of learning, learners will still have learned these things. Learning that is important to the creation a learning ecology.

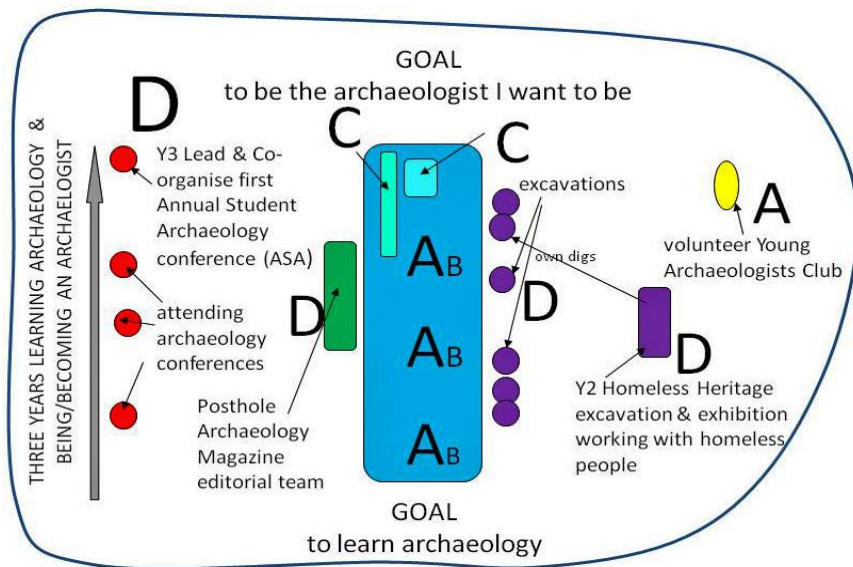
*C) Institutionally supported self-directed learning ecology*

There are some contexts in unstructured learning environments like for example work, volunteering in the community, independent fieldwork, co-curricular enterprise and event organising, which involve learners in activity in which they determining for themselves goals, tasks, content, process and resources. Such environments are beyond the control of the teacher and institution but they may be influenced and supervised by other people like employers, supervisors, entrepreneurs, who may influence goals, tasks, content, process, relationships and resources, and ultimately the recognition of what counts as learning, performance and achievement. Universities can capitalise on these contexts for students' development through frameworks and processes that enable learners to visualise, plan, record/evidence, reflect on, make claims and gain recognition for their own learning and development. These forms of support and recognition vary in the extent to which they focus learners' attention on specific goals and outcomes or they encourage learners to define their own goals and achievements. Support may also be given to encourage and facilitate interaction between learners engaged in a similar process for example in providing a forum for students to exchange information and discuss situations.

*D) Independent self-directed learning ecology*

This conceptual space is where people create their own learning ecologies for their own purposes typically for their own learning projects often associated with interests like sport, hobbies, travel, working in the community or for a charity, enterprise like setting up a business or organising an event, raising a child and countless more contexts. Involvement and learning are not driven by the need or desire for formal recognition but by the intrinsic desire to improve self, and the sense of doing something worthwhile to contribute and make a positive difference. In such self-motivated circumstances the learner determines for themselves and or with co-participants goals, tasks, content, process, resources and relationships and achievements. Although, learners do not seek recognition for learning and personal development gained through such experiences a university could provide the tools and mechanisms that enable learners to plan, record/evidence, reflect on, make claims and gain recognition for their own learning and development. From an educational perspective these contexts are particularly favourable for learners developing their own ecologies for learning and achievement in a way that a formally structured and controlled educational environment cannot.

We can use this framework to evaluate the pattern of learning ecologies within Michael's higher education experience (Figure 6).



**Figure 6** Mapping the types of learning ecology Michael experienced during his time at university

His overarching ecology for learning includes his BSc programme and many other activities that were outside his course. The letters ABCD relate to the affordances in a particular situation for determining his own goals, tasks and activities, content, process, resources, relationships and achievements. They reflect the degree to which is able to create his own

ecologies for learning, development and achievement. The outer boundary encloses the things he said contributed to his sense of being an archeologist and the way he developed his knowledge, skills, values,

beliefs and confidence in being an archaeologist - his ecology for learning and personal development. The letters ABCD relate to the affordances in a particular context/activity for determining his own goals, tasks and activities, content, process, resources, relationships and achievements. It is clear that although his academic programme provided some affordances for him to determine his own ecologies for learning and achieving eg the final year seminar he led and his final year project dissertation, the projects he undertook or created for himself outside his course provided him with the greatest affordance for self-determined learning and achievement.

This simple mapping device could be used to help learners reflect on, make sense of and appreciate their experience as a set of interconnected learning ecologies. It shows them, and their teachers, that what they do outside their programme to develop themselves is as important as what they do within their programme. It tells them that they, not the university, control their own ecology for learning, developing and achieving.

Michael's *learning experience and learning trajectory* are complex and perhaps not typical of most students but it illustrates very well the points I want to make about learning ecologies. One perspective would be that he went to university knowing next to nothing about archaeology and he graduated with a first class honours degree. But other perspectives might be offered through his performances and achievements in the archaeological digs he participated in including those he organised himself, the exhibition he organised and marketed, in his editorial work for the student-led archaeology magazine, or in his leadership and organisation of a national conference for archaeology students. While Michael's course clearly provided the 'backbone' to his *'learning about'* archaeology to a significant extent it was the experiences that he engaged with outside the course and in some cases outside the university environment, that enabled him to appreciate and learn what *'being an archaeologist'* meant to him and in this process developing many aspects of himself that he can carry with him into the future. As far as Michael was concerned the experiences where he was able to create his own ecology for learning in order to achieve something that he valued had the greatest impact on him and his development. However, he acknowledges the important role played by university staff in enabling him to create some of his most valuable learning ecologies.

I .....attended several conferences during the three years of my course [and] I thought it would be great if we could organise our own conference so during my final year me and two other students set about organising one. This was a conference organised and run by students, with talks given by students for an audience of students. It was not part of our course but something we undertook in our own time outside the course. The conference was a great success and we managed to organise it without a great deal of input from university staff. This was a great benefit and a powerful motivator in my view as it gave us complete control over the form, content and organisation of the event.

Our goal was to attract over a hundred students from various universities across the UK and encourage students undertaking original Archaeological and Historical research to come together to share their work. More than that, we wanted this event to be sustained after we had left university so we were trying to create an infrastructure and a culture that would enable responsibility for organising the conference to be passed on to another group of willing student volunteers in a different university each year. It's now three years since we ran our conference and it continues to this day. Our legacy is for other students to get their first true taste of how academic discourse works, and encourage students to see themselves as the next generation of researchers contributing to their field.

Organising the event involved much thinking and discussion, many decisions and a lot of effort and action - a complex collaborative ecology for learning and achieving. However, what I wish to focus on is what the university did to allow us to explore and create this complex ecology. I am of the opinion that complex ecologies must happen organically and be self-determined, as educational facilitators cannot tell someone to create an ecology, nor can they tell students how to do it. In simply informing someone of what to do takes away ownership and responsibility for the ecology. When students are told or advised what to do they are not creating their own ecology, rather they are

creating the ecology of the educator by proxy. What educators can do is two things, firstly *afford* students the space *and potential* to create their own ecology and secondly help them reflect on their ecology, so that they are helped to develop the essential reflective, meaning and decision making capacity of an effective professional. What this means in practice, I hope to illuminate with reference to my own experiences.

When I first pitched my concept for a national conference to the head of our Archaeology Department in York, it is to his eternal credit that he didn't reject the idea out of hand and throw at me all the potential problems and issues that he might expect me to overcome. He simply allowed me to suggest what it was that I hoped to achieve, and encouraged me to think critically about my plan. It was this encouragement, not only for the concept, but also the self criticism that ensured I identified and anticipated the likely issues and thought about possible solutions to them.

It was this process of conversation and self-critical evaluation that allowed me to shape the actions in my ecology, I was able to map out the targets, possible pitfalls and areas of least resistance, and find sources and resources to help me overcome any issues. There were times, of course, where I was met with a challenge and needed outside assistance to overcome, and again here the department was ever facilitating. During a conference I had previously attended, I was struck by the idea of live streaming our own conference. When I brought this to the department they allowed me to speak with the visual media team and make this into a reality. This is a wonderful example of the ecology being student lead (the idea originated with myself) and yet its implementation being facilitated by the department's help and generosity.

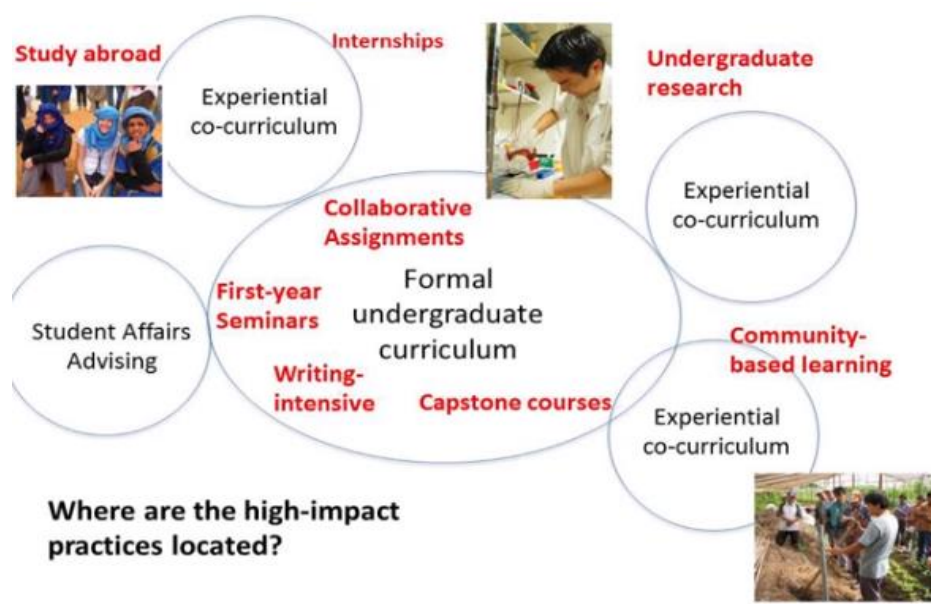
I hope this illustrates my primary point, that in a university setting students' self-determined learning ecologies can be encouraged and prompted by educators, but not created or instructed by them. Fundamentally it's up to students to invent them and for teachers to help them work through and reflect on the complexity they encounter.

## **Educational significance of an ecological perspective**

Stories such as Michael's show how a student's university experience can be viewed as a constellation of ecologies for learning, developing and achieving some of which are created by teachers and others who support student development, and some of which others which are created by the student. The educational significance of the idea of a learning ecology is that, in the world outside higher education, the world we inhabit for most of our life, is a world in which we have to build our own ecologies to learn and develop ourselves in order to achieve or cope with something significant. By helping and enabling students to appreciate their own ecologies for learning (without necessarily using the terminology) we are helping them to prepare for their own future. The significance of the idea of learning ecologies is that it reveals the way a person involves themselves in their world, how they see the affordances in it for learning, achieving and developing and how they convert these perceptions into practical reality. Politicians are good at turning complex patterns of disposition, thinking and behaviour into something called a 'skill' and calling it something like 'leadership' or 'enterprise'. The idea of learning ecologies captures something of the complexity of achieving anything of significance requiring the full capability of a person - everything they can bring to and utilise in a situation. This capturing the totality of a person's involvement in situations to achieve something significant, or make something happen is much more in line with what employers are trying to discover when they recruit a graduate ie if we put you into an unfamiliar situation how would you deal with it? or if we give you a significant project how will you approach it? They want to know how the person will read or comprehend the situation, see the affordances in it and then use all their capabilities to work with whatever emerges. By equipping students with the understandings that comes from appreciating the ecologies they create to learn and achieve we will be helping them gain employment not just for their first job but for every future job. Of course some students (the most aware, engaged and passionate) will intuitively understand that it is the way they involve themselves in the world that really leads to making a difference in and to the world. But if educators in universities understand and accept this proposition, then they have a moral obligation to incorporate this way of thinking into their educational designs and teaching practices.

There is some research evidence to support the view that the sorts of experiences that involve learners in creating their own ecologies are also experiences that have *high impact* on their development. Research using the National Student Engagement Survey (Khu 2008, and reported by Bass 2014 and Figure 7) that experiences that have the highest impact (often transformational) on student learning and development while they are at university are found in specific sites within the academic curriculum (like for example tackling a significant challenge like a project or dissertations involving independent research and/or fieldwork), and in certain co- or extra-curricular experiences. In other words those experiences where students have to substantially invent and create their own ecologies for learning.

**Figure 7** High impact experiences in the undergraduate curriculum (screen grab from a talk by Bass (2014) +17-18mins)



So what makes a high impact learning experience? Bass (2014) suggests that they are spaces and processes where students invest considerable time and energy often because they want to, not because they have to because they see value and purpose, and gain deep satisfaction from what they are doing. They are involved in social learning and action to achieve

something that they help shape and value. They are often working with unfamiliar and uncertain situations, operating outside their comfort zones and taking risks and continually have to make and negotiate decisions about what to do next. They spend time thinking about what they are doing and the effects of their actions and through this create deeper meanings, and what they achieve enables them to feel fulfilled (adapted from Bass 2014 and Jackson 2011). Forging the link between experiences that have high impact on holistic student development and those situations in which they necessarily have to create their own ecologies will enable universities to appreciate the wisdom in viewing learning as an ecological adventure.

The added value of the lifewide concept and practice in education is that it values and gives deeper meaning to the fundamental ecology of the everyday learning and development enterprise of individuals. Furthermore, it honours and celebrates individuals' commitment to their own development, in whatever dimension and part of their life they are seeking rather than simply seeing the higher education experience as mainly a process of intellectual development. It is also likely that changing perceptions of what counts as learning and personal development will help people appreciate more the lifelong-lifewide nature of learning and personal development that is necessary to live a healthy, productive, creative and fulfilled life.

An ecological perspective on a student's higher education learning experiences captures their uniqueness in engaging with the affordances in their life: affordances that sometimes only they can see

and act upon. In this way we cherish the uniqueness of each person and the unique ways they make use of these affordances through their actions. It goes to the heart of what being human means and reveals the source of our creativity. An ecological perspective honours the uniqueness of each student in a way that a degree classification, transcript or even a comprehensive Higher Education Record of Achievement, can never achieve.

An ecological perspective brings together in a holistic way all the elements of a student's experience for learning, developing and achieving that make sense to him. It reveals to him those experiences that have particular meaning and significance. An ecological perspective embeds the learner and their learning in the environment, contexts, problems, opportunities, conditions and circumstances that inhibit or stimulate his learning. From this ecological perspective the things that really matter and which have made a significant difference to him are not only the things that the university has done or provided - although these will be significant. Often, they are the things he has done for and by himself. These things matter because he has been able, through his own intrinsic motivations, decisions, agency and muddlings to make them happen. He has been able to take responsibility for his own actions and engaged in something that might have challenged or even scared him, but through perseverance he gained valuable experience and a real sense of accomplishment that feeds his confidence for the future. We are not talking about simple achievements like passing a test or an exam - he has spent much of his life doing this. Rather we are talking about doing something difficult he has never done before and proving to himself that he can do it and do it well. And an important part of that sense of achievement derives from the messy journey he has made to work things out for himself and make it happen.

An educational institution may encourage and enable learners to create their own learning ecologies in some or all of the spaces outlined in figure 5 but all too often the bulk of a student's higher education learning experience is located in the space of academic routine (space A) where there is little or no scope for creating their own ecology for learning. However, even when an academic programme is not designed to encourage learners to create their own ecologies for learning, some (perhaps most) learners are motivated to create their own ecologies for learning that enable them to become the scientist, lawyer, geologist, engineer or any other discipline-based practitioner they want to be. We should be inspired to change our traditional perspectives on learning by the stories of students who see and act on the affordances for their own development in all dimensions of their life.

In any higher education ecosystem there are forces of disruption and forces for integration. Bass (2014: 37min) suggests that the great tension that we are working through in higher education is between an integrated or a dis-integrated vision of education and the student experience. The ecological perspectives offered in this article are very much in tune with an integrated and holistic vision of education and of students' learning, development and achievement, nested within an institutional ecosystem that supports these visions of integrated and holistic education and learning.

Universities and colleges have the opportunity, power and capability to recognise the totality of an individual student's learning and development enterprise. They also have the moral responsibility to encourage and support learners in this more comprehensive and ecological view of their own development while they are studying. In the last two decades I have been fortunate to witness a shift from more traditional forms of higher education, focused mainly on the intellectual and academic development of a person, to approaches that are more accepting and valuing of the holistic being and development of a person through all the dimensions of their life.

Developing the necessary cultures, capacities and capabilities to fully support lifewide learning and development is a process that requires decades rather than years. It's a messy business and transformation of a complex system is neither systematic nor pervasive. Because every part of the

ecosystem (eg different institutions) is an independent agent, change occurs at different rates so that transformation is unevenly distributed and it will never be homogeneous. Furthermore, new forces emerge (like in 2016 the UK Government's Teaching Excellence Framework) that alter the balance and pattern of evolution with both predictable and unpredictable consequences (see the companion article Jackson and Ward 2016).

For institutional ecosystems that have progressed furthest along the evolutionary trajectory towards supporting more holistic forms of learning, we might anticipate that the next step might be to pay more attention to the idea of learning ecologies and to appreciate their significance as a vehicle for understanding how, why, when and where students' learn and develop in the everyday spaces and places they inhabit.

Developing the institutional ecosystem to make use of these ecological ideas requires turning abstract ideas into tools to aid thinking in the design of curricular and approaches to teaching, learning and assessment. It's fundamentally a learning ecology problem requiring individuals who care enough about the idea to want to involve themselves in their world, to see and act upon affordances and make new things happen. Figure 5 is simply the initial step in developing tools to enable those working in higher education to visualise the consequences of an ecological approach to educational designs. Ultimately, it requires people to pick up this tool and use it to create something new.

If we can achieve this transformation universities and colleges will continue to improve the opportunities for students to prepare themselves more effectively for their lifelong-lifewide learning beyond the classroom. I find it ironic that foresight studies into the future of learning 2030 (Redecker et al 2011) identify a future that is not dissimilar to that envisioned 100 years ago by the great adult educator Eduard Lindeman who offers this inspiring vision for the future of learning in higher education.

*A fresh hope is astir. From many quarters comes the call to a new kind of education with its initial assumption affirming that education is life - not merely preparation for an unknown kind of future living. ... The whole of life is learning, therefore education can have no endings.* (Lindeman 1926:6)

I believe that seeing learning as the process and result of an ecology involving us interacting with our world takes us a step closer to realising this vision.

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#### **Lifewide Education**

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