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Fluid learning: vision for lifelong learning¹ in 2030

Isobel Falconer, Allison Littlejohn, Lou McGill, Glasgow Caledonian University, UK

Learning is tailored for and controlled by individuals as they expand their knowledge, fluidly moving across learning contexts, interacting with others.

1. Fluid learning

This paper provides a vision of what we term ‘fluid learning’ through which autonomous learners make choices about their own learning. This vision is critical because it equips European citizens to live in a global context where knowledge and work is changing so rapidly that people have to learn continually. Fluid learning is suited to a world that has seen a radical change in cultural perceptions of learner agency and learner-teacher roles, associated with changes in technology. After completing compulsory education, the focus of each learner moves from learning pre-defined knowledge to filling gaps between areas of knowledge, integrating different areas of expertise, as well as learning new knowledge. People do not turn automatically to formal institutions for large blocks of learning. Instead they consider it natural to make use of open learning resources and open courses, making their own decisions about what to learn, when and how. Learners naturally employ open learning practices, creating new knowledge for future learners to benefit from. They expect to contribute to the learning of others as well as learning themselves, viewing themselves as the experts in their own situation. In some cases they may elect to take a short formal course, but this is always for a specific reason rather than as a cultural norm. Rather than managing multiple identities in the different groups/communities to which they belong, they see their unique identity as a unifying factor that integrates their activities in various groups, including work and leisure groups that they move easily between. In doing so they accrue new knowledge, integrating it with their current understanding, such that their expertise changes dynamically to match their current needs. The vision requires significant cultural change in European society by 2030.

Fluid learning is a vision for a society in which:

- *The learner is in control of choices over his/her learning.* Learners are able – both culturally and cognitively – to structure and tailor their own learning, moving fluidly between learning contexts to fit their individual needs. Open learning practices are commonplace. Intelligent, networked systems enable learners to operate across networked spaces, serendipitously finding others, or being alerted to others with similar motivations and needs. Open learning practices are commonplace. This condition becomes critical when learners, rather than institutions, structure their own learning, particularly in social contexts, and through connections with different communities and networks.
- *Learning contexts are continually in flux.* Learners dynamically change their networks to either strengthen ties or strike out in new directions according to their needs. Learners

¹ Lifelong learning here is viewed as learning throughout life, from formal, compulsory education to all forms of learning throughout life.



understand how to move in and out of groups and networks fluidly, developing close ties in tightly knit groups, while recognising a critical aspect of learning is extending links to new people and knowledge. Hence, their connections change over time.

- *Organisations that provide formal education radically open up.* These organisations influence how people think about learning through strategic commitments to openness, reforming and developing new infrastructures.
- *Other types of organisations increase involvement in learning:* private, public, professional bodies and third sector.
- *As learning broadens so too must assessment and accreditation.* Assessment is performed by a range of different types of people, including peers and experts in companies, not just by teachers. Open technologies offer new means of accreditation through expert consensus and/or online activity-tracing.

Enabling the European Commission to meet this vision by 2030 will be a considerable cultural challenge, requiring radical change in how learning is viewed by a range of groups and organisations in Europe.

2. Trends in lifelong learning

Our vision of fluid learning has been shaped by trends, of which the following are the most relevant:

- 1 **Increasing numbers of lifelong learners** Over past decades there has been a rapid expansion in the number of active lifelong learners across Europe. There are numerous contributing factors: active aging increasing the number of older learners; the need for continual learning at work, extending workplace learning; the inclusion of previously disadvantaged groups, such as disabled people, in lifelong learning.
- 2 **Ever-increasing opportunities for lifelong learning** The proliferation of opportunities for lifelong learning is most visible through the increase in the number and range of open educational resources, open courses, escalation of ‘edutainment’, proliferation of networked communities for lifelong learning alongside a scaling up of networked technologies.
- 3 **Expanding openness** Boundaries (geographic, disciplinary, sectoral) are becoming difficult to identify and shift constantly. The opening up of knowledge intensifies this shift, changing social behaviour, work, learning patterns and mindsets.
- 4 **Open knowledge, data and analytics** As people collaborate in networks, knowledge is captured and exchanged more easily than before. Knowledge is released as articles, blogs, podcasts, images, datasets, geotags or bio-information, shifting the balance from consumption to the co-creation of knowledge.
- 5 **Specialisation of knowledge** As boundaries break down, knowledge has become more specialised. Cross-boundary translation of knowledge has created new knowledge domains.
- 6 **Broadening of what we understand as learning** Our understanding of what constitutes learning, has broadened from formal, structured events to unstructured, serendipitous, learning opportunities.
- 7 **Demonstration of competence** Historically, examination by “experts” provided a low-resource means of measuring educational outcomes. Recognition of the need for assessment to be authentic, the ability of systems to track performance, and of learners to assess peers, is changing the nature of assessment.

3. The Vision - Learner agency: expansive learning

Fluid learning assumes that by 2030 most learners will be able - both culturally and cognitively - to structure their own learning. Ideally, school learning prepares learners for fluid learning, and their participation in fluid learning communities allows practices to be transferred to others². In structuring their learning, learners or groups move fluidly between individual (solitary) or social environments and between structured or non-structured settings.

Fluid learning can be understood using Engestrom's (1987) model of expansive learning. The four basic, expansive steps each learner undertakes includes:

1. Analysis of the current situation and why it no longer meets their needs.
2. Transforming the learning approach.
3. Implementing a new learning approach.
4. Reflecting on the new practice, consolidating and spreading it.

Expansive learning provides a relevant conceptual basis, because it emphasises the transformative agency of each learner as he/she moves from one learning context to another, as illustrated in the next section.

4. An illustration of fluid learning: the creative writing group

The year is 2030. Networked technologies and internet access are ubiquitous. Open resources, courses and knowledge are abundant. Cultural and practice change has enabled learners to take control of their learning, structuring and expanding their learning pathways and moving fluidly from one learning context to another.

Amelie, Berndt, Carla and Dominic meet weekly in a French creative writing group. They share an interest in learning to write poetry, but their motivations for joining the group are different. Amelie and Berndt have been encouraged to join by their employer, who sees the heterogeneous and diverse group as a more effective means than in-house training days to enhance their report-writing skills. Carla has recently moved to France in search of work; she believes that her social interaction with the group, and the writing she produces, will help her learn French and enhance her job prospects. Dominic aspires to make a name for himself as an author now he has retired. For him the writing is an end in itself.

The learning group was initiated through an online system that connects learners with similar interests. Their meetings, and activities, have been based on a course of open learning resources. The learners restructured elements of the online course to suit their learning needs. They are now *analysing their current situation, identifying to what extent it no longer meets their needs*. Carla initiates a discussion of their learning activity to date, acting as an informal group mentor. Some aspects have worked well, and the group agrees that they will continue with these. The group makes suggestions as to how the resources themselves could be improved and Amelie and Berndt volunteer to *transform the learning approach* used by the group. They see the relevance of open resource-authoring to the development of their writing skills and volunteer to develop the resources jointly and contribute them back to the wider community.

Meanwhile Berndt observes that colleagues have been promoted on the basis of peer endorsement, so, through recommendations from an intelligent system, he *implements a new learning approach*, joining an open resource development group that provides endorsements for his contributions. He finds that while the group can provide the evidence he anticipated – in ways that work well for most members - he, as a person with Autism Spectrum Disorder,

² Currently within 'schooled societies' learners tend to rely on being taught rather than engaging in active learning (Billet, forthcoming).

needs more structure. He moves to a facilitated group offering micro-credits which supports his need for structure.

Dominic feels ready to publish his poetry. However, while writing to the web is an everyday activity for all, quality publishing that will make his work stand out is sophisticated and his technical skills are insufficient. He believes he will gain the skills faster if he enrolls on a course led by an experienced publisher. His personal recommender system suggests a 12-week open course with weekly videos and publisher tracking that provides what he needs. Activity-tracing is used as a learning aid and for authentic assessment. He *implements the new learning approach* and is able to help Amelie and Berndt with technical aspects of their resource development.

Carla, *reflecting on her new practice*, wants to share her experience and newly developed language skills, in a job that will help people who are moving countries to work. She realises the next step is a certificate of professional practice and for this the Social Workers Institute stipulates a practice-based course. Assessment is based on observation of her practice, both face to face and traces on the web. She suggests to the writing group that a good way of enhancing their skills further might be to run a monthly writing club for socially disadvantaged people - providing a context for her professional practice, and further recognition for all of them. Over time her network changes as she links with other relevant learners.

The group operate within an inherently unstructured but social learning environment, fostered by cultural acceptance of open learning practices. However, the expansive actions they choose, take them to learning experiences in different contexts. They may have reasons for choosing to move temporarily into a more structured context: Berndt does so because of special needs; Carla requires professional certification; and Dominic believes it offers an efficient route. Their choices are illustrated below:

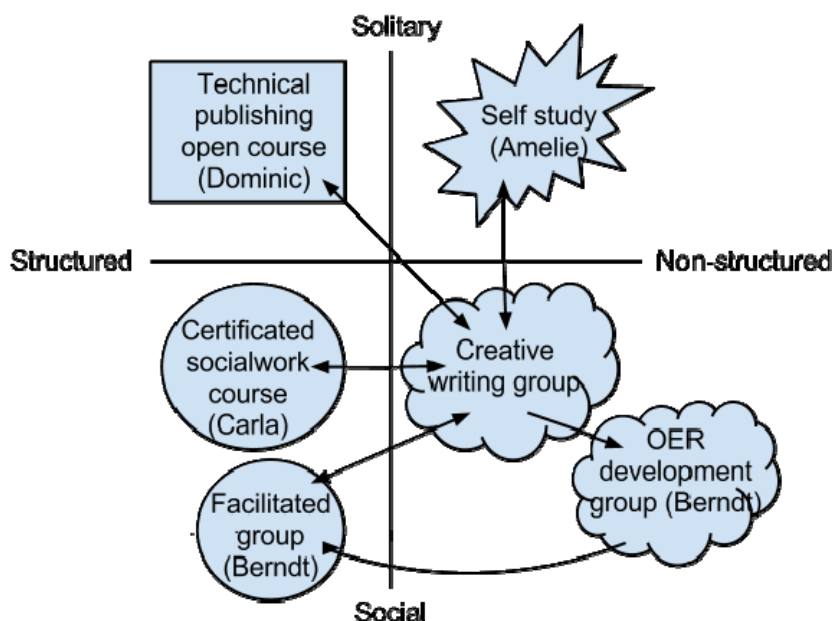


Figure 1: Movement of active learners across diverse learning contexts

In terms of the four expansive steps described in section 3:

1. *Analysis of the current situation* - The group recognised that they had reached the limits of the resources they were using, that the learning approach was ineffective in some ways, and that, as well as group needs, they had individual learning needs.

2. *Transforming the learning model* - The group (or, on occasion, individual learners) decided which aspects of the current model to keep, and how to expand the process to bring in new actions.
3. *Implementing the new model* - For various reasons each member of the group explores a new learning context, and each brings new actions into the group learning activity.
4. *Reflecting on new practice* - The group reviewed and made modifications to their actions.

5. Achieving the vision: challenges and tensions

Although trends in lifelong learning are evident, the outcome of their interaction with each other and society by 2030 is unpredictable. Technology will have evolved by 2030. Change will be decided by the way in which societal and technological tensions, already evident, are resolved. The resolution may be more, or less, favourable to the cultural acceptance of learner agency crucial to fluid learning. This section outlines some of these tensions:

1 Lifelong learners may not be able to structure their learning The narrative illustrates how learners select resources for specific learning needs, and, learn through serendipitous connections. Planning for learning and understanding how to integrate and move between different sorts of learning opportunities is a feature of fluid learning. Currently learners in European society are not equipped to structure their own learning effectively (Littlejohn et al, 2012). Even in situations where learners are given the freedom to plan a learning pathway, we find that they do not always want to take it (Milligan et al, submitted). There are a number of possible reasons: lack of confidence can be one, but even confident learners may choose to surrender their autonomy to a formal course. Another reason can be the cultural expectation that learning should be directed by an instructor, rather than the learner (Billet, 2013). Thus, preparation as lifelong learners requires a shift in perspective within early formal education and beyond.

Learners have to be capable of expanding their own learning, understanding why it is vital to move between learning contexts. They have to have confidence and ability to structure their own learning or, where appropriate, elect to participate in formal education. Radical change within school systems are needed such that, by the end of compulsory education, learners are able to structure their own learning (Facer, 2009). Instructors should focus on helping learners prepare to learn throughout their lives, rather than preparing them with information or enculturation into a discipline (*ibid*). Adults who have already completed formal education can be mentored within fluid learning communities to help them develop as autonomous learners. Both these scenarios are advanced through *introduction of diverse, authentic learning opportunities in schools where teachers or mentors encourage learners to take control of their own learning. Critically, schools and universities have to change the metrics by which they are measured to include measurement of learner autonomy.*

2 Standardisation of learning restricts the broadening of what we understand as learning The learners in the narrative choose what, when, and how, to learn. This flexibility in choice runs counter to the trend in standardisation to facilitate mobility across Europe. A move too far in the direction of imposed standards could hinder learner agency. Currently educational institutions hold a pole position in cultural definitions of learning, to the extent that in situations, such as the workplace, where learners frequently do plan their own aims and the actions needed to achieve these, the activity is often not recognised as “learning”. Thus the recognition of what constitutes learning needs to be broadened to encompass activity outside formal educational institutions if learners are to recognise that this is what they are doing and gain the corresponding confidence in their ability to do it. Organisations that support formal learning must be encouraged to take a wide view of their place in the learning

ecosystem (McGill et al, 2013). This may require changes in policy and legal frameworks. *European Agencies could facilitate dialogue across private, third sector and public agencies (including formal education) to influence the development of cross-sectoral and cross-national frameworks aligned with societal changes. All types of organisations should be encouraged to consider their contributions to societal learning, triggering a re-evaluation of inter-relationships.*

3 Current accreditation processes may restrict authentic and flexible assessment The narrative illustrates the need for assessment to be more authentic for fluid learning. There is little point in assessing memory of factual information since this is readily and openly available - what matters is one's ability to practice effectively, and this is what should be assessed. This leaves un-specified the answer to the open question of who does the assessment - an institution, a professional body, a peer group, or the community – and how is this accredited (Knight, 2013). Assessment and accreditation has to be recast as integral to learning events. *Holistic assessment processes can be implemented through inclusion of a broader range of organisations in learning, capitalising on the opinions of peers and experts as to how well learners are expanding their competence through a combination of peripheral participation and coaching (Eraut, 2004).*

4 Open access may destabilise closed organisations For the creative writing group the ability to work across boundaries routinely and understand how to create resources that will be used by unknown groups of people in unseen ways is critical. Open access to resources could be problematic if the educational institutions that currently largely provide such resources – retain or adopt closed protectionist policies which may be undermined by openness (McGill et al, 2013). Broad elements of society (business, professions, individuals) need to prioritise learning and assume the responsibility for providing open resources (*ibid*). *Formal education organisations across the EU should continue to open up knowledge, resources and courses to a wider group of learners by linking their strategies to a collaborative strategic vision of lifelong learning. Viable funding and business models will have to be developed and tested.*

5 Learning analytics may continue to focus on administrative rather than learning processes The learners in the creative writing group create new knowledge as artefacts and as user traces. These objects and traces are an external expression of their learning that can be analysed to gauge their progress. In 2013, learning analytics is in its infancy and tends to focus on the administrative processes (eg learner dashboards), rather than learning. *For learning analytics to become significant as a learning aid, system design has to take a quantum leap and incorporate intelligent analysis based on Artificial Intelligence.*

6. The learner in society 2030: call to action

Taking forward the vision requires a radical change in cultural perceptions of learner agency and learner-teacher roles, associated with changes in technology. European Agencies have a key role to play in facilitating and supporting a vision which depends on increased collaboration across sectors and national boundaries, and on meaningful conversations between learners and formal education providers. Any vision for Lifelong Learning across Europe is inevitably fraught with challenges around diverse social, economic and political systems, which may or may not support individuals' autonomy, an essential principle for successful fluid learning.

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