#FLANOU

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Self-Directed Learning dynamics in FutureLearn courses: towards a framework

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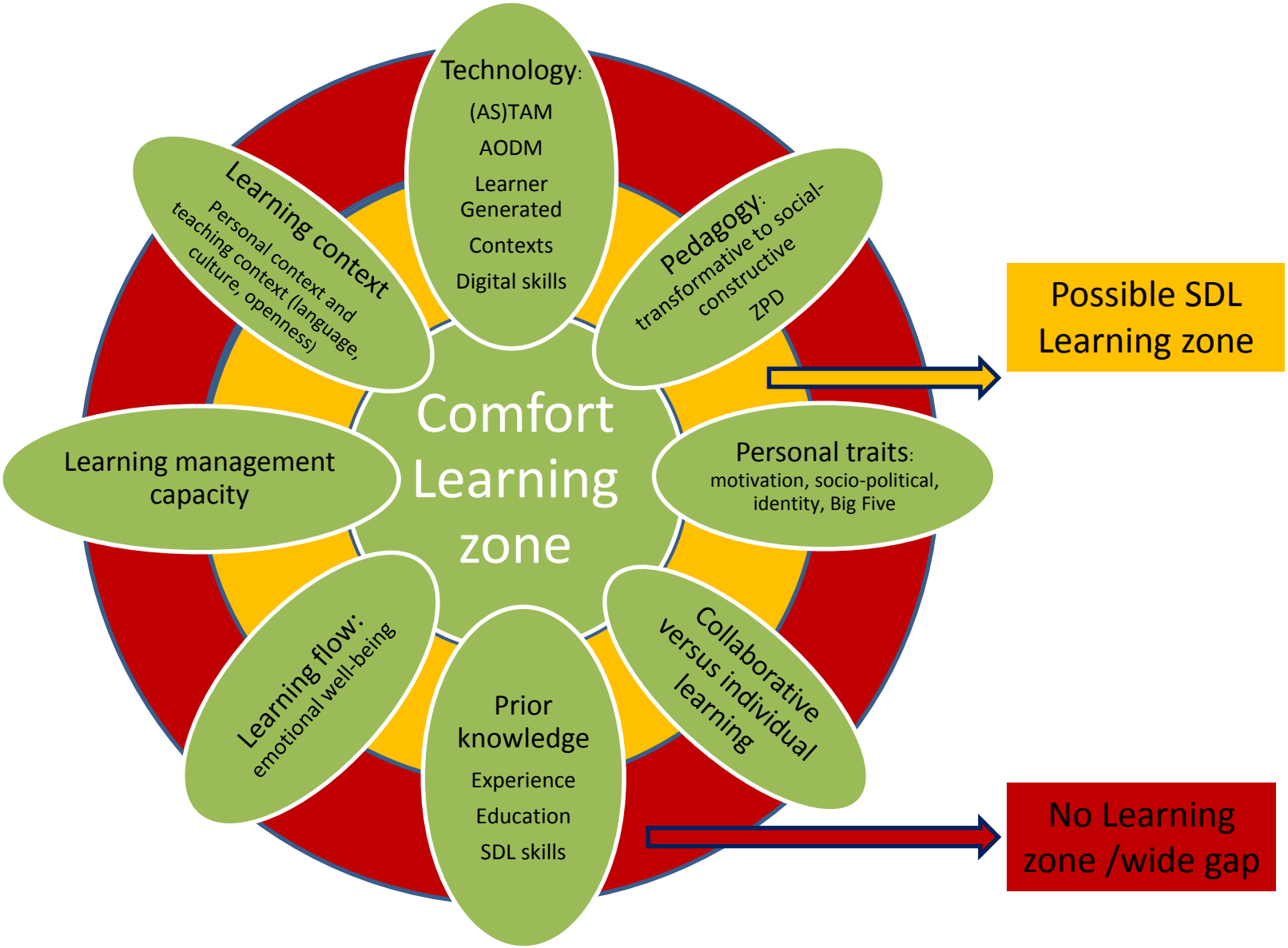
Bound by the Self, Worldviews, & Science

Philosophical choices in the quest of knowledge

- The self: mLearning/eLearning/analytical
- The world: socialised priorities/EdTech
- The science: qualitative, exploratory, human

SDL: mapping factors and zones



Additional elements of SDL

Unclear for MOOC, but elements from mLearning, online learning and some MOOC literature:

- Online learning research related (e.g. Garrison, 1997 & 2003; Luckin, 2008)
- Design influences SDL (Loyens, Magda, Rikers, 2008)
- Seen in relation to Lifelong learning (Arrigo et al., 2012)

Mapping SDL MOOC territory

Overall learning	TELearning (mobile, online)	MOOC learning
Prior knowledge	(Mobile) Seamless Learning	Group size
Collaborative / individual learning	Learning with new tools: digital skills	Global learners: possible non-native languages, different cultural backgrounds,
Formal and informal	Contextualized learning	Content is very modular (but curated), certification very diverse
Different degrees of certification	Shorter courses	MOOC casualness: on top of other learning, as spare time action, superficial curiosity. Leisure learning.
Course/Learning expectations	Just-in-time learning: disaster relief, performance support	Less tutor support (in general)
Unforeseen circumstances challenging participation	Tech savy or willing.	Organised outside class/curriculum (mostly)
Personal traits (including motivation)	Mixed online and face-to-face interactions	Personal interactions within MOOC are publically available (sec. data)
Learning is not confined to the course group	Additional tech learning options: augmented learning, gamification	Learning analytics used as algorithms due to group size data available

Literature foci

- Self-directed learning: andragogy concept of Knowles (1975), enhanced by Merriam (2002)
- Multiple learner contexts: mobile learning: Vavoula (2005); Song & Hill (2007); Kop & Fournier (2011)
- Technology and mobility: Sharples, Taylor & Vavoula (2007); Sharples (2013); de Waard (2013)
- Individual ⇔ collaborative learning: Kop & Fournier (2011); Kop & Bouchard (2011); Milligan, Margaryan & LittleJohn (2013)

Research questions

- What are the learning experiences of experienced adult participants engaging in individual and collaborative self-directed learning using multiple devices in a FutureLearn course?

4 sub-questions:

1. What are the elements of daily life affecting the learning experience?
2. What are the technical aspects influencing learning experiences for learners?
3. How do the MOOC participants perceive the effect of individual or collaborative learning on their SDL?
4. Which actions (if any) did the learners undertake to adapt their learning?

3 FutureLearn courses

3 FutureLearn courses in time span of: 1 September – 15 November 2014 (4 – 6 week courses: Science of medicines, Decision making in a complex & uncertain world, Basic science: understanding experiments)

Target population: 52 participant selected, all experienced adult online learners (based on findings pilot)

Data corpus: 115 pages of online survey answers, 792 pages from learning logs, and 48 pages of interview transcripts

Grounded theory to analyse the data

Need for an exploratory, meanly qualitative methodology

- A grounded theory (GT) approach was chosen to analyse the data (Charmaz, 2006).
- GT fits research looking for meaning as perceived by the research subjects.
- GT permits data like learning experiences to be analysed.
- Following Charmaz allows constructing theory (rather then only theory emergence)

Assumptions and interpretation

Every researcher comes in with assumptions.
When using a qualitative research method =>
keep track of personal assumptions: **memoing**

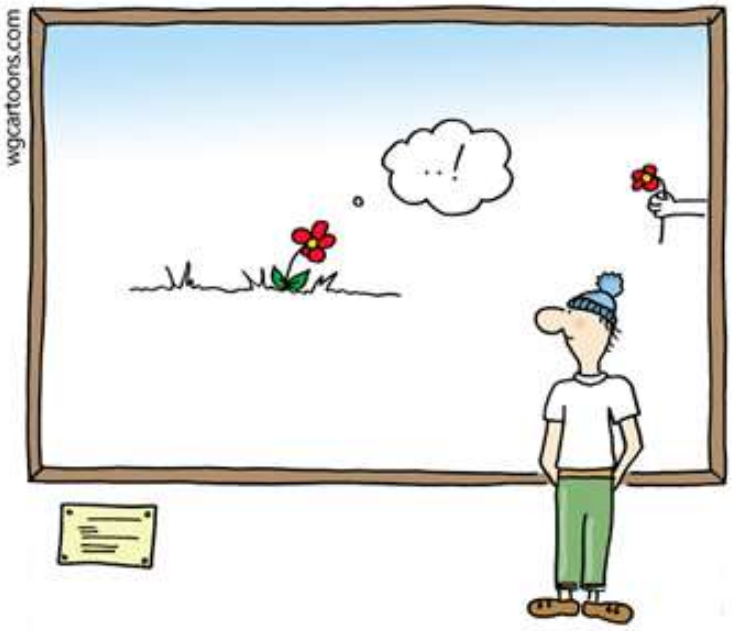
Method: 3 phases for collecting data

The study consisted of 3 phases to grasp the expectations, experiences and reflections of the FutureLearn participants.

- Phase 1 - **expectations:** using an online survey which will be delivered to all participants one week before the FuturLearn course.
- Phase 2 – **keeping learning logs:** learning logs kept during the course.
- Phase 3 – **reflections:** structured one-on-one interviews after the course had finished.

Phase 1: pre-course online survey

- Tool used: formsite (mobile)
- Data collected: prior to course
- Topics covered:
  - MOOC experience
  - mLearning experience
  - Social media experience
  - FutureLearn expectations



"..It asks people what they and
their life are about, and tries to see the big picture.."

Phase 2: Learning Logs

Built upon Vavoula's (2005) learning diary templates. The templates were adapted (adding MOOC elements: social media, collaborative learning)

- learning log: reflects type of FutureLearn interactions the participant engaged in, as well as an account of the participants learning journey.

Phase 3: structured 1-on-1 interviews

Looking at the participants reflections on the course, their devices used, their individual and collaborative learning experiences, their overall evaluation of the course and the strategies they adopted related to SDL.

Initial coding => four dimensions of Bouchard framework (2009)

- Need for adaptation: tailor framework to contemporary online learning realities
- Dimensions will need to reflect the spectrum of the FutureLearn learning experiences
- Four dimensions: Algorithmic (cfr pedagogical), Conative (gathering psycholoigical and social profiles), Semiotic dimension (infrastructure, technology, materials), Economic dimension (cfr value of knowledge)
- Each dimension groups SDL elements (in comparison to categories emerging from data)

Four dimensions (brief examples)
Algorithmic dimension (pedagogy)

Dimensions	Examples from learner data
Pacing (ref. to the timing allowed by the learner to reach learning goals)	I watched the videos, read other people's comments and posted my results a few days early, since I am traveling overseas this week
Formulating objectives (ref. to formulating or stating learning objectives/goals)	I try to revive my memories related to scientific experiments, in order to demonstrate/practice with my son.
Finding resources (ref. to materials, texts that allow learning to take place)	To find things out I use dictionaries – of science and of scientists in this case.
Reformulated/added dimensions	
Finding human support in/outside course	I spoke to the lab technician at work.
Collaborative peer learning (ref. to peer-to-peer interactions)	Some interesting discussions and insights from other learners especially about critiques of Fergusons analysis.
Tutor-peer interactions.	Jennifer's [tutor] enthusiasm worked stimulating.

Conative dimension (social & psychological)

Dimension	Examples from learner data
Initiative (referring to the actions taken by the learner that starts and supports the learning process)	My interest goes beyond the course remit, so it will be a hobby to look into from time to time until I am satisfied.
Motivation (ref. to learner actions undertaken to keep being motivated)	I admit that having to fill out this log prompted me to do this week's work on time.
Context and transition (ref. to professional or personal new goals, needs or challenges as perceived by the learner)	I found it helped to discuss what I had learned with someone. It helped me realize what I did not understand… This is something I have avoided doing until now.
Social environment (ref. to learners managing a useful network who act as learning resources or affective support)	I discussed what I had learned with my son as he has experience of me being on medication for depression.
Adjusted/added dimensions	
Learner personality and identity (ref. to character or personal self-image)	I don't leave a commitment until I have achieved my goals. This was instilled in me by my parents and grandparents.

Semiotic dimension (media/materials)

Dimension	Examples from learner data
Use of printed text (referring to PDF, documents,…)	I no longer print all the course material as I did when starting with courses on FL, I only store the links.
Reformulated/added dimensions	
Digital skills (ref. to online, electronic skills)	Using the online graph to record and display results of the phenomenon
Online resources (ref. to use of digital material)	I only store links to additional material, or links provided by fellow learners during discussions
Assessments provided in-course	Quizzes should be reasonably demanding in order to verify that the subject has been understood.

Economic dimension (value of knowledge)

Reformulated/added dimensions	Examples from learner data
Actual value of knowledge (referring to immediate return for the learner)	I've found that my brain wasn't so stiff and still opened for some new knowledge. I gained new softwares on my comp - NetLogo 5.1
Perceived value of knowledge, ref. to the symbolic value of learning	I choose the topics that seemed relevant in relation to my personal interests and/or as teacher
Cost of learning (ref. to cost of accreditation, infrastructure…)	Coming back from my work, I've purchased yeast for the experiment.
Opportunity costs (ref. to hidden costs, e.g. learning versus earning wages)	I found out in September that I had plantar fasciitis and could not walk anymore until I had steroid injections in the sole of my foot. I enrolled into 10 online classes and loved it.

Current challenges

- Full data immersion for higher level understanding
- Untangling concepts: Heutagogy: self-determined learning (beyond SDL) versus adult learning: self-directed learning (lifelong learning) versus self-regulated learning (vocational learning). And there is more: autonomous learning, individual learning, collaborative learning
- Re-ordering dimensions or adding to them? (cfr. Luckin, ecology of resources)
- Nomenclature of dimensions? More intuitive?

Creating a **learning crossover framework** including learning dichotomies that are relevant to MOOCs

Open science rules!

- Shared research instruments can be read here (Academia: online survey questions, learning log templates, interview questions)
- Master thesis looking at mobile impact on MOOC can be accessed here
- A draft report with literature review and methodology on pilot study with research instruments, can be found here (with some brief pointers on writing a probation report).
- A paper on SDL in Trial FutureLearn courses (pilot study) can be read here.

References

- Arrigo, M., Kukulska-Hulme, A., Arnedillo-Sánchez, I., & Kismihok, G. (2012). Meta-analyses from a collaborative project in mobile lifelong learning. *British Educational Research Journal*, (ahead-of-print), 1-26.
- Bouchard, P. (2009). Pedagogy without a teacher: What are the limits. *International Journal of Self-Directed Learning*, *6*(2), 13-22.
- Garrison, D. R. (2003). Self-directed learning and distance education. In M. G. Moore & W. Anderson (Eds.), *Handbook of Distance Education* (pp. 161-168). Mahwah, NJ: Lawrence Erlbaum.
- Knowles, M. S. (1975). *Self-directed learning*. New York: association Press.
- Merriam, S. B. (2001). Andragogy and self-directed learning: Pillars of adult learning theory. *New Directions for adult and continuing education*, *2001*(89), 3-14.
- Kop, R., & Fournier, H. (2011). New dimensions to self-directed learning in an open networked learning environment. *International journal of Self-Directed Learning*, *7*(2).
- Loyens, S. M., Magda, J., & Rikers, R. M. (2008). Self-directed learning in problem-based learning and its relationships with self-regulated learning.*Educational Psychology Review*, *20*(4), 411-427.
- Luckin, R. (2008). The Learner Centric Ecology of Resources: a Framework for using Technology to Scaffold Learning. Computers & Education 50 (2008) 449–462.
- Milrad, M., Wong, L. H., Sharples, M., Hwang, G. J., Looi, C. K., & Ogata, H. (2013). Seamless Learning: An International Perspective on Next Generation Technology Enhanced Learning. In Z. L. Berge & L. Muilenburg (Eds). *Handbook of Mobile Learning*. Routledge.
- Moustakas, C. (1994). *Phenomenological research methods*. Thousand Oaks, CA: Sage.
- Song, L., & Hill, J. R. (2007). A conceptual model for understanding self-directed learning in online environments. *Journal of Interactive Online Learning*,*6*(1), 27-42.
- Vavoula, G.; O'Malley, C. & Taylor, J. (2005). A study of mobile learning as part of everyday learning. In: Attewell, Jill and Savill-Smith, Carol (Eds). *Mobile Learning Anytime Everywhere: a Book of Papers from MLEARN 2004.* (pp. 211–212). London: Learning and Skills Development Agency.
- Wong, L. H., & Looi, C. K. (2011). What seams do we remove in mobile-assisted seamless learning? A critical review of the literature. *Computers & Education*, *57*(4), 2364-2381.
- de Waard, Keskin, Koutropoulos (upcoming paper) Exploring future seamless learning research strands for MOOC.

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And feel free to talk to me right here, right now!