

All my Footprints

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Abstract

Footprints of Emergence are a subjective, intuitive method for evaluating and reflecting on learning scenarios. Teachers, trainers and learners can use their complex structure to gain emergent insights into their learning and teaching. In this article I describe my learning process in discussing and using the footprints over a period of a year and a half. Three case studies are used to illustrate the benefit of applying the footprints; for designing learning environments, for considering how a learner's learning history influences the learning experience and for analyzing the difference between the trainer's design intentions and the resulting experiences of individual learners.

Keywords: emergent learning, evaluation, open learning, connectivism, footprint of emergence

1. Introduction

In September 2011 I decided to participate in the „Change11 – Change: Education, Learning and Technology” MOOC¹. Up till then I was not familiar with the e-learning experts George Siemens (2005) and Stephen Downes, and I didn't know about connectivism and its activities “aggregate – remix – repurpose – feed forward” based on the principles autonomy, diversity, openness and connectivity/interaction (Downes, 2012). In my (online) training and my teaching I was using a social constructivist approach (Vygotsky, 1978) and was following the ideas of Gilly Salmon (2002, 2004) about virtual groups. I aimed to support my course participants and students to become responsible for their own learning processes. My state of mind embraced the ideas of connectivism easily.

The open approach, the interesting weekly topics and the many resources in the Change 11 MOOC website challenged my approach to learning. During the 35 weeks I immersed myself deeply in the content and learned that I liked the thoughts and ideas of my co-learners more than the rather “finalized” concepts of the experts. So I built a network of bloggers whom I found interesting and started to write my own blog² continually. One of those co-learners in the Change11 MOOC was Jenny Mackness. I appreciate her blog “Jenny Connected”³ where

¹ <http://change.mooc.ca/>

² <http://zmldidaktik.wordpress.com/>

³ <http://jennymackness.wordpress.com/>

she shares her experiences with (online) learning and what she concludes from these experiences.

I “met” Jenny again as an online participant in Etienne Wenger’s “Academic BEtreat”⁴ in August 2012. In this four-day workshop Jenny presented her research, the Footprints of Emergence, which she developed in collaboration with colleagues (Williams et al, 2012). The footprints immediately fascinated me, probably because I liked their visual appearance and I was overwhelmed by their variety. I shared my experiences of the footprints with my colleagues and in autumn 2012 Gudrun Reimerth, Erika Pernold and I translated them into German (Pauschenwein, Reimerth, & Pernold, 2013).

I will briefly present the idea of footprints but will not go into detail about the theory behind them because some of the theory can be found in the keynote of Jenny Mackness and Roy Williams and also in other articles of these proceedings. Furthermore the actual status of the footprints and many examples can be found in Roy Williams’ open wiki⁵. But I want to mention that since my introduction to the footprints we have been discussing the theoretical concepts of the factors and clusters in the ZML-journal club⁶.

In this article I will describe my history of dealing with the footprints and I will discuss my own footprints as designer and learner as well as footprints of students, participants in courses and colleagues.

2. All my Footprints

For this article I finally found the time to try and collect together all my footprints and all the footprints of people who drew them in response to my invitation in the context of a class, a workshop, an online course, cooperation or an exchange. In most cases I discussed the footprints with them, sometimes face-to-face, but mostly online.

Date	Author of footpr. and context	Context and comments	Number of footpr.
Nov. 12	JP - designer	Planning my class “EDV4” in the bachelor study degree “Social Work” – I drew my first footprint by hand and it looked awful	1
Dez. 12	JP - designer	I drew the footprint about my design of “EDV4” again. This time I used a template provided by Roy Williams	1

⁴ <http://wenger-trayner.com/betreat/betreat-overview/>

⁵ <http://footprints-of-emergence.wikispaces.com/>

⁶ Further members of the ZML-journal club are Gudrun Reimerth, Anastasia Sfiri and Erika Pernold

Jan. 13	Groups of EDV4 students - learner	I asked the 5 groups of students in my class to reflect on their learning experiences using the Footprints of Emergence ⁷ .	5
Jan. 13	JP - learner	I was invited to participate in the online course "How to MOOC" ⁸ and reflected on my learning by drawing a footprint.	1
Apr. 13	GR, EP and JP - design	Gudrun Reimerth, Erika Pernold and I designed a footprint workshop and created of course footprints of our design. I will discuss my footprint in case 1.	3
Apr. 13	learners	First footprint workshop with 10 participants who reflected on their learning in the workshop by drawing footprints ⁹ .	10
Apr. 13	JP - design	I evaluated my design for my course "Introduction into Social Informatics" in the master degree "Social work" as part of a publication. (Pauschenwein, 2013)	1
Apr. 13	JP and GL - design	Gert Lyon and I developed the online course "E-Sensitivity – Ein Kommunikations- und Kooperationsseminar im virtuellen Raum" ¹⁰ (a seminar for online communication and cooperation) and we planned the course by drawing a footprint.	1
Apr. 13	Participants - learners	Of course we invited the participants of the course to reflect their experiences by drawing footprints.	4
Mar. 13	JP and JM - learners	Jenny Mackness and I each drew a footprint of our BE-treat experience and discussed them in great detail. This discussion will be summarized in case 2.	2
May 13	3 lecturers - design	During interviews with lecturers from my university about their experiences with e-learning for the article "Reflexive E-Lernkultur" (Hojnik & Pauschenwein, 2014) three of them drew a footprint of their learning design.	3
Sep. 13	Participants - learners	Gudrun Reimerth, Erika Pernold and I submitted a proposal for a workshop at the GMW13-conference and in September 2013 (Pauschenwein, Reimerth, & Pernold, 2013) we travelled to Frankfurt and ran a workshop of 2 hours with 9 participants. During the workshop they created their first footprint.	9
Sep. 13	JP - design	I evaluated my design of the course "Web-based work II" for journalism students as part of a publication. (Pauschenwein, 2014)	1

⁷ The footprints were part of the paper for GMW13 (Pauschenwein, Reimerth, & Pernold, 2013).

⁸ <http://howtomooc.org/>

⁹ <https://zmldidaktik.wordpress.com/2013/05/01/report-on-our-footprint-workshop/>

¹⁰ <http://www.fh-joanneum.at/ca/cx/ckym/?key=zml>

Okt. 13	JP with SH - cooperation	Sylvia Hojnik and I reflected on our cooperation in writing the article "Reflexive E-Lernkultur".	2
Nov. 13	Participants - learners	The teachers of FH JOANNEUM are invited to participate in a training for "Teaching at our university" ("Hochschuldidaktische Weiterbildung", 2-3 semesters) and within this training I offered a workshop about emergent learning and the footprints.	8
Nov. 13	JP and EG - cooperation	Eva Goldgruber and I reflected on our cooperation and co-moderation of the Online-Course "Lernprozesse mit MOOCs und offenen Lernressourcen" (learning processes with MOOCs and open learning resources)	2
Nov. 13	JP and EP - design	Erika Pernold and I reflected on the design of the Online-Course "Fußabdrücke von Lernprozessen" ¹¹	2
Dez. 13	Participants - learners	Participants of the online course "Fußabdrücke von Lernprozessen" reflected on their learning during the online course) – the 6 participants drew 16 footprints during the 3 weeks of online training	16
Jan. 14	JP and EP - cooperation	Erika Pernold and I reflected on our cooperation and co-moderation of the Online-Course "Fußabdrücke von Lernprozessen"	2
Dez. 13	JP - design	I was invited to run a one-day workshop about the Footprints of Emergence for the University of Potsdam. I reflected on my design of the workshop with a footprint and discussed it with the participants.	1
Dez. 13	Participants - learners	The 13 participants of the one-day workshop in Potsdam drew 3 footprints during the workshop. (As not everybody remained until the end they created about 30 footprints). The evaluation of the workshop will be discussed in case 3.	30
Jan. 14	Students - learners	Students of my course "Introduction into Social Informatics" reflected on the course.	22
Apr. 14	JP - design	In the first months of 2014 we built the cope14 MOOC – and a few days before it started I reflected on our design with a footprint ¹² .	1
May 14	Students - learners	The students of the Masters degree Public Communication reflected on their first two months of studying (they are part-time students as they are also in employment)	17

¹¹ http://www.fh-joanneum.at/global/show_document.asp?id=aaaaaaaaaihdan&download=1

¹² <https://zmldidaktik.wordpress.com/2014/04/18/design-of-cope14/>

May 14	MOOC - learners	The learners of our cope14 MOOC ¹³ were invited to draw a footprint and share it with the other learners. 15 learners and the MOOC designer created a footprint at the end of the MOOC. One participant drew footprints to reflect on learning in weeks 1,3, and 4 and I reflected the cope14-MOOC with a footprint as well.	19
June 14	Participants - learners	Participants of the online course “Didaktische Überlegungen und Werkzeuge für E-Learning” (Pedagogical concepts and tools for e-learning) were invited to reflect on their learning process; some of them created a footprint.	4
Summary		Footprints - Nov. 13 – June 14	168

Table 1: All “my” footprints

That’s a rather high number of footprints. Many of these footprints are in my archive of footprints but not all, as not everybody sent me his or her footprint. Some of them can be found on the Internet or online in our closed courses.

For this paper I want to discuss my experiences with regard to three footprints. I have chosen these footprints because they are interesting from three different aspects:

- Case 1: Using the footprint for designing learning
- Case 2: Illustrating how our own learning history influences the shape of a footprint and thus the learning experience
- Case 3: Comparing the trainer’s design with the experience of learners

2.1 Discussion 1: Footprint for the design of the first footprint workshop

As mentioned in Table 1, in April 2013 Gudrun Reimerth, Erika Pernold and I planned a workshop about the footprints. After months of drawing footprints, discussing them, translating and re-translating them from English to German we wanted to share our new passion with other university teachers. We formulated an invitation and got the response that there were people who wanted to know about the footprints. So we started to develop our workshop design and planned how to use the time as wisely as possible. We had the feeling that in the first part of the workshop we should explain the method, the clusters and factors as deeply as possible. Then the participants should draw their own footprints (as designers or learners) and finally we would discuss the footprints. About a week before the workshop, when our planning activities were finished, we all drew a footprint. Fig. 1 shows my footprint.

¹³ www.cope14.at

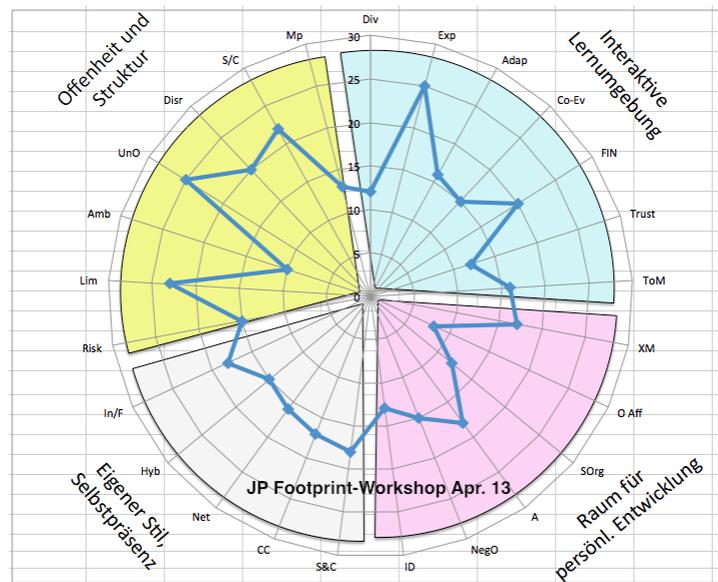


Fig 1. Planning of the first footprint workshop

Additional comment: Now I have to write some words about the footprint itself. Using 25 factors, organised into 4 clusters, the designer or learner reflects on his or her experience about the tension between prescription and emergence, openness and structure in a given learning environment. On the left side of Figure 1 there are the clusters “Open/Structure” (Offenheit versus Struktur) and “Presence/Writing” (Eigener Stil, Selbstpräsenz), on the right side there are the clusters “Interactive environment” (Interaktive Lernumgebung) and “Agency” (Raum für persönliche Entwicklung). In the middle of the footprint there is the zone of prescribed learning, at the outside there is the edge of chaos and between there is the zone of emergence. As there are so many factors we never analysed a footprint with regard to all its factors. A productive approach is to look at the footprint at a whole and to analyse afterwards the factors with the highest and lowest values. Jenny Mackness stated: “It’s the balance between prescribed and emergent learning that is of interest. Having considered this overall balance then individual factors which contribute to this can be looked at more closely.”¹⁴

Hopefully this explanation helps the reader to discover the same odd occurrence Gudrun, Erika and I encountered when we looked at our footprints (Fig. 1) with regard to the cluster “Agency” (Raum für persönliche Entwicklung), where our three footprints were very similar. In the workshop we wanted the participants to learn something new, to grow – but the values for the factors in the cluster “Agency” (Raum für persönliche Entwicklung) were rather low, which had the consequence that the footprint with respect to this cluster was near the pre-

¹⁴ Jenny Mackness, private E-Mail, 6.6.2014

scribed zone¹⁵. This meant that in our design the participants would remain in their “comfort” zone learning a little bit about a new method, but they probably wouldn’t feel a real challenge, wouldn’t get confused, wouldn’t learn deeply and wouldn’t experience processes of emerging learning.

So drawing a footprint (see Fig. 1) about the design of our workshop provoked the redesign of the workshop, to make it more open and challenging (and this worked well for the participants and us).

2.2 Discussion 2: Comparison of two Footprints about Learning in Wenger’s “Academic BEtreat”

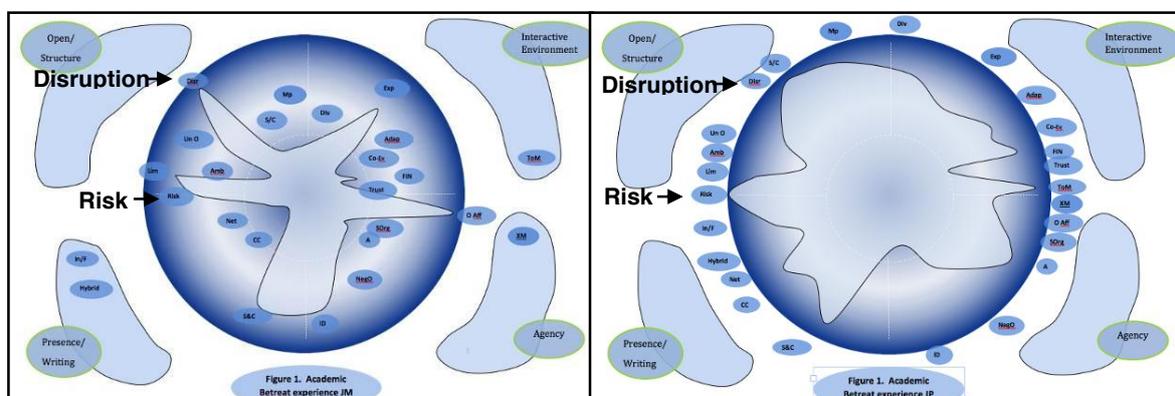


Fig. 2 Reflecting the learner’s experiences (left: Jenny Mackness – right: Jutta Pauschenwein)¹⁶

As mentioned before Jenny Mackness and I met again online in Wenger’s BEtreat in the summer of 2012. In this four-day workshop 8 learners participated face-to-face in California and 8 learners were online participants. Using Adobe Connect and Skype we “onliners” participated via video and audio at the face-to-face workshop. Because of the time difference the workshop started for me at 5 p.m. and lasted until 1 a.m. or 2. a.m. Although the online-sessions were tough we “onliners” used our “free time” (in my case before 5 p.m.) to reflect about our learning experiences. Jenny and I shared these reflections in our blogs¹⁷.

Jenny drew a footprint of her learning experiences more or less immediately after the workshop whereas I started to engage with the footprints at the time of the BEtreat and drew my BEtreat footprint several months later in March 2013. Fig. 2 shows our footprints and at first sight it is obvious that Jenny’s factors are more in the prescribed zone (in the inner zone) than mine.

¹⁵ For readers who are deeply interested in the footprints, I will add a few more details about this footprint: The factor “Open Affordances” (O Aff) was in the prescribed zone, the factors “Self organization” (Sorg), “Negotiated outcomes” (NegO) and “Identity” (Id) were in the zone of sweet emergence.

¹⁶ Jenny did not use the factors Theory of Mind, Cross modal, Hybrids or In/formal writing and In/scriptions whereas Jutta used all the factors to draw the footprint.

¹⁷ <http://zmlldidaktik.wordpress.com/betreat-2012/> and <http://jennymackness.wordpress.com/?s=betreat>

In the following weeks we discussed our footprints using a word file, commenting on them and re-commenting lots of times. Jenny agreed that I could write about and publish our discussion¹⁸. Summing up I believe that in these two footprints our learning history is visible. For me the BEtreat was my first contact with Wenger's concept of conducting a workshop whereas Jenny had already attended an Academic BEtreat in California in 2011 as a face-to-face participant and had worked with Etienne Wenger and his ideas before this. Therefore Jenny knew the format and perceived several factors in the prescribed zone whereas for me everything was new and many factors were in the zone of sharp emergence.

There were some **similarities** in our footprints. In the cluster "Open/Structure" Jenny and I both found the BEtreat a risky and disruptive experience, i.e. there was a perceived high risk of failure ("Risk"). Technical problems at the beginning of the workshop were partly responsible when we online participants could not connect with the face-to-face participants¹⁹. In the cluster "Interactive Environment" Jenny and I experienced a lack of trust in the learning environment. This was due to the open and explicit impatience that the face-to-face participants expressed with having to integrate the online participants into their learning environment. We both agreed that we had been able to negotiate our outcomes (cluster "Agency"). In the cluster "Presence/Writing" we recognized that there was personal space for people, ideas and texts.

There were **many differences** in our footprints as well caused by significant differences between our scoring²⁰. For me there was a lot of freedom in the workshop to interpret meaning and to organize my learning whereas Jenny felt constrained by the strict timetable. I found the interaction exhausting and the environment diverse whereas Jenny observed a rather prescribed learning environment.

For Jenny her experience of the BEtreat was influenced by prior experience in a number of MOOCs; this means that she is very familiar with and usually comfortable in what she per-

¹⁸ I want to thank Jenny Mackness sincerely for the permission to use this material.

¹⁹ Further interpretation for readers who want to deal with the footprints in detail: Both of us experienced liminal space ("Lim") as sharply emergent, i.e. a strange and transformative experience.

²⁰ Further interpretation of the footprint: In the cluster "Open/Structure" I experienced more ambiguity (Amb) and more opportunities for self-correction (S/C) and multi-path learning (Mp) than Jenny. I scored this on the basis of the freedom that I had to interpret meaning, but for Jenny the tightly structured course schedule did not allow time to experience this as emergent learning. There were significant differences between our scoring in the cluster "Interactive environment" and in our perceptions of the way in which the course design was realized and curated. For Jenny, diversity (Div), adaptive (Adap), co-evolution (Co-Ev), frequent interaction and networking (FIN), and Theory of Mind (ToM) were all in the prescriptive zone whereas I found the networking exhausting, co-evolution difficult and the environment very diverse.

The significant differences in the cluster "Agency" were in our perceptions of the amount of self-organisation (SOrg) and autonomy (A) that could be experienced. I experienced these factors as 'sharply emergent', but Jenny found the course schedule too packed to have much time for this. Also Jenny recognized that the learning environment afforded creative innovative engagement (O Aff), but experienced this as chaotic, whereas I experienced this as 'sweetly emergent'. A notable difference was in the Identity factor – balancing the development of our own capability and roles with prescribed roles. Jenny scored identity as sweetly emergent. Her perception was that working as an online participant allowed for much more focus on identity issues, because there was more space to stand back and reflect. I scored this as prescriptive, because in my perception the online participants were expected to fulfil a prescribed role and my identity was constrained by this.

In the cluster "Presence/Writing" I scored all the factors in the middle of the emergent zone with the exception of the factor "(S/C)" (solitude and contemplation) because for me there were chance, serendipitous encounters, a range of networks and communities, a choice of media and modes and opportunities for informal, flexible and light interaction. Jenny experienced interaction as formalized.

ceives as “open” learning environments and experienced the BEtreat as prescriptive by comparison. Furthermore Jenny co-invented the Footprints of Emergence because of her participation in MOOCs. I was introduced to the Footprints of Emergence in the BEtreat and have subsequently used them for several designs for learning. My perception of “openness” is not that intensively linked to MOOCs.

2.3 Discussion 3: Learners’ Perception and Trainer’s Design

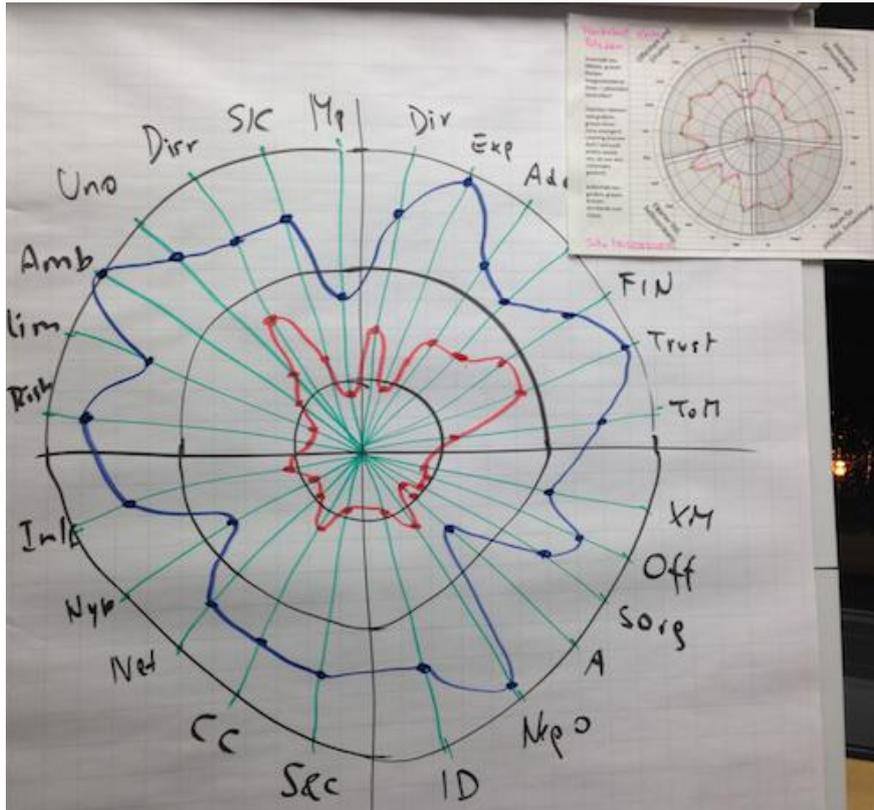


Fig. 3 Footprints drawn by learners (big flipchart) and the trainer (small print-out) (Potsdam workshop)

In the last case I want to discuss the resulting footprint of the workshop about footprints at the University Potsdam. This was a one-day workshop. After a short introduction the participants started quickly drawing their first footprint in the role of teacher or trainer on a printed template. Then we discussed aspects of emergent learning and the clusters and factors of the “Footprints of Emergence”. Afterwards they drew a new footprint as teacher or trainer using an excel template. After interpreting and discussing the footprints I invited them to draw a footprint about their experience as learners in the footprint workshop.

When I designed the workshop I struggled with the challenge presented by open and pre-scribed affordances. I realised that it is much easier to create an open design for an online course than for a face-to-face workshop with a rather strict time line²¹.

On the big flipchart, I compared the highest and lowest values given by the participant group for each of the factors. The inner line records the lowest value for each factor given by participants. The outer line records the highest value for each factor given by the participants. It is amazing that learners in the same workshop experienced the same factors in very different ways²².

On the one hand these differences of perception by the learners may depend on their different interpretation of the factors. On the other hand I believe that the difference between the students' or learners' footprints also tells me how diverse they are. For me as a teacher and trainer this result is comforting. It shows the heterogeneity of learners and that I can never create a pedagogical design which is perfect for them all. I try to create diverse and open designs and then I try to help them if the challenges are too big and the emergence is too sharp. To be able to do this I invest a lot of time monitoring the online learning steps of "my" learners.

3. Discussion and Next Steps

In the last chapter I want to discuss my interaction with the footprints and my next activities in this field. First I want to deal with the various possibilities of how to draw footprints.

3.1 Drawing Footprints

In Fig. 1 I used an excel sheet where I could choose between numbers from 1–30 to score each factor. As I love numbers, this approach was a very useful for me. To find the proper number for a given factor was a challenge that I liked – and I loved the result, which looks a little bit like a spider's net. However, in discussion with other people I recognized that this approach was not easy for everyone. Jenny and Roy had a similar experience and abandoned the excel-tool in 2013.

In Fig. 2 Jenny and I used a word template to draw the footprints which was awful for me to use but where the results were smoother than the results of the excel sheet. These footprints are similar to some of the published footprints designed in a computer lab at Roy's place of work. At the beginning I didn't like using this template at all – I missed having concrete val-

²¹ Further discussion of the factors: In the trainer's footprint the factors "XM" (multi modal), "O Aff" (open affordances) and "SOrg" (Self organisation) were in the zone of sweet emergence and "A" (autonomy), "NegO" (negotiated outcomes) and "Id" (identity) nearly in the sharp emergence zone. (cluster "Agency")

²² E.g. they perceived the factor "Amb" (ambiguity) at the edge of chaos and at the borderline of prescribed and emergent learning.

Further discussion: In the case of the factor "Id" (identity) there is a similar difference between the perceptions of the learners. Fewer differences are visible with respect to the factors "Disr" (disruption) and "FIN" (frequent interaction and networking).

ues for the factors and I was irritated by the haziness of the dots in the word template. So for some time I started with the excel sheet and afterwards “translated” my footprint into the word template.

To satisfy the need for a different tool than the excel sheet I made a template (based on the excel sheet) which could be printed and where the footprints can be drawn by hand. This approach is documented in Fig. 3 (trainers design).

Of course the tool, which is used for drawing the footprint, influences the result – as did our translation from English to German.

3.2 Why I love the footprint method so much

Footprints are a useful approach to reflection. In some cases I even use them to reflect on my cooperation with somebody (e.g. reflecting on how we wrote a paper together). Footprints are highly subjective and they are changing all the time. When I draw a footprint today about a certain design for a learning scenario and do it again in one week, the result will be (slightly) different. Learning is a very complex process and I have a lot more confidence in a subjective and changeable method than in a standardized approach with measurable outcomes.

I’m happy that there are so many factors because I believe that this great number of factors results in footprints, which often contain unexpected aspects. Therefore by drawing a footprint I get new ideas on how to change a design, what to include in class next time. This creative approach gives me ideas outside the normal way of improvement based on students’ or learners’ feedback or evaluation that is more formal.

There is a scientific part of the footprint method and I try to understand the individual factors better and think critically about our work of translation. In addition there is also a very intuitive part of drawing and interpreting the footprints. By drawing them I include a lot of “gut feeling” – and I hypothesize that in this way I can access my unconscious mind, which is not accessible by standard evaluation procedures.

3.3 The Future

I’m looking forward to our E-Learning Day 2014 where I will finally meet Jenny and Roy in person and to all the discussions we will have about emergent learning and footprints. We already submitted a project proposal where we want to bring the footprints into school and it would be really great to discuss all the factors with young people and support them to use the footprints for reflection. Some of the learners of our cope14-MOOC²³ drew footprints to reflect their learning experiences and I want to look at them in more detail and connect them to other evaluation results.

²³ http://www.cope14.at/?page_id=1599

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