

The EmployID
Approach
**Empowering Change
in Public Employment
Services**



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1 Introduction

1.1 Enabling employees to shape change

European Public Employment Services (PES) and their employees are facing fundamental challenges to the delivery of efficient and effective services and the need to change their strategies to combat high unemployment, demographic change in increasingly uncertain and dynamic labour markets. This does not only require developing new professional skills related to new tasks, but poses for more profound developmental challenges for staff members.

Three of these changes relate to understanding the changing world of work; a 'turn' towards coaching; and the increased importance of relations with employers. The staff need to learn new ways of working, with a major challenge being to enhance the power of collaborative (peer) learning in order to support staff in accomplishing their goals.

All these changes are linked to transforming professional identity, which requires learning on a deeper level that is often neglected by continuing professional development strategies. EmployID makes its contribution here; that PES practitioners' learning related to professional identity transformation needs to be facilitated through social learning approaches and the nurturing of social learning networks, which include the following:

- Reflection as a way of turning one's own and others' experiences into general insights on multiple levels, both from an individual and a collective perspective
- Peer coaching as a way of helping learners in changing their behavior through a structured process
- Social learning programmes as a way of engaging learners with new topics, other perspectives, and conversations around it.

1.2 Key interventions at PES in EmployID

Related to these challenges – which have to be addressed at multiple levels, there have been extensive consultations with PES over what aspects of EmployID they see as innovative and what topics they might want investigated as candidates for a palette of options for learning and development for PES staff. The consultations have taken place not only within the project, but also with associate partners, e.g., at the large associate partner event in London in October 2015 with members of the associate partner network.

This broad view has allowed the project to consolidate the feedback into a single set of core constructs:

- **Career Adaptability** – supporting individuals to manage their careers in changing labour markets (ability to support individuals in how they envisage the future (concern); the extent to which they take responsibility for their own development (control); ability to explore visions of possible future selves (curiosity); and belief in their ability to solve problems and to succeed (confidence) (Savickas & Porfeli, 2012)
- **Changing / Transitional Labour Markets** – understanding the nature of changes in the labour market and world of work and being able to convey the need for clients to understand the implications of these changes.
- **Employer Engagement** – working directly with employers and with employer bodies, local/ ^{regional} economic development agencies etc.

- **Peer Support / Peer coaching** – being able to support the learning and development of colleagues, including through peer coaching
- **Stress management / Resilience** – consideration of how to cope with stress in the short to medium-term and develop greater resilience across the life-course (career)
- **Addressing the digital agenda** (including e-communication) – preparing for the digital future of some PES services and developing the e-communication skills to support the learning and development of staff both individually and collaboratively
- **Identity transformation** – changing how PES practitioners see their own roles and how others see them.

These core constructs as priorities for the project have been guiding the developments in the project and particularly the interventions at PES partners.

At DWP, the following activities have been conducted:

- An **online learning course “The Changing World of Work: Working with Employers in a Dynamic Labour Market”** (see section 4.8.5f) was implemented as a pilot course at DWP by Operational Learning Team (OLT) and the National Employer Service Team (NEST) in cooperation with the EmployID project. The course was delivered in the format of a Social Learning Programme (“MOOC”) via FutureLearn.
- Following the success of the first MOOC, a **second online learning course “The Changing World of Work: the Work Coach”** (see section 4.8.7) was implemented as a pilot course at DWP by the Operational Learning Team (OLT) in cooperation with the EmployID project.
- The third response by DWP to the general challenges faced by PES in Europe was to engage with project team members in the development of a **Labour Market Information (LMI) app** (see section o). These developments together were intended to constitute a social learning programme which was intended to help address the challenges related to understanding the changing world of work, the 'turn' towards coaching, and the increased importance of relations with employers.

The response of the Slovenian and Croatian PES to the challenges were similar in that they wished

- to establish a **Reflective Communities of Practice** (see chapter 5) as a means of facilitating collaborative continuing professional development, particularly in the area of Employer Engagement,
- explore the potentials of **peer coaching** methods (see chapter 6),
- and they also expressed interest in investigating what was possible to achieve in developing staff understanding of **LMI** in their respective contexts (see section 4.9.5.1).

1.3 Structure of the document

The structure of the document is visualized in Figure 1.

Chapter structure

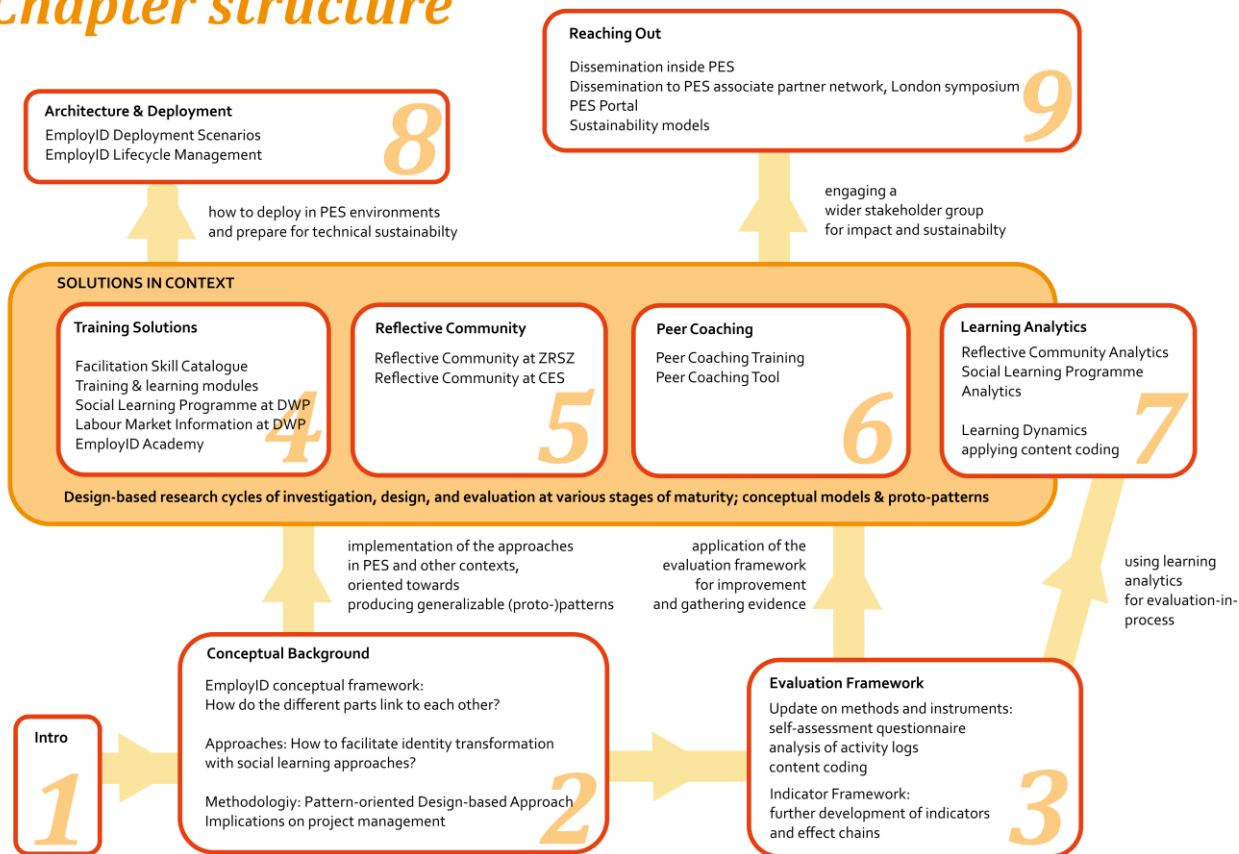


Figure 1: Story of the book

- **Chapter 2** establishes the common conceptualization on the key themes of the project. This starts with an understanding of identity transformation processes and the facilitation of such processes, including the activities that constitute facilitation; it then outlines social learning approaches to implement such facilitation: (online) social learning programmes, reflection, peer coaching, colection (as a combination of reflection and coaching), stimulation of creativity, and prompting. It also introduces a pattern-based approach as an extension of the design-based research methodology the project has chosen.
- In this design-based research approach, ongoing and targeted evaluation and collection of evidence for emerging patterns is key. This encompasses both the research process of the project, but also delivering methods for sustainable and meaningful impact assessment to the PES contexts. Therefore, **chapter 3** presents an update on the methods and instruments (complementing D7.1v2), particularly on self-assessment and content coding. Furthermore, an extended version of the indicator framework and effect-chains is presented.
- **Chapters 4-7** describe the steps in year 2 of the design-based research processes for the interventions in the different PES contexts. They implement the concepts from chapter 2, apply the evaluation framework from chapter 3, and are guided by emerging patterns. These are at varying levels of maturity as timelines varied (e.g., Croatian PES only joined at the beginning of year 2). More specifically:
 - **Chapter 4** presents the training-oriented approaches, which encompasses the development of the Facilitation Skill Catalogue (an evolution of the Coaching & Facilitation Competency Framework from year 1) as an underlying foundation and

various learning modules, such as on peer coaching and on creativity. Furthermore, this chapter presents the results of the first social learning program (aka “MOOC”) started at the end of year 1, and the design of the second social learning program at DWP, designed in year 2. It also includes the Labour Market Information (LMI) tool. The chapter concludes with the EmployID Academy as an umbrella for the training offerings, both for use within the project and for engaging external stakeholders.

- **Chapter 5** shows the progress on the Reflective Community, both in terms of technical development and evaluation in practice. The community platform is currently being deployed at ZRSZ and adapted to the HZZ context as of the end of year 2.
- **Chapter 6** presents the development of the peer coaching concept, training offering (both online and face-to-face), and the peer coaching tool. Activities span across different contexts (coaching experts, project internal peer coaching groups, training for ZRSZ, open online course, summer school, and preparation for deployment at HZZ).
- **Chapter 7** concentrates on Learning Analytics, which is sourced from two streams: (i) Learning Analytics as an add-on functionality to the interventions in chapters 4-6, and (ii) Learning Analytics as an implementation of evaluation-in-action based on chapter 3, particularly on the content coding approach. This is implemented in prototypical solutions, and design ideas.
- While architectural and deployment aspects are already included in chapter 4-7, **chapter 8** adds an overview of the progress on EmployID Lifecycle Management and the deployment scenarios explore opportunities of deploying new solutions into environments with hard constraints.
- **Chapter 9**, finally, shows the various activities of the project in terms of dissemination and exploitation/sustainability. One of the highlights in Year 2 was the London symposium with over 60 participants from PES organizations all over Europe and several other organizations. EmployID has gained significant visibility, and the associate partner network has grown to 32 members. Using the proven technique of the Business Model Canvas, key activities for successful exploitation of the projects have been identified, which have translated, among other aspects, into an outward-facing, result oriented portal (“PES Portal”) that describes values and offerings.

2 Conceptual background

This chapter provides the overall background of the EmployID project. It concentrates on three aspects: (i) identity transformation as the primary goal for EmployID support, (ii) social learning approaches as approaches to identity transformation, and (iii) a pattern-oriented design-based research approach to implement these approaches and gain transferrable insights.

2.1 Identity transformation and its facilitation

One of the core assumptions of EmployID is that learning support for today’s workplaces, particularly in public employment services, but also beyond, must not stop with knowledge about new methods, processes, approaches, but needs to take a broader view. The effects of learning need to encompass “deeper levels” of professional identity, and learning support needs to target at facilitating the transformation to meet the challenges of the changing world of work.

Professional identity has both individual and collective dimensions, which interact with each other and touch various areas, such as professional culture, coping strategies, identity narratives, among others (see Figure 2: Professional identity).

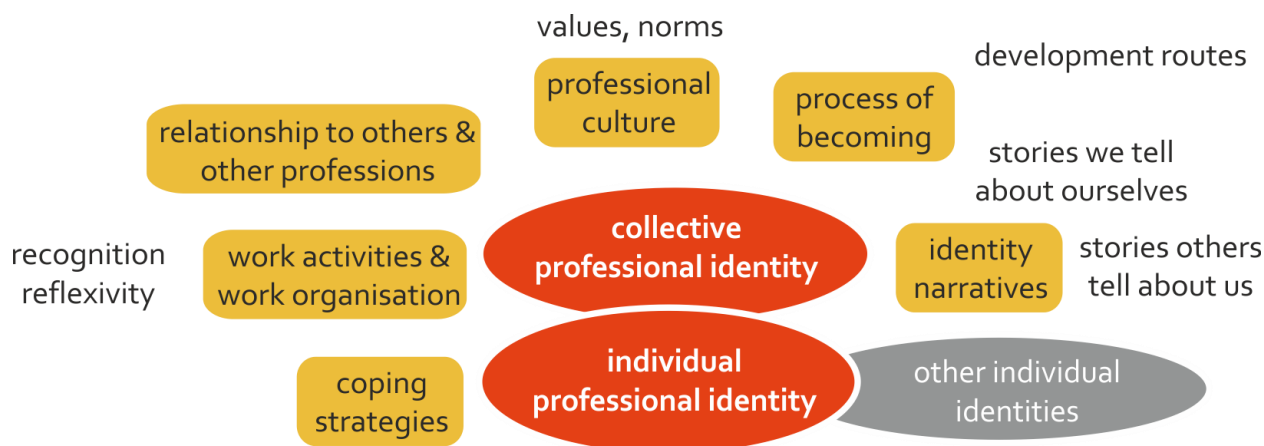


Figure 2: Professional identity

Addressing professional identity development as a learning process is a complex combination of different areas of development, which are summarized in Figure 3). Particularly relevant are the four domains: relational, cognitive, practical, and emotional development, which are addressed by EmployID’s interventions.

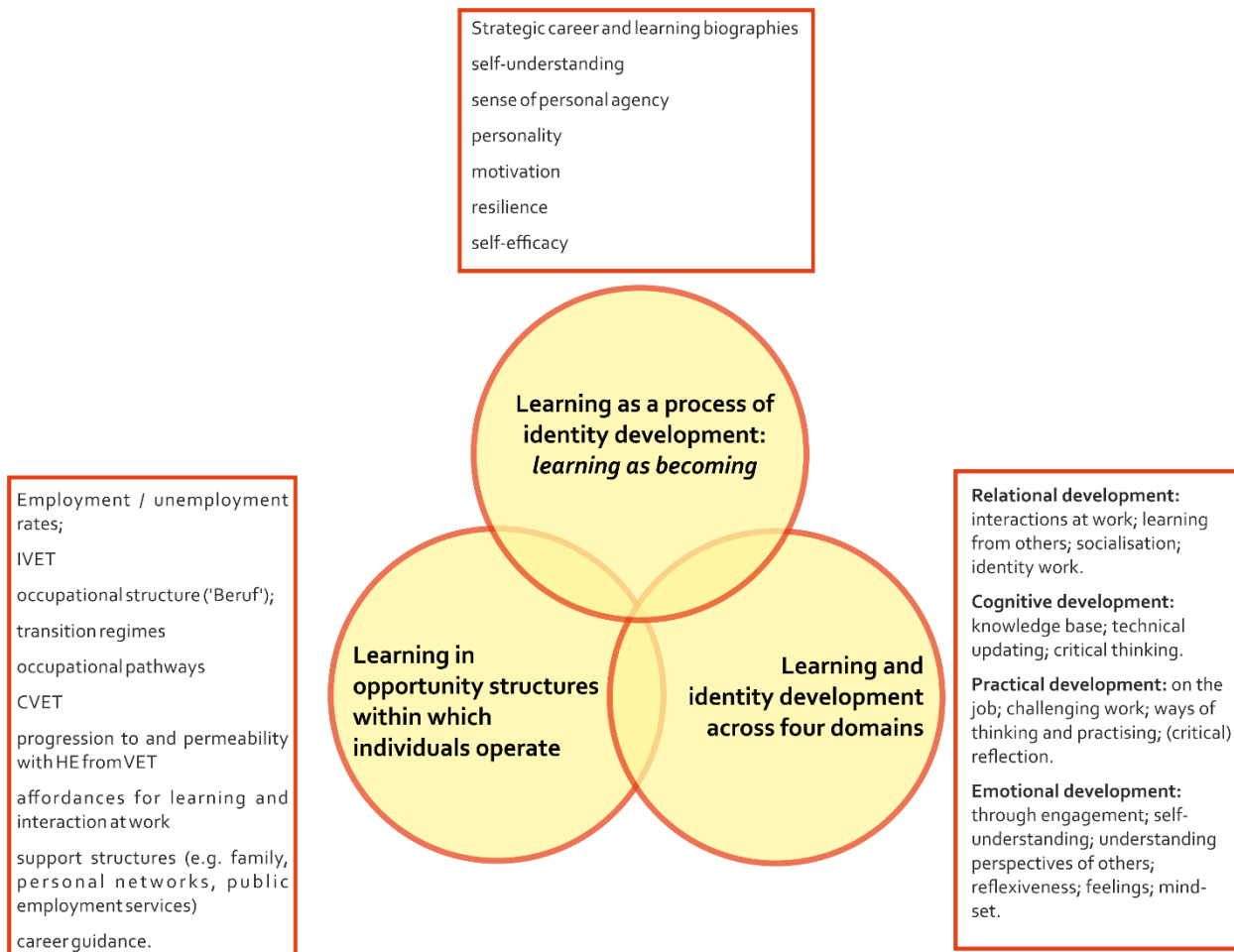


Figure 3: Key factors influencing 'learning for career and labour market transitions'

The key driver of EmployID's solution approach is that such identity transformation processes need to be facilitated, where facilitation is broadly understood as "supporting the learning of others". Such facilitation can happen through various ways:

- *Humans as facilitators.* As part of formal and informal learning, individuals take over various roles in supporting the learning of others, ranging from classical trainers with a strict separation of roles between learners and facilitators, via coaches or moderators of group learning processes to peer learning situations with frequently changing roles between peers. Here the question for EmployID is: How can we make facilitators more efficient so that more individuals can benefit from facilitation, especially as training or coaching can be rather costly forms?
- *Tools as facilitators.* Technology is not only used to support facilitators, but can do facilitation itself. For informal learning situations, this is being investigated, e.g., under the label of "scaffolding, where scaffolding targets at building learning networks, and creating and using digital materials.
- *Environments as facilitators and individuals as facilitators for environments.* The most neglected aspect of facilitation is the role of the surrounding environment. In the case of workplace learning, the most important factor can be the organizational culture. Its incentive structures and the economies of cooperation heavily influence motivation and can pose barriers to creativity and openness to change. But also leadership roles (both formal and informal) are often underestimated in their effect, such as those by claimants or change agents (Kaschig, Maier, & Sandow, 2011). Support in this area ranges from systematic design

processes that are participatory and include motivational aspects (Holoher-Ertl, Kunzmann, Müller, Pelayo, & Schmidt, 2013) to workplace learning analytics solutions.

As part of a project-wide effort to establish a common understanding across the various activities, a conceptual framework has been created and further developed that identifies, names, and connects the key concepts of the project. The latest version of the conceptual framework is depicted in Figure 4).

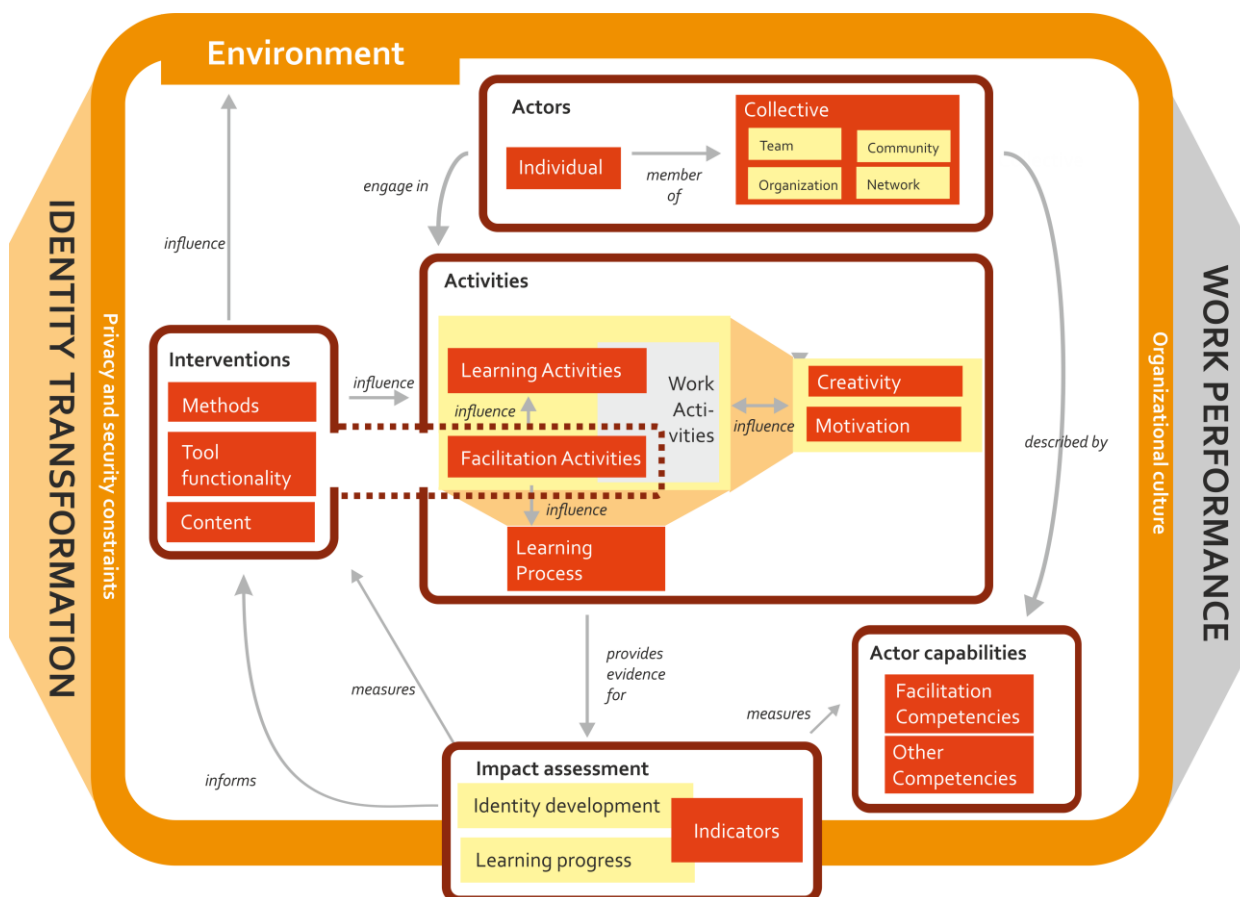


Figure 4: Conceptual Framework as of end of year 2

- **Activities** are at the core of the conceptual framework. They describe activities of individuals or collectives that contribute to learning. While EmployID deliberately takes an activity-centric perspective to avoid prescriptive learning process models, it is also important to consider that some interventions do not target at the individual activities, but rather at their sequencing, which is usually described as learning processes. This particularly applies to reflection and coaching processes. Aspects that influence such activities are particularly motivation and creativity (see also section 2.2.6).
- **Interventions** as the super term for the different ways in which EmployID solutions makes an impact on practice. This can take the form of tools, but also methods (such as reflection in section 2.2.3, or (peer) coaching processes in section 2.2.4), content (as in the case of social learning programmes), or facilitation activities (such as peer coaching, section 2.2.4). These facilitation activities have a double role: EmployID can facilitate PES practitioners or their HR development, but EmployID has also the mission of facilitating PES practitioners themselves in facilitating others' learning activities.

- **Actors** describe the levels at which activities and interventions are considered. Here, both individual and collective levels are important (see also section 3), where collectives can take different forms, such as team (formally defined inside an organization), organizations, communities (informal) and networks (formal to informal). While, strictly speaking, collectives could be seen just as collections of individuals, it would be missing important insights that emerge from the perspective of collectives as first-class citizens in the following.
- **Actor capabilities** are a descriptive tool to make visible prerequisites for learning activities, but also impact of learning activities, both on the individual and the collective level.
- **Impact assessment** has a double role in EmployID (similar to facilitation activities); it is both part of the system (triggering and supporting learning activities itself) and an external activity (creating a body of evidence from a scientific point of view).
- The **Environment** is the frame of learning activities and encompasses very important aspects, such as cultural aspects (e.g. of the organization). While often difficult to change in the short run, EmployID does not consider the environment as immutable. There are also interventions that target changing the environment.
- **Work performance** is of key interest for the PES organizations. However, EmployID targets primarily at learning support for which it is assumed that it has an impact on performance, but it does not provide performance support as such. But as performance goals and their resulting pressure on PES practitioners is an important framing conditions, the link to work performance needs to be part of solutions and interventions EmployID provides.

In the following section, we present the key underlying conceptualizations from the perspective of different approaches to learning processes, which have one element in common: they are all based on the insight that they are social learning processes.

2.2 Social learning approaches to the facilitation of professional identity transformation

As outlined above, EmployID aims to support and facilitate the learning process of Public Employment Services (PES) practitioners in their professional identity transformation process. This is born out of a recognition that to perform successfully in their job they need to acquire a set of new and transversal skills, develop additional competencies, as well as embed a professional culture of continuous improvement. However, it is unlikely that training programmes (which still dominate continuous professional development) will be able to provide sufficient opportunities for all staff in public employment services, particularly in a period of rapid change in the nature and delivery of such services and in a period with intense pressure on public expenditures.

Therefore, the EmployID project aims to promote, develop and support the efficient use of technologies to provide advanced social learning opportunities through coaching, reflection and networking services.

2.2.1 Social learning at the workplace

The idea of social learning is that people learn through observing others behaviour, attitudes and outcomes of these behaviours, “Most human behaviour is learned observationally through modelling from observing others, one forms an idea of how new behaviours are performed, and on later occasions this coded information serves as a guide for action” (Bandura, 1977). Facilitation is seen as playing a key role in structuring learning and identity transformation activities and to support networking in personal networks, teams and organisational networks, as well as cross-organisational dialogue.

Proposals and initiatives to utilise new technology for learning and professional development in organisations is hardly new. However, a critical review of the way information technologies are being used for workplace learning (Kraiger, 2008) concluded that most solutions are targeted towards a learning model based on the idea of direct instruction. Technology Enhanced Learning initiatives tend to be based upon a traditional business training model transferred from face to face interactions to onscreen interactions, but retaining the standard trainer / learner relationship and a reliance on formal, and to some extent, standardised course material and curricula.

Research suggests that much learning that takes place in the workplace and through work processes, is multi episodic, is often informal, is problem based and takes place on a just in time basis (Attwell 2007; Hart, 2011). Rather than a reliance on formal or designated trainers, much training and learning involves the passing on of skills and knowledge from skilled workers (Attwell and Baumgartl, 2009). In other words, learning is both highly individualized and heavily integrated with contextual work practices and is inherently social in its nature.

To succeed in supporting identity transformation, it is not enough merely to develop or deploy technologies which support training and information transmission. Rather, EmployID needs to develop approaches and pedagogies which can support social facilitation services within PES organisations and which empower individuals to engage in peer learning and facilitation around their own practices.

Although there is much research around the use of technology for learning, far less attention has been paid to informal learning and facilitation processes in the workplace. Research around social practice has largely remained the preserve of social science with different approaches based on structuralism, phenomenology and intersubjectivism amongst others. In his paper on theories of social practice, Reckwitz (2002) draws attention to the dual meaning of the English word practice in German.

“Practice’ (*Praxis*) in the singular represents merely an emphatic term to describe the whole of human action (in contrast to ‘theory’ and mere thinking). ‘Practices’ in the sense of the theory of social practices, however, is something else. A ‘practice’ (*Praktik*) is a routinized type of behaviour which consists of several elements, interconnected to one other: forms of bodily activities, forms of mental activities, ‘things’ and their use, a background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge. A practice – a way of cooking, of consuming, of working, of investigating, of taking care of oneself or of others, etc. – forms so to speak a ‘block’ whose existence necessarily depends on the existence and specific interconnectedness of these elements, and which cannot be reduced to any one of these single elements.

Likewise, a practice represents a pattern which can be filled out by a multitude of single and often unique actions reproducing the practice (a certain way of consuming goods can be filled out by plenty of actual acts of consumption). The single individual – as a bodily and mental agent – then acts as the ‘carrier’ (*Träger*) of a practice – and, in fact, of many different practices which need not be coordinated with one another. Thus, she or he is not only a carrier of patterns of bodily behaviour, but also of certain routinized ways of understanding, knowing how and desiring. (pp249-250)”

In this understanding knowledge is more complex than ‘knowing that’. It embraces ways of understanding, knowing how, ways of wanting and of feeling that are linked to each other within a practice.

In seeking to support facilitation within public employment services a vital prerequisite is understanding the nature of the social practices within the workplace, both through observable patterns of individual practice and through developing an overall pattern language. This includes the use of objects. Objects are necessary components of many practices – just as indispensable as

bodily and mental activities. (Reckwitz, 2002). Carrying out a practice very often means using particular things in a certain way. Electronic media itself is an object which can mold social practices and enable and limit certain bodily and mental activities, certain knowledge and understanding as elements of practices (Kittler, 1985; Gumbrecht, 1988). One approach to choosing ways to develop particular objects is to focus on what Onstenk (1997) defines as core problems: the problems and dilemmas that are central to the practice of an occupation that have significance both for individual and organisational performance.

If understanding the nature of social practices and patterns is a necessary step to developing facilitation services, it is not in itself sufficient. Further understanding is needed of how learning, particularly informal learning, takes place in the workplace and how knowledge is shared and developed.

Michael Eraut (2000) points out that “much uncodified cultural knowledge is acquired informally through participation in social activities; and much is often so ‘taken for granted’ that people are unaware of its influence on their behaviour. This phenomenon is much broader in scope than the implicit learning normally associated with the concept of socialisation. In addition to the cultural practices and discourses of different professions and their specialities, one has to consider the cultural knowledge that permeates the beliefs and behaviours of their co-workers, their clients and the general public.”

Eraut attempts to codify different elements of practice:

1. *Assessing clients and/or situations* (sometimes briefly, sometimes involving a long process of investigation) and continuing to monitor them;
2. *Deciding what, if any, action to take*, both immediately and over a longer period (either individually or as a leader or member of a team);
3. *Pursuing an agreed course of action*, modifying, consulting and reassessing as and when necessary;
4. *Metacognitive monitoring* of oneself, people needing attention and the general progress of the case, problem, project or situation.

He also draws attention to the importance of what he calls mediating objects and points out that while some artifacts are used mainly during learning processes, most artifacts used for working are also used for learning. Such artefacts play an important role in structuring work and sharing information and in mediating group learning about clients or projects in progress.

Among informal learning processes that Eraut lists are participation in group processes, consultations, problem solving, trying things out and working with clients. Working alongside others is important in allowing “people to observe and listen to others at work and to participate in activities; and hence to learn some new practices and new perspectives, to become aware of different kinds of knowledge and expertise, and to gain some sense of other people’s tacit knowledge.”

Tackling challenging tasks and roles requires on-the job learning and, if well-supported and successful, leads to increased motivation and confidence.

According to De Laat (2012) informal learning in the workplace is often described as observing how others do things, asking questions, trial and error, sharing stories with others and casual conversation (Marsick and Watkins, 1990). Boud and Hager (2012) argue that learning is a normal part of working and professional development should be placed in a social context where professionals work and learn together, changing and innovating both their professional practice as well as their professional identity.

De Laat (2012) argues that we need to find a new balance between formal and informal learning and

provide opportunities for what Fuller and Unwin (2003) call expansive - as opposed to restrictive learning - through developing an organisational culture that values and supports learning and by so doing, opens doors to various opportunities for professional development. Informal professional development through engagement in social learning spaces can enable participation, construction and 'becoming' (De Laat, 2012).

Lave and Wenger (1991) also stress the importance of both practice and the social nature of learning in their conception of Communities of Practice. Interestingly for them, collective learning results in practices that reflect both the pursuit of our enterprises and the attendant social relations. "These practices are thus the property of a kind of community created over time by the sustained pursuit of a shared enterprise. It makes sense, therefore to call these kinds of communities of practice."

"Communities of Practice are important to the functioning of any organisations, but they become crucial to those that recognise knowledge as a key asset. An effective organisation comprises a constellation of interconnected CoPs, each dealing with specific aspects of the company's competency, from the peculiarities of a long standing client, to manufacturing safety, to esoteric technical inventions. Knowledge is created, shared, organised, revised, and passed on within and among these communities." (Wenger, 1998).

Connecting people in parallel, across disciplines, roles and departments of the business, is fundamentally different from connecting people in project teams or interest groups. Although the nature and composition of these communities varies members are brought together by joining in common activities and by 'what they have learned through their mutual engagement in these activities'

According to Wenger (1998), a community of practice defines itself along three dimensions:

- What it is about – its joint enterprise as understood and continually renegotiated by its members.
- How it functions - mutual engagement that bind members together into a social entity.
- What capability it has produced – the shared repertoire of communal resources (routines, sensibilities, artefacts, vocabulary, styles, etc.) that members have developed over time. (Wenger, 1998)

A number of issues emerge in studies of attempts to develop communities of practice. One is a tendency to build a platform and 'declare' the existence of a community of practice, rather than supporting emergence and therefore ownership. The second is to fail to recognise that such a process of emergence is continuous and ongoing. A third is to conflate organisational structures with communities and to focus on the organisational nature of the community rather than the routines and artefacts that define the capability of practices.

In a similar way social learning is not something which can be done to people. Instead an approach to social learning has to be based on facilitation of social learning processes with organisations and within Communities of Practice. Such facilitation needs to relate to the social practices of people. Murphy (2004) has conceptualized collaboration as a continuum of processes, and developed an instrument with six stages for the purpose of identifying and measuring online asynchronous collaboration: "(1) social presence (2) articulating individual perspectives (3) accommodating or reflecting the perspectives of others (4) co-constructing shared perspectives and meanings (5) building shared goals and purposes, and (6) producing shared artefacts." However, these six stages can also serve as a template for social learning processes and inform the work of EmployID in developing tools which can facilitate social learning.

2.2.2 *Facilitation activities and roles in social learning processes*

As outlined in the EmployID Conceptual Framework (see section 2.1), the EmployID approach is activity-centered as it views the main area of interventions on the activity-level (instead of instructional pathways or similar). Implementing and supporting facilitation, thus, requires an understanding of facilitation activities, which has a three-fold purpose:

- **Inform users about possible social roles and their activities.** As neither target users nor the organizational context are familiar with social learning and facilitation, guidance is important to outline possible roles that can be flexibly assumed and activities of such roles. This has been found of particular importance in the case of the Reflective Community (see section 5), but also as part of Peer Coaching sessions (see section 6).
- **Identify skill requirements and possible training interventions.** Preparing individuals for effective facilitation activities is a goal of EmployID training activities. Therefore, conceptualizing activities is a source for developing the Facilitation Skills Catalogue further (see section 4.3).
- **Inform research activities.** Finally, from a (design-based) research perspective, these activities provide a common foundation across the different interventions and approaches to social learning. They underly the content coding approach to analyze facilitation activities (see section 3.1.3) and their dynamics in a social network (see section 7.4.3 and 7.4.4).

Based on a review of existing models for facilitation in various contexts, the project found Hyland (2010) to be an appropriate starting point, which is based on Murphy's (2004) model on interaction and collaboration, mentioned above and analysed the facilitation activities in online communities of practice and added new indicators to each stage as a result:

- Social presence (being visible online, recognising group presence, supporting learners' esteem, responding to messages, interacting with others to welcome and encourage)
- Articulating individual perspectives (encouraging contributions from others, sharing and exchanging thoughts, providing bridges between cultural, social and learning environment)
- Accommodating or reflecting the perspectives of others (collective construction, supporting use of learning material, improving the ideas of others or working together to improve the ideas of others)
- Co-constructing shared perspectives and meanings (sharing information and resources, responding to questions and giving advice, asking for clarifications, adding own contributions)
- Building shared goals and purposes (supporting creation of shared goals, synthesizing, reflecting, extending thinking ...)
- Producing shared artefacts

Analysing this process in the context of the Reflective Community, we initially identified several areas that came up as being important in our PES specific use cases. These are activities in existing stages, or stages that would need to be added:

- Social presence:
 - Requesting right tone and solution-oriented behaviour

- Building shared goals and purposes:
 - Guiding towards a shared goal or purpose
- Producing shared artefacts:
 - Guiding the creation of shared artefacts
- Presenting to the outside
 - Clarifying what to present to outside
 - Preparing presentations to the outside
 - Reporting back from presentations to the outside
 - Conducting presentations to the outside
- Providing technical advice
 - Helping members with questions on usage of platform
- Fostering networking of participants
 - Encouraging to invite new members
 - Suggest new members
 - Introduce new members

This is still work-in-progress as we need to understand actual facilitation activities in the different social learning approaches better. Therefore, a special focus of the evaluation activities will be on gathering (mostly qualitative) data about facilitation activities of the evaluation participants in the context of the intervention. These will be analysed with the help of content coding (see section), from which we expect to gain further insights

2.2.3 Reflection

Reflection is a process of informal learning. As Kolb (1984) put it, such “learning is the process whereby knowledge is created by the transformation of experience”. Reflection is then seen as the process by which people accomplish this transformation (Boud, 1985; Schön, 1983).

Reflection is common and desirable in everyday work. It is carried out by individuals (e.g., when a worker thinks about tasks carried out and whether they can be improved) and groups (e.g., when a group thinks about their cooperation and how they might improve it). It has been shown to help workers in dealing with changing work contexts (Cressey, Boud, & Docherty, 2006a), it supports them to create innovative practices (Hoyrup, 2004) and it enables them to create change in a bottom-up process (Prilla, Pammer, & Krogstie, 2013). The general understanding of reflection by EmployID has been described in D4.1.

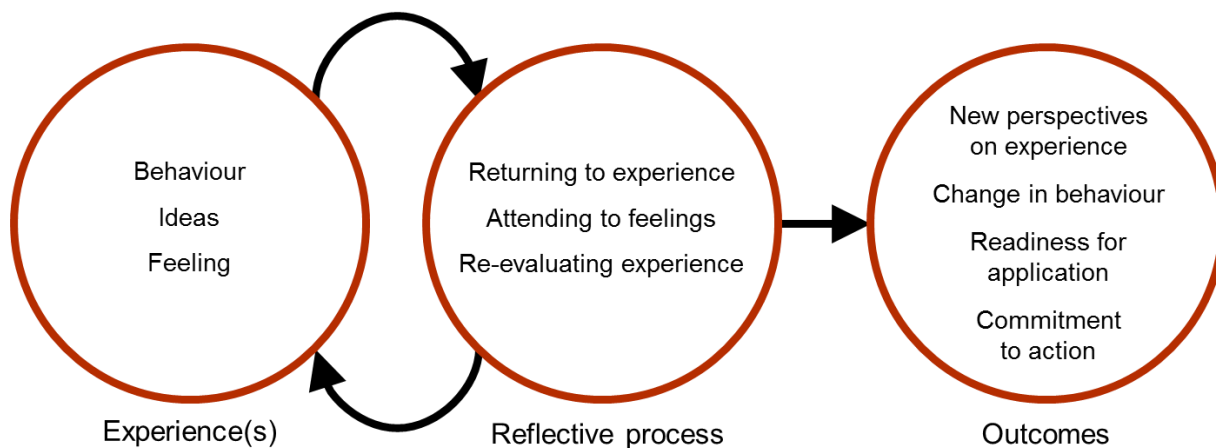


Figure 5: Reflection model by (Boud 1985). Drawing by the authors based on original model.

The approach taken in EmployID is based on the insights of Dewey (1933) and Boud (Cressey, Boud, & Docherty, 2006b), who state that reflection is only possible in interaction with others. This is in line with (Mead, 1934) who described reflection and reflectivity as influenced and driven by direct or indirect interaction with others. Consequently reflection in EmployID is embedded in group processes such as discussions in a forum (Social Learning Programmes in EmployID, see section 4) and interactions in community platforms (see also sections 5.1, 5.1 and 5.3). These group processes are designed to support the reflection of multiple people in an organisation, who do not have the opportunity to interact on a day-to-day or face-to-face basis (e.g. counsellors and other staff of PES working in different departments or locations). This has been identified as a promising way to create the critical mass, motivation and perceived value of reflection support in prior work of partners in the consortium (Prilla, 2015). It should be noted, however, that reflection in groups does not necessarily imply collaborative reflection processes as described by Prilla et al. (2012). Rather people may choose between reflecting individually based on the exchange in group processes (meaning that they can use the exchange as impulses for their own reflection) and collaborative reflection as a process of arriving at understanding and insights together.

On a conceptual (and development, see section 5.1) level the focus on reflection in group processes led to two basic design rationales for tool support:

- Integrating reflection into existing group tools rather than providing dedicated reflection tools: It has been recognised in prior work that the perceived value of dedicated reflection tools can be low if they are seen as “yet another tool” (Michael Prilla, 2015). When interacting with the PES partners of EmployID it became obvious that they already have a tool infrastructure and that new tools would be looked at in the way described before. Therefore, the aim of EmployID is to embed reflection into existing group support tools such as learning, community and cooperation platforms. While this is possible using only (social) facilitation interventions that take place in forums such support does not scale and cannot be provided in each organisation. Therefore, it needs to be supported by features of the platform that support and sustain reflection. To enable such support in different platforms EmployID has developed the concept of reflection as a plugin (Michael Prilla &

Blunk, 2015)¹, which aims to provide generic support for certain reflection support means as a plugin for existing group support platforms (see the description in section 5.1). This allows users in organisations to use the group platforms they are used to while supporting reflectivity on learning experiences via these platforms (Michael Prilla, 2015). Offering reflection through various different plugins also allows the organization to choose which support should be implemented depending on the specific context of the organization.

- Making reflection more likely rather than enforcing reflection: Prior work has shown that reflection at work needs to be dealt with differently to reflection in formal education. In formal educational settings reflection can be embedded into learning processes or enforced by tasks assigned to the learner, while in most workplaces reflection is hard to embed into primary tasks. Likewise, time pressure does not permit stepping back from work for reflection (cf. Prilla et al. 2013; Prilla 2015). Therefore, rather than scripting (Pierre Dillenbourg, Järvelä, & Fischer, 2009) reflection into group processes the concept of EmployID is to make reflection more likely to happen in conversations held via tools. The main corresponding concept of prompting users for reflection has been described in Blunk and Prilla (2015) and aims at providing users of a platform with statements or questions that come unobtrusively but provide a cognitive nudge towards reflection, without enforcing reflective activity (see the description in section 5.1). Furthermore there are several additional concepts aiming at making reflection more likely, including facilitation support for users (e.g., supporting for asking questions that make reflective feedback more likely (see Zhu 1996; Prilla et al. 2015)), visualizations to feedback reflective behaviour (see sections 3.2.4 and 5.1) and a continual supply of current topics to discuss about in platforms (see section 5.1).

To support reflection in general we created a concept for facilitation with prompts in this year, which will be tested and further evaluated next year. Refer to section 0 for more details about the concept.

These conceptual advances in combination with the work done on relating reflection to identity transformation (see D4.1 and Prilla et al. 2014) provide a solid basis for implementing reflection as one means of identity transformation support in PES. Further work will be devoted to refining the concept (especially based on the evaluations planned for Y₃, which are described below) and to continuing the work on the integrated reflection concept, which was developed in Y₁ and used to inform process and technical development in Y₂.

2.2.4 Peer Coaching

Another facilitation approach we follow in EmployID is peer coaching. Peer coaching is a group coaching setting where all participants are trained to peer coach each other and all are of equal rank (Ajdukovic et al. 2014). They facilitate each other in problem-solving by finding solutions for a certain challenge one of the participants currently struggles with. The meetings (face-to-face or online) can be on a regular base, but they can also be if needed on a content base.

¹ The concept of reflection as a plugin has been described in Prilla and Blunk (2015). It received the Best Poster Award at ECTEL 2015, see <http://ectel2015.httc.de/index.php?id=729>.

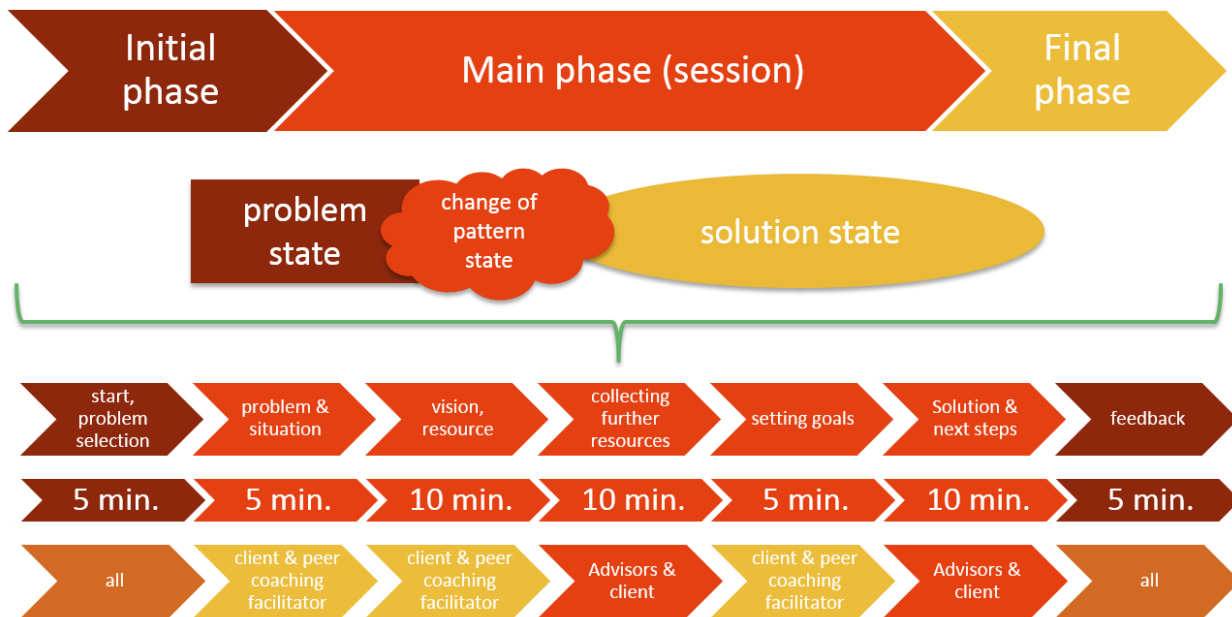


Figure 6: EmployID Peer Coaching Process

Peer Coaching in EmployID is divided into three parts: initial phase, main phase and final phase. The client, an individual who has a particular professional challenge, is at the beginning of the coaching process in a problem state, not capable of finding a fitting solution. At the end the client should be in the solution state where they are in their full strength, take in different perspectives and are able to see different possibilities. During the peer coaching the transfer from problem state to solution state is done through the change of pattern state (Wolf, 2014) (Wolf 2014a, Wolf 2014b & Wolf 2015). The peer coaching process consists of seven phases in which the client receives support by the peer coaching facilitator and a group of advisors. After the challenges of the peer coaching group members is collected, they chose for one urgent challenge and roles are issued the actual session starts. The client explains their challenge and situation and is being powerful questioned and active listened through the peer coaching facilitator. The peer coaching facilitator works on a positive vision or on resources together with the client and the advisors add their ideas on resources later on. After collection of the resources the goal is set by the client with support of the peer coaching facilitator. The client is asked to give an order to the group of advisors for the particular goal to brainstorm on solutions. The client can choose from the solutions what fits them best and plans next steps together again with the peer coaching facilitator. In the last phase the whole group is reflecting on their personal learning outcome and giving feedback on the process (EmployID D4.1).

In peer coaching there are several roles as already mentioned. The current naming can be changed in a later stage and are merely chosen to describe the role already in the term. There are conceptualized facilitation roles such as the peer coaching facilitator or sometimes also called moderator, the advisor and the client, though last of them is not a facilitation role. But through the process of developing a tool for peer coaching and having training three more roles could be identified that are an important part of peer coaching. The first new role would be the Peer Coaching Group Facilitator, someone who is already experienced in peer coaching and supports a newly formed peer coaching group as a tutor and gives feedback. Another new role is the Technical Peer Coaching Facilitator who supports when using technology, such as currently the EmployID peer coaching work-around or later the EmployID peer coaching tool or even other peer coaching work-arounds from the different IT-Infrastructures to cope with restrictions. The last new role,

which is not mentioned directly in the concept before is the one who is organizing the group. Who forms it and who invited people and sets schedules etc. That would be the Peer Coaching Organizer.

In the following the different roles will be described in more detail, adding also skills they need to fulfil their tasks which were taken from the EmployID Facilitation Skills Catalogue (FSC; the former Coaching to Facilitation Competence Framework (CFCF)) which will be described in more detail in the training solutions chapter 4.

- **Peer Coaching Facilitator.** The peer coaching facilitator moderates the peer coaching process, asks powerful questions, listen actively, is emotional aware of themselves and the other participants, does time-keeping and is responsible for documentation of the process. At the end of the session they can share the learning experience from the session.
- **Advisor.** The advisors (ideally at least two of them should be in a peer coaching session) give advice in two phases of the peer coaching on resources of the client and possible solutions. The rest of the session they participate by active listening and trying to be aware of their own and the client's emotions. At the end of the session in the feedback phase they can share their learning experience from the session.
- **Peer Coaching Group Facilitator.** The peer coaching group facilitator is an already experienced peer coaching participant from another peer coaching group who advises the new group in their organization as long the group thinks it to be necessary. The peer coaching group facilitator could also offer to participate as a "shadow" to explicitly support the peer coaching facilitator in their role.
- **Technical Peer Coaching Facilitator.** The technical peer coaching facilitator is a technically capable person also trained in peer coaching, who supports the group while doing peer coaching online with the EmployID peer coaching online tool or any other "work-around".
- **Peer Coaching Organizer.** The peer coaching organizer is the one who formed the group and who is responsible in organizing the peer coaching sessions. This role can also change over time.

Not every role needs a special and comprehensive training, but some support on skills that EmployID can provide through training (on the different training possibilities view training, conceptual part).

However, facilitation is not only performed by humans. As already explained in a paper on the role on facilitation in EmployID (Bimrose, et al., *Introducing learning innovation in public employment services. What role can facilitation play?*, 2014; Bimrose, et al., *The Role of Facilitation in Technology-Enhanced Learning for Public Employment Services.*, 2014), but also by tools and environment.

Facilitation support is built into the in progress peer coaching tool (see 6.4.3) itself: to facilitate distance peer coaching and speeding up the process and functions in the tool like a time-line connected with the peer coaching process for time-keeping, a box with supportive materials for each role and a box where important statements of the session can be collected for documentation and as export for sharing it in other tools

The facilitation through the environment (see section 2.2.1) in peer coaching is among other things the secure room that is created for reflection and problem-solving and the time scheduled (space) for personal development.

2.2.5 Coflection

Coflection is a combination of peer coaching and collaborative reflection. It was previously described in a first concept in the deliverable D4.1 and later in a more matured version published as paper for the EC-TEL conference 2015 (Prilla & Wolf 2015).

Whereas Reflection “is a complex, multifaceted and messy process that is tamed and domesticated at the risk of destroying what it can offer” (Cressey, Boud et al. 2006), Coaching can be defined as structured communication process in which a coach assists a client to identify his or her set of goals to improve professional performance and personal satisfaction.

Coaching and reflection, or more specifically Peer Coaching and Collaborative reflection have some similarities but there are also some differences which we have identified and collected in the table below:

Table 1 Differences and Similarities of Peer Coaching and Collaborative Reflection

	Coaching	Reflection
Learning goal	Understanding practice and learning for the future	
Learning matter	Experiences, practices	
Trigger(s)	Problem situation, discrepancy to expectations	
Learning approach	(Rather) Formal, guided	Informal, emergent
Roles in the process	Coach, client (coachee)	Reflection participants (symmetry)
Interventions in the process	Many tools and interventions for different steps in the process	Questions, moderation of group reflection
Labour division model	Cooperation: Coach provides structure (process expert), client digs into issues (content expert)	Collaboration: All participants engage in reflection on same context
Goal for session	Common goal: Positive outcomes from coaching, capacity to act (but different individual goals)	Shared goal: Learning about same / similar issue(s)
Barriers	Time and personnel (coaches) needed	Time to step back, continuity, integration into daily work
Implementation (technical support)	Synchronous (partly asynchronous, e.g. preparation)	Asynchronous (partly synchronous, e.g. meetings)
Training	Required (role taking)	Not required

A few main differences are for example the roles in the process, the implementation of supported technical and possible barriers.

In peer coaching there are fixed roles for each participant and in reflection all are equal partners without fixed responsibilities. For the technical implementation the difference is that peer coaching is mainly done synchronously therefore there is a need for scheduled appointments between peer coaching facilitator, client or advisors though of course there could be also parts done asynchronously, e.g. preparation of the session. In collaborative reflection it is done the other

way around. It is usually asynchronously though there is the possibility to meet synchronously. In terms of barriers, peer coaching mainly struggles with time and personnel and in reflection there is the need for time to step back in daily work which is not always possible.

There are three levels of coflection which will now be described briefly together with some examples and how we think it could be realized from the technical side.

- **Coflection on the process level (level 1):** On this level the two processes peer coaching and collaborative reflection mutually alternate each other, depending on needs and decision of the facilitators what suits best to get the best results from peer support. Though the processes are separate there is the possibility of transition between coaching and reflection through shared data.

An example could be to reflect on the whole peer coaching process or on parts of it later on a reflection platform by for example exporting data from the peer coaching tool to other tools.

- **Coflection on the element level (level 2):** On this level the main elements of peer coaching and collaborative reflection were identified to have intertwined process steps (see Table 1 Differences and Similarities of Peer Coaching and Collaborative Reflection Table 1) from coaching and reflection in order to create a new coflection process. One benefit of this combination is the shortage of the rather time-consuming peer coaching process.

Examples for level 2 are:

- Adding the provision and discussion of own experiences by advisors to the peer coaching process (with or instead of the solutions suggestions).
- Adding a “coaching” role and a pattern state trigger to the reflection process.

Coflection in tools could be realized by pre-defined coflection setups (procedures) or by own configurations by facilitators.

- **Coflection on the meta-level (level 3):** On this level coflection is realized by either doing peer coaching to learn about (collaborative) reflection during or between reflection sessions or by reflecting on the peer coaching process with reflection intermediate steps.

An example for level 1 and level 3 is adding reminders of solutions after the peer coaching to trigger reflection about the success of the peer coaching process and about the application of solutions identified in the peer coaching process.

Irrespective of which level of coflection is practised, shared data is indispensable. In section 6.4.3 on the peer coaching tool development one solution is already explained which enhances export of main peer coaching statements into other tools.

Coflection facilitator roles are not yet fully identified. These depend strongly on the level of coflection. On level 1 for peer coaching all roles in peer coaching are necessary as well as facilitator roles from collaborative reflection. On level 2 this is not as clear anymore since it depends strongly on which concept (peer coaching or collaborative reflection) the main emphasis of the coflection process is. On level 3 it is clear again that there is need of peer coaching facilitators for the peer coaching parts and collaborative reflection facilitators on the collaborative reflection parts.

Facilitation by tools through coflection is an addition to what is already mentioned on peer coaching and collaborative reflection. Main benefit through using a tool for coflection is the shared data exchange between the tools and the possibility to share e.g. solutions from one internal peer coaching group at one place to other interested persons all over PES.

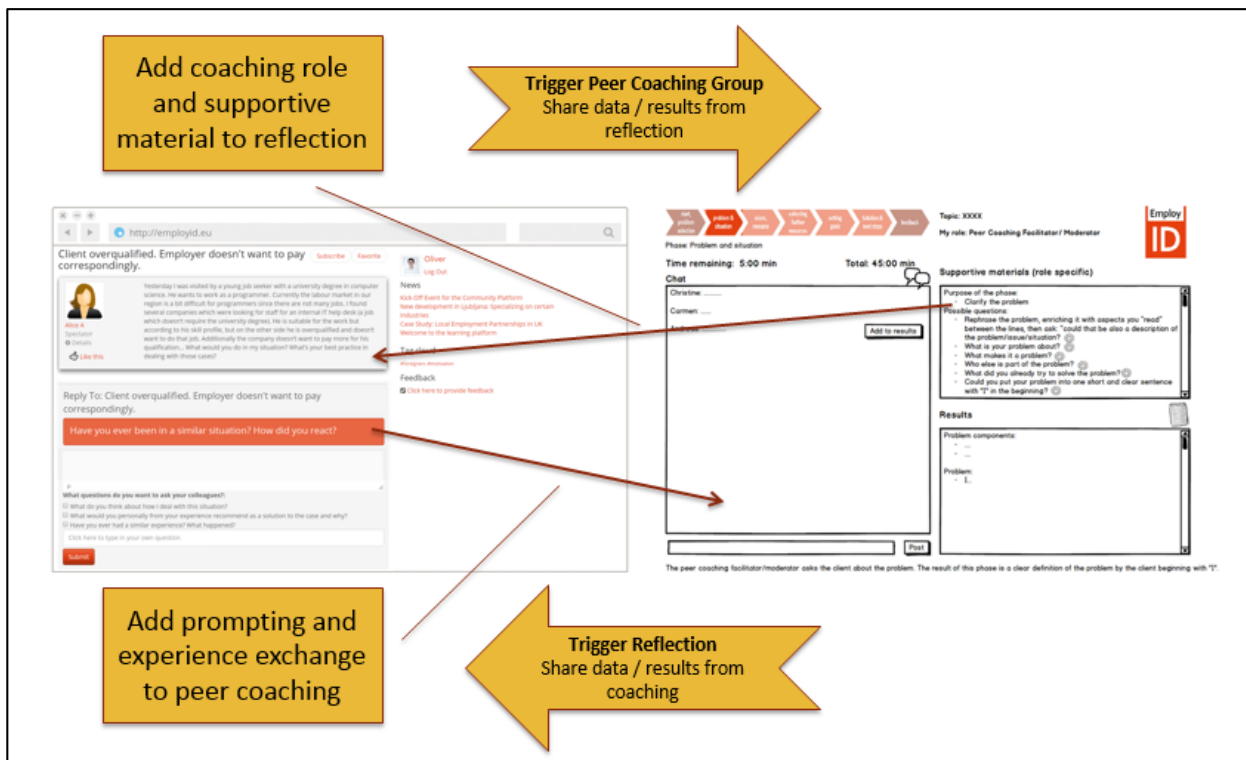


Figure 7: Implementing colection

As described in section 6.4.3 on the peer coaching tool, there is another first approach to realize colection within EmployID tools. The “result” window in the peer coaching tool has more than one function. It is supposed to be a collection of the main outcomes from every phase during the peer coaching session

1. for documentation for the client and for the others for later use or to re-read the session in a quick and appealing way and
2. it is meant to support colection by exporting the content collected there into another tool for collaborative reflection, e.g. into the community of practice
3. or to create easy content for socio-technical pattern.

The second function is meant to support the discussion on parts of the peer coaching session, e.g. collecting further resources, goal setting and solution finding and planning and with that enhance the collection and give further or new impulses. That would be colection on level 1.

Another option would be colection on level 2 by picking phases of peer coaching, e.g. goal setting and solution finding and having them already in the forum without the process around to brainstorm together as a group on the problem and reflect and discuss the various options.

2.2.6 Creativity

Creativity is a cross-cutting aspect of many forms of learning processes. While a lot of creativity research (and literature) concentrates on creative processes on their own, EmployID has concentrated on creativity inside other social learning activities. Therefore, as a result of a project-wide discussion, the Conceptual Framework has been extended by depicting Creativity (as well as Motivation) as influencing aspects of learning and facilitation activities. This means that we do not identify or target creative activities on their own, but the creative aspect in social learning programmes, inside reflective learning or peer coaching (see Figure 8).

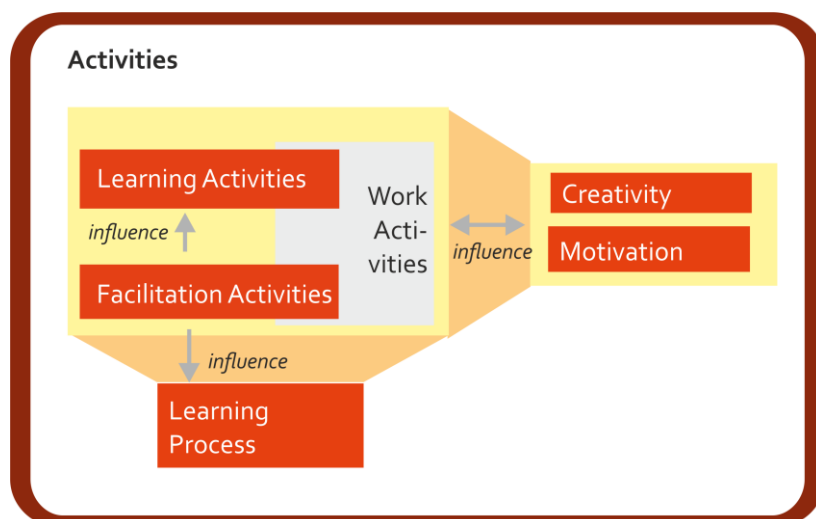


Figure 8: Creativity in the conceptual framework

As a consequence, we mainly see creativity to perform ideation to support users in different contexts e.g. while reflection or while being in a peer-coaching session. Both in reflection and in peer-coaching creativity plays an important role. Both deal with developing ideas on how to approach or solve problems individually (in terms of reflection) or collaboratively in collaborative reflection and in peer-coaching. During reflection users return back to past experiences in order to re-evaluate them with current knowledge to come up with ideas or approaches on how to tackle similar issues in future. Here creativity respectively ideation can provide a good structure to generate new ideas. Similarly, in peer-coaching there is an entire step in which participants are being asked to provide ideas for the client to reach her goal. Here ideation can also help generating ideas to help the client in the peer-coaching process. To conduct creativity, we intend to make use of prompting, which we also use to facilitate reflection (and later on peer-coaching) in a scalable way.

During this year we collected an extensive list of various creativity techniques which could support ideation in those mentioned contexts. A spreadsheet detailing methods of creative problem solving was curated with links to examples and notes about where in the creative process these methods could be applied. Figure 9 shows the list of techniques as an overview.

Techniques		5 Whys
Brainstorming	Decision Tree Analysis	Reframing matrix
Directed Brainstorming	Risk Analysis	Concept Fan
Reverse Brainstorming	Simplex	Grid Analysis
Charette Procedure	Root Cause Analysis	CATWOE
Brainwriting	SWOT analysis	TRIZ
Provocation	Random Input	Failure Modes and Effects Analysis
Morphological Analysis	Force Field Analysis	DO IT
Cause and Effect Analysis	Drill Down	Paired Comparison Analysis
Metaphorical thinking	Starbursting	Preferred futuring (for organizations)
Crawford's Slip Approach	PEST analysis	Two/three chairs
Balint group	Reflective teams	
	Impact Analysis	

Figure 9: Creativity Techniques

Out of a selection of these techniques, an online course has been created as part of the EmployID Academy.

Furthermore, it has been analysed how creativity aspects could be facilitated. In the case of **peer coaching**, the stages in the process of Peer Coaching were broken down to highlight where creativity support in terms of problem solving techniques may be of use. For example, In Peer Coaching Concept II the following is suggested *“The strengths can be written down and/or illustrated by the working group or one single member of the working group for a better vizualisation. A helpful tool to support this process could be the resource wheel, mind-map, tree,”* Support for using the creativity techniques mentioned or others from the spreadsheet could be introduced here. An overview of the Peer Coaching Process is provided in Figure 10 with highlighted areas where support for creativity techniques might be included in the future.

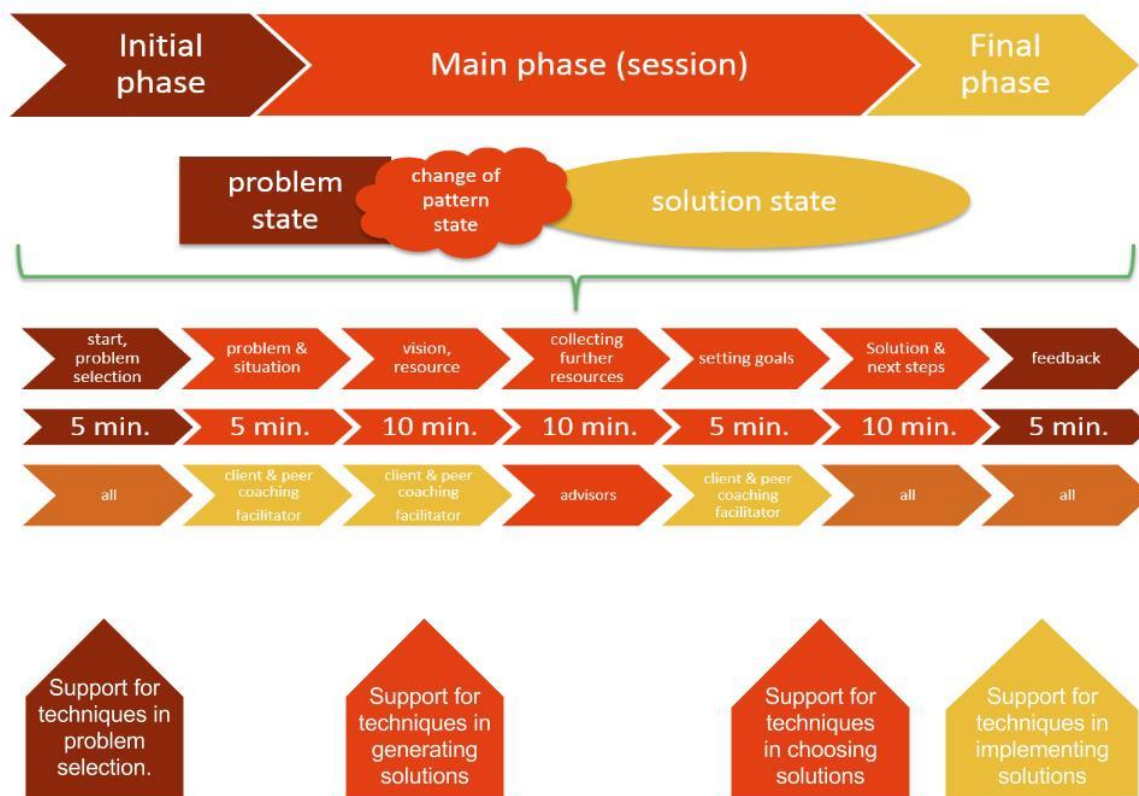


Figure 10: Supporting Creativity Techniques in Peer Coaching

A second facilitation approach that was analysed with respect to creativity, was prompting (see following subsection 2.2.7.4).

2.2.7 Prompting as a facilitation instrument

This section explains what prompting as a facilitation instrument can do for other concepts used in EmployID, like reflection, coaching, and creativity. We show first concepts as well as a layout for a first study on evaluating those concepts. Our work in EmployID includes the linkage between coaching and reflection, what we call coflection (see 2.2.5). We expand concepts for prompting across reflection and coaching and then combine those to also support coflection later on.

Prompting describes showing cues to users in order to stimulate doing an action (Bannert, 2009). These cues are often texts in the form of questions (Thillmann, Künsting, Wirth, & Leutner, 2009), sentence starters (Davis, 2003), or other visual or auditory forms (McKenzie-Mohr, 2000). One important aspect is that prompts don't enforce a user reaction and users can choose how to respond to a prompt (Fivush, Gray, & Fromhoff, 1987). Thus prompts can be basically used to ask people to do certain steps or think about actions which can then benefit reflection, coaching or creativity. It is a facilitation instrument executed by a system in our cases which contains a prompting mechanism, thus enabling large scale facilitation of our concepts, in contrast to facilitation done by humans in larger organizations.

Furthermore prompts are quite popular in various contexts like in formal learning environments where prompts aim to help students with tasks or to stimulate self-reflection (Davis, 2003), they have been used to let people reflect about other experiences recorded in experience sampling methods (Isaacs et al., 2013), or to let people reminisce about pictures or music or conversations (Peesapati et al., 2010).

2.2.7.1 Prompting support for Reflection

The work on prompting is based on previous experiences made in the MIRROR project and the theoretical basis on how prompting could be beneficial to support reflection in our context described in EmployID D4.1. Additionally, we laid out how prompts could support creativity in EmployID.

In this second year of the project we created a concept based on literature how exactly prompting can support various aspects of reflection, which we presented at the ARTEL workshop at the ECTEL 2015 (Blunk & Prilla, 2015). The concept is based on the CSRL model by Krogstie, Prilla and Pammer (Krogstie, Prilla, & Pammer, 2013), shown in Figure 11. The model splits up reflection into different stages each with distinct inputs and outputs for each of the steps. The model helps designing support for reflection through providing a clear process and developers can use the model to make sure that the different inputs and outputs are provided in each phase in order to have all information present during (collaborative) reflection. The prompting concept we defined is based on various goals which are gathered from existing literature which describe which aspects of reflection should be supported by tools. Some of these goals are also based on known problems in reflection.

Following we present a few examples from the paper. The full paper is included in Appendix E.

Goal 6 in the paper represents our earlier finding, which indicates that relating to own experiences in a collaborative reflection setting is more helpful for individuals than stating plain knowledge (Michael Prilla et al., 2015). Prompts for this goal are aimed to get this finding across to participants in order to stimulate them to think of experiences. This connects to the CSRL model through supporting the *making related experiences available* step in the *conduct reflection session* stage.

Example prompts could look like the following:

- Suggestions are most helpful if they are based on your experience!
- What would you personally suggest as a solution? Why?

The prompts intend to emphasize on the experience aspect to aim for an increase in outcomes in collaborative reflection.

The overall goal while reflecting is identifying steps one wants to use in future to solve one's problem. This can be found in models of Boud (D. Boud, 1985) and in the CSRL model (Krogstie et al., 2013). The prompting concept has various goals tapping into this. Through currently not having an automatic content analysis in place, G₉ checks whether the stage of planning outcomes has already been reached by asking the author of the thread whether she already got enough interesting responses or whether she wants to approach the topic again from a different view point. Subsequently G₁₀ then asks the author to state her goal respectively some concrete steps in how she wants to approach in the discussion. Later on G₁₁ tries to start a new iteration in asking afterwards whether the planned changes worked and what happened.

Prompts here include:

- Do you have an idea from this discussion how to change your approach to the topic? If not, phrase a new question.
- How do you want to implement the suggestions of your colleagues?
- Did your plan work? What are your experiences with the change? Tell your colleagues about it.

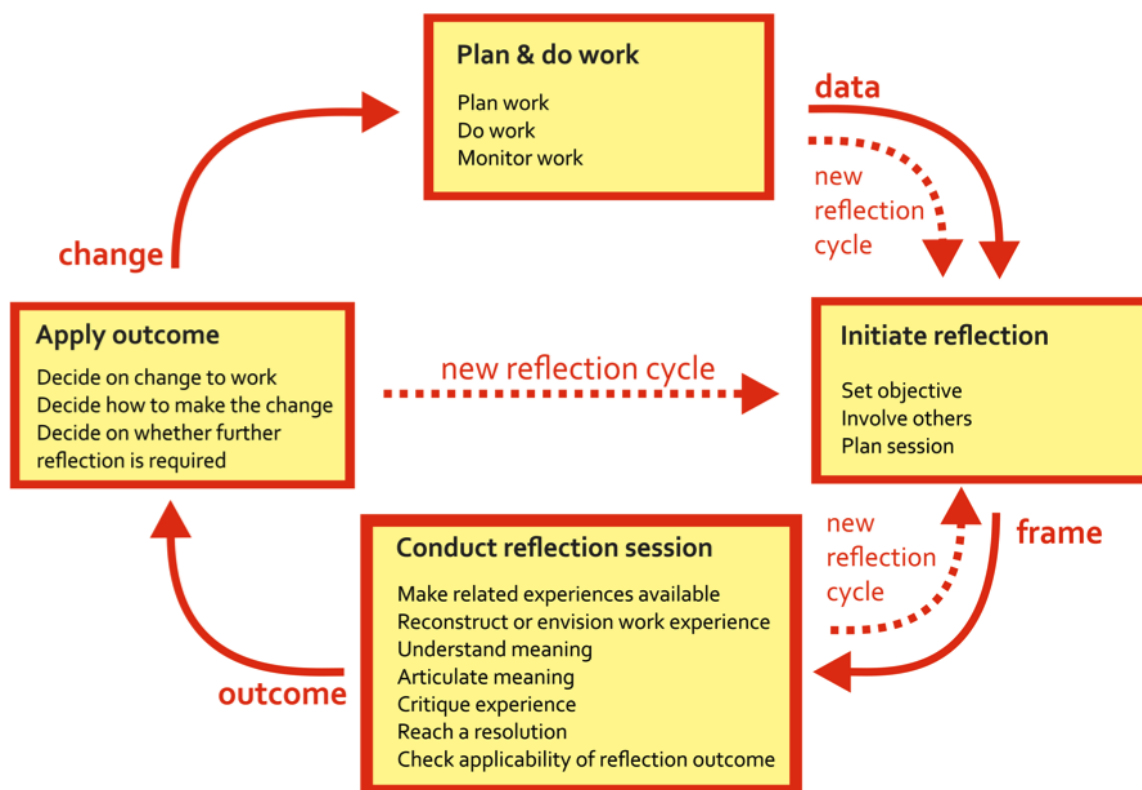


Figure 11: Model of Computer Supported Reflective Learning by (Krogstie et al., 2013)

including four main stages of reflection connected in a cycle by transitions indicating how one stage feeds into the other (solid line arrows). Dashed arrows depict triggers occurring in the stages, leading to the start of a new cycle of reflection.

Literature shows that context specific prompts are showing better results than rather abstract prompts (Davis, 2003; Davis & Linn, 2000; Lai & Calandra, 2007). Thus the implementation of the prompting concept tries to detect the context before showing a prompt. The current context detection contains determining the role of the current user in the thread (whether she is the author, whether she replied already, or whether she is just a viewer) and also assessing the thread length to have an indication whether solutions can already be present before showing outcome related prompts.

In order to assess how viable prompts for facilitating reflection are, we conducted two studies on a crowd sourcing platform. Since those two studies took place at the end of year one, we include here first preliminary results from the first study. The second study hasn't been fully evaluated yet.

The basic idea of the studies is to test how prompts can help stimulate users to exchange experiences and to share experiences online. We therefore created a crowdsourcing experiment using various prompts, to evaluate how they affect participants. Previous studies have shown that results from crowdsourcing experiments are comparable to lab studies, and that the population on crowdsourcing platforms are comparable to real samples as well (Behrend, Sharek, Meade, & Wiebe, 2011; Horton, Rand, & Zeckhauser, 2011; Kittur, Chi, & Suh, 2008; Mason & Suri, 2011). We set up an example taken from a pre-test in which a person is complaining about rejected work, which is happening quite frequently among crowd workers. Participants were presented with a fictive post by someone asking for help about rejected posts. The setting imitates a forum setting, however there hasn't anyone responded to the post yet, so that the participant is the first person. We used three different prompts ("Have you ever been in a similar situation? Enter a comment that describes what you did.", "Enter a comment. Describe a solution to the problem above and why you think this is a solution.", and "Enter a comment") to ask for experiences, solutions and the last prompt was used as a control prompt. In our earlier studies we showed that referring to one's own

experiences is beneficial in collaborative reflection (Prilla, Nolte, Blunk, Liedtke, & Renner, 2015). We had 300 participants, with 100 persons for each prompting category. We configured the system so that each participant can only participate once in the study, to also eliminate carry-over effects. After data cleaning we kept 278 results.

Read the following text carefully and be sure to understand what it is about. You are supposed to create a comment on the text later in this job. **1**

Sometimes I get negative feedback on jobs I completed. Then the requester rejects my work and refuses payment although I did my best to answer the questions correctly and truthfully. This happened to me twice last week. Afterwards I get problems motivating myself because I invested so much time and effort. So I sometimes ask myself why should I take more jobs if I always get such negative experiences. **2**

How many times did the problem happen to the author last week? **3**

Once (1)
 Twice (2)
 Three times (3)
 More than five (5) times

Please provide your comment in the text box below. Be sure to write at least three full sentences and to adhere to the statement written above the comment field. Good comments will receive a bonus. **1**

4 Enter a comment

1

1 Create the comments from what comes into your mind. Do not make up anything but just write what you associate with the text you read and the statements above the text box.

Figure 12: Crowdsourcing experiment setup without demographic questions

Figure 12 shows how the experiment looked like. The instructions (1) explained what is required of the participants. Our setting is explained in a text box (2) and to show that they read the text they had to answer a gold-standard question (3; which helped us avoid malicious responses (Gadiraju, Kawase, Dietze, & Demartini, 2015; Kittur et al., 2008)). In the text box below (4) they could place their answers.

To evaluate the results we used a self-created content coding scheme (which originated in the MIRROR project), which we also used in earlier studies (Prilla et al., 2015). Results show that the prompt asking for experiences significantly shows more codes 4 and 5 (linking to one's own experiences respectively to one's knowledge) than in the other two prompting categories. Similarly, the solution prompt leads to a higher occurrence for the code 8 respectively 8.4 or 8.5 (A justified solution is mentioned in the post, and the justification is either rooted in personal experiences (8.4) or in one's own knowledge (8.5)). Regression analysis shows that the prompts have an explanatory power of 15-20% percent of the occurrences of the codes. This is seemingly moderate level is still big enough to justify using prompts in our contexts to support reflection.

Additionally, we analysed the prompts with LIWC (Pennebaker, Boyd, Jordan, & Blackburn, 2015; Tausczik & Pennebaker, 2010), which is an established tool for automated content analysis. We want to check whether some of the LIWC codes can be also used to identify reflection to ultimately

have a more automated content analysis in order to create more dynamic or even real-time facilitation tools. We focused on the following codes: *I*, *you*, *focuspast* and *focusfuture* (Pennebaker et al., 2015; Ullmann, 2015; Wen, Yang, & Rose, 2014), which are related to reflection. Our preliminary evaluation shows, with the exception of the *focuspast* code, that there is a significant difference between prompts: Content influenced by experience prompts had high amounts of the *I* and *focuspast* as well as low amounts of *You* codes. However, there isn't a big difference between the control prompt and the solution prompt. There may be other LIWC categories relevant for analysing reflection in written content and we plan to continue working on this.

These results show that prompts are a method of influencing user behaviour in online peer-exchange settings to stimulate the amount of reflective interaction present. To our knowledge there are no previous studies about prompts supporting collaborative reflection. Another finding is, that automated content analyses on LIWC can be helpful to detect reflection. Manual content analysis has proven to be effective in the past, however this is time-consuming and analysis can only be provided post-hoc in a conversation. Using automated content analysis, we might be able to develop facilitation which is closer to real-time.

The second study we conducted focused more on how user react to prompts if there are already answers present. For this we took three posts from the first study each suggesting a different solution. We then used three different prompts: "Enter a comment. Which of the solutions would you like to take and why?", "Enter a comment. Refer to the other comments.", and "Enter a comment. Describe a solution to the problem above and why you think this is a solution". The main objective of this study was to assess whether present solution make a difference for user behaviour. Subsequently we took the same prompt asking for solutions from the first study into the second study, to check the difference. We chose not to include a control prompt in this study, since our first study already showed that there is a measurable difference between the different prompts and that people are reacting to the prompts. The study itself has already taken place, however the evaluation is still pending.

So far we are convinced that these studies provide good blueprint for further studies and that crowdsourcing studies are a good way to test prompts in an easy way with a large number of users in a cost-effective way. Thus we might continue these experiments e.g. to assess whether there is a difference in user reacting in good or bad quality contributions from other users in forums and how this affects collaborative reflection in professional settings.

Currently a paper is being prepared for submission to the GROUP conference in 2016 to present the first study in this experiment.

2.2.7.2 Prompting support for Peer Coaching

To be able to extend the prompting concept to our collection concept later on, we are currently planning to create a prompting concept for peer coaching similar to the concept for reflection described above.

While reflection is a rather unstructured process, peer coaching is very structured with different phases and distinct actors who have various tasks in the different phases of the concept. For a more detailed comparison respectively distinction between reflection and coaching refer to

Table 1 in section 2.2.5.

For the prompting in peer coaching concept we similarly analyse all phases in the process to determine which results should be achieved in a phase and what information have to be present to start a new. This will help us creating new prompts to facilitate reaching those results that will then serve as inputs in subsequent phases.

Context-specificity is possible in the peer coaching process due to the different phases already mentioned, and also since the process contains different roles: peer coaching facilitator, advisors and client.

One idea to use prompts in peer coaching is to differentiate between process help and stimulating participation. Thus we can use process prompts (e.g. as described in (Rosenshine, Meister, & Chapman, 1996)) as a scaffold to help new users who are not very familiar with the process or the tool yet. This scaffold can be reduced over time as users get more experienced.

Phases in coaching and ideas of how prompting could support them:

- **Start, problem selection:** This step aims to determine the problem which should be discussed during the peer coaching session, when roles have not been assigned. In this step reflection prompts could help people think about possible problems they need coaching for. Additionally, prompts could ask people who haven't been active in a long time to participate as a coach or who haven't shared a challenge in a long time.
- **Problem and situation:** The goal of this step is to create a brief, concise problem description. Prompts here could ask the peer coaching facilitator to rephrase the problem to check whether the problem is correctly understood by the group, or ask the client to think about different aspects of the problem (where it also occurs, whether it is connected to someone, etc.).
- **Vision, Resource:** Following peer coaching facilitator and client determine resources the client can use, and try to establish the change of pattern state. Prompts here could assist the coach in asking various questions. Also although the advisors have not been involved yet, a system could already prompt the advisors to already start thinking about related resources they can suggest in the next phase from their own experience rather than guessing about the client's resources. This might also help advisors to engage in self-reflection while being in a peer coaching session.
- **Collecting further resources:** Now that advisors are involved in naming possible resources for help, prompts can also trigger participants if something is unclear, or prompts could notify the advisors to participate with ideas or the peer coaching facilitator if there are too few advisors.
- **Setting goals:** In this step the client should rephrase the personal goal in a concise, specific and trackable way. Prompts can here help the client phrase the goal showing examples or important aspects in phrasing the goal.
- **Solution & Next steps:** When the advisors help finding solutions for the goal again, prompts can help with creativity techniques to find additional goals or e.g. prompts could ask to build new ideas based on existing ideas of others. This can be also connected to ideas of how to support creativity which is laid out in 2.2.7.4.
- **Feedback:** Here reflection prompts can help guiding ones' feedback in a way to maybe define personal outcomes of each individual from the peer coaching session.

Summarizing, prompts can act in peer coaching on the one hand as tool or process guidance and on the other hand to help sparking ideas, which now links to the prompting concept for creativity. This is especially helpful in the phases of gathering resources the client can use and also when phrasing the solution and the necessary steps the client could take. Using prompts to guide the process might have benefits in comparison to a rather strict workflow management system in that prompts can be built to react rather flexibly to individual group needs.

Since some participants, e.g. the advisors, in a peer coaching less active in some phases, prompts can remind them that phases have switched and it is their turn to comment again.

During year three a literature analysis will be done to identify common issues in coaching where prompts might help to overcome the issue itself to further expand our prompting concept for peer coaching.

2.2.7.3 Prompting support for Coflection

In the previous section we laid out the concepts how reflection respectively peer-coaching can be facilitated by prompts in an automated fashion supporting scaling. In D4.1. we already presented the co-flection concept, which is combining reflection and coaching in one larger concept containing different levels of integration (see also 2.2.5). Currently we have elaborated some ideas for a facilitation concept (via prompting) for coflection, but a full concept hasn't been created yet.

L1: Coflection on the process-level has alternating phases of coaching and reflection and users can choose which technique to choose to solve their problem. Prompts in this situation can try to guide users in taking this decision of how to continue. Prompts can point at various points in which those techniques differ to aid the user in figuring out which one to choose.

L2: Coflection on the element-level describes merging elements from both techniques into a new process to help the users e.g. when users don't need certain aspects in their solution finding approach, they can leave certain aspects out. Prompts for this level can offer guidance about what element to choose next. E.g. similarly to the goal in the reflection concept regarding specifying outcomes prompts here could also ask whether the user already wants to specify an outcome or whether the user wants to choose other elements from either coaching or reflection. Another idea would be to suggest adding new roles e.g. in the coaching process as described in the coflection section 2.2.5.

L3: This level encompasses reflection to learn about coaching between sessions and also to use coaching to learn about reflection. Here prompts can help to stay on this meta level of coflection and to help guide both processes as outlined in the individual concepts before and to guide the user in this in-between phase.

2.2.7.4 Prompting support for Creativity

We intend to use prompting as a way to convey creativity techniques into our different tools and other concepts.

Our understanding of creativity and how it is integrated into the project is explained in section o. Thus we see creativity support here as a provider of useful techniques to help users generating ideas in coaching or reflection to help overcome issues and to approach the issues from different viewpoints.

We plan to integrate creativity techniques into our existing solutions for reflection, coaching and later on coflection using prompts instead of distinct creativity tools. The intention is to seamlessly integrate the creativity techniques into the existing concepts without the user having to leave a coaching session in order to participate in creativity techniques.

As already mentioned in D4.1 creativity is an important part in reflection because people often need to come up with new ideas to solve one's problem, or to converge multiple ideas to work on a problem.

In D4.1. we named *directed brainstorming* as one ideation technique which can be useful in our context. It describes splitting up a general topic in a multitude of smaller topics and then perform a brainstorming on each of the smaller topics (Santanen, Briggs, & de Vreede, 2000). Santanen reported that this leads to more results than just having a brainstorming for the general topic. This can work on an individual and on a collaborative level. Thornburg reports that individual

brainstorming after group brainstorming can be more productive (Thornburg, 1991) and this also relates to a finding of MacCrimmon & Wagner who write that it is easier to select existing ideas than to generate new ones (MacCrimmon & Wagner, 1994). Additionally, there are two ways this could work in smaller groups: First, each person does a brainstorming on each topic thus working on all sub topics once, or if time is an issue each person gets only a few sub topics to speed the process up. This leads to several design considerations when applying this technique to coaching & reflection:

- The system should support splitting up the general topic so that each user (if present) is shown a prompt containing a sub topic to brainstorm on.
- The system then should collect all user input, and possibly group it according to the sub topic the current user worked on. Also, there could a possibility to show one user the results of the other users for the current sub topic, to stimulate more ideas. This could be done in a prompt like “Have you also thought about <Idea of your colleague>. How can it be expanded?”
- To facilitate the brainstorming overall the system should also contain prompts to restrict time spent on the brainstorming so that the system is time efficient to use.
- Overall the system should have a distinct section to show all user input on the given problem, so that users can see what has been done. Ideally this can be another starting point where prompts can be shown to stimulate the creation of a new reflection or peer-coaching session when someone got another idea of what to discuss.

This way directed brainstorming can be used in reflection in discussion areas where prompts can offer it amongst various creativity techniques, where prompts can then guide through the technique by opening up the brainstorming and then condensing down the ideas to obtain a set of ideas the author of the reflection session wants to work on. Similarly, in peer-coaching, which has a more structured process, this technique can fit in nicely. Prompts can offer the peer-coaching facilitator various techniques to choose from if she wants, and then guide through the process in a synchronous or asynchronous way.

We named *analogic reasoning* as a second creativity technique which can be helpful to reflection and which can be also used in peer-coaching. In this technique people try to relate to problem-solving techniques from other domains in order to come up with new ideas how to approach the original issue, however this requires not only guidance, but also additional time (Maiden, Gizikis, & Robertson, 2004). Prompts can here act as this guidance with explaining the technique very briefly, showing examples and then facilitating the collection of ideas.

This might be similar to thinking about which metaphor might represent the current case, which has been shown that this also supports reflection (Freed, 2003).

Analogic reasoning is also usable in both reflection and peer-coaching, however through the emphasis on the guidance requirement it might be more suited to peer-coaching, where a peer-coaching facilitator can take over the role of providing guidance to the participants in how to perform this technique. This can also enhance the phase in coaching in which the participants provide ideas.

Creativity techniques can be used in (collaborative) reflection when users lack ideas of how to approach the issue when they are stuck in the issue and want to think more “out of the box”. Similarly, peer-coaching has an entire step encompassing generating ideas with the advisors in the peer-coaching session. Here creativity techniques can even add more structure to the peer-coaching with adding a technique which is more different to the default brainstorming mode of everybody adds her ideas and we collect everything.

Finally, this can be linked also to collection, where creativity might be especially helpful in the second level of collection. In level 2, the combination of elements from both processes into a new one, creativity can be one element encompassing a set of different techniques to choose from in the new process. This is a very flexible way to integrate creativity since then participants can choose whether they need a creativity technique or not in their current situation.

This section shows how prompting can support conducting creativity techniques for ideation in reflection or peer-coaching sessions. This also supports scalability since prompts are being issued by a system instead of humans.

2.3 Pattern-based approach

2.3.1 *Patterns in Design-Based Research*

Design-based research approaches have been found to be useful methodology for applied research in fields that evolve rapidly, as it is true for technology-enhanced learning. However, it is often a challenge to create a sound body of evidence from the results of the design process that can be transferrable to future design problems.

The challenge in this respect is that a lot of the knowledge that has been accumulated in the design process is experiential knowledge that is hard to decontextualize. Furthermore, it is not only experiential knowledge, but also knowledge in-between disciplines, combining technical and human-centered, social perspectives (“socio-technical”), which has required the establishment of a shared language among the respective disciplines. As publication channels are often specific to certain disciplines, scientific papers cover only a fraction of the outcome of such research projects.

This has been discovered and investigated in the interdisciplinary workshop series MATEL (<http://matel.professional-learning.eu>), which has been established by the EU project MATURE and since then also co-organized by EmployID and the EU project LAYERS, among others. Focussing on the aspect of motivational and affective aspects, it has been realized that we need methods and artefacts to derive generalizable knowledge from design processes in technology enhanced learning.

As part of these conversations, design patterns have been found to be a useful way of

- capturing design experiences in a systematic way,
- making experiences accessible beyond the context they have been acquired in, and
- establishing a professional language and shared experience base.

Patterns have been pioneered in architecture (Alexander, Ishikawa, & Silverstein, 1977). While patterns are also not new to the field of educational technologies, e.g., (Mor, Mellar, Warburton, & Winters, 2014), it is a novel approach to orient large-scale research projects towards design patterns to make its outcomes transferrable.

At the heart of pattern approaches is the structured description of design and intervention experiences along the following elements:

- **Problem** which is to be solved
- **Solution** to the problem
- **Evidence** or examples that the solution is a solution to a specific real-world instance of the problem

Apart from describing problem and solutions at an appropriate level of abstraction, most effort in the pattern development process is related to accumulating sound evidence about the pairing of problem and solutions in specific contexts. This evidence allows for extracting the relevant characteristics of a context, and as a consequence, to transfer the results to other contexts that share the same characteristics. While in practice, the overhead of sound evaluation is often neglected, research project provide an ideal environment as evaluation activities are an integral part of the planned work.

Along those lines, the patterns form part of the shared conceptual model that glues together the various activities in a design-based research process (as depicted in Figure 13).

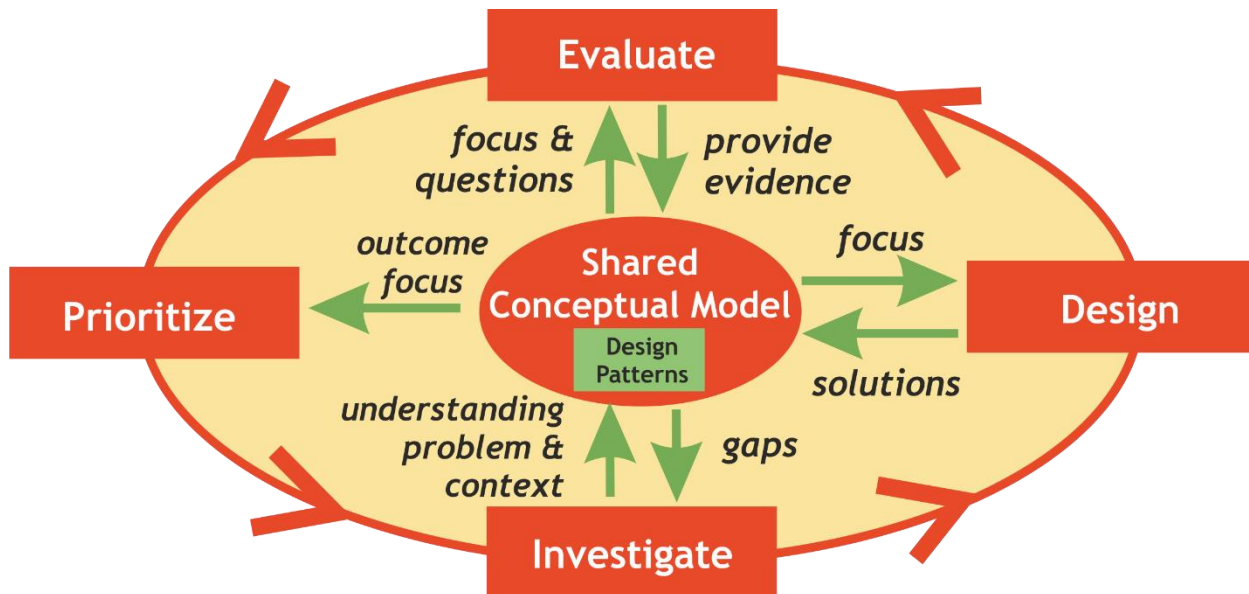


Figure 13: Design patterns and Design-based Research

Furthermore, research projects need a vehicle for making their results transferrable. While this works well for theoretical and conceptual results, this is much harder for design results beyond the (ephemeral) actual tool implementations, which is a major obstacle for design-based research approaches such as (Ravenscroft, Schmidt, Cook, & Bradley, 2012). Patterns provide an excellent way to produce transferable design results. However, the project activities need to be geared towards producing these kind of results.

2.3.2 Pattern maturing process

In cooperation with LAYERS we worked out a method that uses narratives in the form of learning scenarios as a precursor to patterns and develop prospective patterns further as a central part of the design process. It consists of the following phases, which are based on the Knowledge Maturing Model (Maier & Schmidt, 2014) and are an adaptation of (Kunzmann et al, 2015):

- I. Emergence.** In early phases of the project (such as the initial contextual investigation phase), the needs and constraints are explored. Findings and ideas of the various stakeholders are amalgamated into learning scenarios if they are considered significant and promising. In these phase, these narratives act as an important boundary object between different perspectives in a collaborative research project (see Figure 14): they describe the contextual need of users (“initial situation”), the interpretation of the situation through a theoretical lens (“learning challenges”), design options and ideas (“proposed solutions”) and an anchor for evaluation (“evidence”). This already corresponds to the basic structure of a pattern: problem = initial situation and interpretation (which is a first decontextualization step), proposed solution, and evidence.

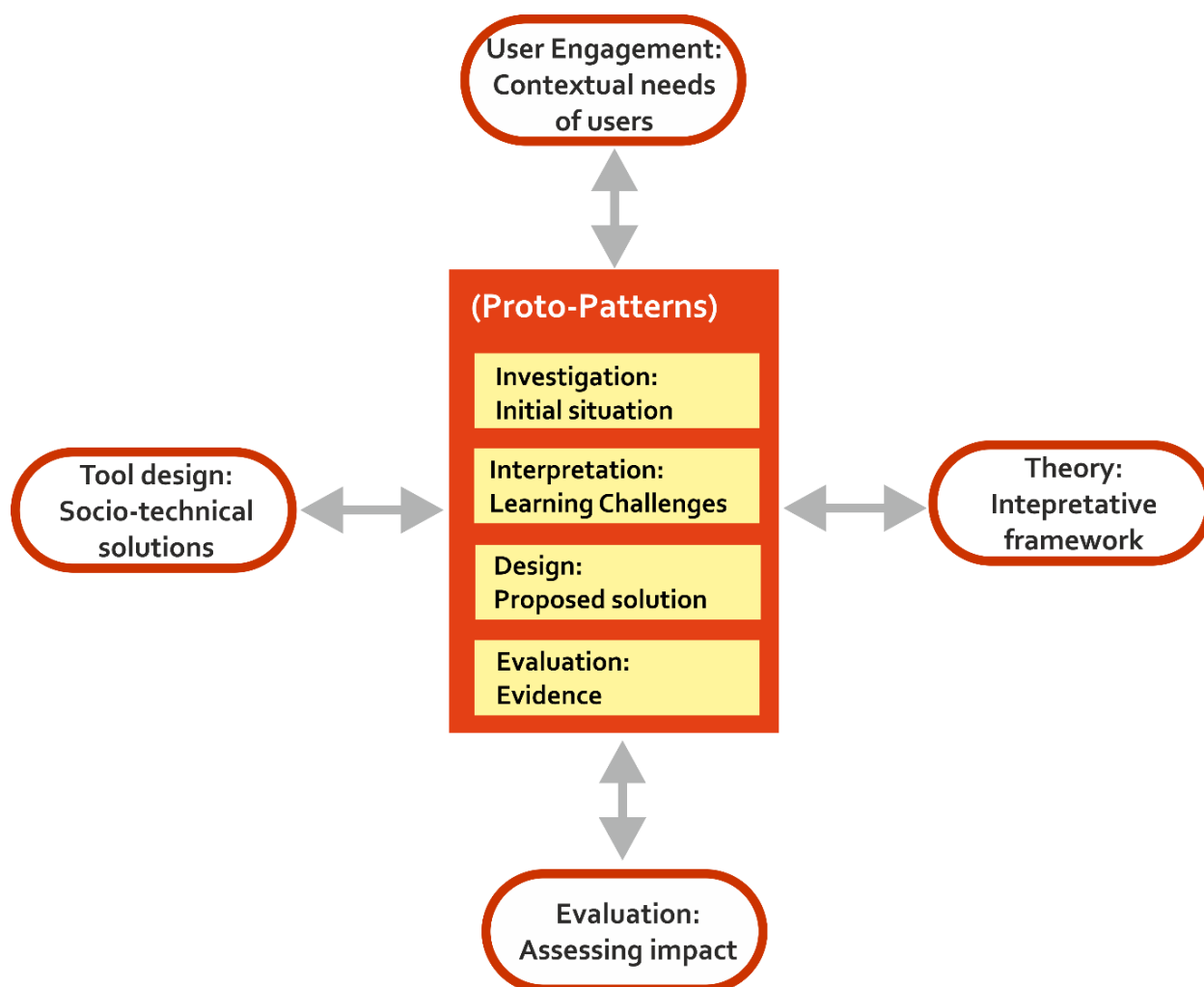


Figure 14: Emergence of proto-patterns as boundary objects

- II. Collaborative solution development.** The Learning Scenarios are used to focus (socio-technical) development activities in a concrete context. In the course of those

activities, the learning scenarios are becoming more specific and more detailed, which applies both to the problem, but also to the solution part. Through formative evaluation activities (which are rather exploratory), evidence is gathered, which in turn influences the problem and solution understanding. The pattern elements

- **III. Transformation into proto patterns.** With solutions stabilizing, the research process enters a phase in which evaluation is used in more confirmatory way to gather sound evidence about a problem-solution pairs and its elements. Towards that end, the concrete experiences are decontextualized, and the main propositions are put into hypotheses.
- **IV. Introduction to new contexts and collection of additional experiences.** Through applying the solution to other contexts (or the collection of similar solutions developed in parallel), it becomes possible to understand which contextual factors have an influence on the applicability of the solution. This then leads to patterns for which usually three different cases are required as empirical support. In this phase, the pattern structure gets refined.
- **V. Standardisation of pattern collections.** Usually, the usefulness of patterns for a certain area of application does not lie in the single pattern, but rather in a collection of different patterns and how they link to each other. As part of that, a language emerges that makes the discussion more efficient. Eventually, such collections and their language become part of curricula.

Along this process, patterns evolve in a highly dynamic way. (Proto) patterns get discarded, new ones emerge, others get transformed, decomposed or merged. It is important to note that patterns are not intended to constrain the creative design process, but to facilitate it. They help to focus activities, make decisions, plan evaluation etc.

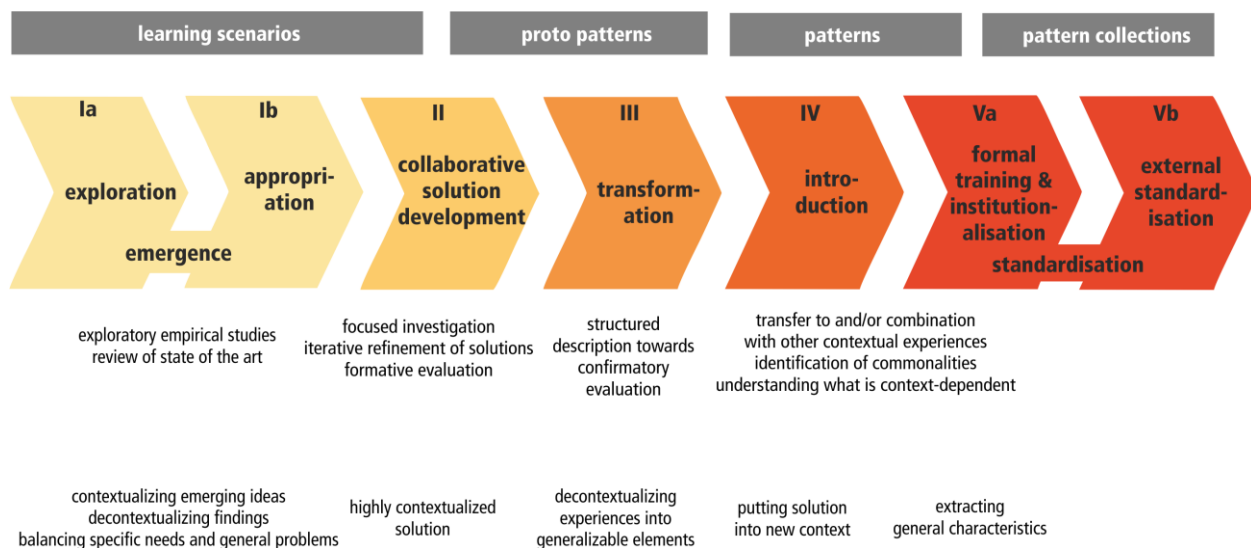


Figure 15: Pattern maturing process

This also means that patterns are an ideal companion to an agile Design-based Research process as they provide accessible representations of the current understanding and complement theoretical and technical results. To use patterns efficiently, it is important that patterns are not used as a report-like description of an outcome. They have to evolve along-side the research activities as their structure (and the categories expressed in this structure) interacts with the research process:

- Patterns focus on (innovative) contributions while designs usually consist of more elements that are prerequisites, e.g., for deployment in practice. They therefore help to prioritize design activities in a research project.
- Patterns capture investigative results as part of better problem and context descriptions, and the difficulties in describing pattern highlight gaps in the current understanding that should be the focus of further empirical analysis. The most difficult part usually is identifying the context characteristics for the class of contexts in which the problem/solution pair is valid.
- As patterns establish a design language, they give focus to the design activities and capture the solutions.
- Evaluation, both formative and summative, yield evidence to the problem/solution pairs and in turn should be also geared towards that, which can be an important prioritizing factor in selecting the most important evaluation questions.

2.3.3 *Patterns in EmployID and Pattern structure*

In terms of the maturing model above, EmployID is currently mainly focused on the early phases (i.e., I and II, partly III) of the pattern development process. Most pattern approaches in the scientific discourse of the pattern community concentrate on the later phases (partly III, mainly IV and V), and so far, there has been little effort to systematically gear research activities towards producing such patterns. An important difference in this respect is that we use patterns not only to consolidate experiences, but also to make propositions that still need validation.

As reported in D3.1, EmployID has already started in year 1 to gear its activities towards patterns. Learning scenarios were developed that brought together practical requirements and theoretical considerations. These Learning Scenarios outlined the solution ideas. In year 2, the project concentrated on developing the solutions and getting formative evaluation feedback, which has resulted in pattern candidates that have been captured as proto-patterns. At the same time, new scenarios have (deliberately) emerged from the ongoing conversations so that we have a healthy mixture of early stage ideas and problem-solution pairs ready for gathering targeted evaluation results that support (or reject) the proposition.

Selecting an appropriate pattern structure therefore was not easy, given the myriad of different pattern structures. A least common denominator included the following sections:

- Problem which is to be solved, described in a generalized way
- Solution to the problem
- Context in which the solution is a solution for the problem at hand
- Evidence or examples that the solution is a solution to a specific real-world instance of the problem

As in a Design-based Research context, theories are an important element, we have added a section on “Analysis”, which interprets the problem in a theory context. This does not apply to all patterns yet. This is reflected in the following structure:

<ID>	<TITLE>
Maturity	Phase of the maturing model plus explanatory details
Problem	What is the learning problem that has been addressed? This encompasses a sufficiently generalized version of a learning scenario
Analysis	Interpretation of the problem from a theory perspective
Context	What are the relevant contextual factors that determine if the proposed solution is actually (and maybe allegedly) successfully applicable?
Solution	What is the (socio-)technical solution?
Evidence	Accumulated evidence that the solution is a solution to the problem when the contextual conditions are met, e.g., examples in a specific context, but also feedback from external stakeholders that problem-solution pairs appear applicable in other contexts.

The pattern candidates are presented in the context of the individual solutions. A summarizing high-level analysis is presented in section 10.2.

3 Evaluation Framework

The evaluation framework of EmployID was described in the updated D7.1 and contains the main research questions and expectations from PES partners, the iterative approach towards evaluation as well as the applied evaluation instruments.

In the following section we want to give an update on the selected evaluation instruments and the indicator framework for impact assessment of EmployID interventions, which builds on the first version presented in D7.1.

The practical application of the evaluation framework to evaluate EmployID solutions in context (see chapters 4 to 7), as well as first evaluation results of the first pilot social learning programme (aka “MOOC”) are presented in 4.8.6 of this document.

3.1 Updates on Methods and Instruments

3.1.1 *Self-assessment questionnaire*

With the need to better understand identity transformation and its facilitation in European PES, a core tool that we started to trial in the second year of the project is the self-assessment questionnaire. It has been designed in a way to serve across the different case pilots and will be provided to users of the EmployID tool suite in all PES organisations.

The questionnaire follows two principal purposes: 1) to foster the users’ self-reflection by supporting them in the observation of their ‘distance travelled’ in key aspects of their identity development and 2) to feed into evaluation by conducting a pre/post - evaluation to bring evidence for the impact of EmployID interventions and answer the EmployID research questions.

The self-assessment questionnaire contains questions to investigate individual, emotional, relational and practical development in Identity Transformation. These blocks are described in the updated D7.1. The self-assessment questionnaire is an instrument that intends to collect data from all EmployID interventions in the different PES organisations. It contains a core set of questions for cross-case evaluation as well as intervention-specific questions that can be selected if they fit the context (e.g. coaching specific questions, reflection specific questions).

Following the latest update of D7.1. the evaluation scrum team finalised the self-assessment questionnaire:

In intense discussions with the PES organisations a selected number of evaluation items was chosen: This selection reflects the evaluation needs and expected impacts from EmployID interventions of the involved PES, the evaluation needs from the different work strands (e.g. coaching, reflection) and covers the success factors for identity transformation. The applied measurement scales were adapted, measuring changes in individual learners via 1) actual behaviour (How often do participants get involved in specific behaviours?), 2) perceived importance (How important do participants think that a certain behaviour is for the personal professional development) and 3) attitudes (Which attitudes do participants have towards learning with and from others?). The reasoning behind the selection of the three scales is that we want to measure actual changes in participants’ behaviour, but changes in behaviour are to be expected on long-term and be preceded by changes in attitudes and the awareness that a certain behaviour is important for one’s professional development.

3.1.1.1 Cognitive pre-tests and back-translations

The first version of the English questionnaire was subject to cognitive pre-tests. Cognitive pre-testing aims to increase the comprehension, validity and reliability of a questionnaire. They allow for identifying and evaluating sources of response error in survey questionnaires. The aim is to e.g. check if the questions are understood by respondents the way they are intended to, if the response scales fit the question format, if there are questions that are somehow critical and thus answered in a "dishonest" way etc. (Prüfer & Rexroth 2000)

The cognitive pre-tests were conducted with two persons from ZSI and contained the following methods:

3.1.1.1.1 Think-aloud-technique:

For this technique interview respondents are instructed to "think aloud" as they answer the survey question. The interviewer reads out the question and then invites the respondents to tell him/her what he/she is thinking. The interviewer then records and notes the process that the respondent uses in arriving at an answer to the question.

The main advantages of this technique are that the interviewer bias is low and the respondent's narration may provide new and unanticipated information. The method is especially valuable when the respondent is articulate. Critical about this technique is the fact that many individuals have problems with "thinking aloud" and tend to simply answer the questions that are asked, without further elaboration.

3.1.1.1.2 Probing techniques:

When applying probing techniques, the interviewer reads out the survey question and the respondent answers. Afterwards, the interviewer "probes" further into the basis for the response. This means that the interviewer asks for specific information relevant to the question, or to the specific answer given. The following probing techniques were used:

Comprehension probing: the interviewer asks the respondent what a specific term means to him/her.

General probes: includes various probing questions: e.g. the interviewer asks the respondent how he/she arrived at an answer or whether the question was easy or hard to answer or what the respondent is thinking about the question.

Confidence rating: the interviewer asks the respondent how sure her/she is about his/her answer

Paraphrasing: the interviewer asks the respondent to repeat the question in his/her own words.

The main advantage of probing techniques is that the interviewer can focus the discussion on specific areas that appear to be relevant as potential sources of response error. Probing techniques are sometimes criticized for the unusual situation they create, because the interviewer does not simply administer questions, and the respondent answers them but the interviewer interjects by asking "probing questions". This disadvantage can be avoided by instructing the respondent in a clear and transparent manner about the procedure of this type of interview prior to asking the questions.

3.1.1.1.3 Internal testing

In addition to the cognitive pre-tests the first version of the questionnaire was also tested internally by participants of the MOOC on peer-coaching (see section 4.4). As part of the MOOC participants were invited to fill in the questionnaire and provide their feedback and comments to the specific items.

The feedback from the cognitive pre-tests as well as internal testing was integrated into a revised and final version of questionnaire (see final version of questionnaire in Appendix D of this

document), which was translated to Slovenian. The Slovenian version of the questionnaire was then assessed with two ZRSZ colleagues to clarify questions about proper Slovenian wording.

To ensure that both, the English and Slovenian questionnaire, are equivalent instruments, the adapted Slovenian version was translated back into English by two different, independent persons. The back-translations were compared and differences discussed in a panel, to finally come up with the final self-assessment questionnaire in Slovenian.

3.1.1.2 Implementation

As described above the self-assessment questionnaire is distributed to participants in all EmployID cases and contains a block of general and some case specific items as well. In addition, the response frequency is case dependent. In the 2nd MOOC for work coaches participants were asked to fill in the questionnaire before the start of the MOOC and 4 weeks after the end of the MOOC.

In the Reflective Community platform the questionnaire is developed as part of the platform. Participants are invited to fill it in when registering to the platform, the first time in beginning of February 2016 and then in intervals of eight weeks of involvement.

3.1.1.3 Visualisation

As stated, the self-assessment approach in EmployID serves the individuals in reflecting on their personal progress and development. To feed the data back to the participants in an appropriate way, a visualisation approach is currently being developed. It is part of the EmployID strategy to workplace learning analytics, putting an emphasis on personal learning analytics that primarily serves the individual and gives them ownership over the data.

Visualisations will be implemented in the Reflective Community platform first, where participants fill in the self-assessment questionnaires in regular intervals. Individual results and distance travelled over different points in time will be visualised and presented to participants to stimulate self-reflection.

To visualise the complexity of data, the items of the self-assessment questionnaire are summarized into categories and these categories presented via individual development curves (see Figure 16 and Figure 17). The categorisation and naming of categories can be adapted to PES specific preferences. So far, we have developed two visualisation types.

The first type of visualisation (see Figure 16) stresses the fact that the involvement in specific *activities* changes over time. These activities are summarized in 5 categories that relate to the categories of success factors of ID transformation. Each of the categories subsume a set of questions from the self-assessment questionnaire:

Individual learning activities (relates to Individual development):

- I gain relevant knowledge and skills through on-the-job trainings or informal exchange to meet changing requirements.
- I learn from thinking about past activities.

Emotional activities (relates to Emotional development):

- I actively seek opportunities to improve my work practices.
- I adopt changes to work practices when the need arises.

Facilitation activities (relate to Relational and emotional development):

- I help colleagues in times of difficulties by asking them questions that support them in finding their own solution.
- I help clients in times of difficulties by asking them questions that support them in finding their own solution.
- I actively listen to colleagues and clients.
- I support my colleagues by addressing their feelings regarding work-related challenges.

Collaboration activities (relate to Relational development)

- I directly ask my colleagues for feedback to my work.
- I discuss with my colleagues possible solutions to work-related challenges.
- I carefully read the comments from colleagues and clients.
- I organize information, based on exchanges with colleagues and clients.

Job adaptation activities (relate to practical development):

- I actively seek opportunities to improve my work practices.
- I adopt changes to work practices when the need arises.

Clicking on the individual curves shows the detailed results of the respective category.

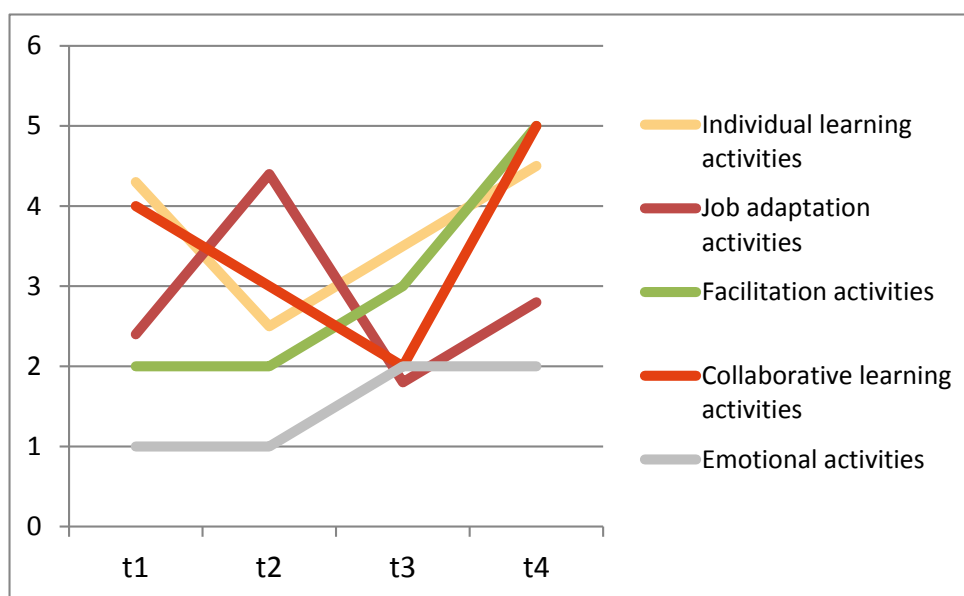


Figure 16: Distance travelled based on self-assessment questionnaires (Visualisation 1)

The second type of visualisation (see Figure 17) stresses the *personal development* of participants. The categories comprise again a set of questions from the self-assessment questionnaire:

Self-manager (relates to individual and practical development):

- I gain relevant knowledge and skills through on-the-job trainings or informal exchange to meet changing requirements.
- I actively seek opportunities to improve my work practices.
- I adopt changes to work practices when the need arises.

Peer learner (relates to relational development):

- I directly ask my colleagues for feedback to my work.
- I discuss with my colleagues possible solutions to work-related challenges.
- I carefully read the comments from colleagues and clients.
- I organize information, based on exchanges with colleagues and clients.

Facilitator (relates to relational and emotional development):

- I help colleagues in times of difficulties by asking them questions that support them in finding their own solution.
- I help clients in times of difficulties by asking them questions that support them in finding their own solution.
- I actively listen to colleagues and clients.
- I support my colleagues by addressing their feelings regarding work-related challenges.

Emotional Stress Manager (relates to emotional development):

- I support my colleagues by addressing their feelings regarding work-related challenges.
- I remain positive in difficult situations.
- I actively deal with my feelings in work situations.

Reflective Learner (relates to individual development):

- I learn from thinking about past activities.

Again, by clicking on the individual curves, the detailed results for each category will be shown.

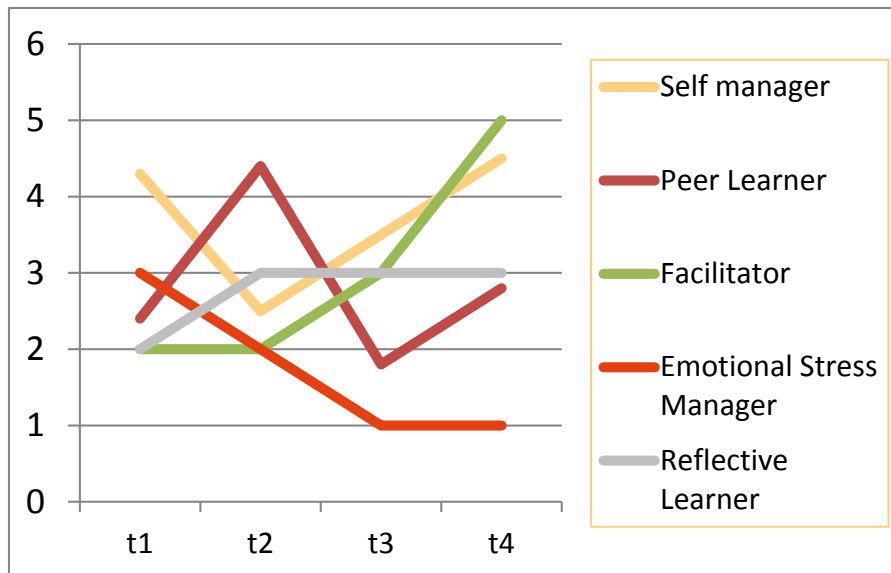


Figure 17: Distance travelled based on self-assessment questionnaires (Visualisation 2)

The development and implementation of the self-assessment visualisation is still in progress. Its first application as part of the Reflective Community platform is foreseen for March 2016. First experiences will inform our understanding of how learners are impacted by the observation of their distance travelled, feeding into Research Question 8 (Which forms of workplace learning analytics can we apply in PES and how do they impact the learner? How can learning analytics contribute to evaluate learning interventions?). PES core partners have chosen from the two different types of visualisation as shown above, which will provide us the opportunity to learn about the application of the different types in practical context.

3.1.2 Analysis of Activity logs

Activity logs of EmployID tool-usage are another relevant information source for our approach to evaluation and learning analytics. The available data depend strongly on the context of implementation: in the case of MOOC 1 and MOOC 2, FutureLearn provides a set of fixed data that can be used for further analysis; for the Reflective Community platform a plugin was developed by the EmployID team to track details of user activities on the platform (see D7.1).

For the evaluation of the MOOC 1, the FutureLearn platform provided a set of usage statistics, which were cleaned and transferred to a MySQL database for the further analysis of user types by the EmployID evaluation team (see Appendix C). The result of this analysis was a better understanding of how deeply participants of the MOOC got involved in the learning. Users were attributed to groups according to their behaviour in FutureLearn.

These were: 1) Learners, who viewed at least one step at any time in the course; 2) Active Learners, who completed at least one step at any time in the course; 3) Returning Learners, who completed at

any time at least a step in at least two distinct course weeks; 4) Social learners, who posted at least one comment on any step; 5) Fully Participating Learners, who completed at least 50% of the available steps and completed tests (if included). The same procedure will be applied for the evaluation of usage data from MOOC 2. The preparation work for MOOC 1 helps to automatize this procedure for all future MOOCs and thus decreases future efforts.

For the evaluation of the Reflective Community Platform the analysis of activity logs will provide insights to the following EmployID research questions (all EmployID research questions are listed in the updated D7.):

Research Question 3: How do practitioners facilitate the learning of others linking individual, community and organizational learning (social learning) and which roles can be identified?

Based on selected information of the activity logs, we will cluster groups of individuals that are similar to each other in their user behaviour into subgroups that have similar response patterns. For this cluster analysis we will consider different aspects of user behaviour, such as: reflection, learning and facilitation. We will then track important variables across all clusters to analyse differences between clusters and we will look at the composition of each cluster. Furthermore, we will carefully look at the relationship of cluster membership to other variables, such as, for example items of the self-assessment questionnaires. To do this, we will save a cluster membership variable for each case and examine the relationship between the clusters (focusing on behavioural aspects) and variables of the self-assessment questionnaire (focusing on attitudes). For this analysis we will use different statistical techniques, such as descriptive statistics, correlation and/or regression modelling.

Subdividing user into homogenous groups according to their behaviour helps us to identify different types of learning and facilitation as well as different user roles in the Reflective Community platform. The analysis of the cluster composition as well as the analysis of relationship of cluster membership to other variables brings insights in how far different user activities in the Community platform correlate with success factors of Identity Transformation and the expected impacts from PES.

Research Question 5: How does reflection and sharing of knowledge in Communities of Practice support Identity transformation processes? How does informal learning, reflection and sharing of knowledge across hierarchies happen in Communities of Practice?

Research Question 7: How is community learning taking place in work-based social learning platforms and how can it contribute to the professional development of PES practitioners?

We will address these research questions by conducting the following analysis procedures:

- Based on descriptive statistics, we will analyse the activity logs (length of visit, number of pages accessed, number of comments shared, number of contacts etc.) to present the broad range of activities conducted, their importance as well as their frequency.
- Selected items of the self-assessment questionnaire are further integrated into a “professional development index”. This index will be a composite index of the relevant effective items and will be constructed using an additive model. The index will be assessed for goodness of fit and validity. To compare attitude aspects (reflected in the professional development index) with behavioural aspects we will correlate the “professional development index” with general activities based on logging data.

While in the first step we deepen our understanding about general behaviour in the Community Platform, the correlation helps us to understand its link to Identity Transformation.

Further activities related to the analysis of logging data are part of learning analytics and described in detail in section 7 of this document.

3.1.3 Coding of Content

The analysis of comments and content shared within the EmployID tools can support the answering of several research questions:

- Identifying aspects of identity transformation (Research Question 1: To what extent are identity transformations taking place in PES organisations (including Core aspects, motivational drivers and barriers)
- Identifying learning and facilitation activities (Research Question 3, 4, 5)
- Collecting evidence for individual and organisational changes (Research Question 2; innovations, shared best practice)
- Formative feedback

When conducting the evaluation of the 1st MOOC, the coding of comments shared between participants on the FutureLearn platform resulted in rich insights about aspects of identity transformation and learning from and with others, that are introduced in section 4.8 of this document. The codes for this analysis were created inductively based on (Mayring 2000) and then investigated according to the success factors of Identity Transformation. As Identity Transformation in PES organisations is an open field of research and we expect new categories to evolve over time, we will continue with this approach in the 2nd MOOC.

In addition to the inductive coding the EmployID evaluation team will apply deductive analysis to investigate the reflection in content of the Reflective Community Platform following a fixed coding scheme for reflection (Prilla et al. 2015).

Similar to the coding approach applied for reflective actions we are currently working on a new coding scheme for learning facilitation in EmployID. Based on existing models of facilitation (e.g. Hyland et al. 2012) and facilitation requirements identified within the PES organisations, a fixed scheme for coding will be developed and applied the first time for the analysis of content shared in the Reflective Community platform.

Going one step further and exploring innovative methodological approaches, we plan to trial some machine learning approach of (semi-) automatic detection of reflection and facilitation in text. This machine learning approach is an important future aspect of coding content, as it allows the analysis of large amounts of shared content, in different languages and not only ex-post, but continually in real time, also reflecting analysis back to learners as part of learning analytics. detection of reflection and facilitation in text. This machine learning approach is an important future aspect of coding content, as it allows the analysis of large amounts of shared content, in different languages and not only ex-post, but continually in real time, also reflecting analysis back to learners as part of learning analytics.

3.2 Indicator Framework

3.2.1 Progress and current status

In our last deliverable, we presented our indicator framework which should on the one hand help PES to conduct a holistic impact assessment of their social learning interventions and on the other hand give us the opportunity to show how and which parts of PES social learning performance we plan to or already do measure within EmployID.

During the last project year, the development of our indicator framework progressed in two aspects:

1. Firstly, we divided the formerly “learning and development” perspective into two separate perspectives, named “individual learning and development” and “collaborative learning and development”. The distinction between individual and collaborative learning and development is crucial within our project context and also reflects the project’s focus on perspectives associated with social learning, employee’s and organizational development. The indicators in the first perspective shall track individual learning, reflection and identity transformation processes that influence traits of character regarding the relation to oneself. Indicators in the collaborative perspective track consequences of collaborative learning activities like coaching, facilitation or other collaborative interventions or changes in rather relational traits of character that are associated with the interaction with other persons resp. peers in a narrower sense.
2. Secondly, we increasingly filled our framework with concrete, applicable and targeted indicators that are important for the different evaluation activities in our on-going EmployID interventions. The indicators are associated to the appropriate cells of the framework and prove that our interventions and evaluation activities cover large amounts of the relevant PES perspectives. Additionally, the overview helps us to identify possible gaps which need to be addressed in the upcoming years. To make the relation to concepts like reflection, facilitation or professional identity transformation as close as possible, some indicators are grouped together and explicitly associated with such concepts within the framework.

3.2.2 Characterization of cells and subclasses within the framework

The following two images show the current status of our indicator framework. To improve readability the framework is here vertically split into a left and a right part. Although we made considerable progress, the presented version should be considered as work in progress which will continuously be improved and filled with additional indicators and then again concentrated on the most important ones. Thereby we guarantee a high degree of alignment between the indicator framework and the project progress.

 from COP self-assessment questionnaire
  from MOOC_i self-assessment questionnaires
 from MOOC_i statistics
  from MOOC_i interviews
  not yet addressed/common PES indicator
Yellow fields = relevant and addressable by EmployID
Orange fields = not directly addressable by EmployID




















	Individual Learning & Development	Collaborative Learning & Development
Outputs	<p>Number of participants at different learning activities/ interventions (e.g. MOOC, COP, ...)</p> <p>Content and design of the intervention/ tool (MOOC, COP, ...)</p> <ul style="list-style-type: none"> • Relevance of content for local context  • Relevance of content for specific job role  • Perceived congruency between tool design and learning expectations  	<p>Design of the Intervention/ Tool (MOOC, COP, ...) for collaborative learning</p> <ul style="list-style-type: none"> • Level of acceptance of pedagogical approach for  • Level of perceived effectiveness for collaborative learning 
Inter-mediate Outcomes	<p>Individual learning</p> <ul style="list-style-type: none"> • % Learners  • % Active Learners  • % Returning Learners  • % Social Learners  • % Fully Participating Learners  • Distance travelled on the way to become a resourceful learner  <p>Individual reflection</p> <ul style="list-style-type: none"> • level of agreement on having learnt from reflecting past activities  • Level of understanding work goals and purposes  • Level to understanding own job role (& fit into bigger picture)  • Frequency and importance of reflecting on own job role  	<p>Collaborative reflection</p> <ul style="list-style-type: none"> • Frequency and importance of discussing possible solutions to work-related challenges with colleagues  • Frequency and importance of exchange with and feedback from peers  <p>Facilitation / (Peer) Coaching</p> <ul style="list-style-type: none"> • Level of willingness /confidence and frequency to share knowledge/experience with colleagues  • Level of perceived ability to actively listen to colleagues  • Level of confidence in supporting colleagues in finding their own solutions 
Long-term Outcomes	<p>Professional identity transformation</p> <p><i>Individual development (distance travelled regarding ...)</i></p> <ul style="list-style-type: none"> • ... remain positive in difficult situations  • ... meet changing requirements  • ... confidence in solving work-related challenges  • ... confidence in sharing knowledge  • ... understanding of specific subject (e.g. LMI)  • ... confidence in facing the changing world of work  <p><i>Cognitive development (distance travelled regarding ...)</i></p> <ul style="list-style-type: none"> • ... ability to consider the bigger picture (of job, information)  <p><i>Practical development (distance travelled regarding ...)</i></p> <ul style="list-style-type: none"> • ... readiness to apply learning to practice  <p><i>Emotional development (distance travelled regarding ...)</i></p> <ul style="list-style-type: none"> • ... emotional identification with job role  • ... ability to actively deal with feelings in work  	<p>Professional identity transformation</p> <p><i>Relational development (distance travelled regarding ...)</i></p> <ul style="list-style-type: none"> • ... feeling recognised by colleagues as an expert  • ... confidence in offering expertise to colleagues  • ... feeling that own work role is central within PES 

Figure 18: Current indicator framework – left part

 from COP self-assessment questionnaire
 from MOOC_i statistics
 from MOOC_i self-assessment questionnaires
 from MOOC_i interviews
 not yet addressed/common PES indicator
yellow fields = relevant and addressable by EmployID
orange fields = not directly addressable by EmployID

Internal Processes (& employee satisfaction)	Customer (employer & job-seeker) satisfaction	Financial & wider social Impact
<p>Learning process/ framework conditions</p> <ul style="list-style-type: none"> • Time dedicated to learning at work 📅 • Time dedicated to reflection (on own work and interaction with peers) 📅 	<ul style="list-style-type: none"> • Employees' knowledge about relevant topics for customer service ☹️ 	
<p>Improvement of work/ processes</p> <ul style="list-style-type: none"> • Amount of improving / adopting work practices (or making suggestion to do so) 📅 • Amount of information exchanged amongst colleagues regarding improvement of work practices 📅 • Efficient group work 📅 • Amount of interactions amongst colleagues regarding improvement of work practices 📅 • Level of management's commitment to use social learning methods 🗣️ 	<p>Interaction with clients</p> <ul style="list-style-type: none"> • Ability to actively listen to clients 📅 • Frequency and importance of supporting clients in finding their own solution 📅 • Frequency and importance of organizing information based on exchange with clients 📅 • Customer satisfaction with the expertise of PES staff ☹️ 	<p>ROI and performance impacts</p> <ul style="list-style-type: none"> • ROI of intervention (cost-effective approach to learning) ☹️
<p>Organisational impact</p> <ul style="list-style-type: none"> • Employees' digital skills 🗣️ • Employees satisfaction ☹️ • Service quality (for job-seekers, employers) ☹️ 	<p>Customer satisfaction</p> <ul style="list-style-type: none"> • Reputation of organisation amongst clients ☹️ • Job seeker satisfaction ☹️ • Employer satisfaction ☹️ 	<p>Social impact</p> <ul style="list-style-type: none"> • People in jobs instead in LMP ☹️ • Savings for social systems ☹️

Figure 19: Current indicator framework – right part

In the following table, we will briefly describe the cells and subclasses related to theoretical concepts of the framework to guarantee for a good understanding of the underlying deliberations:

horizontal	Vertical	Description
Individual learning & development	Output	<p>Content and design of intervention</p> <p>Indicators in this section assess the content and design of interventions that should enhance individual learning. These are considered as output measures because well-designed interventions don't reflect the achievement of goals as such but rather build the basis for improvements in PES employee's individual development. Indicators are designed in a way that they measure the fulfilment of requirements to suitable learning interventions that participants considered as useful.</p>
	Intermediate outcome	<p>Individual learning</p> <p>Individual learning indicators measure how employees engage in certain learning interventions, how much they really learn and how their mode of learning develops.</p>
		<p>Individual reflection</p> <p>Individual reflection indicators measure aspects of individual reflection which means reflecting without direct help from others (e.g. via coaching). This contains for instance the frequency with which PES employees reflect about their daily work, the perceived importance of reflecting or a perception about how beneficial reflection is.</p>
	Long-term outcome	<p>In the long-term, interventions should be able to trigger the desired professional identity transformation process leading to changes in traits of character or general attitudes towards changing work environments. In particular, we try to measure the distance travelled at a current time point compared to a baseline regarding different aspects. We use the common conceptual segmentation of professional identity transformation to classify our indicators and to make sure we cover all aspects.</p> <p>Professional identity transformation</p> <ul style="list-style-type: none"> • individual development • cognitive development • practical development • emotional development <p>(Note: "relational development" is covered in the "collaborative learning & development" perspective)</p>

Collaborative learning & development	Outputs	<p>Design of the intervention/tool for collaborative learning</p> <p>Analogue to the corresponding section in the individual learning perspective, indicators in this section cover the design of interventions resp. tools that support collaborative learning processes.</p>
	Intermediate outcome	<p>Collaborative reflection</p> <p>Indicators for collaborative reflection cover reflection activities which are triggered by interactions with other persons. They incorporate the occurrence of collaborative reflection as well as the perceived importance of such reflective processes for social learning and work development.</p>
		<p>Facilitation / (Peer) Coaching</p> <p>Indicators that focus on facilitation and (peer) coaching measure the willingness, confidence and perceived ability to support colleagues, for instance by sharing relevant knowledge or helping them to find solutions to actual problems.</p>
	Long-term outcome	<p>Professional identity transformation - relational development</p> <p>In the long term, collaborative learning interventions shall trigger professional identity transformations regarding relational development. It covers employee's abilities to effectively interact with other colleagues or clients. Analogue to other aspects of professional identity transformations, these indicators track distance travelled instead of absolute values.</p>
Internal Processes (& employee satisfaction)	Outputs	<p>Learning process/framework conditions</p> <p>In the internal processes perspective at output-level, indicators assess the circumstances under which learning processes take place. Analogue to other perspectives, these output indicators don't measure goal achievement as such but rather assess the conditions that build the basis for changes and improvements in the medium resp. long term. For instance, the amount of time during daily work that is or could be dedicated to learning is considered as a process-related prerequisite for improvements at outcome level.</p>
	Intermediate outcome	<p>Improvement of work/processes</p> <p>The improvement of work-related processes is a mid-term goal that can be achieved in our particular context for instance by continuous reflection about current work processes and improvement potentials. Indicators track these changes to prove the positive impact of interventions not only from an individual but also from an organizational viewpoint.</p>

	Long-term outcomes	<p>Organisational impact</p> <p>In the long term, the above described changes should have a wider organisational impact concerning the overall level of employees' satisfaction and their digital skills. Also, the quality of services provided to job-seekers and employers is a main long-term goal that is measured in this area and associated with the organisation and development of internal processes.</p>
Customer (employer and job-seeker) satisfaction	Outputs	<p>Outputs in the customer satisfaction perspective assess rather quantitative measures that might have a positive impact on customer satisfaction. One example is the knowledge of PES staff about topics that are relevant for customers. This can be considered as a desirable output from well-designed learning interventions, and also as a prerequisite for the possibility to deliver good services to customers. With some time delay this improved services should then lead to a higher satisfaction of customers with PES services. Another example for an output indicator is the time dedicated to work with clients. Although this indicator gives no insights about the quality of customer service, it is also a relevant factor towards overall customer satisfaction.</p>
	Intermediate outcome	<p>Interaction with clients</p> <p>The way in which PES employees interact with clients is an important intermediate outcome towards customer satisfaction. Indicators in these section cover the ability of PES staff to support clients in the best possible way. This incorporates for instance the ability to actively listen to clients or the frequency of supporting them in finding their own solutions. These competences might be for example reflected by the customer's satisfaction with the expertise of PES staff which can be influenced by targeted PES trainings.</p>
	Long-term outcome	<p>Customer satisfaction</p> <p>The satisfaction of customers, i.e. job-seekers as well as employers, is the main goal in this perspective. However, due to its complexity, customer satisfaction and the overall reputation of PES amongst its clients can only be influenced in the long-term and in an indirect way. Therefore, EmployID interventions cannot directly impact on customer satisfaction. However, we argue that successful learning interventions can lead to improved work practices and improved interaction with clients in the medium term, which will improve customer satisfaction bit by bit in the long term.</p>

Financial and wider social impact	Outputs	Output indicators in the financial perspective show quantitative financial values that have to be set in relation to other measures to get qualitative insights. A financial indicator could for example be the total financial effort for staff training interventions. This indicator gives only a restricted view about PES activities and could e.g. easily be reduced by abandoning trainings. However, in conjunction to the assumed benefits of trainings (intermediate outcome) it builds a more holistic view of the value-added and efficiency of training interventions.
	Intermediate outcome	ROI and performance impacts From a financial viewpoint, return on investment (ROI) and performance impacts can be considered as success measures at intermediate outcome level. Whereas the other perspectives focus on the quality of staff development, internal processes and customer services as qualitative benefits of our learning interventions and trainings, this section judges these values in relation to (financial) effort and hence, indicates the value-added and efficiency of these interventions.
	Long-term outcome	Social impact The final goal of PES is the social impact on the situation at the labour market. Ideally, the number of job-seekers and vacancies should be reduced which can be measured by quantitative indicators like e.g. the total number of people in jobs, the total number of job-seekers or savings for social systems. However, the difficulty in this perspective is that these goals are highly dependent on many environmental aspects that cannot be fully controlled. So it is nearly impossible to generate net indicators or infer how much certain interventions contributed to changes in these indicators. Therefore, this perspective is out of direct scope for EmployID and might only be addressable by the use of “effect chains” connecting these long-term-outcomes to directly addressable indicators of our framework.

3.2.3 Types of effect chains and analysis methods

In D7.1, we stated that within our restricted project duration and with the restricted amount of available data, we won't be able to measure impacts on every level. Especially the high-level goals of PES to generate a considerable social impact won't be assessable by EmployID since these effects will turn visible in some years and depend highly on many environmental conditions that we cannot control for. These circumstances emphasize the importance of assumed cause-and-effect relationships between certain perspectives, indicator types and even concrete indicators.

We comprehensively studied the relevant research literature on different types of effect chains in various indicator frameworks. As we based one dimension of our framework largely on the Balanced Scorecard (BSC), which can be considered as one of the most popular management frameworks (e.g. Hoque et al. 2012, p. 529), we first focussed on evidence about the linear, one-way cause-and-effect chains (Brignall 2002, p. 2) postulated by Kaplan & Norton, the inventors of the BSC.

Cause-and-effect chains are considered by Kaplan and Norton themselves as well as by other researchers as a core feature of the entire BSC concept (e.g. Yu et al., p. 1; Hoque et al. 2012, p. 529; Janeš 2014, p. 205; Nørreklit 2000, p. 77). There is some evidence that companies that have modelled causal linkages between measures are more successful (Soderberg et al. 2011, p. 694f.). Nevertheless, only 30% of companies using BSC also have causal chains in place (Tayler 2010, p. 1098f.), which might be a first indication for the enormous complexity of defining and proving robust effect chains. This is underpinned by that fact that even after 20 years of studies on BSC, there is only “little empirical work on the relationships and causality among balanced scorecard perspectives”. (Hoque 2014, p. 48) Only a very small amount of research papers (namely 0,8%) is concerned with causal relationships (Hoque 2014, p. 37).

3.2.3.1 Debate about validity of assumed causal relationships

In recent years, a debate in research about the existence of the assumed causal relationships evolved. This debate is mainly brought up by Nørreklit et al. They doubt the existence of such relationships as postulated (Nørreklit 2003, p. 592) and criticize that Kaplan & Norton have been so vague and ambiguous in defining the conditional statements (Janeš 2014, p. 216; Nørreklit 2000, p. 72) that they cannot “be considered as specific cause-and-effect statements” (Nørreklit et al. 2012, p. 503). The sceptics further state that Kaplan & Norton rather based their assumptions on personal experiences than on empirical evidence or substantial reasoning. (Nørreklit et al. 2012, p. 496)

Another interesting aspect of the debate concerns the type of relation that exists between certain indicators or perspectives. Some authors claim that Kaplan & Norton used the concept of causality in a broad (and maybe ambiguous) sense that differs from the rather strict philosophical understanding. (Bukh & Malmi, p. 5) This leads to some authors interpreting Kaplan & Norton’s deliberations in a sense that they did not explicitly claim the existence of causal relationships but rather consider strategy as a set of hypotheses of whom only some prove right. (Bukh & Malmi, p. 7).

Anyway, the ambiguous and imprecise definitions by Kaplan & Norton and the lack of empirical evidence that supports causal relations gives room for discussions and alternative interpretations. Some researchers argue that the lack of evidence “reflects the presence of logical and finality relations among financial and non-financial performance measures”. (Malina et al. 2007, p. 964; cf. also Brignall 2002, p. 5) Others believe that Kaplan & Norton themselves sometimes referred to the concept of finality instead of a causality (Bukh & Malmi, p. 5), maybe without knowing to do so. As finality and causality are fundamentally different concepts, it would have major consequences on the practical implications and real-life application of the BSC if the assumption that underlying relations are causal would have to be given up. (Nørreklit 2000, p. 77)

The theoretical analysis of this debate shaped our understanding of the complexity that underlies the identification and examination of effect chains. To define precise and correct relations is a very complex and ambitious task, keeping in mind that even the well-established, 25 year old BSC did not really succeed to do so. In our context, we also have to be careful with the term “causality” that might be common sense but not the most precise expression. We thus decided to avoid the term “causal relationship” and rather use the more general term “effect chain” instead.

3.2.3.2 Effect chains

The term “effect chain” represents general chains of relationships between indicators within a framework that can potentially be of any type. Instead of claiming to solely comprise causal relationships (as it might be common sense), the expression “effect chain” remains general and hence is able to consist of various relationship types, including causal and logical ones.

Before we come up with concrete effect chains in our particular context, we want to gain a thorough and robust understanding of the different possible relationship types and their differences. The most important ones are briefly described in the following section.

3.2.3.3 Description of different types of relations within effect chains

Causality

Causal relationships reflect phenomena of the empirical, physical world and can thus only be inferred empirically; they are “part of the structures of the empirical world”. (Nørreklit 2000, pp. 70) An appropriate example for a cause-and-effect relationship exists between smoking and lung cancer. Both occurrences can be observed and associated with each other empirically (Nørreklit 2000, p. 70). Even though most authors refer to the relations among measures as cause-and-effect relations, causal relations are in fact very uncommon in performance management systems except for physical production processes (Malina et al. 2007, p. 964).

Logic

Logical relations in contrast to causal ones exist based on human constructs or definition and turn out to be possibly more common in performance management (Malina et al. 2007, p. 962). As results of human constructs, such as language or mathematics, logical relations cannot be inferred empirically but determined rationally instead. Suitable examples for logical relations might be two and two equalling four (Nørreklit 2000, p. 70).

Especially in the context of the BSC there are many examples of relationships that could be considered to be rather logical than causal. The correlation of customer loyalty and financial success serves as a good example. Nørreklit analyses that in some publications loyal customers are defined as the type of customers generating only low costs for the company and accepting high product prices (Nørreklit 2000, p. 73). The fact that these properties are assigned to the respective customers by a human concept already suggests that the relationship might be logical and the so-called effect is already inherent in the definition of a premise. According to Nørreklit, Kaplan and Norton’s postulation that a large market share with highly profitable customers drives a good financial result is a similar misleading attribution to causation where in fact a logical relationship is in place. Empirically found correlations which sometimes are interpreted as proves of causality might also result from the fact that the underlying concept of the two measured constructs is very similar and thus only a (trivial) logical relation exists. (Nørreklit 2000, p. 73; Nørreklit 2003, p. 616).

Finality

A finality relationship brings together human actions, beliefs and desires in a teleological sense. It exists whenever (a) a person believes that a given action is the best mean to an end, and (b) the belief, desire, action, and end are related by custom, policy, or values (Malina et al. 2007, referring to: Arbner & Bjerke 1997). According to teleology, an action is taken when it “conform[s] to the wishes and beliefs of a person” (Malina et al. 2007, p. 963) and thus builds a reciprocal relationship between ends and means. This implies that a certain action “is not a reflex but is due to human volition” (Nørreklit 2000, p. 76f.). The fact that the basis of an action is not merely a simple stimuli-response-coupling makes it comprehensible that we sometimes move away from a goal at first because this is necessary to finally reach it. Nørreklit presents the following example for such a necessary detour in an economic context: “a satisfactory financial result may be obtained by first supplying a good product at low prices, making customers very satisfied and gaining a market share and an image, and then later reducing the level of satisfaction by raising prices.” (Nørreklit 2000, S. 76f.) Another implication is that any chosen means is just one out of several opportunities that might lead to a desired end, “and each means may have numerous other effects”. Thus, finality relations might be “idiosyncratic to a particular setting or context” (Malina et al. 2007, p. 963) and general laws from which certain actions follow cannot be assumed. (Nørreklit 2000, p. 76f.)

Furthermore, finality relations “often rely on incomplete arguments” with lacking premises that could be “ceteris paribus conditions that are nearly impossible to control in natural settings”. According to Malina et al., the complexity of relations and the lack of independence of phenomena (which violates one of Hume’s criteria for causality) indicate finality relations and make them a

fundamentally different concept compared to causal relations. (Malina et al. 2007, p. 963, referring to Mattessich 2005) However, many researchers (Toepfer, 2004; e.g. Stegmüller 1983 or Davidson, 1963) in the field of philosophy of science or in action theory aren't in line with this clear separation but rather interpret the concepts of finality and causality as dependent or overlapping.

As well as for logical relations, statistical analysis is only a restrictedly suitable mean to derive statements about the validity of certain relationships. It might help to "establish context-specific reliability of a finality relation, but it cannot be definitive". Nevertheless, "financial analysis of costs and benefits of finality-driven strategies might explain their use and longevity despite statistical insignificance of finality relations among measures." (Malina et al., p. 964f.)

Other dimensions

Relations between indicators aren't merely characterized by their dependency type but by several other properties as well. During our work on indicator relations, we also considered further aspects like intensity, reliability and quantifiability, algebraic sign, directionality (unidirectional, bidirectional, loop) and intra- vs. inter-perspective relations.

3.2.3.4 Description of appropriate tools

After having investigated dimensions and according types of relationships, we conducted a desk research about appropriate methods to identify and prove relationships which have been specifically applied in different impact assessment frameworks. Four tools, which are briefly described in the following section, fulfilled this requirement and have been investigated with respect to their applicability.

3.2.3.4.1 Qualitative reasoning

Qualitative Reasoning is a method to model the causal coherencies between multiple elements of a complex system, even if there are no or very little quantitative information available (Hügen 2008, p. 6). With the help of Qualitative Reasoning it is possible to reduce the complexity of regarded models and to decouple from the necessity of having quantitative information available as it focusses on qualitative information (Hügen 2008, p. 12). The approach aims to identify a system's structure via modelling and subsequently deriving its dynamic behaviour by for instance simulation (Werthner 1994, p. 1). Qualitative Reasoning originates from the qualitative physics but has additionally been introduced into various fields of applications, including engineering, economics and artificial-intelligence research (Hügen 2008, pp. 7 f & 131). It is especially suitable for models which are too complex for quantitative simulations or where quantitative simulations aren't necessary, since the determination of the model's rough behaviour would be sufficient (Hügen 2008, p. 7).

In relevant literature, there can be found an application of Qualitative Reasoning to particular BSC context by Torben Hügen which very much fits to our purposes. He first constructs a procedure model which also includes the identification of effect chains and their illustration (Hügen 2008, p. 13). In this procedure model the effect chains connecting multiple strategic goals are based on subjective assumptions by the employees (Hügen 2008, p. 328). A qualitative simulation based on these assumptions therefore provides findings that still require the same verification as the assumptions these findings are based upon.

Aside from this main shortcoming, Qualitative Reasoning has proven to be an effective tool that enables detailed modelling and simulation suitable even for very complex systems with little or no quantitative information available, thereby illustrating the eventual net impacts of single strategic goals by clearing their particular influences (Hügen 2008, pp. 6 & 12).

3.2.3.4.2 System dynamics

System Dynamics can be defined as "a set of conceptual tools that enable us to understand the structure and dynamics of complex systems." (Sterman 2000, p. vii) It represents a modelling

method that supports formal simulations of such systems (Sterman 2000, p. vii) to gain insight into complex problems. It has already been applied in various fields like manufacturing and natural sciences, but also in business areas e.g. to exert influence on the management's strategic thinking and thus to improve decision-making processes (Forrester 1961; Hoque et al. 2012, pp. 531 f).

In general, System Dynamics subsequently applies several "qualitative" and "quantitative" tools (Hoque et al. 2012, pp. 531 f). The qualitative tools comprise mapping tools that actually enable the modeller to gain a broader understanding of the underlying complex system by organizing and formalizing knowledge about it. The first of the two mapping tools, the "causal loop diagram", displays the influences throughout the system via connections between certain variables that are marked with their polarity displaying whether its influence is positive (+) or negative (-). (Hoque et al. 2012, p. 532). It is well suited for illustrating the connections and influences between multiple elements of the observed system. The second mapping tool, the "stock and flow diagram", displays the system's resources as stocks and the influences altering the stocks as flows. It furthermore differentiates between inbound and outbound flows explicitly illustrating the effects that respectively increase and decrease the stock. (Hoque et al. 2012, pp. 532 f). With the help of System Dynamics' quantitative tools, other dynamical aspects like time delays are also integrated.

Some researchers have pointed out the particular benefits of System Dynamics when it's applied to BSC. One of the most essential advantages is the explicit visualization of relations with the help of the qualitative diagrams and the ability to perform scenario simulations. Other significant benefits are the special consideration of time delays between cause and effects that often result in preliminary negative but in the medium- or long-term eventually positive effects. Contrary to BSC (Brignall 2002, p. 2), System Dynamics moreover considers the "causal" relations between variables not to be unidirectional but organized in feedback loops instead.

We consider System Dynamics as a suitable tool for both illustrating the elements and relations of complex systems as well as performing comprehensive simulations based on multiple scenarios to facilitate decision-making. However, the initial hypotheses and qualitative diagrams as well as the mathematical model all rely on mere assumptions. Even though Akkermans & Oorschot allege that the mathematical model enables assumption validation by quantification (Akkermans & Oorschot 2002, p. 6), this quantified model only relies on further assumptions itself. In conclusion, System Dynamics with all its benefits does not provide any mechanisms that actually verify the initial hypotheses and is therefore inappropriate for examination of effect chains.

3.2.3.4.3 *Granger causality*

Granger Causality is a method to determine causal relations between multiple variables and thus extends the statistical concept of correlation. It applies time series analysis of the considered variables to determine their causal dependency. This causal dependency can be alleged between two exemplary variables X and Y (where Y is dependent on X) if the application of lagged values from X in addition to the lagged values from Y improve the forecast of Y. (Granger, 1969)

One essential requirement is that the determination should consider all available sources of information. According to Schulze, one of the most important points of criticism refers to the risk of determining a relation between two variables X and Y under exclusion of a third actually relevant variable Z. What at first seems to be a valid relation, could become invalid as soon as variable Z got included as well.

Malina et al. applied Granger Causality within a study aiming to assess the cause-and-effect relationships within the BSC. The study relies on empirical data from a real company spanning 31 quarters (1997–2005) and on transcriptions of interviews with distribution managers, distributors and BSC designers. The interviews were used to develop a set of hypothesized cause-and-effect relations in the form of mathematical equations. Thereafter, the researchers applied the gathered empirical data on these equations in order to subsequently test them on Granger Causality. (Malina et al. 2006, pp. 935, 941, 946).

In conclusion, the application of Granger Causality in this context yielded rather unsatisfying results because all hypothesized relations were insignificant or at least showed insignificant predictive ability. Evidence to support causality within this context and with the help of Granger Causality is therefore quite limited (Malina et al. 2006, pp. 960 ff).

The application of Granger Causality to estimate the actual relations and verify their predictive ability appeared to be the first observed approach to actually address the verification of effect chains instead of just modelling and performing simulations. However, the shortcoming of Granger causality for our purposes lies in its attribute to be an a-posteriori method. Practically, applying Granger causality in our context would require a large amount of historical data about two variables that is collected at many different time points and under stable environmental circumstances (i.e. ceteris paribus conditions). Unfortunately, it is unrealistic that we can rely on such data. Additionally, as Malina et al.'s study show, the application of Granger causality in real-life contexts rather seem to refute the existence of effect chains between the Balanced Scorecard's strategic goals instead of verifying them.

3.2.3.4.4 Taxonomy

To make the investigated methods comparable, we developed a two-dimensional taxonomy to display the tools in a method map (see below).

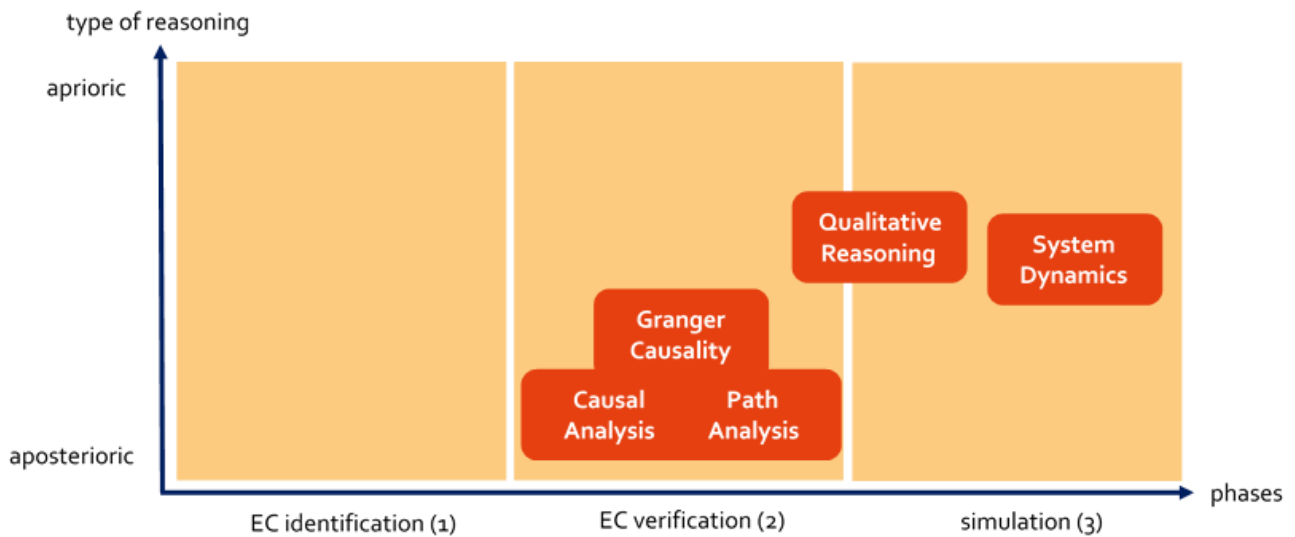


Figure 20: Method map: Approaches to verify effect chains

In our new understanding, the desired development of effect chains within our indicator framework can be split into the three following phases (first dimension of taxonomy):

1. Identification of effect chains
2. Test and verification of assumed effect chains
3. Simulation of entire system consisting of various indicators and effect chains to determine net effects from indicator changes

The second dimension of the EmployID taxonomy classifies the considered methods according to the type of knowledge they depend on respectively to the reasoning type they use. In the field of philosophy, Immanuel Kant has established the terms “a priori” and “a posteriori”. “A priori” refers to knowledge that is derived without prior direct experiences and support of empirical data, but based on related experiences and subsequent logical argumentation instead. Empirical data and past-related immediate experiences on the other hand are characteristics of knowledge that can be referred to as “a posteriori” (Kant 1855, pp. 1). Therefore, methods that rely on experience or past-

related empirical information will be categorized as “aposterioric”. Methods that neither require empirical data nor prior direct experiences, but rely on future-oriented coherent, formal-logical reasoning instead will be referred to as “aprioric”.

3.2.3.4.5 Summary and outlook

In the end, we have to conclude that the investigated tools do not free us from assuming causal relations in a first step. Instead, they provide support either in analysing assumed relations a posteriori with empirical data or in simulating the complex interaction of a system of different values and relations. Thus, these tools can possibly be highly beneficial in a later step, but do not support us in identifying and describing causal relations in a first step. Even for the evaluation of yet postulated effect chains, most tools can be classified as rather aposterioric, which means that we would need an extensive empirical data base to apply them, which will be difficult to gain in our particular context due to privacy issues and the restricted project duration. However, we have now a clear overview about the steps to go and the few tools that might support us. As we meanwhile can rely on a more sophisticated version of our indicator framework with real indicators from different social learning interventions, we will try to follow this phases approach to identify effect chains in our particular context. It is evident that we have to take a manual and individual approach for the first step, as we need to postulate plausible effect chains based on reasoning and literature research for individual indicators. We will probably only in some cases be able to validate these chains by empirical data with the investigated methods. Our approach is a solid and robust reasoning based on literature research combined with practical experience from our PES partners in the first step.

To sum up, our quite extensive literature research indicates that even well-established tools cannot provide robust and reliable effect chains. Nevertheless, the conducted work highly increased our understanding of the various aspects we have to take into consideration when developing effect chains. For instance, we'll have to be careful to use the common expression “causal relation” and can distinguish between tools that aim for proving relations and methods to simulate complex systems consisting of multiple indicators and relations between them.

3.2.4 Identification and qualitative description of exemplary effect chains

3.2.4.1 Effect Chain 1:

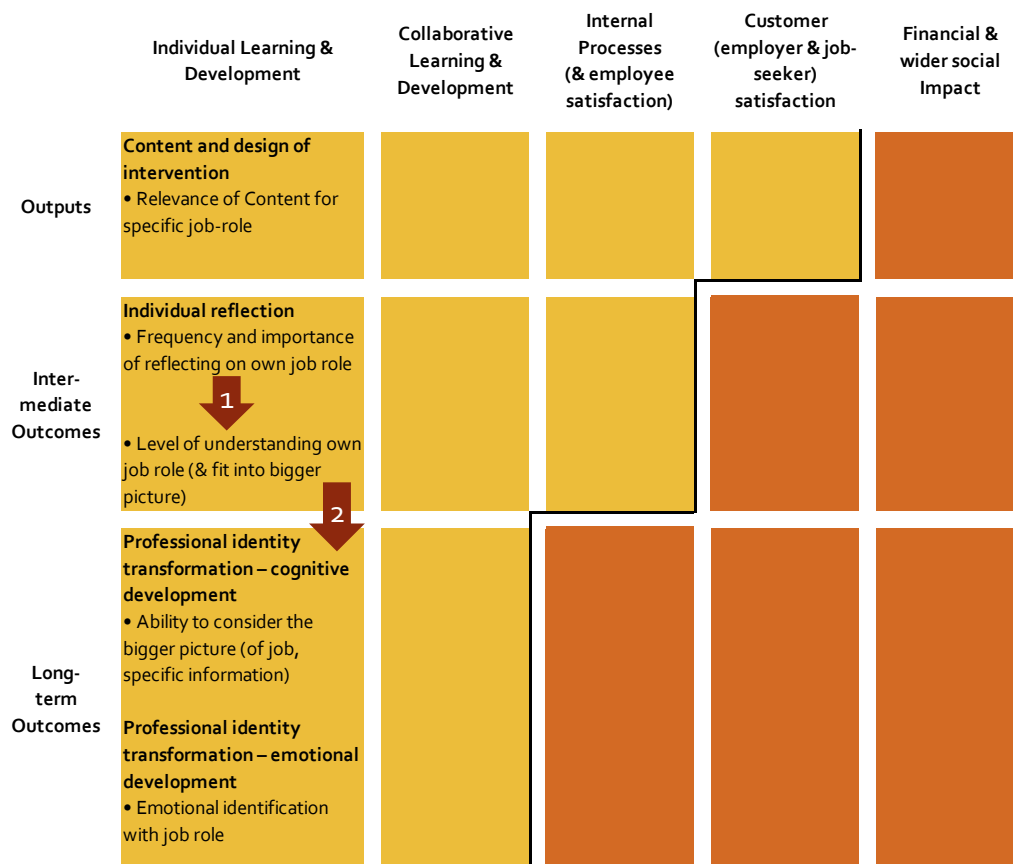


Figure 21: Visualisation of first exemplary effect chain

Our first exemplary effect chain shows unidirectional impact proceeding from output to long-term outcome level in the individual learning and development perspective. It hence shows how well-designed interventions might be able to trigger desired professional identity transformation processes.

The starting point of our first exemplary effect chain are two indicators of the individual learning & development-perspective. For long-term success of social learning it is important that PES staff appreciates content of interventions to be relevant for their job role and to gain a wider understanding of their job role. Relevance of content of the intervention for their specific job role is split into targeted content to local labour market information (LMI) as well as into targeted content for their specific job role (e.g. local Employer Advisors or Work Coaches, as well as for different levels of expertise, e.g. management, experienced and novice staff members). Thus, we consider on the one hand the content and design of learning interventions for PES staff resp. in particular the relevance of their content for the specific job-role of participants in these interventions and on the other hand the attitude of PES staff towards individual reflection resp. in particular the frequency and importance of reflection on own job role.

We assume that both aspects lead in the medium-term at the second stage of our chain to an increased level of understanding of the own job role and its fit into the bigger picture of the whole organisation. This is also a finding from our first pilot MOOC after which most of the participants and their line managers agreed that the content of the intervention and the triggered self-reflection supported participants to get the “the bigger picture”. Besides that, self-reflexivity was identified as an important factor to increase employee’s understanding of job roles, not only on an individual

level, but from a wider organisational perspective. The understanding of their own job roles was increased by reflecting on the content of the MOOC, such as knowledge about changes in labour market.

In the long-term, we believe that the reflection activities can lead to professional identity transformation processes regarding the cognitive and emotional development of PES employees. This should be reflected in two particular indicators measuring on the one hand the perceived ability of PES employees to consider the bigger picture and on the other hand their emotional identification with their job role within the PES organization. By reflecting learned topics the integration of own and other fields of work is supported. Emotional identification with own job roles raises through an increased feeling of being part of a large team.

3.2.4.2 Effect Chain 2:

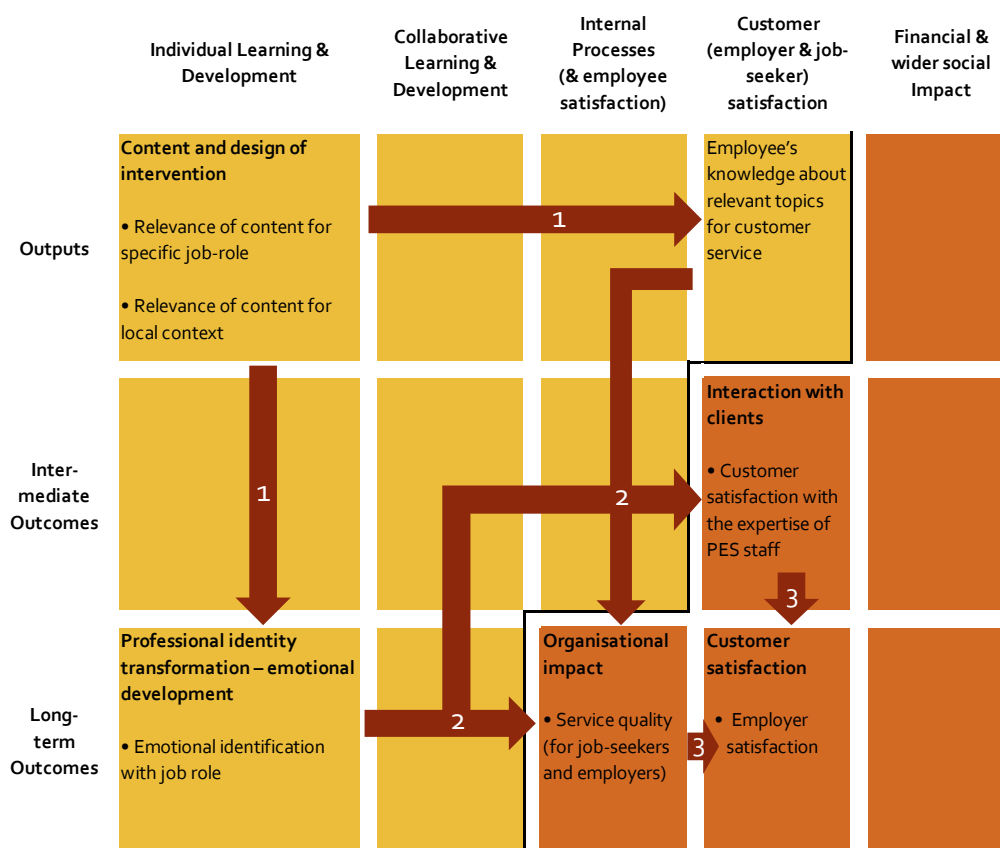


Figure 22: Visualisation of second exemplary effect chain

Our second effect chain with four stages and seven indicators shows how well-designed learning interventions can lead to a greater employer satisfaction in the long-term perspective.

On the individual learning perspective at output level indicators address the alignment of learning interventions to the particular needs of participants. In particular, two indicators assess as how relevant the learning content is perceived by the employees that take part in the intervention, on the one hand with respect to the employee's specific job role and on the other hand regarding the local labour market context of the participating employees.

If the content of the learning intervention is well-aligned to employee's needs, we can assume that employee's gain a broader knowledge that includes also relevant topics for customer service. This builds the basis for delivering good service to customers like job-seekers or employers which is reflected on the output level in the customer satisfaction perspective by the indicator "employee's knowledge about relevant topics for customer service". Additionally, we assume that a deeper

specific knowledge that supports daily activities and is differentiated from general knowledge can support the employee's emotional development and in particular their emotional identification with their job role.

At the third stage, we see how the improved situation at output level regarding customer satisfaction improves with some time delay employee's interaction with clients and especially the customer's satisfaction with the expertise of PES staff. Furthermore, as already mentioned, the increased targeted knowledge should in the long term have an organisational impact (internal processes perspective) and positively influence the service quality delivered to job-seekers and employers.

At the last stage, one final, long-term goal on the customer perspective is impacted. We assume that a higher customer satisfaction with the expertise of PES staff and in general the delivery of a higher service quality for clients will bit by bit positively influence the overall employer satisfaction with PES.

3.2.4.3 Conclusion

We are well-aware that the presented effect chains have to be revised and better specified. However, the chains are sophisticated enough to derive some principal conclusions: The presented chains indicate that we have a coherent indicator framework with several indicators that can be connected with each other creating effect chains. As we assumed, following an intuitively comprehensive logic these effect chains tend to proceed from the lower perspective and levels in the upper left to the long-term wider perspectives in the lower right edge of the matrix. However, both examples show that the course of the chains cannot be generalized to a high extent due to their inherent individuality. There will probably be detours and atypical stages within most of the chains reflecting the principal and overall complexity of identifying effect chains in such a holistic framework and forcing us to examine effect chains individually.

4 Training solutions

Training and capacity building in EmployID draws on aspects of peer coaching, facilitation, technology-use and core, innovative constructs. Training and capacity building has already been conducted in various training formats and plans have been made to offer access to training in a number of different ways. In addition to the promised training and learning modules in WP8 a supporting Facilitation Skill Catalogue (FSC; former Coaching and Training Competence Framework) was created. The purpose of the FSC is to support the identification of skills which require training, skills that can be supported or even substituted by technology (our tools) and to support the analysis and identification of facilitation roles and activities within the project and beyond. Other training activities that tackle peer coaching, facilitation, technology-use and core, innovative constructs are the Social Learning Programmes designed for DWP, the EmployID Academy approach and through the use of the LMI tool.

The underpinning ideas for training and capacity building show how we understand training support and how we try to create a consistent and holistic approach to support PES with our project's solutions.

The **training support for peer coaching** was underpinned by the following ideas:

- Peer coaching is coaching in a group or between individuals without a professional coach or professional coaching background of group members, which means training in peer coaching is essential for participants to learn about the concept, the skills necessary and to practice before starting a peer coaching group.
- Concepts in coaching differ from each other so even experienced practitioners in work coaching and those familiar with the solution-focused approach would need an introduction to the EmployID peer coaching concept.
- Peer coaching training creates the opportunity to form peer coaching groups consisting of the participants. This means that they can start getting into practice right away.
- Depending on prior experience, peer coaching training support can vary from a simple introduction to the concept (and later to the tool - which is related to training on technology-use) to short training measurements to get a complete overview (e.g. learning module with self-learning activities) or deep insight through extensive training measurements (e.g. 2-day training).

The **training support of facilitation of the learning of others** was underpinned by the following ideas:

- The training support for facilitation of the learning of others is both training for facilitators and future facilitators as well as training through facilitators conducted within EmployID.
- Training in facilitation depends strongly on the needs identified within the EmployID activities. Identification is underway by means of the Facilitation Skill Inventory (formerly the revised Coaching to Facilitation Competence Framework). The tool will be described later in section 6. Once the training needs are identified, EmployID can provide support from within the project's capabilities or refer to additional training measurements (e.g. PES-to-PES-dialogue).
- There are facilitation needs within the consortium which can be supported through the EmployID Academy, in turn this training and support acts as a test bed for resources for training in facilitation.

- The training is not necessarily extensive, training resources such as a short video or text might do in some cases. The extent depends on the facilitation skill to be trained.
- In the case of staff working in PES who were not working in an explicit coaching role, learning to become a member of a community of practice is not just a passive process, as individuals may also contribute to changing both the practice and the community. Working well with others may extend beyond collaboration and collegiality to include supporting others in their work (by sharing your own talent) and creating space for the achievement of others. So there are a variety of ways in which it is possible to support the learning of others, not just through coaching and peer coaching. Hence, for example, a wide range of challenges were embedded in the steps and activities of the MOOCs which created opportunities for PES staff to support the learning of others in a variety of ways.

The **training support for technology-use** was underpinned by the following ideas:

- where the PES already had detailed strategic plans for 'going digital' (as in DWP) our support involved collaborative working in close cooperation with learning and development teams, so, for example, the second MOOC for work coaches had a module on 'going digital'
- where our tools brought new technology into the PES it needed to be introduced in a sensitive way and meticulously planned.
- We could also make PES aware of some new technological possibilities in line with the recommendations of the PES 2020 strategy paper (PES 2012) on adaption of innovative communication technologies. This direction also aligned with the needs identified in full-partner PES by EmployID as core, innovative constructs on e-communication.
- We use a large amount on open-source tools ourselves for communication (e.g., Flashmeeting, Skype, GoToMeeting), collaboration (e.g., EmployID wiki, GoogleDrive), dissemination (e.g., EmployID homepage, Flyer, Posters, Newsletter) and development (e.g., tools for paper-prototyping etc.) which need to be trained or introduced to some consortium members (peer-to-peer support).

Suggestions for **training support of possible core, innovative constructs** identified by EmployID partners was underpinned by the following ideas:

- there might be additional training requirements arising from the challenges PES are confronted with and relating to the professional identity transformation which would need to be complementary to their own training curriculum but could be initially introduced by the EmployID project (an example of this was the introduction of the LMI app which could start from project work but then had to go through a full business case analysis prior to wider adoption).

The **training support for coaching for coaches** working in PES was underpinned by ideas such as a solution-focused approach to coaching which:

- should avoid telling the person what to do.
- help to build rapport which leads to more effective communication
- encourage the person to identify for themselves what they need to do, rather than being told
- draw out the person's potential; and
- enable the person to move forward.

Coming from this idea on why training and capacity building is necessary within the EmployID work it is necessary to understand what training in EmployID implies.

The work package brings forth training and learning module(s) on different topics which were mentioned. This means on the one hand that there is variation in the material provided through different formats and to differing extents depending on the need for the topic in particular settings. On the other hand, this leaves open where training starts and where it ends. Training is not an activity starting somewhere in the middle of the clarification process with the PES, but has been undertaken from the early stages of the project. For example, workshops were undertaken to bring forward an understanding of the affordances of various methods and tools. This approach was adopted to highlight the possibilities for continuing professional development for PES practitioners through the use of Reflective Communities, MOOCs and LMI tools. These workshops and continuing collaboration processes were part of a co-construction process where the training materials being developed were themselves partly developed through training of PES staff with responsibility for facilitation of learning and development in PES in order to develop common understandings on activities, tools and processes, including defining a clear process of implementation. These processes are not always explicitly mentioned as training and capacity building activities within the other activities, but through discussions with management, learning and development staff and PES practitioners' awareness is created for the content and the tools and concepts which are mainly co-creations through close collaborative work with the PES partners.

In this chapter current progress in training and capacity building is described throughout different activities. Main 'solutions' that will be described in this chapter are the Social Learning Programmes in DWP, the EmployID Academy and the use of the LMI tool. Other activities are around other training and learning module(s) for peer coaching, facilitation and innovative, core constructs and the Facilitation Skill Catalogue (FSC).

The chapter continues with an identification of core concepts for training and development which was achieved through a process of user engagement (4.1), an introduction into facilitation as part of EmployID's training and capacity building (4.2.), a report on the revised Facilitation Skill Catalogue (4.3.). The focus then shifts to promised deliverable outcomes on peer coaching (4.4), facilitation (4.5), technology-use (4.6), training material for PES (4.7), where the current progress is presented. After this the already mentioned activities around the Social Learning Programme at DWP (4.8), the LMI (4.9), and the EmployID Academy (4.11) and are described in more detail.

4.1 Identification of core concepts for training and development through a process of user engagement

There have been extensive consultations with PES over what aspects of EmployID they see as innovative and what topics they might want investigated as candidates for a palette of options for learning and development for PES staff. There have been continuing discussions with our core PES partners on this issue throughout the project. However, in order to place the individual requirements in a broader perspective there have also been a series of meetings on this topic involving PES core partners and associate partners. The first inter-PES discussion was at a consortium meeting in Karlsruhe in January 2015 with a subsequent round of consultations in June 2015.

The outcome of the first meeting in January 2015 (cycle 1) was the identification of a set of core, innovative constructs against which the project team should measure the learning, training and development opportunities to be offered. The constructs identified included:

- Career Adaptability
- Changing/ Transitional Labour Markets

- Employer Engagement
- Peer Support
- Career Management Skills
- Stress management and
- Identity transformation.

The second consultation took place with the full PES-partners (Croatia, Slovenia & UK[DWP]) who were asked to prioritize what they needed the most and where they saw any gaps in June 2015 (cycle 2).

The importance of Identity transformation, career adaptability and employer engagement (changing labour markets) were re-emphasised and three new constructs were identified. These were:

- (Career) Resilience
- Employer Coaching
- Addressing the digital agenda (including e-communication).

These constructs were also framed by the over-arching need to “do more with less”.

On the first topic the consortium investigated the work being undertaken in Ireland on resilience of PES practitioners. On the third topic on a subsequent field-trip to the Swedish PES in Stockholm the EmployID consortium learned about their progress in communication with clients via chat and VoIP with a tool they developed within another project. For their tool the PES practitioners using it received special e-communication training. This type of training is also necessary for PES staff involved in EmployID activities led in order to communicate effectively in Reflective Communities and it has also been developed within the peer coaching tool and will be part of the training and learning module(s) on technology-use.

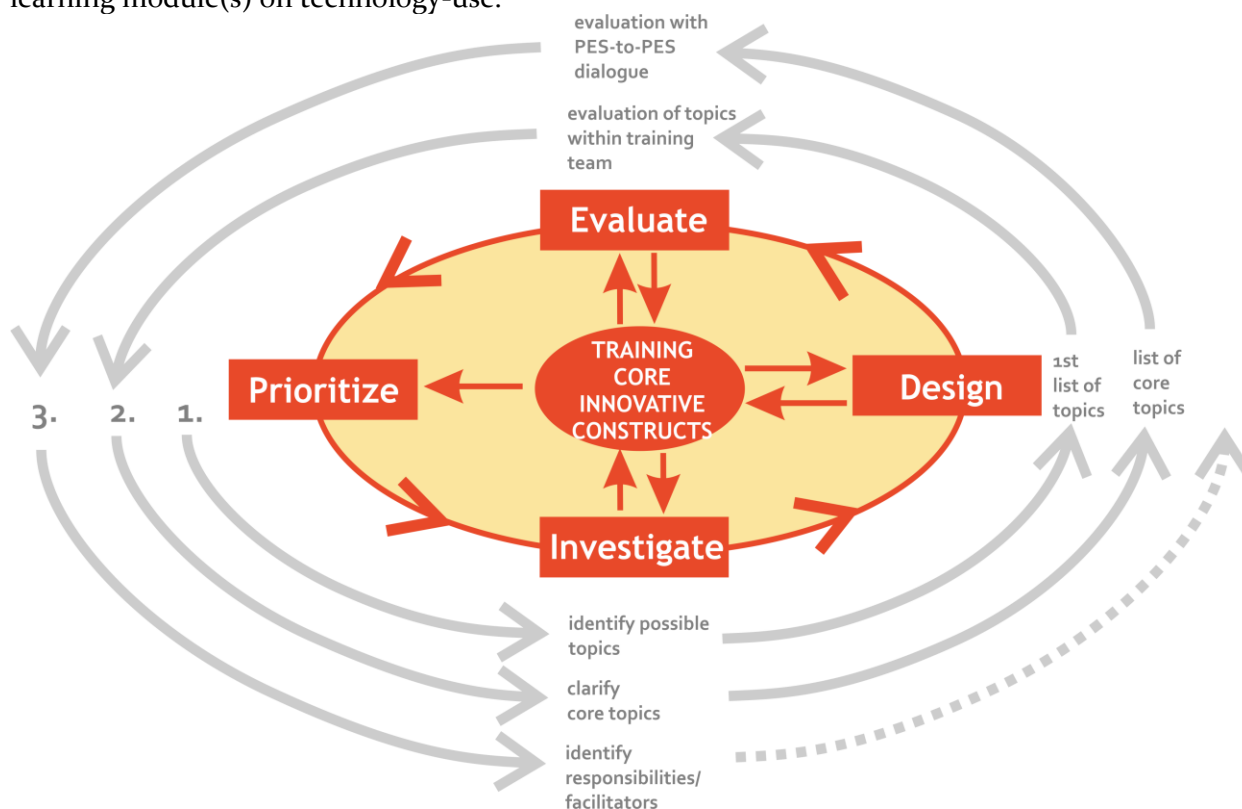


Figure 23: Design-based Research cycles for Training Core, Innovative Constructs

Overall, it is possible to consolidate all the feedback on the core constructs (combining those topics which overlap) into a single set as follows:

- Career Adaptability – supporting individuals to manage their careers in changing labour markets (ability to support individuals in how they envisage the future (concern); the extent to which they take responsibility for their own development (control); ability to explore visions of possible future selves (curiosity); and believe in their ability to solve problems and to succeed (confidence) (Savickas & Porfeli, 2012)
- Changing / Transitional Labour Markets – understanding the nature of changes in the labour market and world of work and being able to convey the need for clients to understand the implications of these changes information
- Employer Engagement – working directly with employers and with employer bodies, local/ regional economic development agencies etc.
- Peer Support / Peer coaching – being able to support the learning and development of colleagues, including through peer coaching
- Stress management / Resilience – consideration of how to cope with stress in the short to medium-term and develop greater resilience across the life-course (career)
- Addressing the digital agenda (including e-communication) – preparing for the digital future of some PES services and developing the e-communication skills to support the learning and development of staff both individually and collaboratively
- Identity transformation – changing how PES practitioners see their own roles and how others see them.

Training, learning and development on these innovative core constructs has already taken place through work already completed or underway in the UK (DWP) and is planned for the work with reflective communities of practice in Slovenia and Croatia. Additionally, some training in these areas is already offered through EmployID Academy and could in future be linked to offerings from elsewhere e.g. PES-to-PES-dialogue, which also seeks to help practitioners meet their development needs (an examination of external offers will take place in cycle 3). Finally, it is planned to produce a ‘generic’ MOOC (in the second half of the project) which will be open to everybody with an interest in understanding ‘the changing world of work, changing careers, and changing identities’.

These core constructs are covered by EmployID activities as depicted in Figure 24, where red boxes indicate a strong focus, dashed lines around boxes indicated planned activities.

	"MOOC1"	"MOOC2"	Generic MOOC (planned)	Reflective Community	Peer Coaching	LMI	EmployID Academy	On-site training
Career Adaptability		<input type="checkbox"/>	<input type="checkbox"/>					
Changing / Transitional Labour Markets	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		
Employer Engagement	<input checked="" type="checkbox"/>	<input type="checkbox"/>						
Peer Support / Peer Coaching	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Stress Management/ Resilience		<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	
Addressing the Digital Agenda		<input type="checkbox"/>		<input type="checkbox"/>			<input type="checkbox"/>	
Identity Transformation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			

Figure 24: Innovative core constructs and how they are covered in EmployID

4.2 Facilitation in EmployID’s training and capacity building programme

Training for facilitation had a number of separate but related strands, related to support for coaching, peer coaching and supporting the learning of others. But there is also training in technology-use and core, innovative constructs in EmployID, which are supporting the tool-use and professional identity transformation in the sense of facilitation.

The facilitation activities in the work package training and capacity building 8 are not only conceptualized, developed and implemented in PES, but also within the consortium itself as well as for other interested participants (e.g. PhD-students from summer schools) within the EmployID Academy.

As for formats there are several possibilities for training and learning within EmployID. Some of these formats were already conducted for internal (EmployID members) and external learning situations, (PES practitioners, trainers, and other target groups, e.g. PhD-students). Parts of this were presented in a poster-session of the EmployID associated partner event in October 2015.

There is structured material in courses (e.g. the EmployID DWP MOOCs hosted on FutureLearn) or to quickly describe important issues (e.g. the "cheat-sheet" for peer coaching or video content creation).

As learning and training formats, we have used in EmployID:

- social learning programmes such as using MOOC (Massive Open Online Course) platforms and Online Courses e.g. peer coaching in EmployID Academy
- Webinars
- Workshops or full training days

- Training material (“loose” material from the EmployID training and capacity building topics (e.g. videos, “cheat-sheet”, etc.).

The possible training and learning formats are either onsite, online or combined in a blended-learning scenario. The format depends very much on possibilities (time & IT-infrastructure) and on clarification of needs with the particular PES or possible other target groups.

Depending on format the way of facilitation through the trainer and other supportive persons changes as well as peer facilitation support within the group of learners (the participants in the training and learning module(s)). For the webinar, training-days and workshops, the training is facilitated mainly by the trainer or two trainers, sometimes the human resources department at the particular organization and the management. For training formats the aspect of facilitation by environments takes a large role. Concerning the Online Courses and social learning programmes more facilitators are active, who in addition may also be learners. In large on-line courses several different mentoring and facilitation roles could be identified (Leon Urrutia et al. 2015).

What is needed depends mainly on what our full PES partners and other PES partners from the associated partner network need and indicate to be useful for them and it also depends largely on resources in time and place (for trainers as well as for learners). The previous sub-section highlighted how PES partners identified their training needs, mainly for core, innovative constructs. The identified training needs are already supported or in process of being developed.

The range of possible facilitator roles and the influence that context has on them shows how difficult it is to identify what is needed to support facilitators to fulfill their role and what training is of use. One possibility we found was to create an overview on possible skills and training needed through the Facilitation Skill Catalogue (FSC), which was formerly named Coaching and Facilitation Competence Framework (CFCF). In the next chapter the revision of the CFCF will be described more detailed.

4.3 Facilitation Skill Catalogue (FSC)

A tool for internal as well as external facilitation is the Facilitation Skill Catalogue (FSC). This is the revised version of the former coaching to facilitation competence framework (CFCF) or later facilitation skill inventory (FSI) which tries to clarify skills needed for facilitation and trained by facilitation.

4.3.1 Present state Facilitation Skill Catalogue

The Facilitation Skill Catalogue facilitates the activities around EmployID by providing a catalogue with possible facilitation skills which can be separated into skills the facilitator needs and skills the facilitator supports with their activity within the learners.

In Figure 25 the previous Coaching and Facilitation Competence Framework is shown. This was fully revised now to avoid misconceptions on the usage of the tool and to stop in-depth discussions on flowing transitions between the concepts competence, ability and skill and rather focus on what we want to provide with this tool: a possibility to get an overview, to analyse activities on facilitation skills and to identify skills gaps.

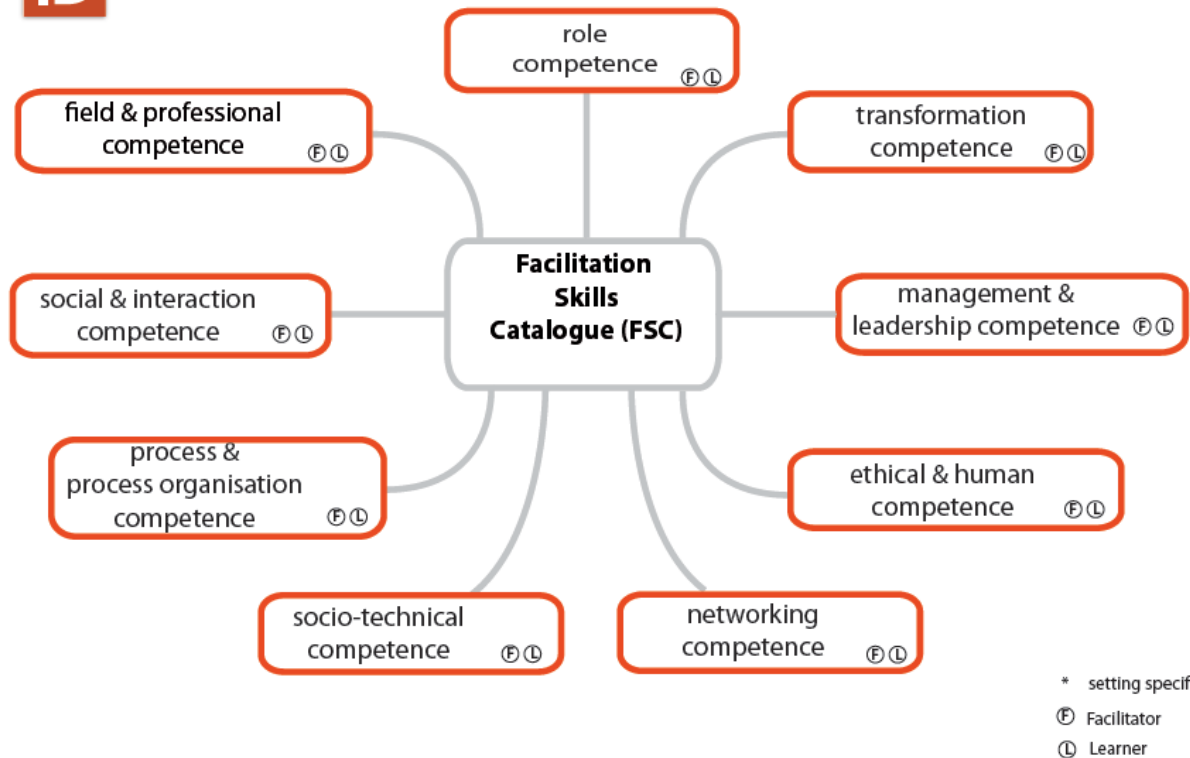


Figure 26: Overview on competences of the Facilitation Skills Catalogue (FSC)

The Facilitation Skill Catalogue is added in a more readable way in the appendix together with a list of skills identified as necessary by experts from EmployID in the peer coaching, MOOC and Reflective Community Context. This is still work in progress and will be discussed and evaluated internally and externally.

The overview of competences in the Facilitation Skills Catalogue shows the revised version of the former Coaching and Facilitation Competence Framework (CFCF) overview. The competence “self-reflection” was deleted and the underlying skills were merged into the “transformation competence” part. This was result of a discussion on what skills to focus on for EmployID in the Consortium Meeting in Zagreb, Croatia in 2015. The main idea was to keep the skills collection close to professional identity transformation and the self-reflection and transformation skills are of major importance for the learners within EmployID. This does not exclude the other competences and underlying skills from the discussion, but the intention was to highlight how transformation could more easily be facilitated if individuals regarded themselves as possessing a bundle of skills which could be updated as necessary if their context of use changed.

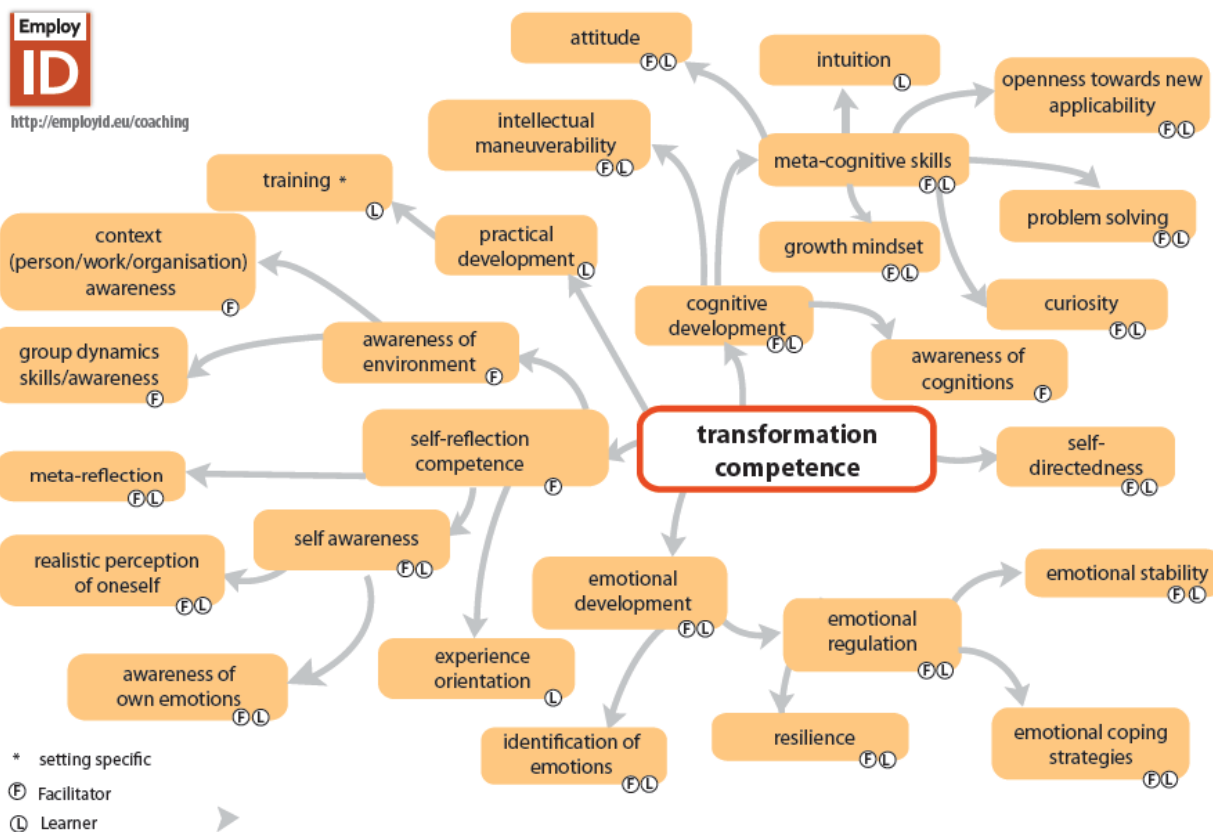


Figure 27: Transformation competence and skills

Another thing that was discussed several times internally and externally is the socio-technical competence. This need was highlighted as part of the user engagement consultation process as the wish for training in e-communication and is mentioned later in this deliverable book as a part of training in addressing the digital agenda. This is not only an important topic for the use of EmployID tools, but something that is aligned with the PES 2020 strategy-paper (PES 2012). During the associated partner event in London some skills were suggested by interested PES practitioners on facilitation and socio-technical aspects. For facilitation also the idea of using a tool for facilitation was suggested by mentioning the need for a systematic tool or app for reflection which is conducted by the Reflective Community and through reflection processes evoked in peer coaching that will be part of the peer coaching tool. Since this aspect is not a skill, we did not add it to the new FSC. For group facilitation it was mentioned that there is need for the skill of managing emotions and aggressions in a group. This is a very important issue that can be handled by a combination of using skills such as awareness of emotions, awareness of environment and group dynamics skills/awareness as well as other skills mentioned under the social and interaction competence. It has not yet been added to the FSC as an extra skill as further discussions are needed as to the solution for handling conflict and conflict resolution. For peer coaching this is a very crucial topic in the sense that the breaking of rules of conduct in peer coaching requires action to be taken, but so far these might be dealt with on a case by case basis rather than having one generic solution. For the socio-technical skills, the skills of internet optimization through being agile with IT was mentioned as well as the need for increasing motivation of jobseekers (probably through technology) and the awareness of ethical use of data (client information) and a skill in storing data. For IT agility the mastery of tool is the skill that subsumes different sorts of tool mastering (including internet use), the ethical use of data is addressed in parts by the skills socio-technical rules (which depend on tool) and skills subsumed under ethical and human competence. Storing data might also be part of the mastering of a tool. What is shown here, is that parts of the skills mentioned could be facilitated not only by humans, but also by the tool itself (e.g. by restricting

data access to a special group like in peer coaching or only one person within the group (the client) to secure data misuse).

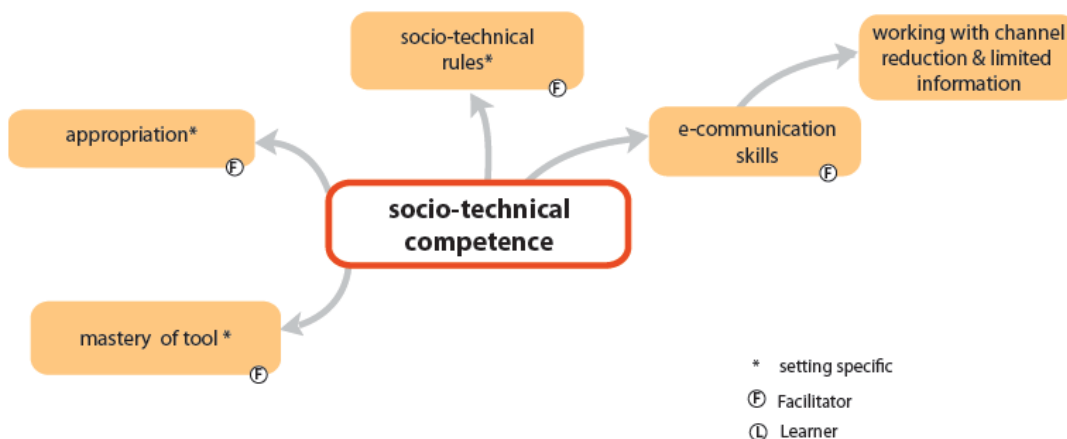


Figure 28: Socio-technical competence and skills

What distinguishes the socio-technical competence from other competences is mainly that these skills are very setting specific. E.g., “mastering the tool” is very much depending on the tool with the tools’ goals, functions etc.

The other new views of the Facilitation Skill Catalogue can be found in Appendix J.

4.3.2 Outlook

The Facilitation Skill Catalogue (FSC) is used around the EmployID activities for facilitation and is still in progress. It will be discussed and evaluated internally (experts on facilitation & coaching & identity transformation in EmployID also from full PES) and externally (experts from the facilitation & coaching from the associated partner network and beyond). Adding content and proof-reading of the table on facilitation skills in context still needs to be done by consortium members and a new version could include the identified core skills for EmployID solutions.

4.4 Training and learning modules on peer coaching

Training and learning modules on peer coaching are provided to be able to understand and perform peer coaching and in some cases learn to train others in peer coaching (multiplier workshops). Some training in peer coaching has already been provided during year one. The report on this can be read in deliverable 8.1. In this the second year, some PES practitioners were part of the training groups, e.g. in a multiplier workshop at ZRSZ in Ljubljana where training center trainers and coaches were taught about EmployID peer coaching and in the EmployID Academy Social Learning Online Course on peer coaching where PES from Croatia participated.

To summarize it: In this year peer coaching was trained internal (consortium members) and external (coaching and supervision experts, TEL PhD-students & PES practitioners). The training was provided in different ways. In chapter 7 the challenges, analysis and process is described in more detail. There was no single context as in the cases of the Reflective Community which makes it hard separate this section with chapter 7. To have everything on peer coaching connected in one

chapter this will only give a first impression on activities in peer coaching training and the main part will be described in chapter 7.

4.4.1 Present peer coaching training and learning module(s)

As already mentioned there is already much training produced for peer coaching in the previous, but also in this year.

In the following figure the working progress so far for peer coaching facilitation training is shown on base of the Design-Based-Research Approach Model by (Ravenscroft, Schmidt, Cook, & Bradley, 2012) to give an impression on work-progress.

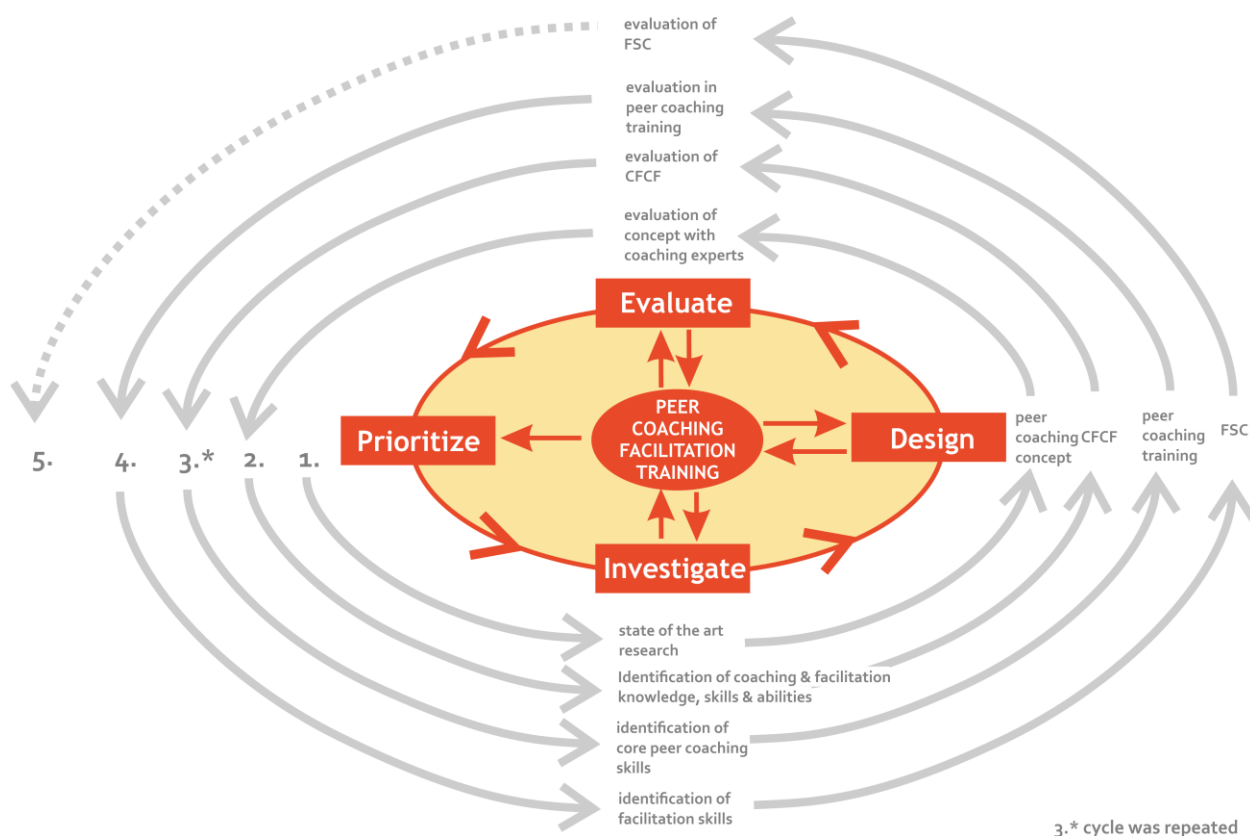


Figure 29: Peer Coaching Facilitation Training Design-Based Research Cycles

- **Cycle 1 (Peer Coaching Concept).** It shows that in the first cycle the peer coaching concept was prioritized, the state of art in research and practice investigated, the peer coaching concept developed and the concept evaluated by internal and external experts.
- **Cycle 2 (Coaching and Facilitation Competence Framework (CFCF)).** In the second cycle the Coaching and Facilitation Competence Framework was designed by capturing skills, abilities, knowledge and competences on coaching and facilitation with focus on coaching and evaluated this again internally and externally.
- **Cycle 3 (Peer Coaching Training).** The third cycle focuses on the peer coaching training where core peer coaching skills were identified and after creation of several trainings (as described before in Deliverable 8.1 and chapter peer coaching and evaluation in this Deliverable book) these trainings were evaluated. There exists a feedback loop between every training on peer coaching and its evaluation, since we try to improve material and

input considering the feedback of the participants and our experiences as explained already in chapter peer coaching and evaluation in this Deliverable book.

- **Cycle 4 (Facilitation Skill Catalogue (FSC)).** In the fourth cycle the CFCF was revised by identifying more facilitation skills from activities already taken part and from that a new Facilitation Skill Catalogue is currently created. The next step would be to evaluate the catalogue internal and external again. This is also groundwork for further work on the facilitation training and learning module(s) as well as to identify what can be facilitated by human, tools or even environment.

A possible next cycle could focus on peer coaching tool training which would be part of the technology-use training and learning module(s) there would also be overlaps here between peer coaching training (e.g. skills training) and facilitation training.

4.4.2 Outlook

The training for peer coaching will be more intense after the first internal trials with the developed peer coaching tool. In the current state EmployID is discussing how to implement peer coaching into Croatian PES. A first flyer for management – to get an impression on our offer – was discussed in a management meeting where we also planned the next steps for further approach.

A generic flyer for management was created at the same time and will give opportunities to raise attention on peer coaching. Also the training videos on peer coaching (peer coaching process, emotional awareness, active listening & powerful questioning) which were created this year can make a first impression for PES partners on what peer coaching is about.

4.5 Training and learning module(s) on facilitation

One of the objectives for Work Package 5 was to provide support for facilitation roles in structuring learning and identity transformation activities. Whilst Work Package 2 describes the need to deliver training support for the different facilitator roles (identified in the FSC); D 8.2 also requires the creation of training and learning module(s) on facilitation which will provide the PES organisations with knowledge and skills on different facilitation roles that need to be established to secure sustainability of the projects outcome and support the mutual facilitation of peers in PES organisations. As described previously in the chapter, solutions for the skills needs identified in the FSC may come from within the capability of the project. One such solution, relating to the facilitation of online learning, is in the early stages of development and is described below.

4.5.1 Learning challenges in context

Throughout the project we are proposing online environments as a means of building communities of practice, shared learning, social learning, coaching and reflection. These platforms will need facilitators outside of the consortium if they are to be sustainable. In organisations where online social learning is a new concept, facilitators will need some level of training and guidance in their new role.

4.5.2 Analysis (applying concepts/theories that guide the solution)

According to EmployID Facilitators are people who

- lead people who are on the “doing” level of creativity,
- guide those who are at the “adapting” level,

- provide scaffolds that support and serve peoples' need for creative expression at the "making" level (A scaffold is a special type of communicational space, one that supports and affords creative behavior.), and
- offer a clean slate for those at the "creating" level

The National College for School Leadership (National College) proposes that facilitation is 'a dynamic, personalised process that empowers and challenges individuals and groups to engage in significant learning. This learning leads to meaningful change in behaviour in relation to professional practice' (<https://www.nationalcollege.org.uk/cm-mc-fac-resource-competency-framework.pdf> page 2)

There are a number of responsibilities associated with the role of facilitator of online learning. Many of these are only learned through the action of being a facilitator but it is possible to provide some guidance topics.

Suggested topics to cover:

- INTRODUCTION TO THE RESOURCES
- ATTRIBUTES OF A GOOD ONLINE FACILITATOR
 - including self-reflection, personal identity transformation, requirements for inhabiting the role of online-course facilitator, these themes should run through the whole 'course' and interlink with the facilitation skills outlined in section 4.3.
- ENGAGING STUDENTS
 - Recruitment - getting them there in the first place
 - Induction - orientation, introductions, getting used to the set-up, icebreakers, agreeing codes of conduct.
 - Retention - keeping them engaged.
 - Barriers to learning online
 - Opportunity for self-reflection - what are your barriers? Personal, institutional, physical, physiological, technological.
 - How can we lower/remove the barriers? How can we facilitate learners to overcome those barriers?
- FACILITATING ONLINE DISCUSSIONS
 - Facilitating synchronous activities such as a webinar
 - technical considerations
 - practical considerations
 - pedagogic considerations
 - facilitating learning
- COURSE DESIGN CHECKLIST - GENERAL PRINCIPLES - WHAT MAKES A GOOD (M)OOC?

- Course content (there is a separate course in early development on creating content for social learning environments)
- brief outline of content types and considerations
- Open Education Resources
- SETTING ASSIGNMENTS, ASSESSING AND GIVING FEEDBACK
 - technical, practical and pedagogic considerations
- FACILITATING REFLECTION ON LEARNING
 - brief introduction to ways in which to do this in on-line environments
- TIPS AND QUOTES FROM PREVIOUS STUDENTS/FACILITATORS
- SIGNPOSTING TO EXTERNAL RESOURCES (eg PES to PES dialogue)
- FAQs

4-5-3 Process

Building on the work on Facilitation Activities and Roles (Section 2.2) and taking into consideration the literature on facilitating online courses, (Ebner, National College, Oxford Brookes) a list of the competencies specific to facilitating learning in an online environment were identified and a small framework was developed as follows.

Facilitation Competences	Suggested Content (in progress)
Self Awareness	Attributes of a good online facilitator?
Group Management	Engaging students, Facilitating discussions,
Designing Learning experiences	Content and Facilitating discussions
Facilitating Learning	Course design, Synchronous and Asynchronous activities
Social Awareness	Barriers to learning
Developing Self	Self reflection
Developing Others	Facilitating reflection on learning, Assessment and feedback

The interrelations between the competencies, the facilitator, the group of learners and the platform were explored. Drawing on the work of Goleman (1995) and Boyatzis (2006) the following diagram was created to explain the process of facilitating learning in an EmployID context. In the process of developing others through the role of learning facilitator you are also developing yourself.

Facilitating Learning in an online environment.

Competencies for facilitating an online course are linked by the relationships between the learners, the learning environment and the facilitator.

Personal development (Identity transformation) of the facilitator affects all other relationships.

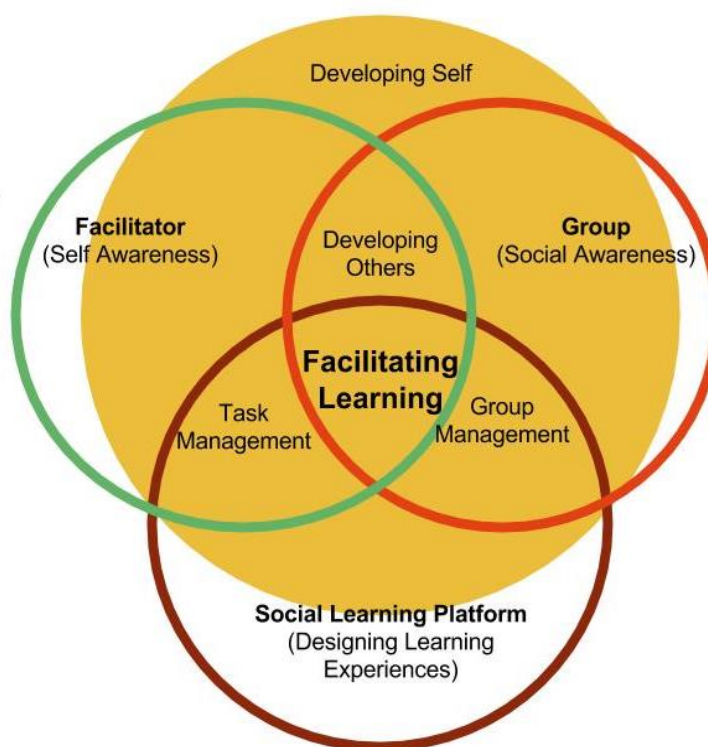


Figure 30: Facilitating Learning in an Online Environment

For each of the Facilitation Competences a tutorial page with linked activities will be created within EmployID Academy, work on some of the basic course content has begun but as this is a future deliverable we are only able to comment on what currently exists.

4.5.4 Solution

Initially face to face tutorials and workshops will fill the need for facilitator training, but refresher materials and training materials in other formats will need to be available to ensure sustainability of courses and platforms beyond the life of the project, to respond to staff turnover within the PES, and to enable new participants to engage with EmployID activities. For this matter, a series of stand-alone online tutorials and open educational resources are proposed. The resources will be housed in the EmployID Academy, the course structure is as yet undecided but notes from the planning phase are included below to provide an overview as follows;

Who is it for?

Anyone facilitating an online work-based learning experience/course

How will it work?

This could be a 6 session MOOC style course in EmployID Academy OR

A 10+ item menu of stand alone tutorials from which participants can pick and mix. (Maybe we could award lightweight digital badges on completion of the associated activity for each unit as an incentive?)

OR

Stand alone course/units but with a forum and a regular tweet-up (eg. wednesday evenings 7-8pm regular hashtag for people to ask questions/chat about a certain topic) but I assume this would be problematic internally for PES, is there another platform - maybe on internal forum.

OR

Start with a competency framework, ask participants to identify strengths, then present/signpost activities/learning-units linked to each competency. ask/prompt to reassess strengths on completion.

OR

A combination

4.5.5 Results

Some materials from this work in progress are available from the url; <http://mooc.employid.eu/category/facilitating-online-courses>

4.5.6 Outlook

Over the next couple of months work will be done to finalise the curriculum and delivery format for the training in facilitating online courses. The course will also be brought into line with the revised Facilitation Skills Framework. The resources and delivery format will then be tested with a pilot group of consortium members, the resources will be improved taking feedback from the pilot group into account. Materials will be made available through EmployID Academy for the duration of the Pilot process and beyond but the finalised resources are expected to be available towards the middle of 2016.

4.6 Training and learning module(s) on technology-use

The new tools produced within the project, but also technology that is currently created needs to be facilitated. Not everything is easy to understand by everyone and here additional needs of PES concerning the task of handling technology and e-communication is being

4.6.1 Current training and learning module(s) on technology-use

Training and learning module(s) on technology-use are not yet in focus of the project, but will be contributed to in the upcoming years. Main support in technology-use is currently provided within the EmployID consortium as short supporting sessions during consortium meetings on the EmployID wiki, the GoogleDrive and the EmployID Academy (or while writing this) on Sharepoint where we collaboratively work on this year's deliverable book. In Figure 31, the wiki page for organizing topics, participants and "trainers" and to add content is shown.

The screenshot shows the EmployID Wiki interface. At the top right, there's a user profile for 'Carmen.wolf' with links for 'Talk', 'Preferences', 'Watchlist', 'Contributions', and 'Log out'. Below this is a navigation bar with 'Page Discussion', 'Read', 'Edit', 'View history', and a search box. The main heading is 'EmployID Academy'. A sub-heading reads: 'The EmployID is intended to be a learning space for the consortium to learn from others about specific topics.' Underneath, there's a 'Proposed topics:' section containing a 'Contents [hide]' box with a numbered list of five topics.

Figure 31: Technology-use training organisation & material in EmployID Wiki

One area where training on technology-use is already included in parts for external partners is the Social Learning Programme at DWP which will be described in more detail in section 4.8. Other technology-use training activities are based around the usage of the LMI tool and in implementing the Reflective Communities in the HZZ and ZRSZ. These activities will also be described in the separate sections.

4.6.1.1 Example 1 (external training): Social Learning Programme at DWP

A good example for the first steps towards training on technology-use is the Social Learning Programme at DWP. Where the learning challenges was that DWP wanted the MOOC for work coaches to address issues around their 'going digital' agenda. The process was a collaboration between project team members and DWP's learning and development team. The solution regarding 'Training and learning module(s) on technology-use': material on this in the second Social Learning Programme in 'Going Digital' – 3.5 hours training with a focus on DWP's 'Going Digital' agenda. The activities were as follows:

- 2.1 INTRODUCTION ARTICLE
- 2.2 YOUR THOUGHTS ON 'GOING DIGITAL' DISCUSSION
- 2.3 OFFICE OF THE FUTURE (VIDEO) ARTICLE
- 2.4 THE CHANGING WORLD OF WORK SEARCH ARTICLE
- 2.5 QR CODES FOR A QUICK RESPONSE ARTICLE
- 2.6 DIGITAL WORK SEARCH: SOME TOOLS AND TECHNIQUES. ARTICLE
- 2.7 SOCIAL MEDIA ARTICLE
- 2.8 FIND SHARE CONNECT: DWP AND SOCIAL MEDIA (VIDEO) ARTICLE
- 2.9 DIGITAL MOT ARTICLE
- 2.10 MOT REVIEW, DIGITAL DILEMMAS AND TECH TIPS DISCUSSION
- 2.11 DIGITAL UNIVERSAL CREDIT (VIDEO) ARTICLE
- 2.12 DIGITAL WORK COACH DISCUSSION
- 2.13 SUMMARY ARTICLE
- 2.14 REFLECTIONS ON COLLABORATIVE LEARNING FROM THE EMPLOYID TEAM DISCUSSION

The outcome was that the course participants engaged with the material and a collaborative discussion ensued. As the MOOC was only completed in January 2016, full evaluation results will be presented in Year 3 directly in the section on the MOOC.

4.6.1.2 Example 2 (internal training): WordPress Training

An example of peer to peer training in technology use from within the consortium was the need for short tutorials in aspects of WordPress. Many of the platforms such as the online Communities of Practice for PES and the EmployID Academy are built in Wordpress. The need for consortium members to have a basic understanding of how to use Wordpress from the back end in order to create content for courses has been discussed and should the need arise, a dedicated course will be created within EmployID Academy. Currently knowledge sharing occurs on an ad-hoc basis and all materials produced are hosted on the EmployID Academy and shared in the wiki. A training need was identified as needing the ability to change the menu structure in Wordpress. To meet this need a screencast tutorial was created. In order to do this the Google hangouts on Air account, employed during the Video Online Course in year one, was used. A hangout was opened with only one participant and the tutorial was broadcast directly to YouTube. Screen sharing was used so that the tutorial could show the process of editing the menus directly with real-time spoken explanation. Once the hangout broadcast was completed the resulting video was edited directly in YouTube's dedicated web-based software. The video was then shared by email and uploaded to the EmployID Academy for future reference. The tutorial can be found using the following URL; <http://mooc.employid.eu/changing-the-menus-in-wordpress/>

This process is a quick and easy way to create and share short technical tutorials. It also opens up the possibility for live streaming of a technical tutorial in a synchronous webinar scenario.

4.6.2 Outlook

In future there will be more formalized technology-use training and learning module(s) offers also for external partners, e.g. our PES colleagues on parts of the tools we provide

As next steps EmployID needs to identify the most important support-areas for training and learning modules on technology-use. The already explained Facilitation Skill Catalogue and the needs that PES expressed in the section on core, innovative skills later on support the process of identifying what training is needed. Our work in starting with support of each other within the project also shows gaps and where externals might also need support to be able to work with our tools and methods.

4.7 Training material for PES and others

In the description of work the deliverable on training material for PES is due. Some of the material created especially for PES is already included in last year's deliverable on the MOOC for DWP and this year's chapter 4.8 with the Social Learning Programme of DWP. Other material is presented on the EmployID Academy platform, e.g. videos for peer coaching, a video on learning analytics and more.

4.7.1 Present state of training material for PES and others

As mentioned before there is already much training material for PES and others created during the first and second project year, but as the deliverable 8.1 highlights the collection of training material does not end until the last year of the project. As well as proposed developments to training for peer coaching, other training offers within EmployID will also be developed regardless of the deliverable 'deadlines'. This approach follows the nature of this project in working closely with PES practitioners and our response to changes and needs.

In the image below the EmployID Academy activities are shown (which does not necessary mean that all content is available in the EmployID Academy platform, but as seen earlier in our projects wiki for some of the internal technology-use training and on other platforms (e.g. FutureLearn for the Social Learning Programmes of DWP) or onsite.

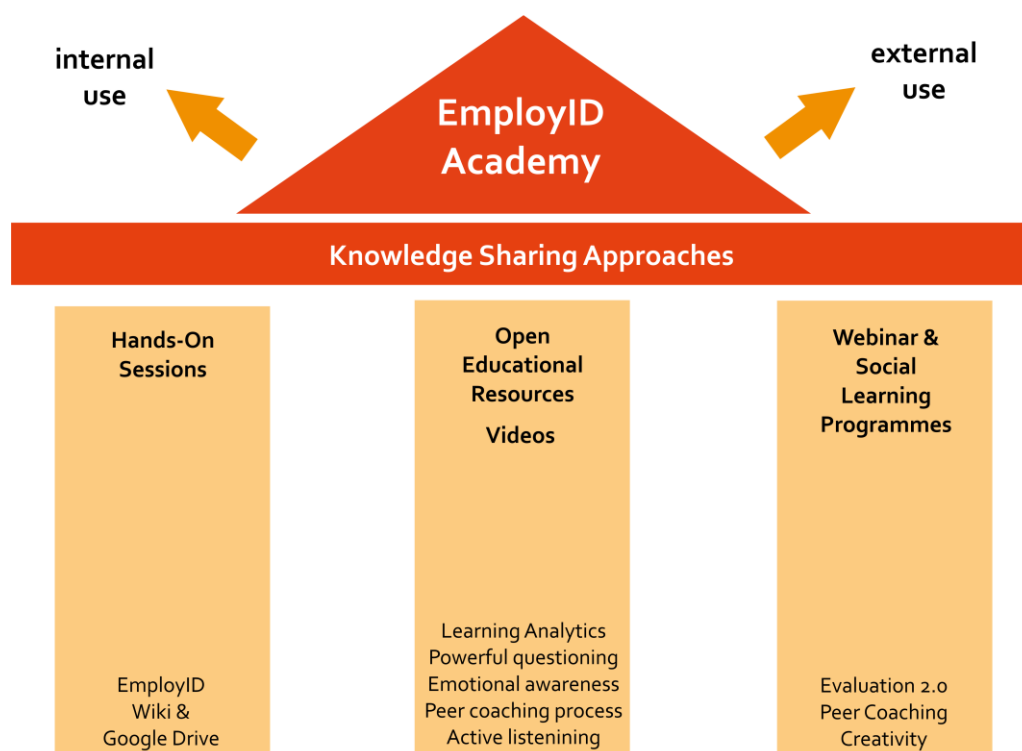


Figure 32: EmployID Academy Approach

There is already much material collected which includes training material for PES, but additionally training material for other target groups and for our internal training. Some of the training material is not yet separated to a material folder (e.g. content used within the Social Learning Programmes for DWP) and some can be found in the EmployID Academy as a collection of material (called [Knowledge Sharing in EmployID](#)). The way training content is delivered also differs as explained earlier in formats and the topics we thought to be of use, e.g. action planning are not focused on and instead other topics (e.g. those mentioned in core, innovative constructs) are more of importance to our full PES partners.

The training material collection in EmployID Academy under Knowledge Sharing in EmployID covers input on:

- Evaluation 2.0
- Workplace Learning Analytics
- Using the EmployID Wiki
- Menus in WordPress
- Peer Coaching – Resource Activating Tools
- Powerful Questioning (Video content)
- Digital Identity
- Creativity 2.0

- Emotional Awareness (Video content)
- Peer Coaching Process (Video content)
- Active Listening (Video content)

4.7.2 Outlook

The collection will be continued during the further progress of the project and made available for others. Additions could be among others things the training and learning module(s) on core, innovative constructs that are yet to be created and parts of the Social Learning Programmes of DWP that can be generalized.

4.8 Social Learning Programmes at DWP

4.8.1 Overview

The social learning programmes developed at DWP contained explicit training components. For example, the online learning course “The Changing World of Work: Working with Employers in a Dynamic Labour Market” was implemented as a pilot course at DWP. The course had 15 participants, employer advisers, and was explicitly framed as part of continuing professional development. The training comprised a rich menu of activities, most of which had a collaborative dimension, designed to develop learners’ understanding of ‘how work is changing’; build their sector knowledge; find out which were the most effective ways to contact employers and liaise with employer bodies at district and regional level; find the most effective ways of working with current LMI systems such as Universal Jobmatch and engaging with the potential of new approaches such as Using the LMI for All app. There were then a series of integrative activities designed to link what was happening in local labour markets with wider trends as to what is happening in local labour markets across the region; and a final team exercise to develop updated employer engagement plans for their three counties. Throughout the course there were opportunities to build cumulative cycles of experience, reflection and learning.

The second online learning course “The Changing World of Work: the Work Coach” is focused on the training and development of work coaches. The course will help staff: come to terms with DWP’s digital agenda and understand the implications of the cultural and digital changes within DWP through a range of activities; develop their coaching skills through claimants by analysing a range of case studies, sharing good practice with their colleagues and applying their learning in practice; make sense of how the world of work is changing; recognise the importance of Labour Market Information (LMI) and Sectoral Knowledge and how these could be incorporated into practice; share knowledge, ideas and experiences with colleagues; reflect individually and collectively on what they have learned; think about how careers and work identities will change in future.

Employer advisers and work coaches also received training in how they could use a Labour Market Information (LMI) app in their practice. Using the App staff are able to get answers to specific labour market questions by occupation and geographical area.

4.8.2 Learning challenges in context

The response in the project by DWP to the general challenges facing European PES was three-fold. First, an online learning course “The Changing World of Work: Working with Employers in a Dynamic Labour Market” was implemented as a pilot course at DWP by the OED Operational Learning Team (OLT) and the National Employer Service team (NEST) in cooperation with the

EmployID project. The course was delivered in the format of a MOOC via FutureLearn. The course was intended to help address challenges related to understanding the changing world of work; and the increased importance of relations with employers. The course had 15 participants and ran for 6 weeks from February 2015, with a review meeting in May 2015. The details of the implementation and evaluation are reported below.

Second, following the success of the first MOOC, a second online learning course “The Changing World of Work: the Work Coach” was implemented as a pilot course at DWP by the OED Operational Learning Team (OLT) in cooperation with the EmployID project. The course was again delivered in the format of a MOOC via FutureLearn. The course had 65 participants and ran for 6 weeks from November 2015, with a review and evaluation to be completed subsequently. The MOOC was intended to help address challenges related to understanding the changing world of work and the 'turn' towards coaching, although there was also some recognition of the increased importance of relations with employers.

The course was devised as part of the EmployID project specifically for DWP Work Coaches. It was a closed private course accessible only to DWP staff course participants and EmployID project members. The course aimed to give staff opportunities to help:

- recognise the cultural and the digital agenda changes within DWP
- understand coaching claimants
- make sense of how the world of work is changing
- recognise the importance of Labour Market Information (LMI) and Sectoral Knowledge
- how these relate to their own (changing) roles within DWP
- share knowledge, ideas and experiences with colleagues
- reflect individually and collectively on what they have learned
- think about how careers and work identities will change in future (including their own!)

The third response by DWP to the general challenges faced by PES in Europe was to engage with project team members in the development of a Labour Market Information (LMI) app. The LMI app, called Coach Central, pulls together LMI from a number of approved open Government sources. Using this App DWP staff will be able to get answers to specific labour market questions. Coach Central is designed to find LMI by occupation and geographical area. The job vacancies service (Universal Jobmatch) can also be accessed via it. The LMI App was made available to the Work Coaches as part of the second MOOC (and an earlier version was available to the employer advisers on the first MOOC). Further details of the LMI app are given in later sections of this report.

These three developments together were intended to constitute a social learning programme to help address challenges related to understanding the changing world of work, the 'turn' towards coaching, and the increased importance of relations with employers.

4.8.3 Analysis

The concepts and theories that guide the solution are outlined in Brown (2015), Brown & Bimrose (2015), and Brown & Bimrose (2014). The key ideas can be summarised as follows: Learning and identity development can be represented as occurring across four domains: relational development; cognitive development; practical development; emotional development. Learning may involve

development in one or more domains and development in each domain can be achieved in a number of different ways.

A major route for relational development is learning through interactions at work, learning with and from others (in multiple contexts) and learning as participation in communities of practice (and communities of interest) while working with others. Many processes of relational development occur alongside other activities. However, more complex relationships requiring the use of influencing skills, engaging people for particular purposes, supporting the learning of others and exercising supervision, management or (team) leadership responsibilities may benefit from support through explicit education, training or development activities. Relational development was the 'golden (or red) thread' throughout the activities in the MOOC which were very collaborative.

A major work-related route for cognitive development involves learning through mastery of an appropriate knowledge base and any subsequent technical updating. This form of development makes use of learning by acquisition and highlights the importance of subject or disciplinary knowledge and/or craft and technical knowledge, and it will be concerned with developing particular cognitive abilities, such as critical thinking; evaluating; synthesising etc. This strand of the MOOC was represented through seeking to achieve a greater understanding of the 'changing world of work.'

For practical development the major developmental route is often learning on the job, particularly learning through challenging work. Learning a practice is also about relationships, identity and cognitive development but there is value in drawing attention to this idea, even if conceptually it is a different order to the other forms of development highlighted in this representation of learning for labour market transitions. Practical development can encompass the importance of critical inquiry, innovation, new ideas, changing ways of working and (critical) reflection on practice. It may be facilitated by learning through experience, project work and/or by use of particular approaches to practice, such as planning and preparation, implementation (including problem-solving) and evaluation. The ultimate goal may be vocational mastery, with progressive inculcation into particular ways of thinking and practising, including acceptance of appropriate standards, ethics and values, and the development of particular skill sets and capabilities associated with developing expertise. This strand was represented in the MOOC by incorporating activities which were expressly designed to lead to changes in ways of working and an understanding of practice.

For emotional development, the major developmental route is learning through engagement, reflexiveness that leads to greater self-understanding, and the development of particular personal qualities. Much emotional development may occur outside work, but the search for meaning in work, developing particular mind-sets, and mindfulness may be components of an individual's emotional development. Particular avenues of development could include understanding the perspectives of others, respect for the views of others, empathy, anticipating the impact of your own words and actions, and a general reflexiveness, which includes exploring feelings. Identity development at work may also be influenced by changing ideas individuals have about their own well-being and changing definitions of career success. This strand was represented in the MOOC by developing a stronger basis for interacting with employers and by adopting a more 'professional' role based on their developing expertise.

4.8.4 Process

How the solution was developed and put to practice: The first part of the process involved the development of an online learning course. "The Changing World of Work: Working with Employers in a Dynamic Labour Market" was implemented as a pilot course at DWP by the Operational Learning Team (OLT) and the National Employer Service team (NEST) in cooperation with the EmployID project. The course has been delivered in the format of a "MOOC" (Massive Open Online Course) via the FutureLearn Platform (<https://www.futurelearn.com>). While the pilot

course was neither “Massive” nor “Open” this format has been chosen to explore the potentials of MOOCs for a possible broader roll out within DWP.

The course topic focused on two main areas:

The Changing World of Work (how work and job roles are changing in the labour market)

The Changing World of Careers (how people’s careers are developing across the life-course in a more dynamic and uncertain labour market)

Following the common pattern of MOOCs in FutureLearn the learning content was designed in small chunks using short video clips, in-house apps, such as job aids, quizzes and self-assessment tests. These activities were pulled into a structured learning journey in weekly themes. The newly developed App ‘Labour Market for All’ (by EmployID partners) was also presented in the course and participants could explore how to maximise this App for their work. From a pedagogical point of view a great focus was given towards collaborative learning, including group discussions and reflection exercises. The course was implemented and facilitated by a core team of experts from DWP and the EmployID team, especially UWAR for content and facilitation and PONT for the LMI app.

Preparatory work for the MOOC started around November 2014 and included a series of regular meetings to align the pedagogical design, the content and the technology. A close working relationship between DWP staff members and EmployID members, especially UWAR, was established.

4.8.5 Solution

Course implementation of the First MOOC

The main objective of the course was to build resourceful learner capability to make use of sector based knowledge and labour market information to shape their employer engagement plans and to use the knowledge gained to support work coaches in order to coach the claimants more effectively.

Apart from the topic related objectives, such as the use of sector-specific labour market information and the deeper understanding of the changing world of work, this pilot course also aimed to guide learners to support colleagues/peers in applying latest labour market information in their work and related aspects covered in the MOOC and to use reflection techniques on the learning process itself as well as a on any further learning needs.

The course was designed to have a total duration of 22.5 hours spread across 6 weeks.

The pilot MOOC had 15 participants, all working as Employer Advisers in the South West of England, in the counties of Devon, Cornwall and Somerset.

The group of participants consisted mostly of experienced Employer Advisers, including 3 line managers. At least 2 persons indicated that they were new in the Employer Advisers work group with only 3-4 months of experience in that role, although not new to DWP.

A People Preparation event took place on the 5th of February 2015. This was a half-day face-to-face event to inform the learners about the Changing World of Work MOOC and their role within the learning. Participants were also given a short presentation of the EmployID project and the concept of professional identity transformation that is studied in the project.

MOOC launch: the MOOC was launched on the 16th of February 2015 and lasted for 6 weeks. Participants were expected to spend a total of 22.5 hours on the course. The course contained various activities, such as live events, discussions, videos, employer visits, articles, links to DWP internal and external resources, etc. Reflection activities were built into the course at various

stages. The course design included individual reflection as well as group reflections and discussions. Towards the end of the course participants were asked to do a collaborative exercise, namely to prepare an Employer Engagement Plan for the three participating districts (Devon, Cornwall and Somerset).

A face-to-face Follow-up event took place on the 21st of May 2015 in Newton Abbot, UK. During this half-day event the participants presented their Employer Engagement Plans to a panel of experts. In addition, the event was used for reflecting on the course and gathering feedback for future improvements. In parallel it offered the opportunity to conduct interviews with the learners and DWP L&D staff members. All the participants received a certificate for attending and completing the course successfully.

The MOOC – Week by Week

WEEK 1: HOW WORK IS CHANGING

SELF-ASSESSMENT OF LMI UNDERSTANDING EXERCISE

DISCUSSIONS

TEXT ARTICLES

VIDEO CONTENT

All based around KEY FACTORS AFFECTING LABOUR MARKETS.

QUIZ

SUGGESTED FURTHER READING ARTICLE

REFLECTIONS ON LEARNING DISCUSSION

EMPLOYID PROJECT - BACKGROUND ARTICLE

THOUGHTS FROM AND FOR EMPLOYID PROJECT TEAM DISCUSSION

WEEK 2: WHAT IS HAPPENING TO WORK IN DIFFERENT SECTORS?

Building sector knowledge

Same types of activities as in week 1 plus DWP KNOWLEDGE HUB WALKTHROUGH TELEKIT (teleconference)

WEEK 3: WORKING WITH EMPLOYERS

Visiting employers

Visiting an employer in your area

Same type of activities as above plus MID-COURSE REVIEW DISCUSSION

WEEK 4: LMI FOR ALL AND UNIVERSAL JOBMATCH

Working with LMI for All and Universal Jobmatch

Same type of activities as above plus

DWP UNIVERSAL JOBMATCH Management Information TELEKIT (teleconference)

WEEK 5: PERCEPTIONS OF LOCAL LABOUR MARKETS IN THE REGION

Local labour markets linking wider trends to what is happening in local labour markets in the region: same type of activities as above

WEEK 6: REFLECTION ON EXPERIENCE AND LEARNING

Same type of activities as above plus:

Reflections reflecting on course and future activities

REFLECTIONS ON LEARNING ACROSS THE COURSE AS A WHOLE DISCUSSION

FORMAL COURSE EVALUATION

FINAL SELF-ASSESSMENT OF LMI UNDERSTANDING EXERCISE

4.8.6 Results /Evaluation

4.8.6.1 Data collection instruments and timeline:

In this pilot implementation we have selected a number of different sources for data collection, including qualitative and quantitative data. It should be stressed that this implementation is a pilot setting, also from an evaluation perspective. It is a first intent of formative evaluation within EmployID and should help to refine and shape the evaluation approach as well as specific questions to be added in the future for any pre- and post-evaluation. The following image gives an overview of the course implementation and data collection process along a timeline.

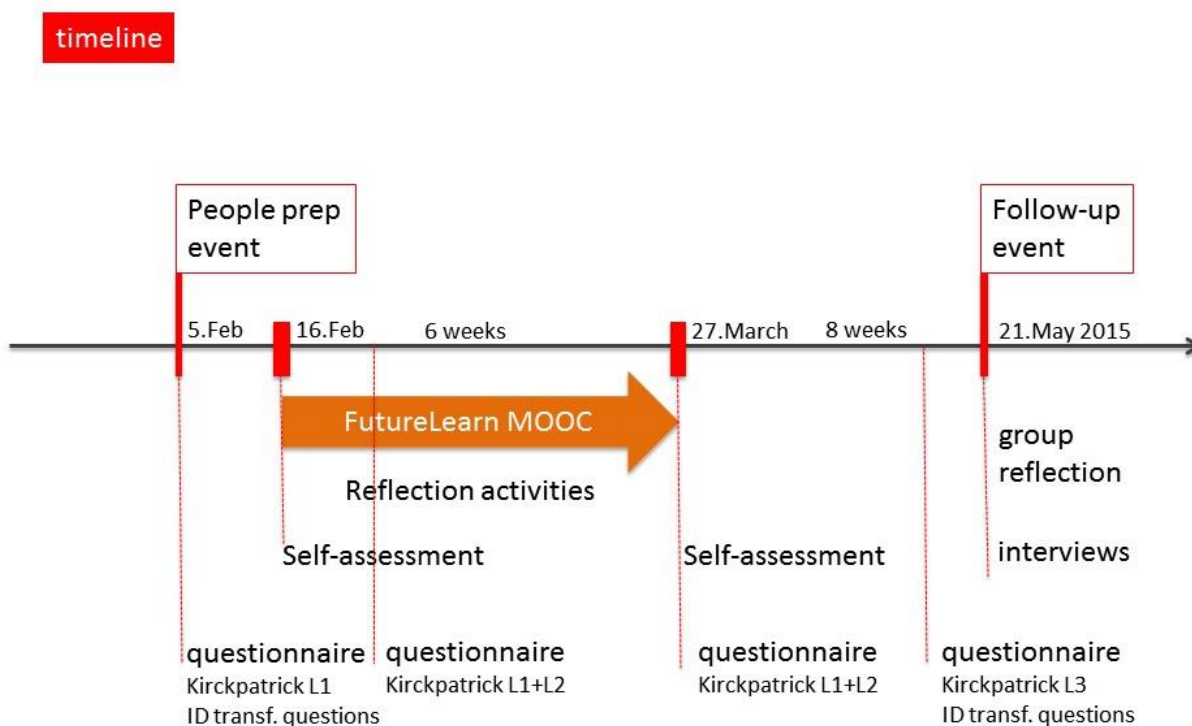


Figure 33: Chronology of 1st pilot MOOC in DWP

Self-assessment: One of the first activities for the course participants was to perform a self-assessment with regards to their knowledge and experience related to the course topic. This self-assessment was in the form of an online self-assessment activity during the first week of the MOOC. The self-assessment activity was repeated at the end of the course.

Questionnaires (electronic): A questionnaire was given to participants to collect feedback regarding the preparatory event and the information given there (Kirkpatrick Level 1 evaluation).

At the beginning of the MOOC (Week 2) and at the end of it (Week 6) the participants were provided with an electronic questionnaire. These questionnaires focused on Kirkpatrick's Levels 1

and 2 evaluation (Kirkpatrick, 1998) for the course and constitute a regular evaluation instrument for learning activities within DWP.

Together with the questionnaire at the preparatory event and the Week 6 evaluation an additional set of 4 questions were distributed, related to aspects of professional identity transformation:

- I feel recognised by my colleagues as an expert in Employer Engagement Services.
- I am confident about offering my expertise in Employer Engagement to my colleagues.
- I feel that my role is central within DWP services to customers.
- I am confident in facing the challenges related to the changing world of work.

In addition, a Kirkpatrick Level 3 evaluation questionnaire was sent to learners and line managers 6 weeks after the course ended (Week 12). The questionnaire for the line managers was again enhanced with questions relating to professional identity transformation and facilitation skills:

- Did learners offer their expertise to their colleagues after the learning programme?
- Was there a noticeable change in behaviour or attitude of the learners when back at their workplace?
- Has there been an increase in recognition of the learner's expertise in Employer Engagement/LMI by their colleagues?

The first question relates to possible facilitation skills, supporting others, peer learning, etc. It includes aspects of relational development as defined in the evaluation framework. The third question also relates to the learners' relational development, with a focus on recognition and acknowledgement of their professional identity. The second question relates to confidence, motivation, self-esteem, etc., covering specifically aspects related to the individual and emotional development.

Content analysis: An important source of evaluation data was the communication of the participants during the course, especially those discussions triggered by reflective questions. Qualitative content analysis as proposed by Mayring (Mayring, 2000) has been applied to all discussion entries on the FutureLearn MOOC platform.

Interviews: Personal interviews were with six course participants and five from the Learning, Development and Management Team. The interviews were mainly conducted during the follow-up event on the 21st of May 2015. The analysis of the interviews followed the same methodological approach as the content analysis, namely an open coding scheme (Mayring, 2000).

Statistical data from the course: In addition to the data gained from direct interaction with the learners, the FutureLearn platform also provides statistical data that can give insights in the activity level of the participants during the course. For this first pilot the data provided by FutureLearn was replicated by the EmployID evaluation team to get some statistical data on learner's participation (see Appendix C for details).

4.8.6.2 Evaluation results

A full evaluation report is available in Appendix C, with just the highlights presented here.

Course Design:

The general feedback about the MOOC design is highly encouraging. The MOOC looks professional to the participants and the learning is “easy to navigate” according to open feedback in the questionnaires and interviews.

Most of the learning expectations were met as the feedback questionnaire in Week 12 indicates (see Figure 34). However, there is also some disagreement. From qualitative statements we learned that this disagreement is due to the fact that some learners expected even more interaction and more contribution to discussions from their peers as well as a better IT support infrastructure. These aspects will be addressed in the following sections.

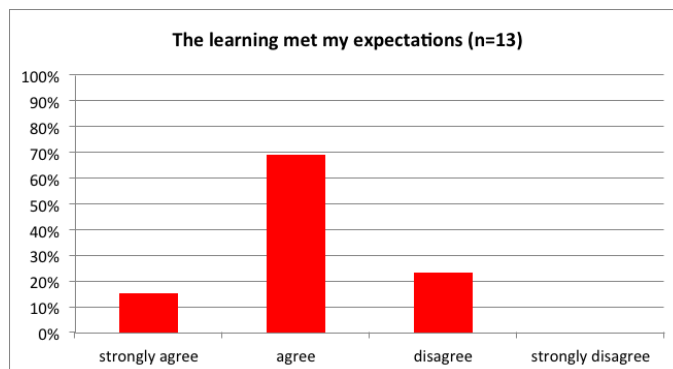


Figure 34: Learning expectations in Week 12

Overall, participants appreciated the possibility during the MOOC to follow the course at their individual pace and that it catered for different learning styles. Various comments supporting this view are found in the feedback questionnaires such as:

“Reading from a screen is not my preferred learning choice but it was made easier as I was able to do this at my own pace. I found having all the links in the training really useful and having these all in one point has made it easier for me to refer back to.”

One of the most critical aspects in the implementation of the MOOC was related to technical issues and restrictions within DWP. Participants were struggling with accessing the videos, which in some cases led to frustration. As the learners were facing technical difficulties with accessing the videos from the DWP offices some were accessing the videos from their home computers. One of the line manager summarizes that “*The major barrier was and remains the inability of DWP digital equipment to properly download certain aspects of the course*”. This has been confirmed by participants and managers alike and has been addressed when setting up the second MOOC.

While the participants seemed to have some doubts about the learning method at the beginning of the course in Week 1-2 (Figure 35) the effectiveness of the MOOC was confirmed by the participants at the end of the course in Week 6 (Figure 36).

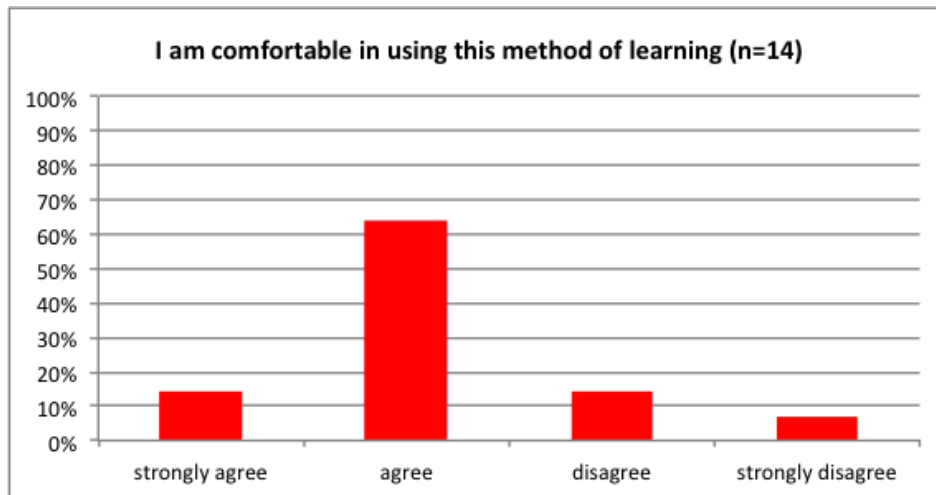


Figure 35: Acceptance of learning method in Week1-2

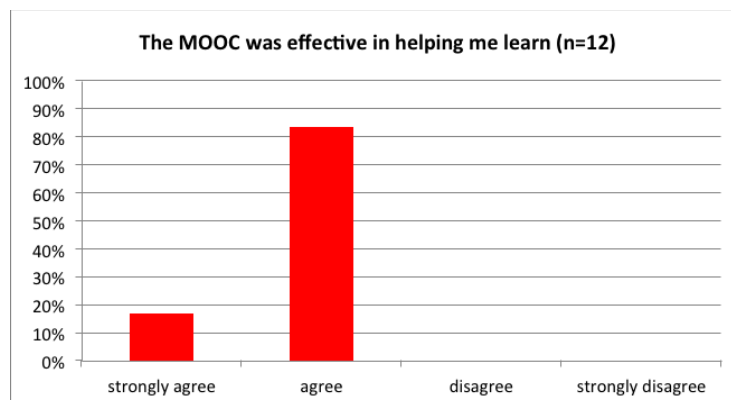


Figure 36: Effectiveness of MOOC in Week 6

Reflection:

Building reflection into the course was one of the very valuable aspects achieved with the MOOC. According to an Organisational Learning Team member reflection “*is a forgotten art as far as we are concerned*”. Based on the experience of the MOOC reflection is gaining attention in the learning design of DWP and is considered as something on-going, to be done at the beginning, during and after the course. Self and peer reflection activities shall be even considered more prominently in the next DWP MOOC.

Collaboration:

Most importantly, the participants all valued the content coming from their peers in the discussion and interaction activities. Exchanging experiences about their daily challenges, such as employer visits, relationship and trust building, networking, etc. was highly appreciated.

Course content:

Overall, the content of the MOOC was considered important and relevant for practitioners’ work and the participants confirmed the importance of LMI for their job role. Being able to deliver factual data about LMI is considered very important when working with employers and it helps to raise reputation.

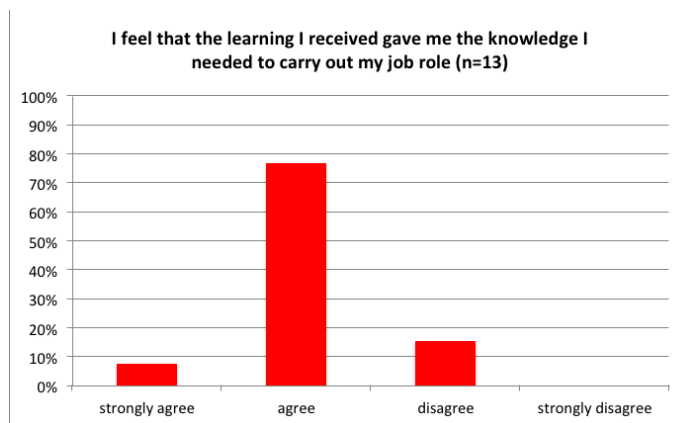


Figure 37: Relevance of content (Week 12)

An important feedback for improvement was the focus on local content: The local embedding of content is important to many participants. This has been raised continuously by the participants in the feedback questionnaires as well as in the interviews. While most of the participants and their line managers agreed that the learners got “the bigger picture” of labour market information, there was a general tenor that the content could be brought down further to the very specificities of the local labour market. Someone was e.g. suggesting MOOCs on LMI at district level.

Identity development:

Personal development:

There is evidence that the reflection and discussion activities during the MOOC triggered some self-reflection amongst individuals. Some participants expressed their increased confidence with the additional knowledge gained as well as an increase in confidence with the knowledge already acquired previously as the following statement nicely summarises:

“....it was nice because it made you realise that you know a lot more than you think you do as well. So actually helped you confidence- wise...”

The Kirkpatrick Level 3 evaluation in Week 12 aimed to collect some evidence of a personal development and confidence. When looking at the consolidated answers, the agreement to an increase in confidence is very high amongst the participants (see Figure 38).

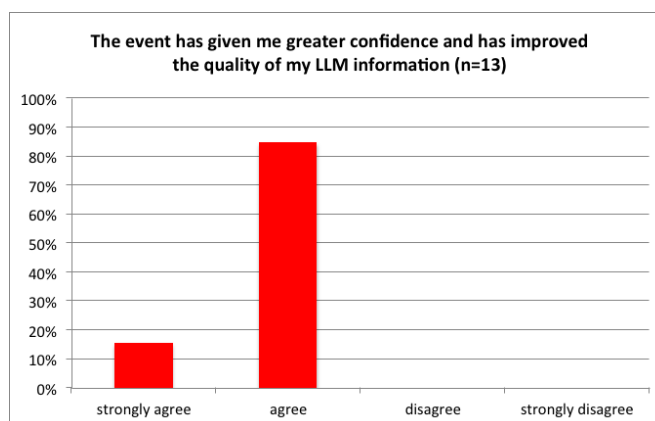


Figure 38: Gained confidence in Week 12

Other indications of personal development were found in the analysis of the comments provided on the MOOC platform itself. A number of self-reflective statements were found that provide some evidence for the learner’s self-reflexivity, such as “the course is making me think about my relationship with employers”.

Cognitive development (development of technical knowledge):

In terms of cognitive development the main focus is on the participant’s understanding of the content and acquiring new technical knowledge, relevant for their work. Both feedback questionnaires, in Week 6 as well as in Week 12, confirm the gains of new knowledge on Labour Market Information of the participants.

Cognitive development was also expressed during the final event in Newton Abbot, where the three districts presented their employer engagement plans. Although the three groups approached the task in very different ways an increase in the participants’ use of LMI was noticeable during their presentations and the following discussions. Each of the three groups had chosen a different approach to employer engagement planning and in all three cases new and useful elements were identified by the respective other groups.

Participants and line manager agree that the learning advancement with regards to LMI were mainly with regards to gaining a greater understanding of the “bigger picture”. The following feedback from a participant summarises the experience nicely:

“I like the fact that the MOOC prompted all of us to look at and learn at a higher level, for instance the learning partnership (LEP) doc for South West – very informative and this information underpins the basis of employer engagement. It broadens the mind and encourages you to consider the bigger picture and to look at working to a higher degree with information. Is this relevant looking at EAs objectives and expectations – yes I think it is. Especially relevant in dealings with councils, business forums at an expected level. I would like to see some type of discussion group to continue.”

Practical development

Practical development is related to transferring and applying the gained knowledge on the job. As stated above there are indications that a knowledge maturing process still needs to take place in order to make further predictions as to how far the MOOC has influenced the practical development of the participants. At the time of the Kirkpatrick level 3 evaluation in Week 12, 12 of the 13 participants already indicated that they were able to apply their learning to their job role.

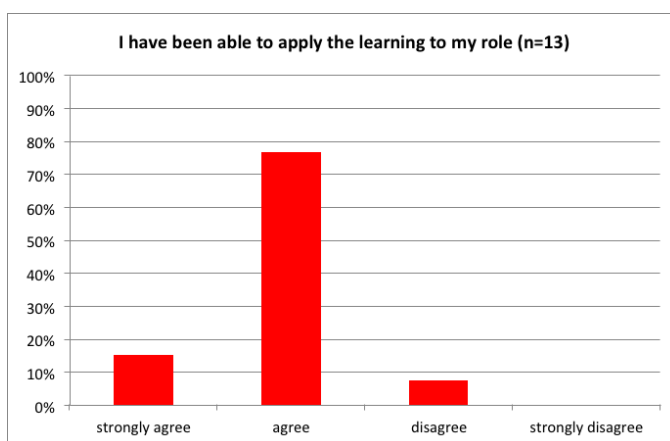


Figure 39: Applying learning to practice (Week 12)

Relational development

Relational development is referring to the interaction with colleagues, the learning with and from others, in peer groups and in communities of practice. In the pilot MOOC the learning from others, the exchange, discussions and feedback from peers was the most valued aspects by the participants. This fact is recurrently confirmed in the interviews, the feedback questionnaires as well as the statements of the participants of the MOOC. Important aspects for the relational development of individuals are the recognition by others, the feeling of belonging to a group of peers and the sharing of knowledge with others. The evaluation showed positive development in all these respects. One of the main instruments to identify any potential change, in this respect, was the questionnaire distributed before the start of the course (during the people prep event) and at week 12 (6 weeks after the course ended) with a set of 4 questions.

When looking at the collated answers received from the participants an overall positive development can be stated (Figure 40).

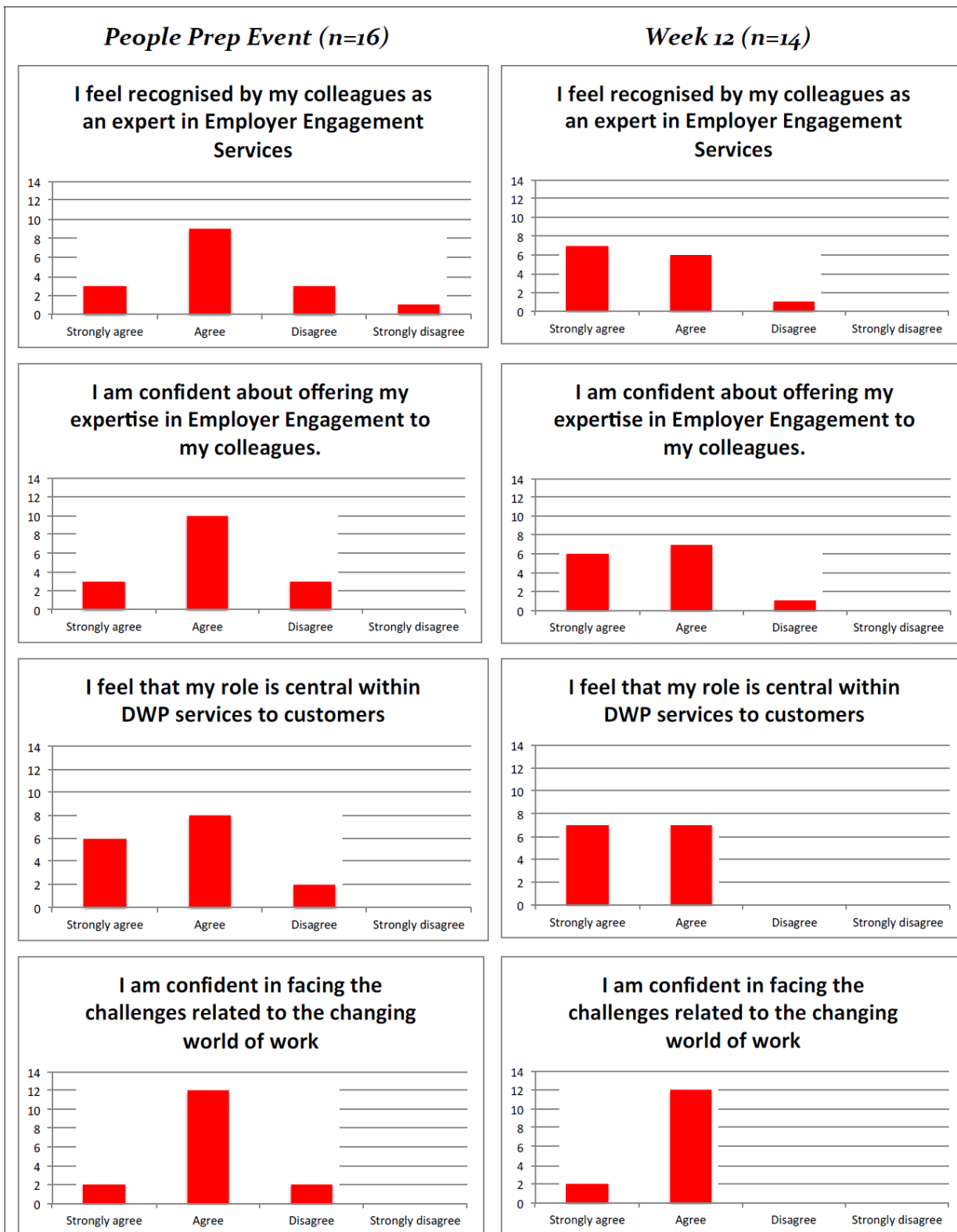


Figure 40: Individual and relational development in Week 6 and Week 12

While there is a positive shift for the first three questions, the last question does not indicate any changes in confidence regarding their future work challenges. This might be an indication of the fact that participants expect being faced with highly demanding challenges related to the current labour market changes and professional identity transformation processes within DWP. The changes associated with the introduction of Universal Credit as well as other external factors such

as the political landscape, are expected to effect the work of DWP staff in the future, as indicated by some interviewees.

An impact beyond the duration of the course can be derived from the participants' statements about transferring their experiences of the MOOC to the local offices:

"It has made me keen to look at how to best present and share this with rest of the office to enable us all to have better overall understanding of our patch."

"Have discussed with local Manager about setting up work group in office from volunteer frontline staff to look at how we can move this forward locally. Will look at drawing up questionnaire/survey for local staff to look at knowledge levels currently, what information they need/want and best formats and frequency for sharing this. Want staff to be involved and have whole office approach to moving this forward."

"Will involve office to fully understand how and what they want from us then can use knowledge gained covering MOOC to enable me to deliver a product to meet these needs."

The willingness to share and exchange experience is also confirmed by the line managers, who mostly state that the learners were offering their expertise after the MOOC with their colleagues.

Emotional development:

The issue of reputation associated with their specific job role towards the outside world and how it can be increased was a topic discussed quite intensively amongst the participants, revealing some emotional attachment to their job.

Organisational response:

The MOOC received high level managerial support and there was a commitment to roll out a similar MOOC for Work Coaches: "*The MOOC had a positive influence on senior leaders' thinking on how we learn*", with DWP even thinking about offering MOOCs for customers and claimants. In the interviews with the managerial team involved in the pilot MOOC a series of practical and financial implications in case of a wider uptake within DWP were addressed. For any learning provided in DWP the ROI (return on investment) has to be provided and learning needs to be linked to performance in business objects. According to one of the Operational Learning Team members the MOOC has been approved in the learning review, meaning that it has gone to a very senior level and the learning outcomes are worth the costs associated with it. This is also in line with the general tendency towards following a more digital and thus cost-effective approach to learning. The organisational team of DWP involved in the implementation of the MOOC are all generally very positive about a potential further roll out.

Another important lesson learned from an organisation perspective relates to the preparation of the staff to become resourceful learners and the building of people's digital capacities:

"...one of the challenges at DWP I've got is actually the lack of digital skills that staff have. So that's something that we need to work on which we are doing; so the social media side – and it's that culture of actually moving people – you're not sitting in a class room, you're not sitting doing e-learning, you're actually learning through individuals and learning is not being done to you ..."

These issues will be explicitly addressed in the second pilot MOOC. Collaborative learning is regarded as an important support for individuals in their professional identity transformation by members of the Organisational Learning Team. The sharing of practices and learning from peer is clearly regarded as offering great potential for individuals to cope with demanding and changing job roles.

The digital agenda and the related up-skilling of DWP staff members, including management, has been identified as a developmental challenge for the organisation. One of the participants also expressed a need for up-skilling for the digital agenda on the client side, namely the employers, which affects the work of Employer Advisors.

Being implemented in the context of the EmployID research project and the resulting collaboration between learning designers in DWP and research partners was a new experience and important learning experience itself. The collaborative elements as well as the elements of reflection were especially challenging and new to the learning in DWP. As one of the core learning designers in DWP states: *“Since I have been part of EmployID I have given presentations on reflection to my colleagues and that information I have passed on.”*

Although the focus was on LMI in terms of content and social learning, including collaboration and some reflection and facilitation, DWP staff members involved in the EmployID project also mentioned how other elements of the project, such as coaching and peer coaching, would be needed in DWP learning in the future, including in the upcoming MOOC pilot for Work Coaches.

4.8.6.3 Implications for evaluation

Finally, we also collected experiences in this pilot MOOC regarding our next evaluations and our overall evaluation approach, which are as follows:

First, a closer alignment and integration of the project evaluation with the organisation’s learning evaluation would be beneficial. This should include a more thorough evaluation design in terms of roles and responsibilities and bringing the researcher team and the learning designers of the PES closer together. This has been confirmed from both sides, the researcher as well as DWP staff. While we did not encounter any big issues during the evaluation, an improved coordination might reduce the overall efforts put into evaluation. This clearly depends on the internal evaluation requirements within PES as well as the different evaluation interests of the project.

Second, the questions related to professional identity transformation still need to be better aligned with related aspects of the project, such as facilitation, reflection, social learning and coaching. The first set of questions was giving good indications, but they cover only part of those aspects and should be slightly reformulated to provide deeper insights. In addition, the scale for the questions should allow for more differentiated answers.

A self-assessment approach is currently designed that should include self-assessment and self-reflection questions for the learners. It is expected that the self-assessment would provide valuable insights regarding personal development for the evaluation, but more importantly for the learners themselves.

Third, in this formative evaluation we applied a number of data gathering instrument that partly lead to overlapping results. E.g. the content analysis of the MOOC discussion groups was rather time consuming without providing many new insights that were not yet covered in the open comments of the questionnaires and the interviews. Thus, we need to find a trade-off between the different instruments, also considering the limited time and patience of the participants.

Fourth, we need to be cautious in our interpretation of data generated automatically from the systems. While there is clearly some value in the data and there are plans to study automatically generated data in more detail in the next pilot implementation there is a clear need to verify any conclusions drawn from such data with human intelligence. As the data from FutureLearn has clearly shown the collected data does not necessarily reflect reality they had to be cleaned and restructured to come up with valid statements about the learners’ behaviour in the course (more details in the full report in Appendix C).

4.8.7 Development of the second MOOC

Based on the experiences from the first pilot MOOC the evaluation approach has been adapted for the second pilot MOOC. This second course is the first pilot where we introduced the EmployID self-assessment questionnaire (see above for details) that specifically integrates questions related to professional identity transformation, facilitation and reflection. We expect to gain important formative feedback for this instrument. Additionally, reflective activities have been integrated more prominently in the whole course, inviting participants to jointly reflect on their learning experience. The image below summarises the chronology of planned evaluation activities during the second pilot MOOC.

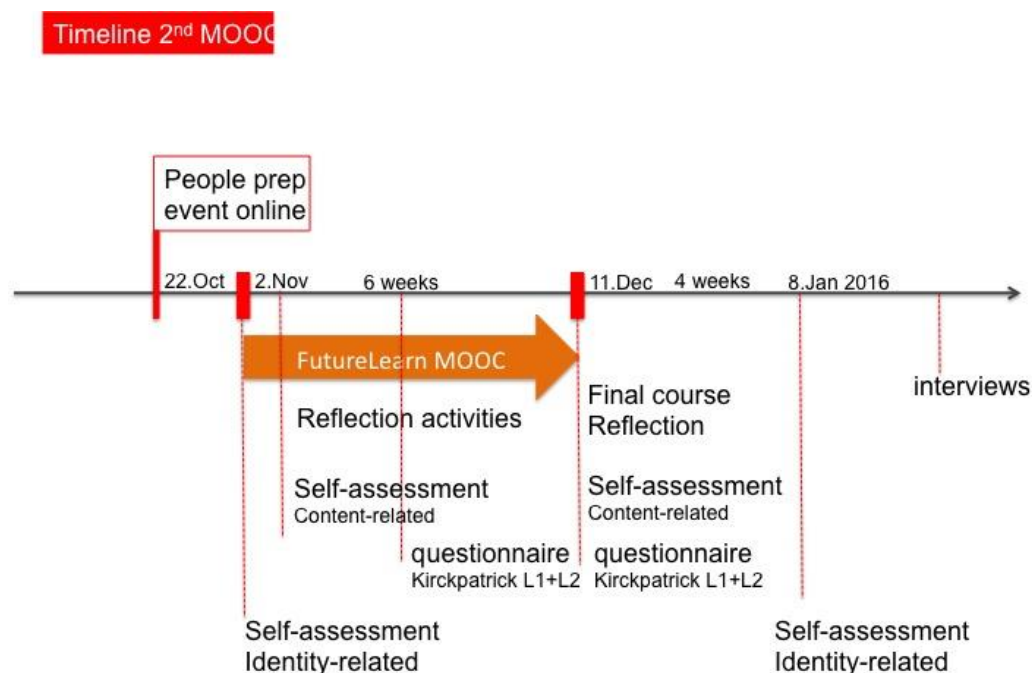


Figure 41: Chronology of 2nd pilot MOOC in DWP

Outline of the pilot course on ‘The Changing World of Work: the Work Coach’.

The detailed planning for the second MOOC began with a start-up meeting in June 2015, with detailed design taking place with regular meetings in the period September – November 2015. As well as developing the content, IT technical and security issues were addressed, including the adoption of a customised DWP intranet page to support the second MOOC. The design of the second MOOC built on the lessons from the first MOOC, including more emphasis on reflection, evaluation of Identity transformation etc.

This course was devised as part of the EmployID project specifically for DWP Work Coaches. It is a closed private course accessible only to DWP staff course participants and EmployID project members. The course aimed to give work coaches opportunities to help them to:

- recognise the cultural and the digital agenda changes within DWP
- understand coaching claimants
- make sense of how the world of work is changing
- recognise the importance of Labour Market Information (LMI) and Sectoral Knowledge
- relate all these to your own (changing) role within DWP

- share knowledge, ideas and experiences with colleagues
- reflect individually and collectively on what you have learned
- think about how careers and work identities will change in future (including your own!)

There was a self-assessment exercise to complete for evaluation purposes before the course began. The six week course was laid out as follows:

Week 1: Cultural Change within DWP. After an introduction to the course, where what you can expect from participating in it is mapped out, we will focus on issues around Cultural Change within DWP. Throughout the course there will be opportunities for you to reflect upon your experience of the above, how they affect your job role and to share and discuss your ideas with colleagues. The focus on the cultural changes taking place across DWP starts with a look at the 2020 vision and the technological changes that are supporting this vision. You will also look at the changing world of Work Coaches. The Work Coach Delivery Model is covered and this will help you to understand how it will change your role.

Week 2: Digital. This week focuses on how digital technology is impacting the Work Coach role. It will give you a glimpse into the digital future of the Work Coach role as we move towards making our 2020 vision a reality. It will give you an opportunity to assess your digital capability and to help you to plan your own digital development. There will be opportunities throughout to take part in discussions. Using these you will be able to share your ideas with colleagues to support digital development across sites.

Weeks 3 and 4: Coaching. These 2 weeks will look at your role as a Work Coach, the expertise you demonstrate in your role and how to improve on it. We will briefly recap the knowledge, skills and behaviours of the Work Coach before listening to how these can be used effectively to coach the claimant to take personal responsibility for their work search. We will also look at how to coach the claimant to assess and improve the quality of their work search. Finally we will look at your well-being and building your resilience to the stresses of your role. Throughout weeks 3 and 4 there will be opportunities for you to benefit from giving and receiving peer coaching from your colleagues in your discussion of the challenges raised by the learning.

Week 5: Labour Market Information (LMI) and Sectoral Knowledge. This week is about LMI and Sectoral Knowledge and includes a series of activities that you can choose from to complete. To assist in this you will initially complete a self-assessment diagnosis of your current knowledge and understanding of LMI and Sectoral Knowledge. However as one of the main methods of learning in the MOOC is peer coaching you should take part in all the discussion groups. This will enable you to share your existing skills and knowledge with your colleagues. During this week you will also be introduced to a LMI App and how you can use it in practical ways in your job role.

Week 6: Reflection and Evaluation. The activities this week should enable to draw together and reflect upon what you have learned on the course. There will also be an opportunity for you to tell us what you think about the course as a whole.

4.8.8 Patterns

I.1 Scaling up learning		Phase II-III
Problem	Changing work demands and the introduction of new technologies are leading to increasing need for professional development programmes within European Public Employment Services. However, pressure of time and budget restrictions mean L&D departments are unable to provide sufficient opportunities for CPD through traditional (face to face) workshops and courses.	
Solution	Provide social learning programmes (see Pattern II.1) based on the idea of MOOCs. Such programmes are closely related to work practices, are short (typically based on 2 hours a week learning for 6 weeks, are flexible, facilitate social learning and incorporate multi media.	
Evidence	Two pilot programmes, organised by DWP have been extensively evaluated, including pre and post course questionnaires, interviews with L&D professionals, managers and participants, discourse analysis and through examination of Learning Analytics data provided by the FutureLearn platform.	
Evaluation	Focus: Training helps to learn the peer coaching method and the peer coaching concept helps to overcome barriers of time constraints.	

II.1 Facilitating social learning		Phase Ib
Problem	Some European Public Employment services have experimented with introducing online courses. However these have often not been popular with participants - the reasons seeming to be lack of relevance for work processes and a feeling of isolation and lack of exchange with colleagues. Overall this has led to the feeling that 'online learning is not for me'.	
Solution	To develop a pedagogic approach based on social learning. Such an approach develops and fosters interaction between participants and values participants as facilitators of the learning of others. It is integrated with work based practices and develops self directed learning and teh professional identities of learners.	
Evidence	This issue emerged from the evaluation of the first DWP MOOC and on expectations and feelings of participants regarding online learning.	
Evaluation	The EmployID project has continued to develop its pedagogic approach to social learning, adapting such an approach through all of the tools and actions being piloted in PEs organisations. The facilitation of the learning of others is seen as a major focus for research and evaluation.	

4.9 Labour Market Information at DWP

4.9.1 *Learning challenges in context*

4.9.1.1 *The importance and use of Labour Market Information*

Access to high quality Labour Market Information (LMI) is seen as priority by most European Public Employment Services. LMI is important for those directly working with clients, in showing labour market trends and opportunities, both for young people entering the labour market and for older people seeking new jobs and careers. Future labour market trends and predictions may be an important factor for those considering retraining. However, it is not only PES staff dealing directly with claimants that need access to LMI. LMI is also important for staff working with employers, especially in establishing the credibility of PES services through their knowledge of the present and future requirement of different industries and sectors. LMI is also important from a policy and planning aspect, in seeking to ensure qualifications and skills are adequate to meet future employment requirements. One reason for the increasing emphasis being placed on MI for employment services may be the growing precariousness of labour markets, with temporary and short term employment increasing in most countries. At the same time changing forms of work organisation and particularly fast changing technologies are rendering long term planning and employment problematic, leading to new demands of employment services, both for working with individual clients for working with employers. LMI is critical both for understanding existing local and national labour markets and for planning for future demands

4.9.1.2 *Sources of Data*

There is no shortage of LMI in most countries. However, this data has historically not always been easy to access, particularly for use within PES services. Much of the data required, for instance pay and hours worked, employment in different occupations and sectors, job vacancies and qualification requirements are collected by national statistical agencies with the main aim of supporting economic development and policy. In other cases data may originate with education and training organisations and in some cases has been outsourced for instance job vacancy data in the UK. Even when this data is readily available, it is often in a format making it difficult to use by PES organisations and staff, for instance in large data bases and spreadsheets. Data is not always available to PES organisations and even in those countries advocating open data policies, data may be withheld over concerns regarding disclosure of sources. Often it is difficult to link different data sources, especially as much data is collected using industrial classification systems, rather than focusing on occupations which is far more useful for employment services. It is important to note that data classification systems are not standardized within the EU. Although Eurostat collects and publishes a standard set of LMI through the European Labour Force Survey, this is at a relatively low level of granularity. Indeed granularity is a major issue with LMI, particularly for those staff working with employers who require local LMI for their work.

4.9.2 *Analysis*

The EmployID project has been working with PES organisations in both the UK and Slovenia to develop what we call 'Technologically Assisted Boundary Objects' to provide easy access to relevant and up to date LMI. These boundary objects take the form of dashboards which allow the querying of databases based on open and linked data. In both countries there are policy initiatives encouraging the publication of open data. In the UK the data is published under an Open Government licence allowing its use for both non-commercial and commercial purposes. The Government sees this is not only central to open government, but as important to developing a growing data services industry and to encouraging technological innovation. The dashboards being developed through the EmployID project are designed as mediating objects within the work

process, mediating between different communities and social actors, including statistical agencies and data producers, employers, and claimants. LMI also mediates processes and collaboration between different groups of staff with PES organisations for instance between those providing services to employers and those providing services to people seeking employment. In being embedded within work practices they are designed also to be learning objects, allowing PES employees to develop their knowledge about the interpretation and use of LMI through work practice. In this respect it is important to note that it is not adequate merely to gather and publish all available LMI, even with good visualisations. Instead it is necessary to understand how the LMI is to be used in work practice and to develop dashboards and instruments which support that use.

4.9.3 Process

The LMI dashboards are being developed through an iterative design process between EmployID developers and LMI experts within the PES organisations, using wireframes and testing and evaluating different designs with end users.. The development work has also had to take into account the procedures for approving access to external technologies and services, privacy concerns and restriction and within the different public services and the limitations of legacy software systems. These are non-trivial issues, especially where older internet browsers restrict the use of modern systems for visualizing data.

The development of the learning resources has been informed by a consideration of the following issues, amongst others:

- The importance of developing methods and strategies for co-design with users.
- The need for conceptual tools to help people understand the models and ideas which are part of LMI.
- The need for a more open pedagogy (than is typical of much existing technology-enhanced learning, *and* existing workplace training practice).
- A system in which boundary objects are configurable by end-users (practitioners) and by guidance trainers to be used in multiple ways
- The need to build an understanding of how technologically-enhanced boundary objects (TEBOs) may be used in ways that have utility for the employing organisation (in terms of efficiency savings), are empowering for practitioners, and ultimately for clients too.

4.9.3.1 LMI and Skill development

Labour Market Information requires interpretation, even when mediated through EmployID dashboards and tools. Within the UK early prototypes have been developed alongside the two MOOCs, with the aim of both the MOOCs seeking to develop understanding and knowledge of the potential uses of LMI within public employment services and the trialling of the different tools, providing feedback as part of the iterative development process. This is in attempt to address the following issues concerning appropriate personal skill development:

- The need for time for people to interact, reflect, use concepts etc.
- Trying to reach a stage where practitioners have justifiable confidence in the claims they make and can exercise judgment about the value of information when faced with unfamiliar LMI.
- Choosing between a range of possible use-contexts.
- Deciding how to employ support from communication and discussion tools.

- Developing and transmitting Labour Market intelligence – the importance of communicating to others.
- Preconfiguring certain ways of thinking through use of scenarios; discussions can point into and lead from scenarios.

4.9.3.2 Sustainability concerns

Although the tools are being developed through the EmployID project, there are major considerations regarding sustainability. The aim is that not just the dashboards are adopted by the Public Employment Services but that the PES organisations or other public services will take on responsibility for updating data in the future. Of course there are political and policy variables which cannot be fully foreseen, particularly in a period of austerity. But these considerations have design repercussions, in both developing an understanding of the processes involved in publishing open data and in developing technologies which are flexible and extendable in the future. Of course this work is being undertaken against a background of an increased focus on big data by government and services. However rather than focus on big data, we are rather concerned with smart, timely and above all actionable data, in terms of its use within the provision of public services.

4.9.4 Solution

The following sections provide a description of the development work being undertaken with the Department of Works and Pensions (DWP) in the UK and the Zavod Republike Slovenije za zaposlovanje (Employment Service of Slovenia). Although many of the issues are common, the development process has followed different courses, due to access issues with data and different potential user groups. The final part of this section will consider possible future development.

4.9.4.1 The DWP Work Coaches Dashboard and Coach Central

The two different dashboards developed with the DWP are based on the UK Commission for Employment And Skills' LMI for All project. LMI for All is an online data portal, which connects and standardises existing sources of high quality, reliable labour market information (LMI) with the aim of informing careers decisions. This data is made freely available via an Application Programming Interface (API) for use in websites and applications.

The portal makes data available and encourages open use by applications and websites that can bring the data to life for a range of audiences. This is an open data project, which is supporting the wider government agenda to encourage use and re-use of government data sets.

LMI for All includes information from two key products from the Office for National Statistics: the Labour Force Survey and the Annual Survey of Hours and Earnings; plus data from two products from the UK Commission for Employment and Skills: the Employer Skills Survey and Working Futures. It also includes vacancy data from Universal JobMatch, data on skills, interests and abilities from the US O*NET database and Higher Education destinations data from the Higher Education Statistics Agency

The data available from LMI for All are organised around the [Standard Occupational Classification](#). This system classifies all jobs into 369 detailed categories, according to the tasks that are undertaken and the level and nature of the skills and qualifications required to do the job.

The LMI for All database can be accessed through a web portal and API.²

The LMI for All database:

- Provides access to key data that individuals need to make decisions about learning, skills and careers;
- Provides data that have been quality-assured in terms of robustness, statistical quality and confidentiality;
- Includes data that have been cleaned and standardised;
- Has been tested with developers and further iterations made as required.

The data within LMI for All are all available under an open government license. This means that individuals and organisations are welcome to use the data for any purpose, including commercial use.

The DWP Dashboard was developed for use in the first MOOC, “*The Changing World of Work: Working with Employers in a Dynamic Labour Market*” organised with DWP in Spring 2015. This MOOC was targeted at Employer Engagement staff working with employers in the South West of England. The main objective of the course was to build resourceful learner capability to make use of sector based knowledge and labour market information to shape their employer engagement plans and to use the knowledge gained to coach the claimants effectively.

The design process is being undertaken in conjunction with the Department of Works and Pensions, primarily with the Knowledge Team and National Employer Service Team. An initial meeting took place as part of a hack day for the LMI for All application, organised by the UK Commission for Employment and Skills. A follow up session took place with a presentation and consultation with around 25 LMI specialists from different divisions and region of DWP at a Labour Market Knowledge Exchange event. It was agreed that the first key activity was to research what Employer Engagement staff want to be able to find out about LMI. A survey revealed the following issues and questions.

I want to be able to find...

1. The description, skills and qualifications required for a specific occupation
2. The projected employment levels by geography (lowest level e.g. Local Authority level) for an occupation and/or sectors
3. The current number of vacancies in my local geographic area by occupation
4. The skills and qualifications that can be transferred to related occupations
5. A list of the current jobs available for a specific occupation (or set of skills and qualifications) by geography (lowest level e.g. Local Authority level)
6. A list of jobs/occupations that someone could move into with a particular set of skills and qualifications (the transferability of skills)
7. The jobs or occupations that are hard to fill in my local authority are

2

Access to the LMI for All web portal is at <http://collab.lmiforall.org.uk/doku.php?id=start>.

8. How the number of vacancies for specific occupations compares against the number of people who are seeking this work in my local authority area – a supply and demand measure to give us an indicator of the chances of getting this type of work in our area
9. A list of skills shortage vacancies (UK and/or local) with capacity to view occupational descriptions – being able to recognise when someone has specific skills that are in demand
10. How the employment and unemployment rates against specific sectors/industries/occupations change over time for my local authority area
11. What someone can expect to earn for a specific occupation in my local authority area and a description of how these earnings may change over what timescales as a career progresses (demonstrate and influence career pathways to customers)
12. The main occupations that make up an industry and sector, the numbers employed in these occupations and how these are projected to change over time
13. The most popular jobs/occupations in my local area and how many people work in them. % share by industry/sector and compared to other areas/Regions/UK
14. Who are the biggest employers in my area and what jobs do they mainly recruit for
15. What are the biggest sectors/industries in my local area and how many people work in them
16. An overview of the labour market position in my Local Authority area and compared to region/UK position (labour supply, inactivity, employment by occupation/sector/industry, unemployment, employee jobs by sector/industry, self-employment rates, business counts of PAZE based enterprises, worklessness, business starts and closures, size of businesses)
17. Levels of qualifications and numbers by local authority area
18. Survival rates of businesses in my area
19. The number, names, size band and contact details of employers based in my area, including which sector or industry they represent
20. Which employers in my area are recruiting through Universal Jobmatch
21. Sector summaries – economic position and impact, employment levels, skills gaps, future projections of employment levels and challenges to sector
22. Mythbusting for certain occupations or sectors/industries
23. Entry level occupation information
24. Public transport routes across the local Travel To Work Area

Within time restraints and the restriction of data availability it was not possible to answer all of the requirements. However the prototype provided access to data to explore many of these questions (see Figure 42 and Figure 42, below), drawn not only from the LMI for All database but ‘mashed’ with data from the Office of National Statistics for local data, as well as providing access to the DWP Twitter feed.

The screenshot shows the LMI for Work Coaches portal. At the top, there is a search bar with the text 'nurse' and a 'Find' button. Below the search bar, there is a 'Results' section with a table of occupations. The table has columns for 'SOC Code', 'Description', and 'More Info'. The results list various nursing and care-related occupations, each with a 'View More' button. To the right of the search bar, there is a 'DWP Bulletin' section with the text 'Important announcements go here.' and a 'Twitter Feed' section showing tweets from the DWP Press Office and Nat Ex Group. The tweets include links to videos and articles about new state pension information and a wheelchair lift in action.

Figure 42: LMI for Work Coaches portal

The screenshot shows the LMI for Work Coaches portal with detailed information for the occupation 'Carpenters and joiners'. The page is divided into several sections: 'Occupation Overview', 'Description', 'Qualifications', 'Tasks', and 'Related Documents'. The 'Description' section states that carpenters and joiners construct, erect, install and repair wooden structures and fittings used in internal and external frameworks and cut, shape, fit and assemble wood to make templates, jigs, scale models and scenic equipment for theatres. The 'Qualifications' section notes that there are no formal academic entry requirements, though GCSEs/S grades are advantageous. The 'Tasks' section lists several tasks, including examining drawings and specifications, selecting and measuring appropriate wood, and aligning and fitting prepared wood pieces. The 'Related Documents' section provides links to Wiki pages, documents from a document store, saved and shared web links, and Yammer discussions. On the right side of the page, there is a 'Weekly Pay by Gender and Region' bar chart showing weekly pay for male and female workers across various regions. The chart shows that male workers generally receive higher weekly pay than female workers across most regions. Below the bar chart is an 'O*NET Skills' radar chart showing the relative importance of various skills for the occupation. The skills include Management of Personnel Resources, Reading Comprehension, Active Listening, Writing, Speaking, Science, Critical Thinking, Active Learning, Learning Strategies, Monitoring, Quality Control Analysis, Judgment and Decision Making, Systems Analysis, Systems Evaluation, Time Management, and Management of Financial Resources.

Figure 43: Visualisation of Labour Market data

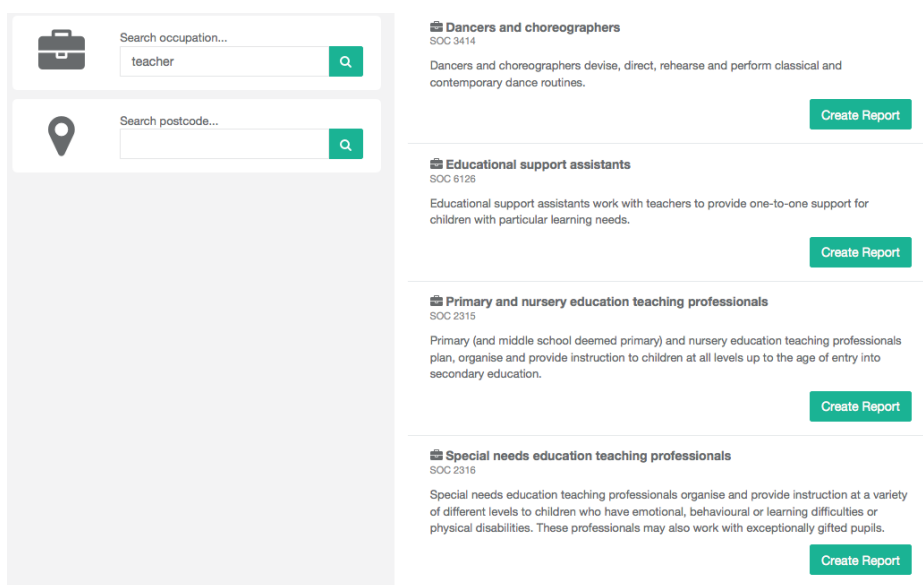
4.9.5 Results

The major issue with the Work Coaches portal was access and functionality on DWP computers. Many of the DWP computers use Internet Explorer 9. This is problematic, both in terms of how Internet Explorer interprets JSON requests and the limitations on visualisation with Javascript. This

was a particular problem with data from the Office of National Statistics. However a number of participants accessed portal on their own computers using more modern browsers and in general were enthusiastic about the potential of the tools, particularly as a research tool to be used prior to meeting with employers and as a tool to help Employment Advisers gain a better understanding of Labour Markets. Discussion in the follow up evaluation meeting focused on how the tools could be extended. One limitation was the level of granularity of data and the coding of local data. Although the ONS provides local data on employment this is coded against the Standard Industrial Classification, which is seen as less useful than The Standard Occupational Classification in dealing with employer needs. Furthermore, the size of the sample restricts the granularity at a local level. One potential way of overcoming such restrictions could be to develop tools to allow Employer Advisers, to themselves add data into the system. There was also interest in the possibilities in producing a digital version of a paper based tool which was in use on one district for colour coding different occupational employment opportunities.

The problems in accessing the Dashboard were major considerations in the redesign of the Dashboard for the second DWP MOOC in autumn. Firstly, it was necessary that it could be accessed using Internet Explorer 9, requiring a fundamental recoding of the dashboard. Secondly discussions were held with DWP regarding quality assurance and access requirement for DWP to extend access to the portal to a much wider group of users. This involved a risk assessment and the development of a login system. While the first MOOC had been targeted at Employer Engagement staff, the second was designed for DWP Work Caches, working directly with people seeking work. It was also noted that with the introduction of Universal Credit, there would be an increasing emphasis on advising those already in work, how to obtain employment with better wages or prospects. Restrictions in time available to work with individual clients meant the dashboard needed to be simple and quick to use directly in the work process.

Thus, the second iteration, code named Coach Central was reorganised around the metaphor of ‘reports; designed to allow a work coach to produce a quick and relevant report which could then be printed off for use with individual clients.



SOC 3414

Dancers and choreographers

Dancers and choreographers

Description

Dancers and choreographers devise, direct, rehearse and perform classical and contemporary dance routines.

Tasks

- builds and maintains stamina, physical strength, agility and general health through fitness exercises and healthy eating;
- attends rehearsals to develop and practice dance routines for performance;
- participates in dance performance;
- demonstrates and directs dance moves, monitors and analyses technique and performance, and determines how improvements can be made.

Qualifications

There are no formal academic requirements, although some dance schools may require candidates to have passed relevant dance Graded Examinations. Entry to courses is often via audition. Medical and physical assessments are required. Performers' courses typically last three years and lead to a diploma or certificate awarded by the school. Some degree courses are also available.

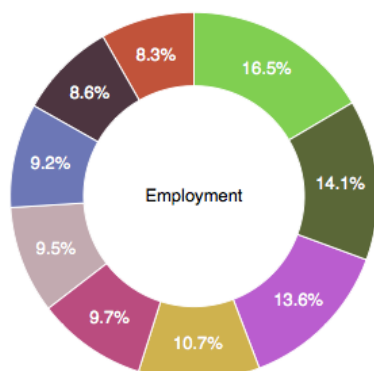
O*NET Top 10: Skills

#	Name	Score
1	Speaking	4.12
2	Active Listening	4.12
3	Instructing	4
4	Coordination	4
5	Time Management	3.88
6	Monitoring	3.88
7	Social Perceptiveness	3.75
8	Judgment and Decision Making	3.62
9	Critical Thinking	3.62
10	Reading Comprehension	3.62

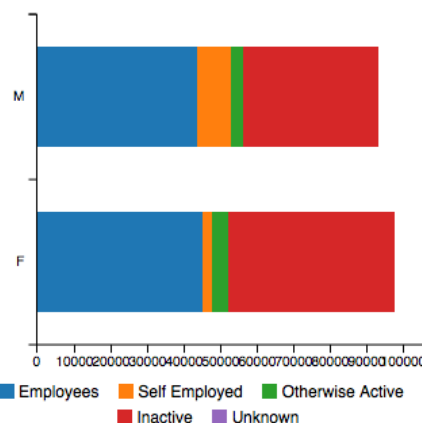
Rhondda

Rhondda Cynon Taf

Employment Makeup in Region



Economic Activity by Gender



Note: data for economically inactive and self-employed residents is extremely unreliable and often missing entirely.

Although the evaluation of the course has not yet been completed, initial feedback is positive. Participants said:

"This is really good and could be used all the time by Work Coaches during interviews to discuss job profiles, skills required and the availability in the area. Also to identify the top 10 industries in the local area as clients need to concentrate their efforts where there are actually jobs to go to. The skills list can be words the client then brings forward into their CV/covering letter. I particularly like the way it links straight to Universal Job Match. I could see myself using this all the time. "

"Hi, Got email with link immediately - first couple of attempts failed to get password set up but 2nd link did it - enabled all content message at bottom - and have now got it saved in my favourites and can access direct from there - just did this in the last 10 minutes. Looks great and agree withs comments above. Once fully operational would be a good tool for customers to use themselves"

"This is great, hopefully this will become Live soon and we can use it as a tool to help claimants."

"Eventually managed to get the app saved onto my desktop - so hopefully once fully operational it will work wonders!!"

"I really like this tool can't wait till it goes live. Will be really useful to use with claimants and help to get them to see how their skills can be used in different jobs"

"Feedback: I think this is a useful app. It is quick and the layout is simple and easy on the eye. The Top 10 skills are really handy for doing CVs and profile sections on UJ. I thought the Predicted Employment tool was useful for identifying whether something was going to last. According to that CNC is on the downturn so perhaps not such a viable career these days?? The HtF Skills Shortage seemed useful but I wasn't sure how to read it. Maybe I looked at a bad example (it was half and half!).

I would have liked to see a town/city search for Top 10 industries (rather than postcode). I also would have liked to see more in depth LMI. E.g. which industries are recruiting now, which companies etc. For example, we have a lot of building work going on here and it would be good to see at a glance the companies that are doing that.

I think the link to UJ is an excellent idea and it is really useful to be able to see the link between Coach Central's data and the vacancies available on UJ."

"Agree all of []'s comments here - think the presentation is great but the sectoral and occupation information needs to be more localised in order for this to be used to inform conversations with customers. Also agree that I found it difficult to work out what the Skills Shortage info actually meant.

Also I think we need to be a bit more careful with the third illustrative example - i.e. "Within the App in the Employment Makeup in Region report, the Work Coach was able to show that the work would not be available" - this report isn't able to demonstrate that."

I love this and will really enjoy using during interventions when discussing 'realistic' goals

"Agree all of []'s comments here - think the presentation is great but the sectoral and occupation information needs to be more localised in order for this to be used to inform

conversations with customers. Also agree that I found it difficult to work out what the Skills Shortage info actually meant.

Also I think we need to be a bit more careful with the third illustrative example - i.e. "Within the App in the Employment Makeup in Region report, the Work Coach was able to show that the work would not be available" - this report isn't able to demonstrate that."

"I love this and will really enjoy using during interventions when discussing 'realistic' goals."

"Agree all of []'s comments here - think the presentation is great but the sectoral and occupation information needs to be more localised in order for this to be used to inform conversations with customers. Also agree that I found it difficult to work out what the Skills Shortage info actually meant.

Also I think we need to be a bit more careful with the third illustrative example - i.e. "Within the App in the Employment Makeup in Region report, the Work Coach was able to show that the work would not be available" - this report isn't able to demonstrate that."

"I love this and will really enjoy using during interventions when discussing 'realistic' goals."

The comment regarding the password is part of the ongoing issue of how to provide secure logins but avoiding firewall issues. However, one caveat is that testers seemed to be using the app only as part of their learning. Further evidence is needed of its use in live interviewing situations with customers and feedback how it is used and how it can help in customer reviews. This feedback will help decide on the future direction for developing the dashboard.

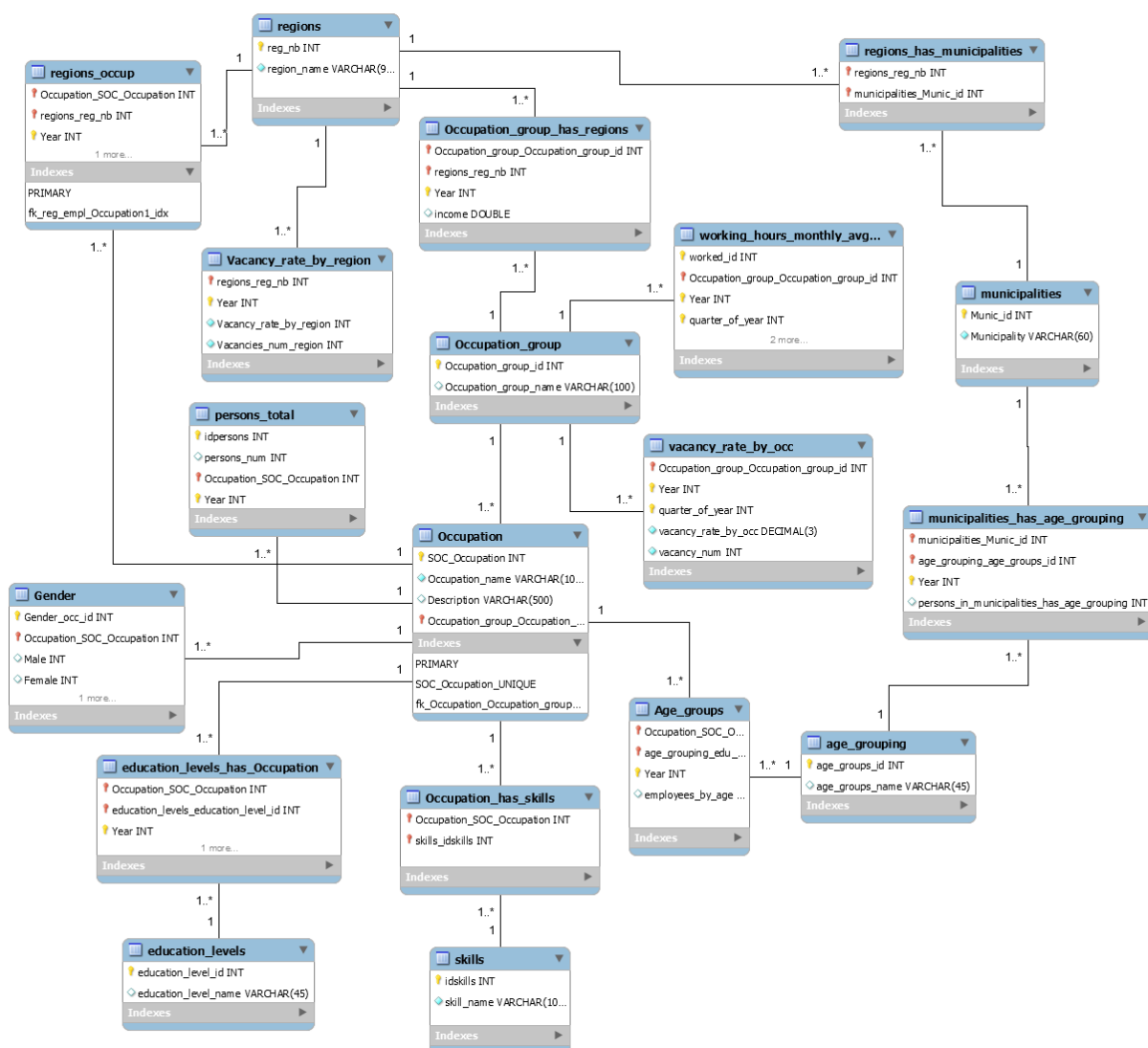
At the time of writing, 14 more staff (the majority Work Coaches) have been given access to the app (2 from each DWP Geographical Group). Their brief is to test in a live environment with claimants from until end of January. Feedback on its use is via a weekly email and support from DWP via phone and Microsoft Lync. At end of January they will complete a formal evaluation and this will feed into discussions with other managers in DWP, resulting in a report to senior managers in Spring 2016 and recommendations for further development and improvement and potential wider roll out and implementation

4.9.5.1 LMI development with the Employment Service of Slovenia

Work on LMI with the Employment Service of Slovenia began at Easter 2015. It was initially an exploratory approach. Whilst in the UK, the EmployID project was able to build on the relatively resource heavy work already undertaken by the UK Commission for Employment and Skills in developing an open database through LMI for All, no such work had been undertaken in Slovenia. Feedback at the EmployID conference in November 2015, show there is considerable demand for LMI applications but a lack of resources for developing such applications. Thus a major aim of the development work in Slovenia was to see whether a more light-weight approach could still develop significant results. Whilst LMI for All uses a number of different statistical approaches to publishing non-disclosable data, in Slovenia we are using open and already published data. In this work we are aided by the commitment from the Slovenian government to open data and the publication of a wide range of open data by the Slovenian national statistics agency.

However, as with any data project, the data is often somewhat messy and requires some effort in data cleaning and in normalization before it can be used.

The following entity model diagram shows the data which has been extracted and cleaned and is now available through a database and API developed by the EmployID project.



Additionally, a series of wireframes have been produced as an artefact for stimulating discussion with different managers within the Slovenian Employment services, particularly with the Analytical Office responsible for LMI.

In June, 20165 Graham Attwell from EmployID, was invited to present a keynote on Predicting Mid and Long-term Skills Needs in the UK and the Implications for Policy at the Slovenian Employment Service final conference of an ESF funded project on Monitoring of the Short Term Forecasts and Mismatches on the Labour Market. Further discussions have been ongoing as to the possibility of mashing together data produced through an employer survey with the LMI database from EmployID. At the time of writing this work is ongoing, with the Slovenian Employment service themselves producing wireframes by January, 2016. These wireframes will then allow the development of a dashboard for use by employment advisers.

Issues and comments

Overall the work undertaken has confirmed the importance of Labour Market Information for Public Employment Services. However, the development process is lengthy involving consultations with a wide range of different departments with the PES organisations before products can be tested. The work with Slovenia suggests that with commitment to Open Data it should be possible to produce a reasonably effective solution with limited resources. A further step in this direction will be to test the potential of automatic Extraction, Transformation and Load (ETL) tools, which could help in the longer term sustainability of the tools and dashboards.

Although further testing and evaluation is required, initial results suggest that the dashboards mediate learning and knowledge exchange within employment services and between employment services and other agencies as well as for working with clients. The work also suggests the need for co-design and development processes to ensure that the tools can be integrated within work processes. If this is done successfully, there is considerable potential for informal learning within work, whilst leaving little or no overhead in terms of further work for staff with already onerous workloads.

Further feedback suggests the potential of such tools in wider contexts, including economic planning and for direct use by clients although these applications are outside the remit of EmployID.

There needs to be further discussion around how Labour Market Information can be turned into Labour Market Intelligence. It would appear that systems for allowing PES staff themselves to add data and local intelligence could be greatly beneficial although this could require further thinking and negotiation round privacy and security concerns within the PES organisations. Certainly there is potential for developing online learning opportunities and materials to accompany the tools. Despite the lack of common European Standards for LMI, there would appear some potential for developing a European hub which could be jointly owned by the PES services and provide access to learning materials as well as to data and dashboards produced by EmployID partners but also where available by national statistical services and employment services.

4.9.6 Patterns

II.9	Developing and using Labour Market Intelligence	Phase II
Problem	Labour Market Intelligence is seen as increasingly key to the work of European Public Employment Services, for understanding future labour market demands, planning labour market activities, undertaking employer engagement and providing support to clients seeking future training or jobs. In all countries labour market information is collected, usually by national and regional statistical agencies but also by other organisations. However, the main use of this information is for economic planning and often it is difficult for staff in public employment services to access such information, especially in a timely manner. Furthermore, the format of the MI, often as very large spreadsheets and data bases is not easy to interpret and is not presented in a way to be usable with employers or end clients. Even then, labour market information needs to be interpreted by users in order to become labour market intelligence, for instance in understanding the implications of data for local labour markets and for future employment in particular occupations. Staff often lack the skills and knowledge to adequately interpret and make meanings out of data.	

Analysis	<p>According to Schmidt and Maier (2007) “learning is an inherently social and collaborative activity in which individual learning processes are interdependent and dynamically interlinked with each other: the output of one learning process is input to the next. If we have a look at this phenomenon from a distance, we can observe a knowledge flow across different interlinked individual learning processes. Knowledge becomes less contextualized, more explicitly linked, easier to communicate, in short: it matures.” For this process to happen in European PES organisations around labour market information and for that to mature into labour market intelligence, there is the need for boundary objects or as Michael Eraut calls them mediating artefacts which are used for working but support learning processes. Such artefacts are used to communicate between communities (Kent et al., 2007). Following the analysis of Bowker & Star (1999), “boundary objects” are “objects that both inhabit several communities of practice and satisfy the informational requirements of each of them”, thus making possible productive communication and “boundary crossing” of knowledge.</p> <p>Tools designed to provide access to mature LMI thus fulfil a number of roles. They take the form of a boundary object between different communities both between those employed in PES organisations and other communities, for instance employers but also between different communities within PES organisations such as employer engagement staff and employment advisers. They also support informal learning in practice through their potential for use within work practices, and can at the same time be used within more formal training activities such as MOOCs. Finally they can mediate knowledge maturing processes through the evolution of labour market information into labour market intelligence.</p>
Context	<p>There are a number of contextual constraints in developing and implementing these tools within PES organisations.</p> <p>At a resource level, the initial development is relatively resource heavy, although when developed it provides flexible access and maintenance and updating should require less resources. Despite that, much published data is ‘dirty’ and it may be difficult to develop automated tools for cleaning data.</p> <p>Access to relevant sources of data for LMI varies in different European countries. Although there is a movement towards Open Data across Europe, the speed and extent of implementation is different in different countries. In some countries there is already access to LMI databases, in others PES organisations already have some LMI systems in place and in still others there is little presently implemented.</p> <p>Even where there is a commitment to open data, concerns over non-disclosure may prevent the publication of the detailed data which is of most use in PES organisations. This may be overcome by various statistical procedures, but once more these can prove resource heavy.</p> <p>Often local data is classified under industrial classification systems, rather than the occupational classifications most useful in PES organisations and it can be difficult to link different data sets. It should be noted that there is not a common occupational classification system in use in Europe and early attempts to develop such a system appear to have stalled.</p> <p>Different user groups may require different data and forms of access to data and although this can be based on a single database and common endpoints, it requires considerable input from end users and PES staff, and developing understanding of the technical issues, possibilities and constraints may be time consuming.</p>

	<p>It is also likely that the granularity of the public data is insufficient for end use with clients, requiring the development of hybrid systems including public data and data added by public employment staff or scraped from more local and varies data sources.</p> <p>Finally there may be issues in allowing access to externally provided services by PES staff and in dealing with legacy software systems in place in PES organisations.</p>
Solution	<p>Raw and processed LMI is increasingly being made available in the form of open data. This data can form the basis for the design of LMI tools. This involves the identification of relevant and useful data, its collection, cleaning and normalising and loading into a relational database. For optimal use, the data needs to be lined – as open and linked data- most usefully through systems of occupational classification. The database can then be accessed through the development of open access points in the form of an API. The API can itself be queried, either from standalone dashboards or applications or within existing PES web sites and applications. This requires the design of appropriate visualisations which help in processes of interpretation and meaning making.</p> <p>Data accessed through a LMI API can also be linked to other data sources if available either from within a PES or external to the PES. The data tools can also be utilised within more formal social learning programmes such as MOOCs or with for instance tools for reflection, Question and Answer forums or online learning materials. In order to ensure sustainability automated Extract, Transform and Load (ETL) tools can be developed to ease processes of updating.</p>
Evidence	<p>Working with DWP, the project has undertaken piloting of two iterations of an LMI dashboard. The initial dashboard was seen as a very useful tool, but technical problems with legacy software meant access on DWP computers was problematic. Initial feedback on the second iteration is also positive, although a full evaluation is not yet complete. A further evaluation is being undertaken through a DWP focus group.</p>
Evaluation	<p>Plans are being developed for a further roll out of the DWP dashboard. Discussions are being undertaken with the Slovenian PES with regard to developing a LMI dashboard.</p>

4.10 Evaluation Plans

In the UK, 14 more staff (the majority Work Coaches) have been given access to the app (2 from each DWP Geographical Group). Their brief is to test in a live environment with claimants until end of January 2016. Feedback on its use is via a weekly email and support from DWP via phone and Microsoft Lync. At end of January they will complete a formal evaluation and this will feed into discussions with other managers in DWP, resulting in a report to senior managers in Spring 2016 and recommendations for further development and improvement and potential wider roll out and implementation.

4.11 EmployID Academy

4.11.1 Context

The impetus for creating the EmployID Academy was to provide a testing, development and research area to inform our early work on MOOCs. Because of the need to disseminate knowledge internally between project partners combined with the requirement for an open platform on which to host the Peer Coaching course, the Academy has grown to become a course platform in its own right. The Academy now encompasses many aspects of the project including; capacity building, network and relationship building, peer to peer support, dissemination of information, knowledge and skills between the consortium, software development and testing and research into the pedagogy of online courses and social learning. The rationale was discussed in more depth in the previous deliverable report and so further detail is not included here.

In year two of the project the Academy has served a number of purposes;

- A sandbox for course and content creation.
- An open platform to host public courses on.
- A platform to host private courses on.
- A knowledge sharing space.
- An early testing ground for plugin functionality.

4.11.2 Platform

EmployID Academy is built in WordPress because it is a platform which is both easily accessible and one which consortium members have a wealth of experience in using. It is organic in nature, changing frequently as new tools and ideas are tested. Useful features tested out here have been integrated into the COP platforms which are also based on WordPress.

On this site you will find **Open Educational Resources** produced by the EmployID project. Everything is licensed by Creative Commons share alike with attribution so please feel free to look around and use any of the resources you find here but remember to attribute them to the project.

EmployID is a research project aiming at supporting public employment services and their employees in adapting to the changes to their world of work by facilitating the development of their professional identities.

You will find resources here relating to Coaching, Peer Coaching, Digital Identity, Creativity, Content Creation, Evaluation2.0 and much more.



Figure 44: EmployID Academy Front Page

The courses created so far in EmployID Academy can have both closed and open versions running simultaneously with the discussion also split between open and closed forums.

It is also a good testbed before content is transferred to more traditional platforms such as Futurelearn. In future we may wish to push some of our tried and tested courses onto other more commercial platforms to exploit the wider reach these platforms have.

4.11.3 Technical Development

The Quotes plugin, originally designed to display a daily quote was used as a random creative prompt generator for display within the short course on creativity. After testing in the academy the tool was then integrated into the COP development as a device for providing a humorous aspect to the platform.

The iFlyChat tool was installed and configured to only show on certain pages where synchronous online discussion was happening around the content. Initial observations are that the user interface was not suitable for larger numbers of users but with further testing and development this may prove a useful workaround for the chat functionality required by the Peer coaching tool (see section 4.2)

The JetPack plugin is utilised alongside the twitter API to enable different twitter feeds to show in each course. The Peer coaching course pages show the twitter feed relating to the hashtag #peercoachingOC where others have #employID or something more specific to the content.

Careful use of custom menus has allowed for multiple courses to exist on one platform without using a dedicated course-creation or Learning management plugin.

The main introduction and overview for each week of a course is written as a wordpress page, any additional tutorials and assignments relating to the week's topic are written as posts. If the posts are tagged or categorised appropriately this allows for all related posts to be shown on one page thus making navigation through course materials easier. Where multiple courses were written concurrently the order of posts in the general feed became confusing and so the ability to navigate from one post to the next was removed forcing the user to use the custom navigation menus and improving the user experience. In this way we are also able to have multiple instances of the same course running concurrently including one public, one private and one hidden version of the Peer Coaching course. The benefit of this is having the ability to compare different versions (Original pilot version, improved public version and private version being used with participants) side by side. To enable a private course the introduction page for that course was password protected (See Figure 45). Navigation to the rest of the course was accessed via a custom menu attached only to the pages visible once the password protection was unlocked by the user. Hiding the course meant that comments were not public, however this method would not be secure enough for more sensitive information as the password only applied to the introductory page, if someone were able to guess the URL of any of the content pages they would be easily viewed. However a higher level of privacy was not deemed necessary in this instance.

Protected: *Peer Coaching

This content is password protected. To view it please enter your password below:

Password:

Figure 45: Creating Password protected areas in EmployID Academy

The BuddyPress and bbPress plugins are activated for the platform to enable social networking amongst course users as well as the use of a forum. This aspect of the platform is only available to users who have been granted access and so areas where discussion occurs are more secure and private than the course content.

An open badges plugin, BadgeOS is being piloted on the Academy platform. At present any user who signs in to the platform and participates in a course by commenting on content is automatically awarded a badge for participation.

4.11.4 Content

Learning needs are identified via the wiki or by declaring an interest during a meeting, the more proficient team members support others by creating short tutorials, holding face to face support sessions during consortium meetings, via skype and email. Any digital media created during this process finds a home on the EmployID Academy.

Topics covered by the academy this year include

- Peer Coaching (See section 4.4)

- Facilitating Online Courses (See section 4.5)
- Creativity (See section 2.2.6)
- Digital Identity
- Creating Content

A page showcasing some of the media created during the second year of the project can be found at the URL <http://mooc.employid.eu/knowledge-sharing-in-employid/>. The Public facing front page also contains easy links to find the courses and open educational resources created so far.

4.12 Outlook

Over the coming months, EmployID Academy will play host to further iterations of the Peer Coaching course, the pilot and later the improved versions of the Facilitation course, tutorials in technology use and other learning materials arising from the core constructs.

As we move into the second half of the project it is expected that the EmployID Academy will continue to provide a space for skill swapping and dissemination of knowledge internally between project partners. At the same time it will begin to take on a more advanced role of hosting the project's Open Educational Resources.

Completed and tested materials and resources, although already publicly available, will be made more accessible for both individual use and by external organisations to include in their own training under the terms of the Creative Commons share alike by attribution licence. EmployID Academy will be linked to the EmployID Portal (See 8.2) and the EmployID Academy label will be used to disseminate and promote expert knowledge, software solutions and concepts via public web sites.

5 Reflective community

5.1 Reflective community platform

The goal of the reflective community platform is to help PES establish communities of practices consisting of practitioners and managers, in order to support vertical and horizontal communication. The community platform has features to facilitate reflection, peer exchange, informal learning, and lastly professional identity transformation. The community platform was built in EmployID based on findings that PES practitioners could benefit from a more systematic support for learning together about their work (see the detailed rationales for concrete PES in sections 5.1 and 5.3 as well as in Deliverable 4.1 of EmployID).

It should be noted that the term “Reflective Community Platform” is used here for two reasons. First, there is a need to differentiate between what we may refer to as a “community of practice” (CoP) in the sense of (Wenger, 1999) and the technical vehicle these communities use. In particular, the platform needs to provide support for the way communities want or are supposed to work, and there may many communities using one platform for their exchange (in parallel). Second, EmployID aims at integrating explicit support for reflective interaction (collaborative reflection, (Michael Prilla et al., 2012)) into the concept and existing implementation of community platforms in order to foster reflection as a means for identity transformation (Michael Prilla et al., 2014).

This section contains our reflection-as-a-plugin approach (as described also in 2.2.3) and subsequently presents various plugins that are aimed at facilitating reflection in particular and facilitating user engagement in general. Additionally, we show an outlook of what is currently in development. Lastly this section contains a description of the underlying architecture of the community platform.

5.1.1 Basic functionality of the Platform

For the basic functionality we use a WordPress CMS (see 5.1.3 for more technical details about the platform) enhanced by various plugins to extend the capabilities. We already described some of the features in D4.1. Thus we have a summarized list of basic features of the community platform here:

- The community platform revolves around forums, which can be used for discussions amongst peers enabling peer exchange. Plugins help to support reflection and also professional identity transformation in a community setting.
- Users can form their own groups that can be used to, for example, group all counsellors sharing the same job role to have a discussion area focused especially on issues arising during their daily work. All groups have visibility settings to restrict access, for example *private groups* can only be entered after a request has been approved. This way, confidential discussions can also take place on the forums. (For anonymity on a user-level we offer a distinct plugin (see 5.1.1.7)).
- Users can define their own profile on the platform and customize their profile to some extent (e.g. configuring mail notifications etc.).
- Users can form personal networks with other users on the platform to get a better overview what their colleagues are up to.
- The site contains a *news area* that can be used for various purposes depending on the needs of the community using it. Content can be news from within the community itself (e.g. self-

organisation), news from the organisation about new developments or interesting cases, or even from other PES in Europe.

- A landing page informs users with widgets containing recent posts or tag clouds about recent activity on the platform in order to facilitate participation.
- The platform fully supports internationalization, which is very helpful in an international project consisting of PES' from different countries. Currently the platform is available in English and Slovenian. More languages will be added as required.

Additionally, we also use already existing plugins to extend the basic functionality described above:

- Plugin for attaching files in the forum area to facilitate sharing of documents.
- Plugin to work collaboratively on new documents within groups.
- FAQ plugin that contains both entries with step-by-step explanations on how to perform certain actions, and explanations on how to engage in the community itself.

All of the above mentioned extra plugins were named as requirements at some point in time by ZRSZ during workshops or EmployID internal meetings.

To enrich this already existing functionality we developed various additional plugins which will be described also in this section in more detail (see 5.1.1.1).

5.1.1.1 Currently available plugins

This section contains a list with all plugins which are currently ready to use in the community platform. We describe for each plugin here how it works and how it supports reflection respectively how it facilitates the platform usage and contributes to community building.

In order to explain the purpose of our different plugins to users nearly all our plugins contain a so-called *Why-Should-I-Care* button (a blue question mark e.g. in Figure 46), which opens a little popup explaining (shown in Figure 47) what the plugin is intended for and why interacting with the plugin benefits the user.

5.1.1.2 The Prompting Plugin

Displaying prompts in the community platform is currently targeted at initiating and continuing existing reflection of users. The concept for this is described in section 5.1.1.1. Currently prompts are used in three locations in the community platform. On the landing page (Figure 47) and while creating new posts (Figure 48) in the forum the purpose of the prompts is to initiate reflection threads, e.g. through getting users to think about their work, about negative and positive past experiences which they want to share with their colleagues. Prompts displayed in existing threads (Figure 46) are targeted at steering threads towards generating solutions the author can use to approach her problem in future, stating what users have learned in the discussion so far, or the planning of steps the author wants to take in order to solve her problem.

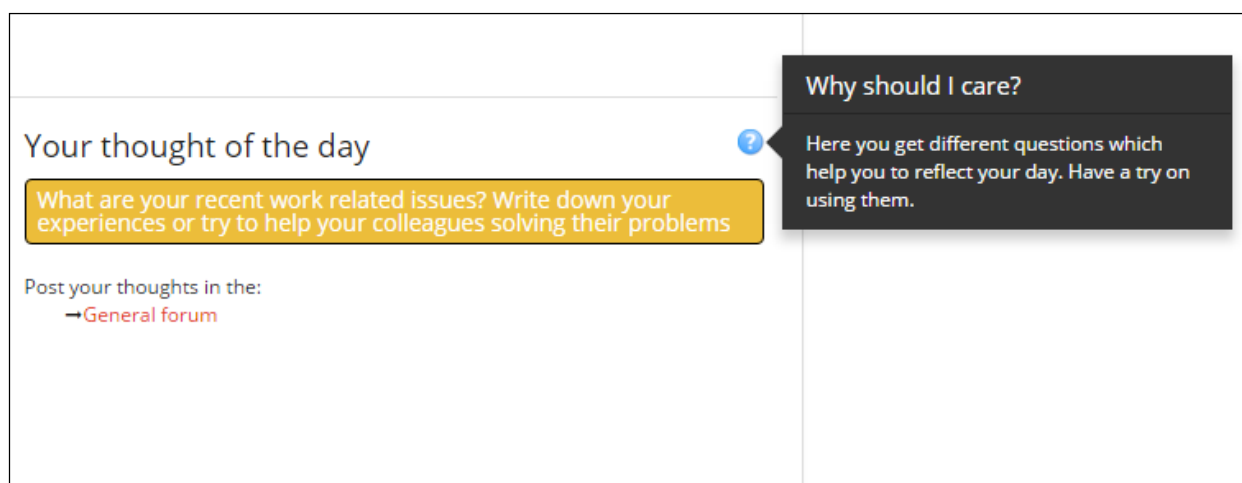


Figure 47: Prompt on the landing page with Why-Should-I-Care button

A study to evaluate the Prompting Plugin in a workplace setting in one of the PES is currently being planned (see also sections 0 and 5.1).

5.1.1.3 *The Questions Plugin*

Existing research on reflection shows that asking questions to one another is beneficial to structure conversations and also to initiate reflection e.g. (Zhu, 1996). We created a plugin which aims at facilitating asking questions to each other in discussions in the forum. Currently this feature is only available for the author of a new thread so that she can structure the post according to what she wants to know or to focus on the point she wants to get help with.

Figure 48 shows the interface for users who want to create a new thread in the forum. Below the edit box is now a selection of three predefined questions which users can choose from if they want to. If they prefer instead to phrase their own question they can do so in the text box below. Selected predefined or newly created questions are automatically appended to the post of the user.

The prompting plugin has an additional option which allows overriding prompts in favour of the selected question of the users. This way the question which the user selected while created the first post is then presented to others who want to answer in the given post in a highlighted way (the yellow box in Figure 48). The purpose of this is to give authors another way of emphasizing on their intended objective they had in mind when creating the post.

EmployID – Demo of the Social Learning Platform

Home News Groups Members Help 2 Language:

Welcome to the ZRSZ community

Here you can get an overview what happened in the community since your last visit

Recent News

- Kick-Off Event for the Community Platform
- New development in Ljubljana: Specializing on certain industries
- Case Study: Local Employment Partnerships in UK
- Welcome to the learning platform

Topic of the Month

How to minimize the 'creaming effect'?
Help us all in finding good strategies against the 'creaming effect'. This effect describes that when referring people the qualified ones are getting referred over and over and the less qualified ...

Latest reply (by Alice A)
I often try to include one or more persons who are on paper less qualified but who were quite motivated in the appointments here at ZRSZ. This can account for a lot and I even got Feedback from ...

[Join the discussion](#)

Recent Topics in the Forums

- My super secret topic
- How to minimize the 'creaming effect?'
- Topic of the Month Archive
- Employers making requests for candidates not eligible: What to do?
- Examples for motivating clients?

Most useful posts in the last 30 days

Not willing to take job - motivation?	2 Votes
There was a job vacancy at company X. If offered it to a candidat...	
Reply to: not-willing-to-take-job-motivation	2 Votes
The same happened to me recently. I offered a vacancy for assista...	
Reply to: how-to-minimize-the-creaming-effect	2 Votes
I often try to emphasize the social skills someone has when refer...	
Reply to: not-willing-to-take-job-motivation	1 Votes
This also happened many times to me and my colleagues here	

Oliver
[Log Out](#)

Search Forums

Search for:

Currently Online



Figure 49: Topic of the Month Plugin on the Landing Page

5.1.1.5 The Helpful Posts Plugin

Reflection and collaborative reflection are both methods to learn from experience. In collaborative reflection people join together to solve problems and they often exchange their personal experiences to help one another and to discuss possible outcomes. The Helpful Posts Plugin enables a button in the forum to mark those posts (much like the Like-Button in Facebook or other social networks, but here aimed towards marking quality), which is shown in Figure 46 on the left side near the profile picture of the user. The landing page contains a list with the top 5 helpful posts of the last 30 days (see Figure 49), and also a list with the users who wrote the posts which got the most markings as helpful in the last 30 days. The purpose of this plugin is to show high quality content directly on the front page, so that is easy for users to engage in discussion which aim at quality solutions. Furthermore, the users who are writing helpful posts are rewarded for doing so. Especially in larger communities being on the list of writing a lot of helpful posts can be motivating for users.

5.1.1.6 The Survey Plugin for continuous evaluation and “distance travelled”

This plugin asks different questions to users every day in order to create a continuous evaluation and to later on show the user her personal distance travelled in the community.

Originally the idea was to show one question a day, but research shows that people instead prefer not answering questions for a period and then answering multiple questions per day (Nierhoff, Forthcoming). The plugin contains a set of questions and users have the possibility to answer all

questions during one day if they want. The plugin randomizes the questions but it makes sure that all questions are answered before starting to repeat questions.

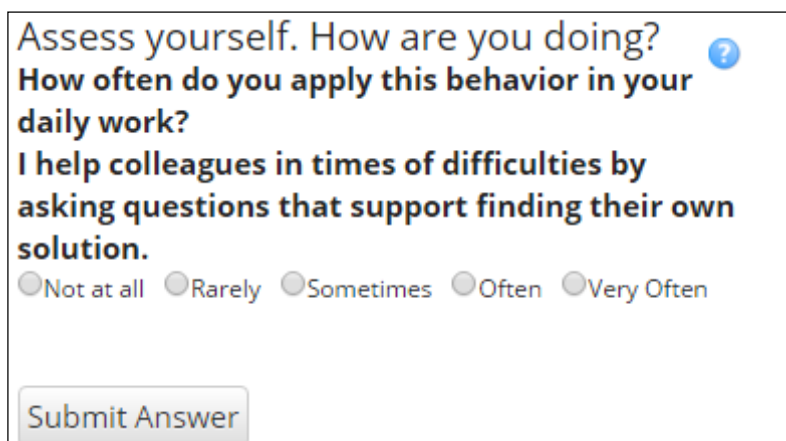


Figure 50: The Survey Plugin for continuous evaluation

The plugin currently handles asking different questions as described before. The visualization of the distance travelled is currently in the conceptual phase.

5.1.1.7 The Write Anonymous Posts Plugin

Often users are worried when voicing critical points in a discussion or when mentioning problems in an organization. This plugin displays a checkbox when creating a new post (shown in Figure 48) which allows users to create their post anonymously. Then the post appears to be written by a generic *Anonymous* user and the original author cannot be associated with the post from a perspective of regular users. When editing her own post, the author can of course remove the anonymous status of the post to show her real name again.

From the perspective of users or moderators in the forum the original author of an anonymous post cannot be revealed. Still the plugin saves information about who the real author was in the database so that the organization could identify the user in case of strongly inappropriate posts (e.g. hateful content) to protect the community from a negative environment.

5.1.1.8 The Weekly Digest Plugin

Users gave us the feedback during workshops in ZRSZ that they are overburdened with emails and per default WordPress and bbPress (the Plugin for the forums) only allow for either no notifications, or notifications for each new message in a thread or forum. Thus we started to create a new plugin, which sends a weekly summary of all groups the user has joined at the beginning of each week. Thus users can keep track of what is happening without getting new emails whenever someone is writing something in the forum. Users can sign up for the digest upon registration and they can cancel the digest anytime they want through their profile.

5.1.1.9 The Logging Plugin

We extensively extended the capabilities of an existing plugin (Aryo Activity Log) in order to log actions on the platforms. This has two reasons. On the one hand we need to know what happened in order to identify faulty features and on the other hand the logging plugin also captures usage data that is used for evaluation. The usage data is stored in the form of logged events, i.e. which action did a subject perform on other objects at specific time. For example, sent a message to another user, applied for a group membership, or created a new topic in the group forum.

Users are notified about the terms of data collection during the registration to the learning platform. Before they can register and start using the platform they have to read a data collection and privacy policy statement, and explicitly consent for their usage data to be collected according

to the statement. The statement clearly describes the purpose and terms of data collection, storage, processing and use, the data that is logged, and data access rights. Registration is not possible without selecting the consent option.

Currently, there is per default no point of interaction for the users with the logging data and it is only accessible by administrators. Thus this plugin is not directly facilitating the usage of the platform, but helps us maintaining and operating the platform as well as evaluating it. However, the users have rights to request and receive from the platform operator data that was collected about them. They can also request for their data to be deleted before the end of the project.

5.1.2 Plugins currently in development

Next to the already existing there are a few other plugins currently being in development, which are also targeted at facilitating reflection and fostering engagement in the community platform. Those plugins might not be ready for the initial planned launch in ZRSZ (see 5.1 for more details), but are scheduled to be integrated later on.

5.1.2.1 The Network Maps Plugin

This plugin visualizes various social networks for users to explore them. The idea is to show with whom the logged in user has contact to (through the discussion threads they participated both in) as well as to visualize the activity or ongoing topics in various local offices. The main purpose is showing users points of interaction. The plugin is currently being developed in the context of a master's thesis.

All functionality of this plugin can be reached through links or little maps on the landing page (see Figure 54) or through a map widget in the sidebar in the forum area (which is automatically filtered to the current group the user is discussing in).

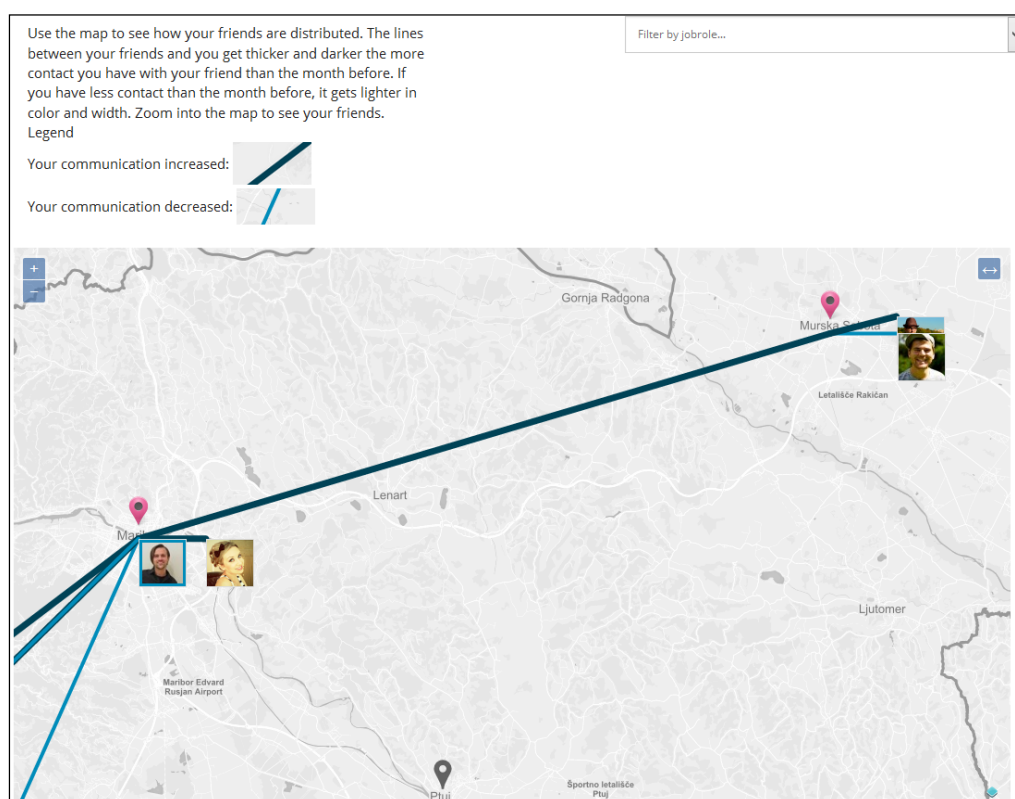


Figure 51: The Network Maps Plugin showing a social network

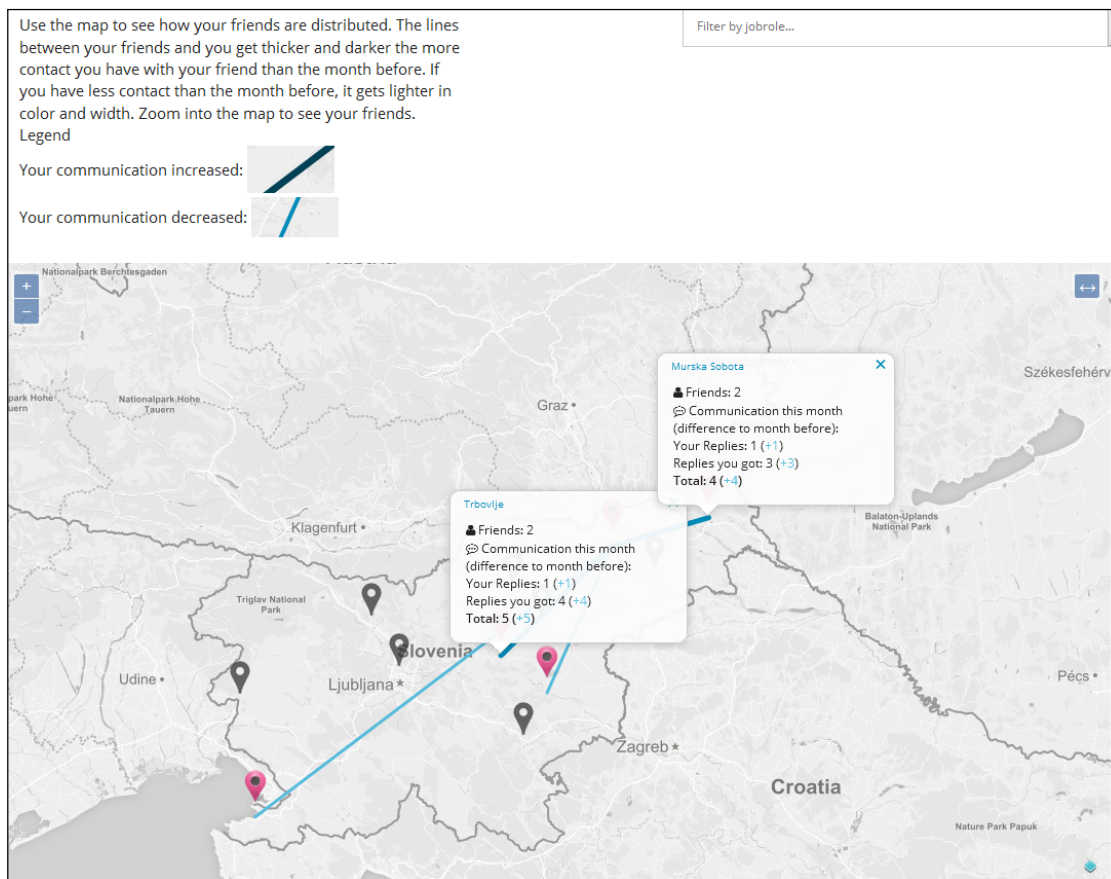


Figure 52: The Network Maps Plugin with a more detailed social network

The social network is shown on a 'lower' zoom level in Figure 51 showing how the interaction with various other users located in their respective local offices has changed during the last time period of e.g. 30 days. This way users can visually "see" how often they interact with others and this might be used to find colleagues who one wants to interact with more in future again because they had fruitful discussions in the past. This view shows the communication flow to offices as well as the people working there.

The platform allows users to form a personal network connection between them so that they can follow up on the activity of their network more easily. This is a good way for users who are frequently in contact to see what the other is posting etc.

On a higher zoom level, Figure 52 shows some indicators how the communication flow changed in numbers during the last time period.

Users can interact with both maps through clicking on offices or other users to see what topics were being discussed together and also what recent topics of that person are. Thus this plugin helps users discover their interaction network aiming at facilitating further interaction. This way users can see where the users are who are answering posts, what they also write about and so on.

This view can be filtered by different job roles so one can check how the personal connection to other users sharing the same job role. This way, people can focus on discovering topics and users which might be of higher interest to them.

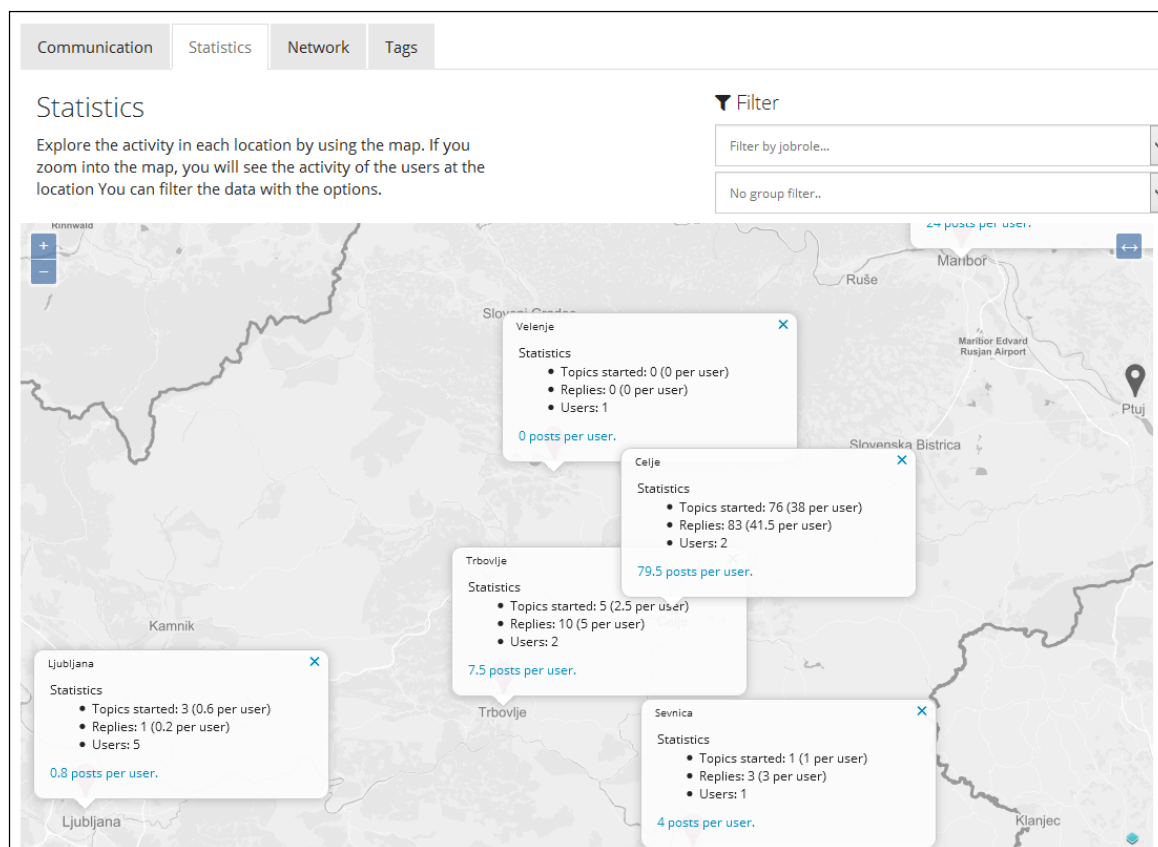


Figure 53: More detailed statistics on a more local level

Figure 53 shows a view of the statistics tab displaying how active users in a given office are. Similarly, the tab called *Tags* visualizes the tags of the topics started in each of the offices participating in the community platform. This way, users can also discover and identify interesting tags in other offices which might interest them. Those views can be also filtered by job role or by groups in order to also visually check where are which tags discussed in group.

As of yet no evaluation with users has been done to check which plugin be more appropriate for the use in a public employment service. However, the student working on this plugin is currently performing interviews with members of the project to get a first assessment on the perceived usefulness for the usage in a PES context.

5.1.2.2 The Karma Points Plugin

The Karma Points plugin is also being developed by the same student in his master's thesis. The aim is to create an offer to replace the current Helpful Posts Plugin (see 5.1.1.5) with a more elaborate system in which users can give each other points that add to a permanent reputation of those users. This plugin makes use of a gamification concept where certain actions can also add to one's reputation.

The widgets for the currently most helpful posts as well as the widget with the ranking of the authors with the most helpful posts are adapted to the new Karma Points plugin, as shown in Figure 54. This figure also shows the current text of the *Why-Should-I-Care* button explaining the functionality of the plugin as well as the icons. The current reputation of the user is prominently shown near the Login box and the profile picture (top right in Figure 54). Later on this plugin will also show off the current reputation of a user in the forum area.

The screenshot displays the EmployID website interface. At the top, there is a navigation bar with links for Home, News, Groups, Members, Help, Feedback, and a Language dropdown menu. The main content area is organized into several sections:

- Recent News:** Lists items like "Quiz Test 1", "dev test", and "Kick-Off Event for the Community Platform".
- Topic of the Month:** Features a "new totm" post by "totm..." with a "Latest reply (by Oliver)" and a "Join the discussion" link.
- Recent Topics:** Lists various topics such as "How to cope with upcoming distractions?", "Employer got angry with me", and "Employer not satisfied with last employee".
- Most helpful posts in the last 30 days:** A list of posts with star ratings, such as "Reply to: i-dont-know-what-to-do" (6 stars) and "Test" (5 stars).
- Users with the most helpful posts in the last 30 days:** A list of users with their star ratings, including Grace Santos (25 stars), Markus Jelonek (20 stars), Richard Taylor (20 stars), Milan Medved (18 stars), and Sara Watson (18 stars).
- User Profile:** A profile for "Oliver" is shown with 11 reputation points and 20 karma points, along with a "Log Out" button.
- Tag Cloud:** A collection of tags including #foreigners, #motivation, appointment, brain storming, careers, distractions, disturbing tasks, economy, education, employer, engagement, job, training, Karma, meditation, new, occupation, overqualified, profession, qualification, random_video, school, self-employed, sport, staff, supervision, training, unemployment, vacancy, work, and youth.

A tooltip titled "Why should I care?" explains that the Karma Points section shows a user's reputation and karma points. It states that karma points are temporary and expire after a week, while reputation points are permanent. The tooltip also mentions that users can earn karma points when someone gives them one and provides a link to the info page for more details.

Figure 54: The Karma Points Plugin

The plugin has reputation and Karma points. The karma points are temporary and expire after a week but are also refreshed each week. This way users can only donate karma points to a few selected posts in each week. The user who receives a karma point gets the point added to her permanent reputation points.

PES can later on choose which plugin they prefer to highlight quality contributions in the community, between the “simple” Helpful Posts plugin (see 5.1.1.5) or this plugin. As of yet no evaluation with users has been done to check which plugin be more appropriate for the use in a public employment service. However, the student working on this plugin is currently performing interviews with members of the project to get a first assessment on the perceived usefulness for the usage in a PES context.

5.1.2.3 The Reflection Analytics Plugin

Another student who is working on his bachelor’s thesis is currently working on a plugin for a first trial of the combination of reflection (see 2.2.3) and learning analytics (see 3.2.4), which we label as *reflection analytics*.

The idea of this plugin is to collect various usage data of the platform and show it in an actionable way so that users can use this information also to learn something about their behaviour in contrast to the average of the groups they joined or in contrast to their personal network. The purpose of this is to show people information in order to let them reflect about their behaviour in the platform and then possibly to give them enough information to show them how they could change their behaviour.

The plugin will use a number of different charts, each wrapped in a widget in order to retain customizability. This way each PES can choose which graphs they want to use and where to show them in the community platform.

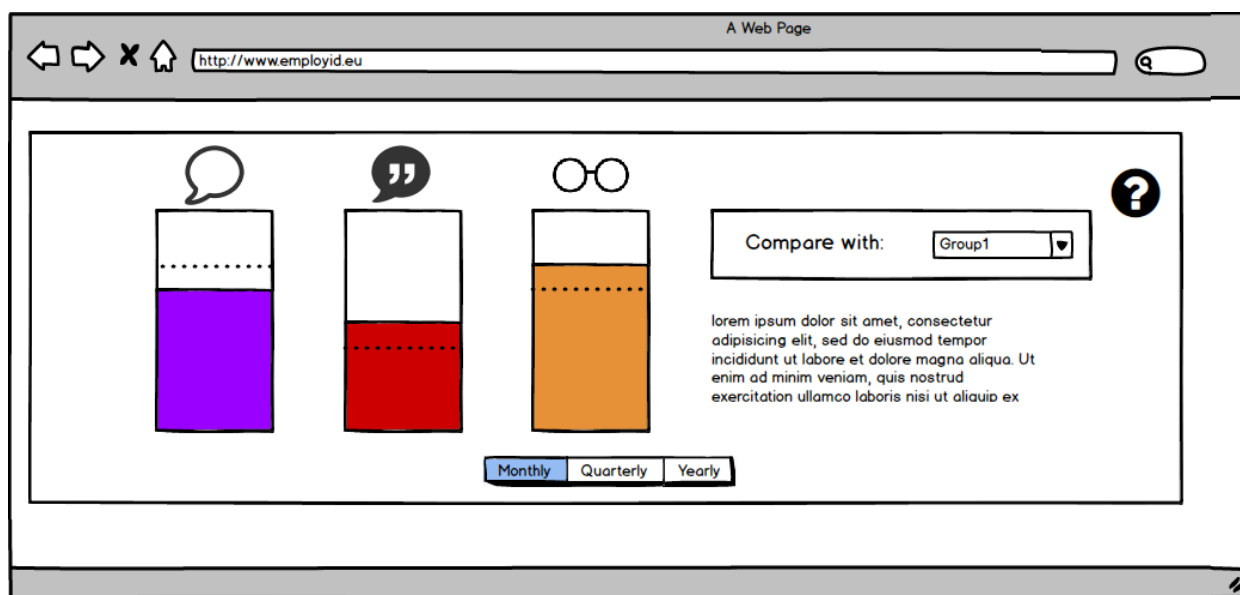


Figure 55: The Reflection Analytics Plugin showing the users role in the forum

Figure 55 shows an example of one of the charts we are currently planning. It visualizes the role of the user's interaction of the current month in terms of how many posts did she author, how many topics did she comment on and how many topics did she read. The dotted lines show the average of the currently selected group. This way, users can easily identify whether they are writing a similar number of topics as their colleagues. Those numbers are calculated in a way to not let users completely fill all bars in this chart but rather show relative increases. Additionally, currently represented by dummy text, the plugin will give some suggests e.g. "Now that you read so many pages, how about creating your own new topic" (since here, the number of new topics started is below group average) showing actionable data. This information can be shown over different time spans and it can be later on compared to all groups the user is part of, with a default comparison against the dedicated forum area for the user's job role. This can be also extended be information about how many helpful posts are written by others or other information.

Other ideas what could be shown in this plugin are the following:

- Another widget could display a more aggregated overview how a group is currently developing e.g. if they are too long waiting for answers. This information can be picked up by moderators to as some members of the group specifically to help users to stimulate forum activity.
- Another idea is extending the usage of the display of tags to e.g. visualize currently trending tags, which can be then also compared to other groups. This could also offer new interesting topics to users on the platform, particularly when showing how tags developed in the last e.g. 30 days in contrast to the groups one has joined.

5.1.2.4 *The Guidelines / Code of Conduct Plugin*

During the planning stage with ZRSZ the requirement for showing a code of conduct on the platform in order so that people can agree on basic rules on how to conduct themselves on the platform (e.g. treat others respectfully).

To not only display this code of conduct we modified a plugin in order to show various messages containing material of the code of conduct on the landing page to remind users.

5.1.3 *Architecture of the Platform*

The community platform is based on the popular³ CMS WordPress. This has various advantages for us, since WordPress is highly customizable by plugins and also offers a structure to support internationalization of the platform allowing us to offer translated versions for the different contexts. Existing mature Plugins like BuddyPress (offering social features) and bbPress (enabling discussion forums) allows easily to expand the feature set of WordPress. Additionally, W3 Total Cache helps as a caching plugin speeding up the loading times of the platform, thus making it more user-friendly.

Other available plugins could also allow to connect our platform later on to existing corporate authentication systems like LDAP or Active Directory, enabling Single-Sign-On. This helps integrating the platform in the IT landscape in organisations.

The platform is currently hosted on an apache2 web server together with a MySQL database.

Additionally in order to offer reflection features as a plugin (see 212.2.3), we created a *reflection backend*, which is a JavaEE application, running on TomCat and MySQL. It exposes various web services interfaces other tools can connect to. Currently this reflection backend is used to deliver the prompts to the community platform.

To strengthen our capabilities for user tracking in order to support our evaluation further, the set up Piwik as well (running as well on apache2 and MySQL), and connected it to the community platform. All users are informed upon registration about what data is collected for what purposes, and that data processing is limited to this research project.

³ A recent survey claims that over 25% of all websites are powered by WordPress:

<http://smallbiztrends.com/2015/11/sites-on-wordpress.html>

5.1.4 Patterns

I.3	Using a community of practice to enable horizontal and vertical communication among practitioners	Phase II
Problem	<p>Practitioners often exchange work related problems with the colleagues in their immediate vicinity. Especially in spatially distributed work settings where colleagues are located in other offices the possibilities for exchange on the same eye-level to discuss issues and to solve problems are limited. This situation might also be problematic in smaller offices where very few people sharing one profession are working since this is naturally limiting the possibility to peer-exchange.</p>	
Analysis	<p>There is a need to foster and facilitate peer exchange among practitioners in the company, through providing a structure to exchange work related problems e.g. in regular meetings.</p> <p>Etienne Wenger defined communities of practice as “groups of people who share a concern or a passion for something they do and learn how to it better as they interact regularly” (Li et al., 2009; Wenger, 2011).</p>	
Context	<p>Communities of Practice as described by Wenger do fit in the context of Public Employment Services in Europe. Counsellors as practitioners share counselling clients to bring them into work as the same domain and they often form smaller communities within their teams at work.</p> <p>During our workshop participants often named peer exchange as an area to improve especially since some teams don't have access to regular meetings or smaller offices only encompass of single individuals responsible for different tasks limiting peer exchange at the office itself.</p>	
Solution	<p>To tackle the identified challenges of lacking a well-established structure for peer-exchange on various levels within and across offices, we propose using the community of practice approach to establish a community of practitioners among counsellors within the Public Employment Services.</p> <p>To support establishing a community and to offer infrastructure so that the community can maintain a level of independence to organize their topics or meetings, we offer a reflective community platform (as described in this chapter). The platform itself provides the structure of creating one's profile, forming own groups, forming personal networks and discussing important topics at work. The (socio-)technical platform is not the community itself, but rather supporting the evolving of one.</p>	
Evidence	<p>While the project doesn't have evidence of using the community of practice yet, there is a number of scientific research showing the applicability of this approach.</p> <p>In EmployID we plan to collect evidence through Social Network Analysis and log files to evaluate how the usage developed over time and to show how practitioners communicated horizontally and vertically.</p>	

II.2	Facilitating usage of community of practice platforms	Phase II
Relates to	Pattern II.1	
Problem	Most users in communities spend their time 'lurked' instead of creating content or participating in discussions. Thus communities depend on very few active people to drive the community and to be responsible for new content. This way there is pressure on these few people in smaller communities to always be there to create content or drive communication and the community would suffer if one of them drops out.	
Analysis	This heavy participation of only a few people is often called the 90-9-1 phenomenon in which 90% are lurkers (who only read), 9% are contributors and 1% are superusers who create a lot of content (van Mierlo, 2014).	
Context	Due to a limitation in resources for moderating and maintaining the community from a central level in the Public Employment Services, the solution has to be scalable to also work with larger communities. Thus we also focused on mechanisms which are processed by a technical system, in order to facilitate participation & communication.	
Solution	<p>The community platform makes use of several functionalities which aim to increase the likelihood of participation:</p> <ol style="list-style-type: none"> 1) One topic of importance for the entire community is put in focus of discussion every month as a topic of the month (see 5.1.1.4), which is also prominently being displayed on the landing page. 2) With the possibility to mark posts as "helpful" (see 5.1.1.5) the community contains a little gamification element. The most helpful posts are being displayed on the landing page as well as the authors who got the most votes on their posts. This way people are encouraged to provide quality content and also to participate in order to appear on the landing page as an expert in their area. 3) Users can sign up for a weekly summary to get an overview of what happened in the last week. This way they don't need to log in every day to get an overview and they can choose more easily in which topic to participate. 4) Additionally, we will try to recruit human moderators from the members of the community which help to nudge people to post in there if e.g. topics don't get answers for a longer time. <p>Using these mechanism we plan to increase the participation respectively lower the barrier of participating so that the community is less reliant on a few active superusers.</p>	
Evidence	<p>Specific evidence hasn't been collected in EmployID yet, but this proto-pattern is a solution in process being currently implemented at ZRSZ and CES.</p> <p>To evaluate the effectiveness of the solution described above a mixture of data collection and analysis will be used:</p> <ul style="list-style-type: none"> • Activity logs will provide insights into the popularity of the topic of the month, the usage and acceptance of the "helpful" feature. • Content coding activities will analyse the role and activities of human moderators in the learning platform. • Qualitative interviews will investigate what motivated people to start contributing to the platform, which were the drivers and barriers for doing so. 	

III.1	Enable reflection as a plugin to enhance already existing systems	Phase Ib
Relates to	Pattern I.3	
Problem	<p>Users are often reluctant to learn and use additional software in organizations. This is due to often changing software for specific tasks and also to often a larger number of different tools for different tasks which have to be learned individually.</p> <p>Additionally, organizations often already have learning platforms and eLearning solutions in place, so that offering additional tools for reflection is creating some redundancy and also leads to a fragmented landscape in which two tools have a seemingly similar purpose, but often are not connected to each other.</p>	
Analysis	<p>During our studies in the MIRROR project (http://mirror-project.eu) we unveiled various factors influencing the usage of a reflection solution: Spatial arrangement of the user group (remote or co-located), support through a facilitator or duration of the usage (Michael Prilla, 2014; Michael Prilla & Renner, 2014). Following this we suggested to incorporate reflection functionality in existing tools to put it into a wider context, aiming to enable long usage.</p> <p>Additionally, bringing in automatic methods to help with facilitation can help both scaling and adoption of the new functionality.</p>	
Context	<p>In EmployID we integrated various plugins supporting reflection (e.g. The Prompting Plugin (see 5.1.1.2) or The Questions Plugin (see 5.1.1.3)) to facilitate reflection. Currently both ZRSZ and CES are interested in using a community approach for improving communication within the organization.</p> <p>What are the relevant contextual factors that determine if the proposed solution is actually (and maybe allegedly) successfully applicable?</p>	
Solution	<p>Offering reflection features as plugins which can be incorporated into existing applications in the organization can solve this problem. Having distinct plugins for separate reflection features allows organizations to choose which features to integrate. Furthermore this also allows designers to adapt the integrated plugins to the design used in the organizations so that users have a similar look and feel like in the existing solution.</p>	
Evidence	<p>Currently this pattern is in the conceptual stage and the stated concept has been successfully submitted to the ECTEL 2015 (Michael Prilla & Blunk, 2015).</p>	

II.3 Facilitating reflection in communities of practice to enhance identity transformation processes Phase II	
Relates to	Pattern I.3, III.1
Problem	Since reflection is a second order process for which practitioners are not paid in organization, it often falls short compared to other, more urgent tasks. Despite that it is often acknowledged that reflection is beneficial and our workshops have also emphasized that reflective behaviour is encouraged by managers.
Analysis	<p>Literature shows a clear need for facilitation in reflection. Earlier studies in MIRROR (http://mirror-project.eu) showed that people often stop reflection and need to be triggered to continue working towards an outcome of the reflection session (Michael Prilla, 2014). Also collaborative reflection is relying on communication amongst the practitioners reflecting together thus requiring facilitating communication (Wood Daudelin, 1996).</p> <p>On a concept level we have already connected the concepts of (collaborative) reflection and professional identity transformation showing that reflection can support practitioners in different elements of professional identity transformation: dealing with challenging work, updating one's knowledge base, self-directed learning and self-reflexivity (Michael Prilla et al., 2014). Additionally, professional identity transformation can be supported through reflecting on training or reflection on supporting interaction with external stakeholders.</p>
Context	Building onto the previously described patterns of using a community to enable horizontal and vertical communications as well as using reflection as a plugin, this pattern uses reflection as an amplifier to support professional identity transformation in communities based on the concept described above.
Solution	<p>In order to facilitate reflection, we make use of different mechanisms to offer a scalable way through automatic facilitation:</p> <ol style="list-style-type: none"> I) Prompting: We prompt people with various questions or instructions (see 2.2.7), to stimulate participation in collaborative reflection and also to focus on working on outcomes of the reflection session. II) Asking questions is an established method to facilitate people in reflection. We offer a method, which helps people asking questions to each other aiming at raising the amount of reflective discussions. III) We are in the process of creating a reflection analytics concept and mechanism to show people how they interacted on the platform to stimulate reflection about their own behaviour (e.g. users who are reading a lot, but don't post much, get prompts to suggest to them that they can also bring in their own topics) IV) Although we have different automated mechanisms for facilitation, we also rely on human moderators in the community of practice in order to stimulate reflection.

Evidence	<p>So far evidence hasn't been collected. However, we are currently in the process of planning the evaluation and to plan the study:</p> <ul style="list-style-type: none"> - Periodic questionnaires as well as continuous surveys are aimed at gathering information about how people use the platform and how they exchange information with their colleagues respectively how they reflect together. - Log analysis shows later on a more detailed picture of how people interacted in the community platform and how they e.g. formed personal networks and communicated to each other - A content coding approach (see 7.4.3) aims to detect whether reflection was present in different conversations or not. Our content coding scheme was already started in the MIRROR project (http://mirror-project.eu) and was subsequently improved in other studies. - Interviews are being used to ask more in depth questions which can't be covered through questionnaires or the other previously mentioned evaluation methods. These in depth questions will investigate what stimulated participants to reflect, which role the prompting questions were playing, how useful users perceived reflection analytics and what effect the moderator had on reflection practices. <p>The project is currently in the process of implementing the reflective community platform at ZRSZ and scheduling an implementation for CES.</p>
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III.2	Enable networking to facilitate professional identity transformation and peer exchange communities Phase Ib
Problem	In order to establish communities of practices people have to gather in forums and find each other according to their practices and interests
Solution	Offering dedicated features to find colleagues who helped oneself (Networks Maps plugin) based on topics or job roles help members networking amongst themselves.
Evidence	<p>No evidence yet, plugin developed</p> <p>Evaluation via SNA, activity log, questionnaire, interview</p>

5.2 Reflective community platform at ZRSZ

The Reflective Community Platform was built according to needs for more systematic support of exchange among practitioners with the purpose of learning from each other articulated by different PES. ZRSZ was the initial partner EmployID worked with on the implementation of the platform. All the work described below has been done in close cooperation with ZRSZ, including many practitioners and management staff who have contributed their views and experiences. The initial work with ZRSZ was reported in Deliverable 4.1, and this section reports on the progress, which led to the development of a stable version of the community platform and a concept of how to introduce it in the organisation. It should be noted that within ZRSZ the Reflective Community Platform is referred to as the “learning platform”, and we will use these terms synonymously in this section.

5.2.1 Learning challenges in context

The learning challenge tackled in ZRSZ can be described as horizontal and vertical communication, especially communicating among practitioners **sharing the same task or profession but spread across the country**. These groups (e.g., counsellors working with young unemployed people, counsellors working with employers, counsellors working with long-term unemployed, counsellors working with people with disabilities (or hard to be placed clients) face similar challenges in their work. Within the local office there is a culture of exchange among them, but work and resource demands do not allow for systematic exchange across offices (see D4.1). However, counsellors should be systematically supported in exchanging their experiences in dealing with these challenges, as this will allow them to tap from the existing potential of exchanging best practices or solutions not only among already established networks (there are close social networks e.g. in the local offices), but also more widely among different local and regional offices. Such exchange was also recognised as one of the challenges within ZRSZ to be worked on by EmployID (see D4.1). For example, there are counsellors working with employers in most local offices, and they talk to each other about their work in order to learn from each other. However, it is hard to be in contact with colleagues from other offices on the same regular basis and to establish a culture of practice exchange with them, although there is huge potential to learn from the as well (as we were also told by counsellors, see D4.1). As another example, in all local offices there are counsellors working with young unemployed people, who are keen on continuously improving the way they deal with their clients. Apart from talking to each other in the local office, which is already helpful, they could benefit much from a possibility to reach out to other colleagues in other offices to exchange their challenges and practices with them. These and other examples are closely related to EmployID scenarios 2 and 5 as described in D4.1.

Another more specific challenge identified for ZRSZ is supporting the training of new employees or employees in transition from one job role to the other. When people get trained questions occur whether they understood what they were trained in (and the background of it) and whether they will be able to transfer from training to practice. In the past, the ZRSZ training centre has verified the transfer of knowledge into daily work through short post-training questionnaires or by individual coaching. Nevertheless, practical support in applying training content in practice with facilitation support from trainers or peer colleagues remained a challenge and is another scenario of applying the reflective community platform at ZRSZ. This is closely related to EmployID scenario 1 as described in D4.1.

5.2.2 Analysis

The learning challenges tackled with the Reflective Community Platform at ZRSZ described above are (at least) twofold: First, there is a need to enable communication and exchange of experiences and ideas horizontally and vertically across individual local or regional offices, and for this exchange there is currently not enough support. Enabling the communication has to deal with a lack of time and other resources to meet in person as well as a lack of structured ways in the organization for other forms of a wider experience exchange, a lack of technical support on how to search for expertise and no clear solution as to how to integrate the idea of organizing practitioners in communities into the stressful work of PES practitioners. Second, the need for communication and experiences and ideas exchange was expressed in order to learn from colleagues, who are located at other local or regional offices and to support identity transformation. There are some concrete challenges for the design and establishment of communities resulting from this.

A major challenge was identified in the fact that although there is an already existing reflective exchange of good practices existing among immediate colleagues mostly in face to face communication (i.e. there is a willingness and perceived value in support each other), **wider exchange is often challenged by high caseload and reduction of staff, with the consequence**

there are few opportunities and limited time. This excludes the option to hold regular face-to-face or other meetings of practitioners from different offices, and this is also the reason why currently wider networks among practitioners have not been established beyond personal acquaintances. It therefore makes a solution necessary that can be used flexibly. Using a community-based approach is helpful when analysing this situation: Leveraging Communities of Practice for different groups of PES practitioners creates a meaningful context and frame for the communication while allowing each individual to participate in a way and at times that suits them.

A special aspect in the challenges identified is the need **to create a solution that supports exchange in a community of practice way that integrates well with the rules and norms at ZRSZ, especially regarding a professional way of using the platform.** This can be understood as a general challenge in establishing communities in PES organisations, in which the desired bottom-up and lateral communication across subsidiaries needs to be mixed with top-down aspects of guidance by management. Many academics refer to the challenge of fitting a Community of practice within traditional hierarchical organisations (Fuller 2007, Wenger 2010). The informality and also difficulties to measure the value of communities in combination with expectations by ZRSZ management provide a design challenge. It therefore is required from the EmployID team to find the *right balance between enough formality to be accepted in the organisation and enough informality to keep the character of peer-oriented, self-governed learning partnerships.* Thus the EmployID team was required to think about measures on how to foster peer-to-peer exchange on the one hand and support quality guidelines on the other.

There is a need to follow quality procedures in order to provide good service to the public which has to be integrated into the concept and implementation. Concerning the scope of communication, it is important for ZRSZ that the Community Platform is primarily intended for supporting practitioners in their daily service delivery without taking too much time from their tasks and thus that conversations *within the Learning Platform stay productive and goal-oriented, and come to concrete outcomes that correspond to certain quality criteria.* However, using the platform for chatting should be allowed, as it is a form of adopting the forum and creating ownership, providing members with the feeling that they can do what is important for them. For the purpose of relaxation and non-work related posting, the ZRSZ expert services agree on establishing Off-topic group, where practitioners can post funny, relaxing content. Therefore, a concept was developed that includes (human) facilitators supporting the community, guidelines and features in the platform. The concept is also described in *strategy paper* (and repeated in the FAQ of the platform) to be disseminated within ZRSZ, as this is common practice for new tools and concepts to be introduced:

- **Facilitation** will be done both globally for the platform and locally in the groups (forums). For the former the platform will feature a main moderator, who facilitates all group leaders and has a helicopter view on all content and access to all groups and discussions. Due to high caseloads at the regional and local Offices, it is proposed for the pilot launch that a person from the central office takes over this role in close collaboration with the members of the pilot group. group moderator(s) will play a key role, especially at the beginning of the Community Platform implementation, to highlight positive contributions and good tone amongst members and thus demonstrate and stress the required behaviour of group members. Insulting or pejorative content can be reported by all group members and will be deleted by the group or main moderator. Groups can freely choose if the activities of the group moderator are taken by one person or split up to several members of the group. Responsibilities can also be handed over from one person to another over time, are thus seen as something that is flexibly negotiated amongst group members. The role and activities of the group moderator can be taken voluntarily by members of the Community Platform.

- Developing guidelines such as descriptions of roles and activities in the strategy paper (and repeating them in the FAQs of the platform) corresponds to the needs of the PES, which operates within established structures. Using clear guidelines facilitates rapid enlargement of platform usage beyond pilot without using too much staff resources. The guidelines on the Reflective Community Platform provide detailed **descriptions of expectations to members and groups without being too restrictive**, providing a corridor and context of how to use the platform. These include suggestions for how to use the platform, , reasons for engaging in discussion, ways to use the platform for fruitful exchange and preserving ideas and other results of discussion as well as ways to help and motivate others. The guidelines provide an integration of what is known from literature and the specific requirements described above. As an example, there were discussions on how to make good practices and solutions that are developed in the different (sometimes closed) groups of the Community Platform visible to all levels of management and accessible to the whole organisation. Ideas that came from within ZRSZ were for instance, to ask group leaders to copy good practice examples from their private groups to an “official good practice”- group which is then openly accessible. This is documented accordingly in the guidelines to make users aware of this opportunity and what it is good for. As another example, to boost respectful and positive communication when solving stressful situations among highly burdened practitioners at the learning platform, members will have to agree to a code of conduct when registering to the platform.
- Human facilitation and guidelines will be accompanied by **features of the Reflective Community Platform** (see section 5.1) such as the prompts (see section 5.1.1.2), user-driven questions (see section 5.1.1.3) and display of guidelines (see section 5.1.2.4), which provide an adaptable balance between guidance (scripting) and free collaboration suggested in the literature (Pierre Dillenbourg et al., 2009). For the implementation and sustainment of a community culture and using the reflective community platform the project team has created guidelines, manuals and content for the platform (and continuous to do so at the time of writing this document introduction), which can be found in Appendix B.

Concerning the moderation of the communities we understand that this requires a certain effort and also time and personal investment. Concerning the challenge of high case load the identification of moderators is another challenge we have tackled. To deal with it descriptions of the expected activities and responsibilities of participants of the platform to be taken over were included in the strategy paper mentioned above to provide a first understanding how much effort the new service will take from appointed participants. Emphasis was laid on describing these responsibilities while stating that there is not much extra effort involved and that the role will provide value for others, thus inviting people to take over this role. Regarding the main moderator of the platform a person from the central office volunteered to take over the role at least for the pilot launch (see below), who has already established the needed trust in the pilot group and has the knowledge of the purpose of the reflective community platform. To overcome the entry barrier of people taking up the initiative to create groups and volunteer for the initial moderators, in the pilot roll-out possible champions in ZRSZ for different topics will be identified by the EmployID team and individually contacted and motivated to take over certain responsibilities at the beginning to launch the groups.

Enabling reflection in the approach will be done by complementing community processes and features with reflection features as well as adapting existing features to support reflection. This will be done by using the concept of reflection as a plugin described in section 2.2.3. Reflections support then aims to enable PES practitioners to share and compare their experiences (which is a major prerequisite to produce outcomes from reflection, see Prilla et al. 2015), to create (and share) ideas how to deal with the challenges associated to the experiences and to arrive at individual and/or

collaborative solutions. This is supposed to promote a deliberative learning process, transcending implicit and reactive learning styles (Eraut, 2004), which makes people agents of their own change.

. Process

The reflective community platform to be used at ZRSZ was developed to meet the needs to practitioners at ZRSZ early on. As Figure 56 shows this is based on the requirements and user workshops as well as the field visits conducted in Y1 of EmployID, and has been continued in a participatory design processes after that. In particular, from the work done in Y1 a prototype was built, which was developed further based on feedback of a “check group” composed of different stakeholders from ZRSZ. The resulting prototyped is planned to be rolled out to and evaluated with one target group at ZRSZ early in 2016. At the time of writing this deliverable the project team is working on the preparation of this pilot roll-out. Below we will provide more details on the process.

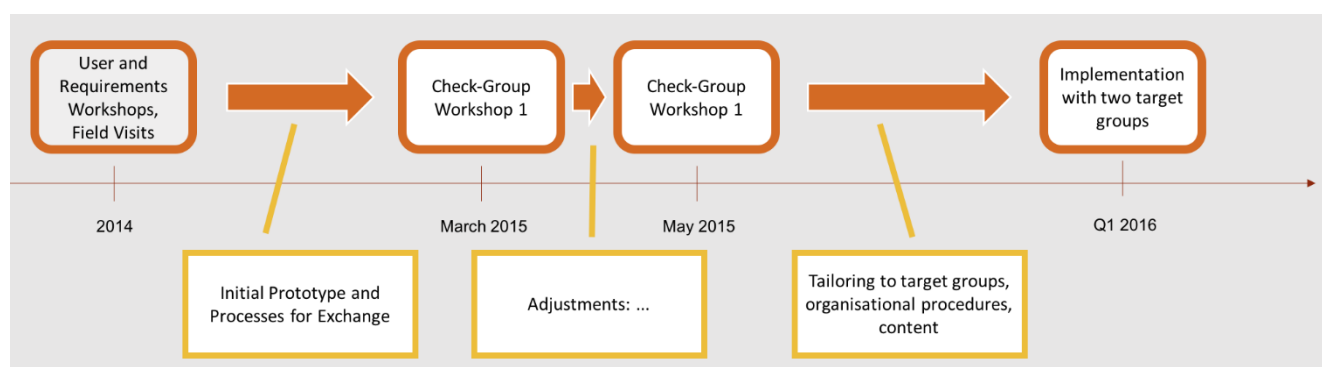


Figure 56: Process of development for the Reflective Community Platform at ZRSZ.

The initial prototype was created based on the work done with ZRSZ in year 1 of EmployID (see D4.1). This work was then continued by the implementation of a so called check groups within ZRSZ in order to tailor the prototype to a platform suiting the needs of a PES. The check group at ZRSZ was composed of different stakeholders at ZRSZ, namely a director of Regional Office, two counsellors for employers, two counsellors for unemployed and a practitioner from the training office. There were two check group workshops with EmployID partners’ presents, which were run in similar ways: First the concept of the community platform and its purpose were introduced, then the practitioners were involved in exercises in the usage of the platform (e.g. what kind of topics they would like to exchange in it) and practical usage of the platform (e.g. exchanging some of their recent experiences), and at the end of the workshop they were asked for their feedback on the respective platform prototype. In a third round of feedback participants of the check group were asked informally for their feedback on the refined prototype. The feedback of the check group enabled the project team to improve the platform in many ways and to make it ready for usage in ZRSZ. Below we mention the most important topics covered by the feedback from the two workshops and how we reacted to it.

Feedback	Reaction
Workshop 1	
Seriousness of the platform: The participants wished for wording and features that would emphasise the professional focus of using the platform.	Features and names were adapted according to the feedback. For example, the social network feature, which allowed adding people to “Friends” was changed to adding people to one’s network.
Finding relevant information: The check group raised concerns on how to find other users with similar practices and/or content	The search feature of WordPress was adapted to respect the privacy settings of groups and enabled to search for content and users.

relevant for them in the platform	
Missing overview / orientation: The amount of information was hard to manage for the participants, and it was hard to determine what has happened between two visits of the platform.	Development of a “landing page” to display most important information and activities since last visit (see Figure 47 and Figure 57)
Notification: Participants wanted to know about activity in the platform (e.g. activities they want to join) without the need to log into the platform	A notification concept (see section 5.1.1.8) was developed.
Content: The check group suggested the platform to be more than “just” a forum in order to raise more attention.	A concept was developed how to extend the platform, including ideas like the topic of the month (section 5.1.1.4).
Workshop 2	
Need for off-topic communication: The group stated that an additional channel in the platform in which they could exchange non-professional content such as jokes would make it more attractive to people	The “Off-Topic” group was added the platform as one of its standard groups
Group audio calls: The group requested the possibility to create audio calls for deepening the discussion on certain topics	The platform will be connected to the audio communication tool available at ZRSZ as soon as it is hosted within the IT of ZRSZ
Posting documents and videos: Members of the check group suggested that video tutorials or documents could be anchors for reflection	The platform was extended by (WordPress) plugins to show videos and exchange documents
Social presence: Participants stated that they want to see who is online and what they are interested in	The Network Maps Plugin (see section 5.1.2.1) was developed in order to visualize the social relationships
Guides on initial usage: The group suggested to create guides for the initial steps of using the tool, including how to create a group	A concept and text for guides was set up for development and to be ready when the pilot would be launched
A member of a check group tried the platform within already established communication paths at the same office. Such usage did not happen, the impression was it was widely refused by practitioners (“We had a meeting I which we invited people to use the platform, but there was little activity after that”)	A concept for enabling people how to use the platform for the purposes of creating and running a community was created. Reaching common understanding – also through guidelines and introduction that the platform is primly intended for collaboration between offices in different locations.

Table 2. Feedback from the participatory workshops.

Feedback on the platform was mixed. In the first workshop the members of the check group were generally positive towards using the platform, and some even requested to use the platform directly after the workshop (which was granted in order to help them make own experiences). However, there was also reluctance and scepticism towards using the platform (for the reasons described above. In the second workshop people had more experiences in using the platform and feedback

was more differentiated. On the negative side the group reported that they had not seen much value in using it for communication among the group members – this can be explained by the fact that the group was heterogeneous and did not have practices and experiences to share. Individual members also mentioned that using it for internal purposes (e.g. running their own group) had not worked out (see Table 2), while others had lost some of their interest in using the platform, calling it “just another channel”. The latter emphasises the need to point out the value of the reflective community platform more explicitly when piloting the tool. On the positive side the manager present in the group was keen on using the tool for her local office and requested support in doing so. In addition, a counsellor stated that she saw a lot of value in sharing her views in the platform (“I was happy when I was invited to the platform, because now I could share my opinion with my boss”).

After the check group workshops, a project plan for the implementation and rollout of the platform was created, which was targeted at rolling the platform out within 8 months. The progress of work according plan was checked every two to four weeks. The plan included

- The Implementation of features suggested by the check group or identified by the project team in order to make the platform applicable in PES contexts: This included the development of many features described in section 5.1 such as the landing page, the notifications, personal networks and many more.
- The implementation of reflection features as described in section 5.1 in order to tap from the potential of reflection for professional identity transformation.
- The Development of a strategy and corresponding material for the implementation of the platform at ZRSZ. This included the identification and description of potential target groups, the development of guidelines, the creation of privacy and consent forms and the creation of an internal strategy paper to foster the implementation inside ZRSZ.
- The clarification of deployment options, as it became clear that for practical (e.g. connecting the platform to other tools such as audio conferences), ethical (privacy and security of data) and quality (ensuring availability) reasons hosting of the platform inside ZRSZ was preferred.

While technical and implementation tasks were one aspect of the project plan the integration of the platform into the organisation is another, possibly more important task. It includes the creation of content suitable and interesting for target groups, guidelines and other information for introducing the concept and platform, facilitation roles and their support in the platform and many other things. This resulted in a strategy described in the internal paper mentioned above as well as in the guidelines for the pilot roll-out.

Concerning the **implementation of the platform within ZRSZ** a multi-step approach was agreed upon: As the value of community support can best be shown by existing communities and good experiences with supporting these communities, it was agreed that the platform will be piloted and (if evaluated positively) gradually made available to more practitioners within ZRSZ. At the time of writing two target groups have been identified for a rollout, but upon the agreement described above, only one group will be included in the initial pilot roll-out: the platform will be used to support a group of 20 counsellors for youth at ZRSZ, who will be trained for their future work as counsellors for youth in January 2016. This target group of practitioners was identified as suitable for the pilot roll-out as it consists of younger new employees, who are keen on using e-channels and ICT solutions, highly motivated and are not located at the same location. Further, as mentioned above, a colleague from the Central Office, who will train and collaborate with the target group and is as well involved in the EmployID project, will take on the role of Main Moderator. This is very important also from the aspect of supplying the group with relevant news, information and professional literature (“seeding”, (Fischer, McCall, Ostwald, Reeves, & Shipman,

1994)). The evaluation results as described in section 5.2.4 will be used to discuss further steps in rolling out the platform together with ZRSZ.

5.2.3 Solution

Based on the feedback collected in the participatory workshop the strategy for the ZRSZ reflective learning platform is to use a diversity of the plugins described in section 5.1 in order to make the platform valuable from the beginning and for different people. As mentioned above, the pilot roll-out of the platform is envisioned for early 2016, and it will be done for one target group.

For this purpose in ZRSZ the reflective community platform will offer all of the plugins mentioned

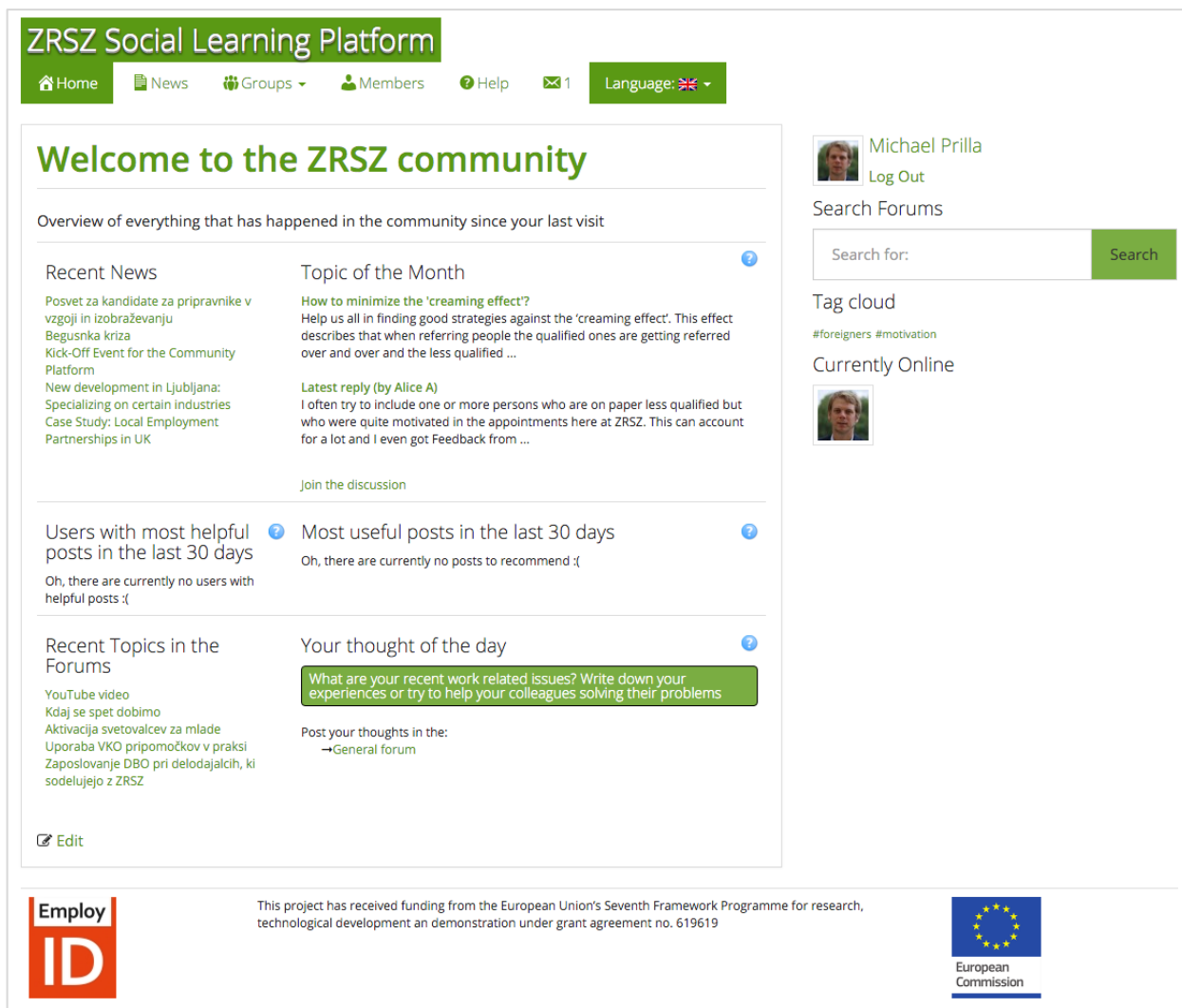


Figure 57: The Reflective Community Platform for ZRSZ.

in section 5.1.1 (except for the plugins allowing anonymous content) and, if it is ready by then, the Network Maps plugin mentioned in section 5.1.2. The platform will be pre-configured for the roll-out to the target groups- and configured to suit the needs of the target groups:

- The Topic of the Month will be prepared with some topics to draw from, which will be related to the training and application of training content within the pilot group. The main moderator will take care of adding new topics and fostering a discussion around them.
- The Prompting plugin will be configured to support basic reflection activity (sharing experiences, commenting on them in a reflective way) in the beginning in order to support

the creation of content at the start of the platform. Later on prompting will also be offered for the creation of solutions (see sections 0 and 5.1.1.2 for further information).

To ensure a maximum of availability of the platform within ZRSZ and to ensure data privacy the platform will be hosted within the premises of ZRSZ, with the project team being given access to the ZRSZ servers for the purpose of deploying and administering the platform and to ensure it is running properly. Deployment is in progress while writing this deliverable.

5.2.4 Results

At the time of writing the Reflective Community Platform has not been rolled out to ZRSZ beyond the check group described above, and therefore there are no results describing its uptake or impact on people. It intends to support the exchange of good practices and challenges at work. There are multiple ways how this may lead to identity transformation, and there are corresponding approaches of evaluation for each of them. For the evaluation of the Community Platform the team will apply a set of quantitative instruments (self-assessment questionnaires, reflection specific questions, activity logging, deductive content coding) which will be combined in statistical analysis and a set of qualitative instruments (interviews, deductive content coding). The instruments are described in D7.1. and in section 3 of this deliverable).

timeline



Figure 58: Timeline of the Reflective Community Platform Evaluation

In the following an overview of the main questions to be investigated is provided:

- **Establishing a culture of exchange among staff:** The primary goal of creating the reflective community platform and supporting the establishment of communities within ZRSZ is supporting people in exchanging experiences and learning from each other. This can be seen as a prerequisite for the goals described below, as without a culture of exchange these goals are void. Therefore, evaluation needs to look at how the communities supported in platform develop, that is, how the network between people unfolds, how frequently and intensively

people interact and what is the perceived value of being part of the community. The evaluation will be based on the self-assessment questionnaire developed for all EmployID interventions (and described in section 3.1.1), by descriptive statistics on activity in the platform (see section 3 and D7.1 for both) and by social network analysis as described in (Prilla & Renner, 2014).

- **Improving reflectivity of staff:** It has been laid out in D4.1 and Prilla et al. (2014) how reflection can lead to identity transformation. The reflection mechanisms described above are directed towards these goals, and will be evaluated by the analysis of activity and content in the platform. In particular we will look into the content and see whether the amount of reflective interaction increases over time in the platform and whether people provide more solution-oriented comments (see Prilla and Renner 2014; Prilla et al. 2015 for the importance of solution-oriented comments). For the evaluation reflection specific self-assessment questions and the content coding scheme developed for reflection and corresponding analysis will be used (see section 3, D7.1 and Prilla et al. 2015).
- **Creating and adopting good practice examples:** The interaction in the community in general and the reflective interaction in particular aims to create good practice examples, which can then be taken up by practitioners as part of identity transformation (see Brown 1997; Prilla et al. 2014). The identification of such examples is supported in the platform by human facilitation, by features such as the “Write Helpful Posts” feature (see section 5.1.1.5) and displayed in central areas of the platform, which shows such examples (see, for example, Figure 49). In the evaluation we will look at the creation and identification of such examples and whether people have taken them up in their daily work. This will be supported by analysing the use of corresponding features (e.g. statistics on uses of the “Helpful” feature and read events of the lists), by specific post evaluation questions.
- **Encouraging exchange and facilitation:** Besides identity transformation, reflectivity and others, facilitation and the capability to facilitate the identity transformation of others are key issues in EmployID. Facilitation is a key element of communities, and for the ZRSZ community it is planned not only to have pre-defined facilitators but to provide the practitioners using the platform to engage in communities with information on how they can support the learning of others. This will be done by displaying guidelines, feeding back behaviour and how it could be changed and prompting users to certain activities. This is supposed to lead to higher engagement in facilitation activities by users, and will be evaluated statistics of activity in the platform, content analysis (scheme currently being developed) and interviews with users.

It should be noted that the list above deliberately misses identity transformation as an explicit category of evaluation, as it is the key aspect of EmployID and will be evaluated in all interventions according to the evaluation framework described in section 3 and D7.1.

5.2.5 Patterns

II.9	Prompting Code of Conduct	Phase II
Problem	There is a need to ensure that the ZRSZ quality standards and agreed processes and practices are fully applied by the users of the Learning Platform the support of communities in PES.	
Analysis	There is a need to balance between the freedom and self-directed learning in communities and the need to ensure that the ZRSZ quality standards and agreed processes and practices are fully applied by the users of the Learning Platform, which is similar to the well-known balance between scripting and mapping in learning support (P. Dillenbourg, 2002; Schmidt, 1997). This needs to be taken on board in	

	design and affords solutions that can flexibly be adapted towards one or the other end (Pierre Dillenbourg et al., 2009).
Solution	The solution taken in the ZRSZ community platform is the provision of a “Code of Conduct” plugin (section 5.1.2.4) that constantly but unobtrusively invites and reminds users of the platform to use norms and rules associated with the platform. To make sure that users are not burdened from this the reminders will randomly switch between parts of the code of conduct and guidelines (FAQ)
	The solution is developed for the reflective community platform, in which too much of steering / control would harm the flow on the community interaction. It assumes a professional way of using the platform and thus following the code of conduct displayed. These are reminders rather than enforcing rules.
Evidence	Evidence will be collected when the platform is rolled out.
Evaluation	In addition interviews with participants will deepen our understanding on the perceived usefulness of the applied solution.

5.3 Reflective community platform at CES

This section describes the EmployID solution approach for the Croatian Employment Service (CES) showing the context and how the solution approach fits in. Due to the fact that CES joined the EmployID project at a later stage than ZRSZ the current status of implementing a solution approach is at a different stage. Still, this section is somewhat similar to the ZRSZ case since CES also have a need for using the community of practice approach (see 5.1).

5.3.1 Learning challenges in context

In February 2015 three workshops have been held at CES in order to analyse current challenges regarding changing roles of counsellors and how to tackle those changes. This section contains a brief summary of the workshops and the results. For the full report please refer to Appendix B.

For workshop preparation three questions were defined and sent in advance to CES employees from the regional and central offices to prepare an overview of interesting topics and input for the workshops:

- Which important changes do you expect in your work in Croatian Employment Service until 2020?
- What do you assume are the required tasks to be fulfilled and skills and attitudes needed in 2020?
- How do you prepare yourself to handle the changes? What are good experiences?

Answers to the questions were also collected in advance to the workshop to guide the workshops. Those questions have been sent to both practitioners as well as managers at local, regional and central level. During workshops intensified discussions around the answers to the questions above were held. Finally, participants prioritized those aspects, on which the participants want EmployID to focus on.

Especially the workshop with practitioners revealed a demand for improvements in horizontal and vertical communication in order to enhance the exchange of experiences and best practices in a guided manner. Managers on the regional level emphasized necessary progress to be made for techniques like peer coaching to foster peer exchange and help practitioners in dealing with specific problems they encounter in their daily work. Managers on the regional level highlighted

experience sharing and training in peer coaching, thus underlining the demand for support for practitioners to help each other.

While managers perceive horizontal exchange at CES as a good practice example, they identified E-Learning as a method that could facilitate learning among employees and should be more developed in organization. At the time when workshops have been conducted, CES implemented an E-learning project with the aim of development of internal e-learning system for CES employees based on the Moodle. There is also internal platform in CES (Intranet) which includes different functions such as a self-developed question & answer system in place. This is valued by the practitioners, however there are currently not enough resources supplied for maintaining the platform due to the fact that content should be updated on regular basis (due to changes in legislation etc.).

Based on the workshops findings, the workshop report recommends using a community of practice approach (creation and facilitation of a platform); thereby supporting peer exchange and the exchange of best practices. Additionally, reflection and peer-coaching as ways to guide the exchange is recommended.

5.3.2 Analysis

In order to support CES in the challenges faced, the usage of our reflective community platform was further recommended, since the identified need for E-Learning is already being approached by another EU funded project that is currently at the final stage of the implementation in CES.

Similarly to the analysis for ZRSZ (see 5.2.2) using the reflective community platform helps tackling the need for supported peer exchange as identified by practitioners in the workshops. Furthermore, it helps facilitating professional identity transformation. Support for reflection is enabled through different plugins (like the Prompting Plugin, see 5.1.1.2; or the Question Plugin, see 5.1.1.3) that help users to learn from their experiences.

Implementing a platform to build a community of practice amongst the practitioners helps to strengthen existing connections amongst practitioners, setting new ones and enhances peer exchange. This was also labelled by the managers in the workshop as a good practice, which can be fostered and facilitated by the community platform.

The community platform is created in a modular way (see 5.1) by using various plugins to support different needs. For the CES we also plan to use general plugins, like the Topic of the Month plugin (see 5.1.1.4) or the Helpful posts plugin (see 5.1.1.5) to facilitate the use of the platform, as well as other plugins facilitating reflection more directly (like the Prompting Plugin, see 5.1.1.2; or the Question Plugin, see 5.1.1.3). The latter plugins intend to facilitate engaging in reflection amongst users so that they can learn from experience and share their knowledge.

The difference between the CES and the ZRSZ is that CES employs other internal systems to which the platform could be linked at (Intranet and E-learning system). Intranet offers different functionalities, like document management, questions and answers section etc. E-learning system offers trainings for employees but also gives an opportunity for training participants to communicate on training topic. Main difference between these systems and CoP is in the formality/informality of the communication and hierarchical information exchange (currently held platforms in CES are formal way of communicating knowledge between the central office and regional offices – “one way” knowledge exchange). Leaving room for possible future interconnection of the platforms, the community platform at CES will be configured with a lower amount of plugins and it will be more focused on the core concepts of communities for the start. Additionally, CES is using Moodle for eLearning portal and in recent meetings it was agreed that both platforms, Moodle for eLearning and the community platform, can be configured to push the usage with linking to each other.

Using a community of practice approach in which members are allowed to organise themselves and to contribute to the content also helps to reduce the reliance on central support for the platform (like with the currently used question-answer platform).

Since the proposal of the platform have not yet been presented in detail to the management nor the counsellors (just an initial feedback has been received by CES Central office), the new possibilities and functions of the platform will be created together with the CES employees and project team. The main difference in the process of the implementation of the platforms in CES and ZRSZ, at the moment, is in the core group of the users. Core group is the first group of PES employees to which the platform will be presented. Their goal is to make a decision on the thematic focus of the CoP and definition of the platform goals. The core group of the ZRSZ has been comprised of the employees working within the same business processes but with different hierarchical levels. It is planned that in CES the check group will be comprised of the counsellors who share the same job role and are on the same hierarchical level since the communication can be more focused on certain areas and more open and informal.

The community platform is intended to function in addition to existing practices of peer exchange such as the coffee kitchen, team meetings or larger meetings of the staff. It, nevertheless, provides an innovative channel for exchange. The platform is more flexible for its members and also more cost-effective than large staff meetings which often bind a lot of time and money. Also, CoP enables employees from different regions (dealing with similar issues and practices) information sharing, finding solutions of specific problems they encounter in their work, improving practices and services to customers, setting up new services upon clients' needs etc.

During the workshops the topic of peer coaching came up as a need additionally. Peer coaching has also been recognized as one of the priorities by the management within the context of the human resource development. This demand can also be supported by EmployID, e.g. by including corresponding functionality in the community platform, however it is not yet included into the first feature set when launching the reflective community at CES.

5.3.3 Process

Most features of the platforms have been developed in a process together with ZRSZ and are currently customized. However, we are currently in the process of involving various departments at CES to obtain feedback and to involve users at an early stage so that the platform can further be customized to CES requirements. Initial feedback received from CES is generally positive – main functionalities and possibilities of the platform are generally in line with the needs of organization. There is also request from the CES for finding the way of some kind of quality control of the data provided on the platform. This challenge will be faced in next steps, similarly as in ZRSZ, taking into account specific needs and context of the CES.

Figure 59 shows the timeline of our work with CES. Workshops started in February 2015 and we received the management decision to pursue the plan with a community platform. At present we are elaborating a more detailed roadmap for the implementation of the community platform, as well as collecting feedback from users to check whether we have to adapt the plugins or even create new ones due to a different context.

Currently, the go-live for the plugin is envisioned to take place with one target groups, the CISOK counsellors, not earlier than the second quarter of 2016. Since the CISOK counsellors have a different profile than the training participants in ZRSZ, but also the goal and the context in which they operate, we will also need to pay special attention to creating different initial content to start the community platform.

Since the practitioners working at the CISOK centres are the first targeted users of the platform, please find a brief information of these centres in the following:

Lifelong Career Guidance Centres (CISOK) were established in CES in 2013 in order to provide lifelong career guidance services to all citizens based upon their identified needs. They are situated outside the CES premises in order to be more open and accessible to different target groups of the customers. CISOK activities and measures are developed and implemented in the cooperation with relevant regional stakeholders – educational and employment sector. Main purpose of the CISOK centres is (re)integration of the unemployed people into the labour market. Emphasis is put on young people for whom various activities are developed – case managed services, group activities, self-assessment of the needs and potentials and other self-help tools.

CISOKs are so far established in 10 out of 22 regions in Croatia – currently there are 11 CISOK centres. There are on average 2 counsellors in each Centre, so this equals 22 counsellors on average. All counsellors in CISOKs have Master's degrees in humanities or social sciences: psychology, pedagogy, educational-rehabilitation sciences, social work and such. There is no competence framework set for the CISOK counsellors. Competences that are expected from these counsellors are the same as those set for the counsellors for vocational guidance in CES regional offices.

Their main work activities include the following:

- informing on employment opportunities and involvement in the apprenticeship/internship, education and training
- informing and counselling on professional career development
- improvement of career management skills through individual/group counselling
- workshops on job search techniques
- info campaigns through various forms of communication (web, social networks, brochures, panel discussions at the local level). Campaigns will be organized for specific target groups (based on educational level, age, gender etc.) and based on the data that will be available after the establishment of a NEET monitoring system
- motivational activities to activate young people on the labour market
- job vacancies access.

Their target groups are all citizens of Croatia (employed, unemployed, students, pupils) with special emphasis on:

- people not in education, employment or training (NEETs)
- young people (aged 15-29)
- long-term unemployed (more than 12 months).

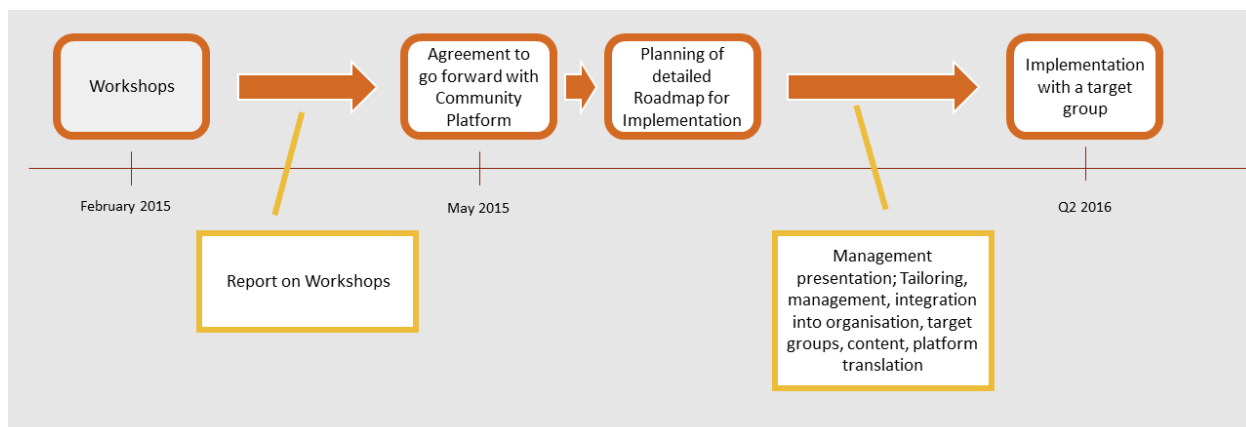


Figure 59 Process of implementation of the community platform at CES

Having done most of the work in the ZRSZ case helps us avoiding pitfalls and speeding up the process since we already designed the implementation phase for ZRSZ. CES benefits from this since the project already could gather experience in launching a reflective community platform in a public employment service.

5.3.4 Solution

During the EmployID consortium meeting in Zagreb in May 2015 CES informed the consortium on the decision to go forward by using a community of practice in order to approach the challenges identified during the workshops.

A first demo version for CES to evaluate and “play with” has been created and offered as shown in Figure 60. This version is strongly based on the ZRSZ and has not been fully customized to CES yet, which is due to the early stage of the implementation.

HZZ Social Learning Platform

[Home](#)
[News](#)
[Groups](#)
[Members](#)
[Help](#)
2
[Language: !\[\]\(34b4f260a8587d2e97eeaee361cc357b_img.jpg\)](#)

Welcome to the HZZ community

Overview of everything that has happened in the community since your last visit

Recent News

- Kick-Off Event for the Community Platform
- New development in Ljubljana: Specializing on certain industries
- Case Study: Local Employment Partnerships in UK
- Welcome to the learning platform

Topic of the Month

How to minimize the 'creaming effect'?
Help us all in finding good strategies against the 'creaming effect'. This effect describes that when referring people the qualified ones are getting referred over and over and the less qualified ...

Latest reply (by Alice A)
I often try to include one or more persons who are on paper less qualified but who were quite motivated in the appointments here at ZRSZ. This can account for a lot and I even got Feedback from ...

[Join the discussion](#)

Users with most helpful posts in the last 30 days

Oh, there are currently no users with helpful posts :(

Most useful posts in the last 30 days

Oh, there are currently no posts to recommend :(

Recent Topics in the Forums


- How to minimize the 'creaming effect'?
- Topic of the Month Archive
- Employers making requests for candidates not eligible: What to do?
- Examples for motivating clients?
- Not willing to take job - motivation?

Your thought of the day

What are your recent work related issues? Write down your experiences or try to help your colleagues solving their problems

Post your thoughts in the:

→ [General forum](#)



Oliver


[Log Out](#)

Search Forums

Tag cloud

#foreigners #motivation

Currently Online



[Edit](#)

Figure 6o: Current community platform version for CES

At first we plan to start the community platform with three groups of counsellors who are working at the CISOK centres. Since there are 11 CISOK centres, from each centre we would include one counsellor who is interested in the project. This group would benefit especially from the community, not only because they have similar job roles, but because they are also open minded towards technology and want to influence further development of the system. Also, CISOK model is quite a new model of providing lifelong career guidance services in Croatia, so we estimated that CISOK counsellors could benefit from the CoP especially in creating new activities and measures for certain target groups of the customers – e.g. NEET. Due to all the reasons mentioned, we believe that this target group would build up a fruitful learning environment in which its members will be able to exchange their views openly and create new services and measures to customers according to their needs.

Currently there is no final list of plugins which are to be enabled upon launch since the process is not yet in that specific planning stage.

5.3.5 Results

The community platform hasn't been implemented at CES yet. We are currently in the stage of planning a detailed roadmap for the implementation and receiving feedback from the Central Office.

The results that are expected and evaluated from the usage of the CES community platform are very similar to the ZRSZ case, since both PES use the community platform and have been equally involved in the elaboration of evaluation instruments (e.g. self-assessment questionnaires) and

responding evaluation questions. So for details please look at. These results are of interest since the CES case is quite similar to the ZRSZ case and since both PES have been involved in the planning of the evaluation and the corresponding evaluation questions.

Comparable to ZRSZ, the results will be measured using a mixture of quantitative and qualitative instruments, combining the results from the self-assessment questionnaires with the data from activity logs and amending it with detailed insights from interviews as well as the coding of content in the platform. This mixture of instruments will investigate changes in attitudes, skills and behaviour of the practitioners as a result of project intervention. Soft aspects like changes in the motivation and resilience of practitioners are important aspects of impact evaluation too. In addition the linkage from these changes in practitioners to changes on an organisational level are an interesting question to explore. The qualitative analysis should help to better understand what works and does not work in practitioners' processes, in order to have the possibility of providing the practitioners with the needed education and training.

Since an IT community of practice, as a method of learning, has never been used in CES, there is the possibility of measuring its indicators on learning in comparison with standard methods of building competencies that are already in place in CES (face to face workshops, trainings) and comparing this new approach to the ones already used.

5.3.6 Patterns

III.4	Linking to existing learning infrastructure	Phase I
Problem	Often training is conducted without offering infrastructure to let training participants connect outside training. Thus there is a lack of people being able to interact during their daily work outside training.	
Solution	Offering a reflective community of practice platform helps to enable training participants to have a communication infrastructure to interact with each other outside regular training sessions. This way people can exchange their experiences with the training content during regular work days and discuss those experiences. Additionally, forming a group of training participants helps forming a group identity which can help participants identifying themselves with the training. This can help form longer lasting work relationships between participants which can also last after training ended.	
Evidence	The Moodle platform used by CES for internal training purposes and the reflective community of practice platform will contain links to each other. This establishes a first connection between those two systems, allowing users to jump from learning into the community and vice versa.	
Evaluation	Interviews can be used to check how participants perceived the usage of the platform during training and how it benefitted their learning experience.	

6 Peer coaching

The peer coaching concept and process was already described in earlier deliverables (D4.1 & D8.1) as well as in this deliverables book (section 2.2.4) (chapter 2.2.5).

In this chapter the whole activities around concept, training and tool are described. Currently there is no specific context, but many contexts (e.g. for the training) and internal use of the mash-up of the tool. This is why this chapter seems to fall out of series currently. All of this is preparation for implementation in context. EmployID is currently in discussion with Croatian PES management for implementation of peer coaching at HZZ and there were several requests of PES from the associated partner network at the London APM.

6.1 Learning challenges in context

As already described in D3.1 there are several learning challenges that lead to peer coaching and the underpinning ideas for peer coaching training were already described in section 2.2.4. In the following the learning challenges form the learning scenarios are summarized briefly:

- Learning challenge one is about the lack of sustainability of training (from learning scenario one).
- Learning challenge two is on the benefit of peer consulting as counselors and job coaches already support their clients, it is acceptable that they also use their knowledge and their skills to counsel each other (from learning scenario three).
- Learning challenge three focuses on improving individual practices of coaching, counseling and guidance (from learning scenario four).

Challenges can also be what is described in learning scenario eight on learning about time management/handling as well as in using labor market information in practice (learning scenario ten).

There could be also other learning scenarios or challenges possible, but these fit most the needs identified together with the PES partners and build a wide range on challenges that can be faced with peer coaching.

6.2 Analysis

Peer coaching is a method to mutually support the learning of oneself and others. It is conceptualized for colleagues who can support each other with solving their personal professional challenges.

It is therefore fitting the need for peer consulting using the special peer coaching process and for practising on a solution-focused coaching approach with clients within secure conditions (between colleagues). Since the lack of sustainability of training is often through unclear transfer of trained material into practice or challenges occurring after the training that arouse problems with the practical transfer, peer coaching can be a method to secure the outcome of training and support with initial problems of transfer. A more concrete challenge is the time management and handling of time, which is often made a subject of discussion during coaching. This is also a challenge where participants independently if peer coaching facilitator, client or advisor, can benefit from the collected solutions during the peer coaching session. Using labour market information in practice would be again a transfer topic.

From the challenges described above the analysis can be summarized in peer coaching being useful for

- coaching practice,
- peer facilitation of colleagues and strengthening the idea of that concept,
- transfer into practice (e.g. from general from training or specifically from LMI) and
- to solve individual professional problems.

These different usages of peer coaching show how valuable the method is and how much can be done by implementing peer coaching into PES practice.

In the following parts the development of the solution will be described briefly. Most of it can be found in Deliverable 4.1 from the conceptual and technical side, in Deliverable 8.1 from the training side and in this document in section 4.4 and in addition in the updated Deliverable 7.1., so the focus will be mainly on training and evaluation of peer coaching.

6.3 Process

Peer Coaching development started with the creation of a peer coaching concept, specifically for EmployID which was discussed with internal coaching experts as well as with external coaching experts from the associated partner network. In parallel the former coaching and facilitation competence framework (CFCF) was developed where at the beginning mainly coaching skills were collected. With the input of the concept and the collected coaching skills the five core peer coaching skills in EmployID were identified again with internal and external discussions and in parallel first peer coaching training offers created and performed. Parallel to these activities first mock-ups were created and discussed and peer coaching trained members of the consortium met for paper-prototyping sessions. The group from the first paper-prototyping, the Barcelona group, started to try out the process in practice by performing internal peer coaching sessions to collect feedback for the peer coaching tool/prototype which can be found in Appendix K.

In the following overview the development from concept to a second prototype is shown.

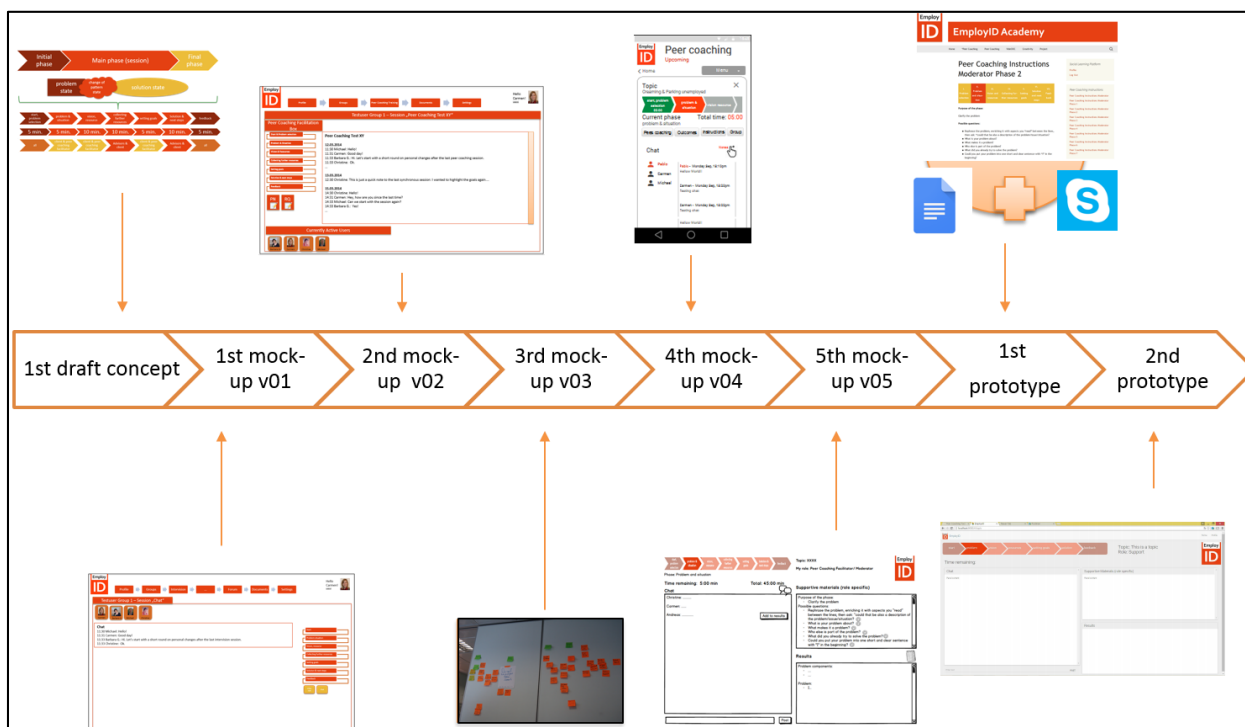


Figure 61: Development of peer coaching tool - an overview

The 1st draft concept of peer coaching and the 1st and 2nd mock-ups were already explained in last year's deliverable on "Initial concept and individual prototypes". The 3rd mock-up, a paper-prototype and the 4th mock-up were design-experiments for a mobile version of the peer coaching tool created in Barcelona during the Barcelona prototyping-session as already explained partly in the updated deliverable 7.1. The 5th mock-up was created in a later stage when the internal peer coaching group of EmployID, Barcelona group, tried out the peer coaching concept with several basic tools (e.g. Skype for communication). Afterwards a 1st prototype was created, consisting of a mix of already existing tools that mirror the functionalities of the 5th mock-up. We call this a "work-around" for peer coaching. The 2nd prototype, which is currently in development, is based on the 5th mock-up and experiences collected after the peer coaching sessions of the Barcelona group by using the work-around.

In the following the different stages of the peer coaching tool beginning the Barcelona prototyping session will be described in more detail.

6.3.1 Collection of functional requirements

In February and March 2015 there were discussions on requirements and specifications for development of the peer coaching tool. Some lists were created with requirements and specifications in general and alongside the peer coaching mock-up Vo2. The result of the collection within the peer coaching scrum team was that there was much need for visualization since the functions were not clear to everyone due to fact that not everyone is expert in coaching and the group is very interdisciplinary, but mainly not from the technical sector. That was a reason to prepare a prototype session for the peer coaching tool.

6.3.2 Prototyping Session Barcelona (3rd and 4th mock-up)

On the 8th April 2015 some of the EmployID members met at Enzyme headquarters in Barcelona for creation of a prototype for peer coaching. Coaching and IT-experts discussed together with two representatives of the three full-partner Public Employment Services on how the tool could look like according to the peer coaching concept and the possibilities realizable in PES. Before meeting in Barcelona, some information material was sent around and the Prototyping started with a short introduction into paper-prototyping. This is also part of the internal facilitation within EmployID and adds to training on technology-use.

After introducing into the method to create a prototype the expectations of the working group were collected and a decision was made on what kind of prototype should be created. The decision was that the 3rd and 4th mock-up are designed for a mobile device to be forced to a simple design. The decision forced to group to be very concise considering what should be implemented.

The peer coaching process was analyzed more deeply to make a reasonable transmission between the concept and the future tool (see Figure 62: Clustering the process and possible functions).

“In my role as working with employers I really like to full-fill their expectations to bring them the best candidates (obstacles, skills, are motivated), but I have also a lot of persons that are not as easy to employ. I am in conflict I want to satisfy the employers with giving them the best employees on the one hand and on the other hand in following my mission in supporting unemployed persons who are hard to employ. This is a dilemma.”

The 4th mock-up is described now in more detail. The complete 4th mock-up can be viewed also [here](#).

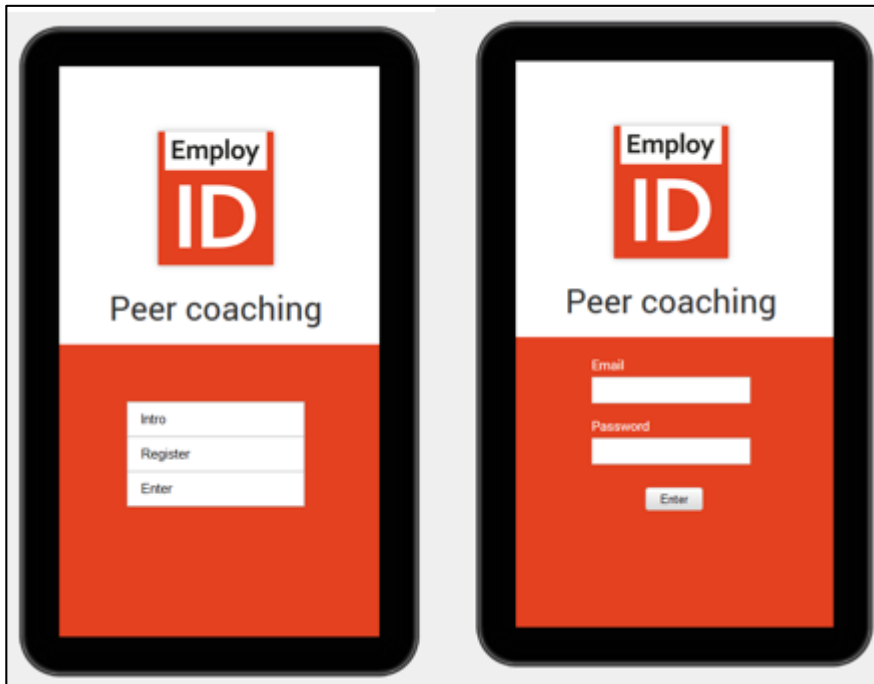


Figure 63: Screenshots of the mobile mock-up (registration & sign-in)

In Figure 63, there is the starting screen of the mock-up on the left with three fields to click on. The field “Intro” leads to the EmployID Academy social learning platform where a peer coaching online course can be worked through for information on peer coaching. Clicking on “Register” leads to the mock-up screenshot on the right side of Figure 63. The mock-up does as if the user already registered and a log-in screen can be seen. Here the user can enter his or her email and password, since the tool is closed to the peer coaching groups and peer coaching users only. When clicking on “Enter” it leads to the tool jumping over the registration. This is of course only for viewing the mock-up and for those who actually entered their data into the app before.

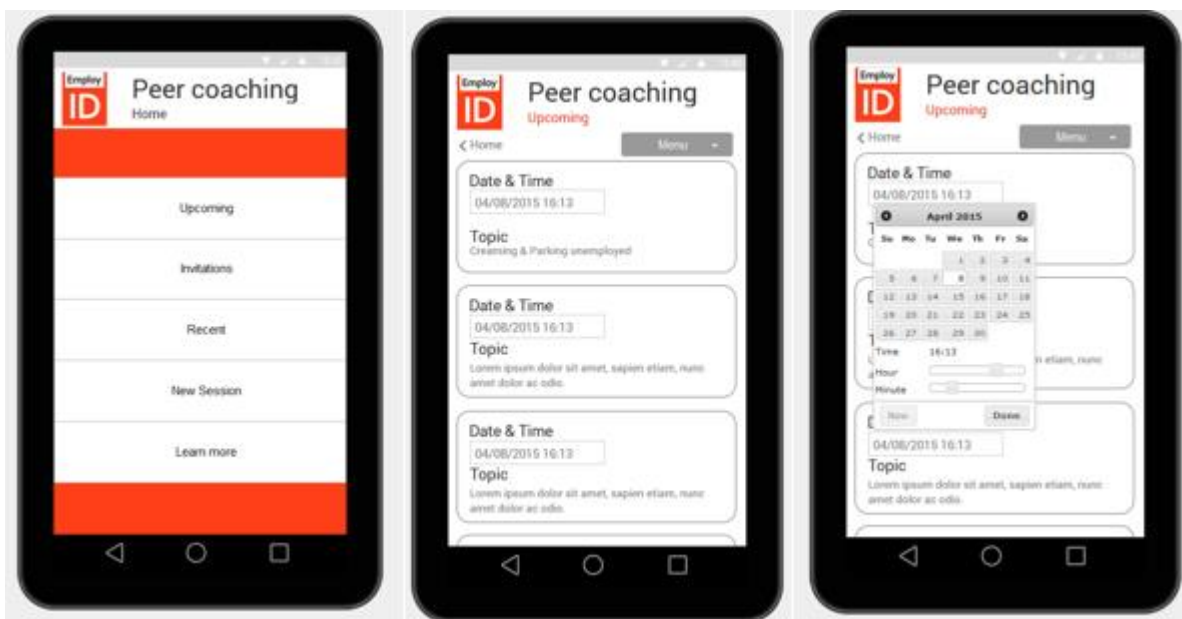


Figure 64: Screenshots of the mobile mock-up (upcoming meeting)

After clicking “Enter” the view in Figure 64 on the left appears. The decision can be made between going into an upcoming meeting, viewing current invitations of meetings and accepting them, checking recent meetings, starting an own new session for inviting others and learning more about the tool and the peer coaching concept. In the mock-up only the “Upcoming” button is clickable. That leads to the view in the middle. Here a menu is integrated on the top of the upcoming peer coaching sessions with the same possibilities to choose from as the menu shown in the left view. Then there are currently four upcoming sessions. The first one is the one created by using the example mentioned earlier. It consists of a date and a time and the main topic of the session. The appointments can be organized and viewed on the right screen.

After clicking on this upcoming session a more detailed description of the session is opened.

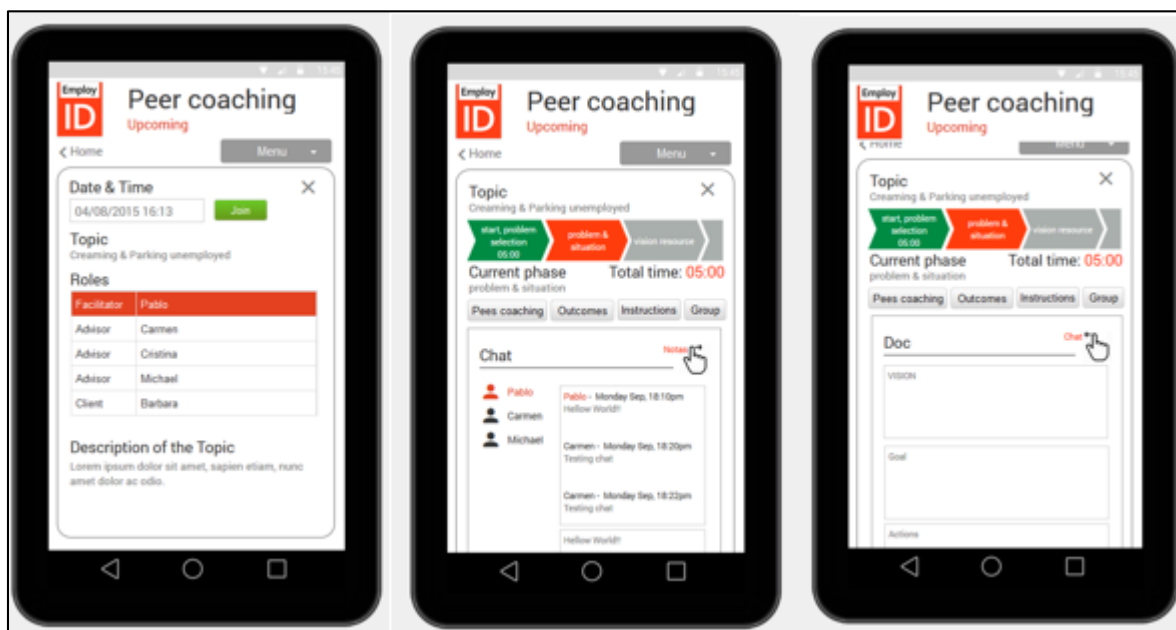


Figure 65: Screenshots of the mobile mock-up (process)

In Figure 65 on the left view the detailed description of the session is opened. There again is the option to arrange date and time and to join the group via the green “join”-button. The topic is

included again and as extra now the roles and the persons that agreed to take over the roles in this particular session. In this case Pablo as the peer coaching facilitator, Cristina, Carmen and Michael as the Advisors and Barbara as the client. Underneath the topic is described in more detail for preparation of the participants. If the session is joined the view in the middle is opened. On the top again the topic and the process of the peer coaching with marking on which phase is already over and which the group is currently in or are upcoming. Additionally there is the time remaining in the different phases viewable, which supports in time-keeping. Beneath there is the session currently in the “problem & situation” phase with a chat-function. The reason for chat is very pragmatic. Currently videoconferencing is very difficult due to IT-restrictions in every participating PES as already mentioned in the D.5.1 “Initial concept for contextualisation & architecture” earlier and also because of working conditions where private chats cannot be guaranteed otherwise. The process above is shift able by clicking and shifting to the left side. There is also the possibility to switch between the chat-view and a view on the most important collected notes, which is the first attempt to also bring the first level of collection already into the mock-up. More on this later in the chapter on collection. Underneath the chat in Figure 65 in the middle there are quick instructions for whatever role the user is in to be supported during the peer coaching process. The instructions change in role and depending on which phase the peer coaching is in.

This was mainly the first realization with a larger group of EmployID members to create a mock-up fitting all needs.

There is still need on another prototype session on the “group forming” process, since this is very complex. There are many possible solutions, depending on the needs of the peer coaching group, e.g. monthly, weekly meetings or meetings if necessary, how to inform the others, how to start the session. There is another very important lesson to be learned in this first paper-prototype session: There is a need to enable the peer coaching groups to be in time. It will already be a cultural change to have them blocked for 60 minutes, so there is need to avoid them needing more time. Plus the feedback at the end is very important and should not be postponed.

6.3.3 Evaluation of 4th mock-up

The evaluation of the 4th mock-up took part in parallel to the Barcelona Group testing phase and prototyping the 5th mock-up for pc use. After each peer coaching session feedback was collected from the Barcelona group at first unstructured and after the second session with a provided structure in a group private GoogleDrive document which was transferred later in to wiki where everyone of EmployID can access it. From there a GoogleForm was created with the main questions to the phases of the peer coaching for further evaluation in following peer coaching groups. More on this will be described in the “Solution in Context” chapter.

6.3.4 Prototyping session Karlsruhe (5th mock-up)

The 5th mock-up was created based on the experiences and the feedback collected during the internal peer coaching sessions. It builds upon the 4th mock-up from Barcelona, but based on the feedback from possible pilot users, a responsive version (which combines mobile and desktop-based usage scenarios) was started to be created on 5th June 2015 in Karlsruhe with a small group on participants. The mock-up was created using the tool myBalsamiq.

In Figure 66 is the first view of the 5th mock-up. On top again the process phases and an indication in which phase the session is currently and the time remaining in the process phase and the total time remaining for the whole session. Underneath the time is a chat. So far it is very similar to the 5th mock-up. There is a possibility to be built in to add comments by clicking “add to results” to the results of each phase in the result window on the right below. Depending on which phase there are different important results to be captured to have a short and concise overview later on the outcome of the session. Underneath chat and the result window there are the explanations again

different for every phase and depending on which role the user is in. For the 5th mock-up only the role “peer coaching facilitator” was realized as can be seen next to the process where the role and the topic can be found again. Underneath the topic there are supportive materials which are also roles specific. There is a short introduction with clarifying the purpose of the phase and possible questions the peer coaching facilitator can also directly add into the chat by clicking on the plus-sign.

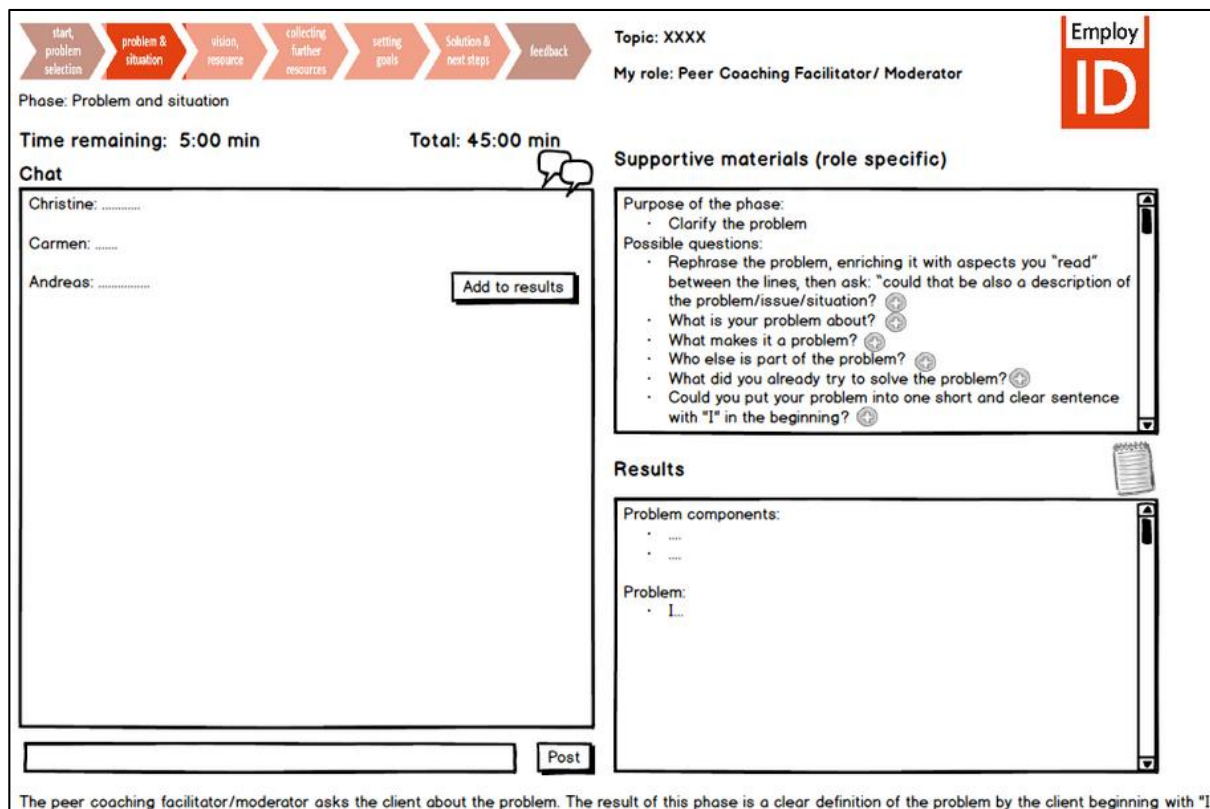


Figure 66: Problem and situation phase (peer coaching facilitator view)

Every phase is in a similar design only with changed content on the instructions below, what is there as supportive materials and what kind of results there should be collected. And of course the different phases take a different amount of time.

The result window is important to collect the main outcome of the session for a later documentation, to recall what was set and for possible export into other tools such as a reminder-tool after the session or into a community platform or discussion forum for further user for others. This is of course only possible if the data collected in results is anonymous and if the client agrees to share the collection. Possible could also be the sharing of only some of the results, e.g. only the problem description and the solutions. In a forum it could be discussed further or collaborative be reflected on it. This would be one way of supporting the new method collection that was introduced in this deliverable earlier.

Depending on which phase the session is, different content is planned to be captured. In the problem and situation phase it is “problem components” subsuming concise feelings and thoughts of the client, persons who are involved in the situation and their relationship to each other, and other striking statements. And the other result needed to be captured is the problem statement starting with “I”.

In the “vision and resource” phase some striking statements on the vision written by the client should be collected as well as so-called resources that could be of support, like in Figure 67.

start, problem selection problem & situation **vision, resource** collecting further resources setting goals solution & next steps feedback

Topic: XXXX
My role: Peer Coaching Facilitator/ Moderator

Phase 3: Vision and resource
Time remaining: 10:00 min Total: 40:00 min

Chat

Christine:
Carmen:
Andreas:

Add to results

Supportive materials (role specific)

Purpose of the phase:
• Change into a positive, resourceful emotional state.

Possible questions:
• If this problem/issue/situation is solved, how would you feel?
• If this problem/issue/situation is solved what would have changed in your context?
• If this problem/issue/situation is solved what would enable?
• Imagine the problem is already solved. Everything is fine and you archived your goals. Can you imagine a scenario where you have been successful? How does it feel? Where do you feel it (in your body)? Describe your feelings, thoughts, behavior? Could you show me how you look, when you archived your goal?

Results

Vision:
•
•

Resources:
•
•

Post

Peer coaching facilitator/moderator supports the client to visualize feelings, thoughts, strengths, and resources (supportive elements, e.g. family) for a powerful moment.

Figure 67: Vision and resource phase (peer coaching facilitator view)

Again there is different supportive material and a different description on what to do in this phase (both roles specific).

In the next phase on “collecting further resources” more resources by the group can be identified, analyzed from what they heard or added from their experience, but without giving a concrete solution. Only mentioning what could be useful. The client can then collect together with the peer coaching facilitator what he or she wants in his or her results collection (see Figure 68).

start, problem selection problem & situation vision, resource **collecting further resources** setting goals solution & next steps feedback

Topic: XXXX
My role: Peer Coaching Facilitator/Moderator

Phase: Collecting further resources
Time remaining: 10:00 min Total: 30:00 min

Chat

Christine:

Carmen:

Andreas:

Add to results

Supportive materials (role specific)

Purpose of the phase:

- Collect further resources.

Possible questions:

- What else resources were mentioned before that you (the advisors) find useful? 🗨️
- What resources would you (the advisors) use? 🗨️
- Please do not post solutions yet. 🗨️
- Please focus on the resources of the client. 🗨️

Results

Resources:

- ... (Carmen)
- ... (Christine)

Post

Advisors ask/suggest/repeat possible resources of the client.

Figure 68: Collecting further resources phase (peer coaching facilitator view)

This phase is mainly brainstorming by the advisors.

In the following phase “setting goals” the result that should be captured is the actual goal or maybe also more than one goal and one order to the group. So if there are more than one goal, still there is only one order to the group possible on which they should focus on finding a solution.

start, problem selection problem & situation vision, resource collecting further resources **setting goals** solution & next steps feedback

Topic: XXXX
My role: Peer Coaching Facilitator/Moderator

Phase: Setting goals
Time remaining: 05:00 min Total: 20:00 min

Chat

Christine:
Carmen:
Andreas:

Add to results

Supportive materials (role specific)

Purpose of the phase:
- Finding a goal.

Possible questions:
- What would be the specific and measurable goals you could identify to achieve to advance/solve on the problem/issue/situation? ⚙️
- If there were any other goals, what would they be? ⚙️
- Now we looked at your strenghts and resources. What is your goal you want to achieve? ⚙️
- Can you express your goal precisely? What is your goal for this session? ⚙️
- What is your order for the advisors? On what should they

Results

Goal(s) /objective(s):
-
-

Order to the group:
- I...

Post

Peer coaching facilitator/moderator asks client what he/she wants to achieve in this session. Client formulates a specific goal and gives order to the advisors on what to brainstorm for solutions.

Figure 69: Setting goals (peer coaching facilitator view)

In the phase “solution and next steps” solutions can be collected, again by having the advisors brainstorming about it and then planning of the next steps which is done by the client facilitated by the peer coaching facilitator (see Figure 70).

start, problem selection problem & situation vision, resource collecting further resources setting goals **Solution & next steps** feedback

Topic: XXXX
My role: Peer Coaching Facilitator/Moderator

Phase: Solution and next steps
Time remaining: 10:00 min Total: 15:00 min

Chat

Christine:
Carmen:
Andreas:

Add to results

Supportive materials (role specific)

Purpose of the phase:

- Finding solutions.

Possible questions:

- Base on the problem/issue/situation identified, the resources and people involved, and the options you see as possible goals, what would be the possible actions to take to move towards such objective?
- What would be the actions we could take to measure the advance towards the solutions?
- What solutions did you find useful? When will you be taking steps to the solution?
- Which step will you start within the first 36 hours?

Results

Solutions:

- (Andreas)
- (Christine)
- (Carmen)

Next steps:

-
-

Post

The advisors can brainstorm on possible solutions. After collection (max. 5 min.) the client can decide on the solutions useful for him/her and when to take the next steps. The peer coaching facilitator/moderator moderates the process.

Figure 70: Solution and next steps phase (peer coaching facilitator view)

The final phase “feedback” is for giving feedback on the process and reflecting on each person’s own learning outcome from the session.

The screenshot displays the 'Feedback' phase of a coaching process. At the top, a progress bar shows stages: start, problem & situation, vision, resource, collecting further resources, setting goals, Solution & next steps, and feedback (highlighted). The current phase is 'Feedback', with 5:00 minutes remaining out of a total 05:00 minutes. The user's role is 'Peer Coaching Facilitator/Moderator'.

Chat: A text area for communication with participants. It shows names: Christine:, Carmen:, and Andreas:, followed by an 'Add to results' button.

Supportive materials (role specific): A section containing:

- Purpose of the phase:
 - Reflect on the session and learning outcomes.
- Possible questions:
 - What have you learned in this process? (with a refresh icon)
 - What can you pass on to other problems/issues/situations from this experience? (with a refresh icon)

Results: A section titled 'Learning outcomes:' containing a list:

- (Carmen)
- (Christine)
- (Andreas)

At the bottom left, there is a text input field and a 'Post' button. A footer note reads: 'Feedback is given to a.) coaching process (experience & learning outcome) and b.) on a meta-level (what to improve). Feedback started with client, then peer coaching facilitator and advisors. Bear in mind feedback rules!'.

Figure 71: Feedback phase (peer coaching facilitator view)

The learning outcomes can be captured again in the results section (see Figure 70).

1st prototype – based on a mashup of existing tools (Solution 1)

After the creation of the 5th and until now final mock-up the Barcelona Peer Coaching group tried out what was designed in the way by using other tools in combination to display the tool as it should be like with its functions.

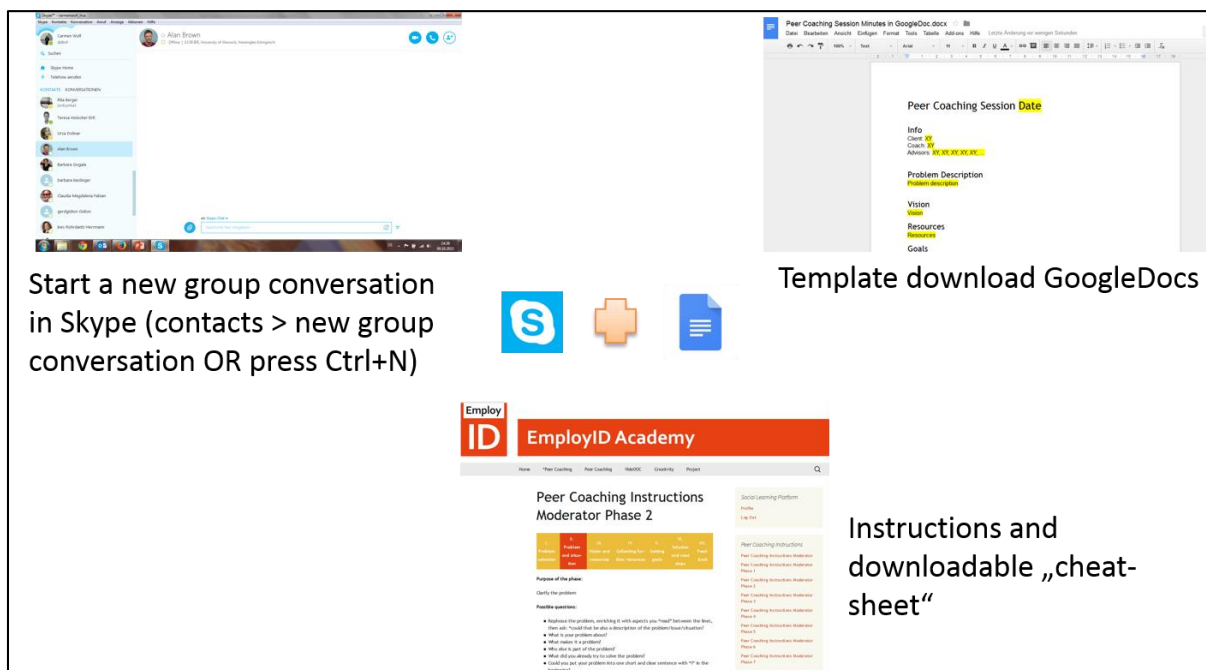


Figure 72: Mashup of existing tools for EmployID peer coaching tool testing

The group currently uses Skype for the chat-function, GoogleDocs for saving the core messages from the “results”-window and WordPress-Blog (EmployID Academy) for instructions for the peer coaching facilitator (supportive materials), see Figure 72 and Figure 73.



Figure 73: Peer Coaching Instructions for the peer coaching facilitator in EmployID Academy

In course of discussion also with a possible second internal peer coaching group (Warwick group) it was held down that there might be PES organizations who could only work with such a work-around due to IT-infrastructure restrictions. The skype-chat work-around was also not possible for PES at the workplace. They would need other tools to support the same function. Possible would be also the internal GoogleDocs Chat, but that was not tested yet.

But in the long run it came clear there should be alternative solutions for PES.

6.3.5 2nd prototype: the EmployID peer coaching tool (Solution 2)

Nevertheless the peer coaching tool as it was designed in the last mock-up (Vo5) and evaluated in feedback sessions by the Barcelona group after the peer coaching sessions is currently in development.

The testing within the Barcelona Group is still on-going since the process should be lean in order to be presented to PES in a form from which they can adapt it to fit in to their particular implementation contexts. The testing has for example reduced the process steps or producing additional supportive material for the peer coaching participants and each role. Another current activity is the analysis of another method as an alternative to peer coaching, introduced by the name of action learning facilitation and the question on how to bring peer coaching training participants into action.

6.4 Solution

The solution is actually three solutions in one. The first solution is the peer coaching concept, which can be used or adapted by anyone interested. It is a contribution to the coaching market and professional coaches to use it and by the time of the projects end it will also have valuable evaluation results to proceed and therefore also adds to the wished for professionalization in coaching according to the coaching associations.

The second solution is the training for peer coaching which can also be separated in different single solutions depending on which format is needed and which target group it is addressing to. The training – at least the current online learning course – is open to anyone who is interested and training material can be used for other trainings or actually as training to create a peer coaching group even outside PES.

The third solution is the tool, the prototype for peer coaching which is actually also not only one tool, but an all-in-one-solution which is in development and an early prototype as a combination from other already existing and working tools which could be solution we already tested, but is open to adapted solutions depending on tools available.

Table 3 Peer Coaching Solution(s)

1. Concept		2. Training				3. Tool		
EmployID Peer Coaching Concept I	EmployID Peer Coaching Concept II	Peer Coaching Online Course (PCOC)	Peer Coaching Workshops	Peer Coaching Multiplier Workshop	Other training and training material	EmployID “work-around”	Peer Coaching Tool (all-in-one-solution)	Other “work-around”
The main peer coaching concept.	not yet used				to be planned with PES and peer coaching videos			to be planned with PES

6.4.1 EmployID peer coaching concept

No major changes were made on the EmployID peer coaching concept this project year. The current concept can be found in the Appendix K.

6.4.2 EmployID peer coaching training and learning module(s)

In this year several training and learning modules on peer coaching were conducted. In the table below, the trainings, which were explicitly conceptualized as trainings for peer coaching can be viewed.

Table 4 Peer Coaching Training and Learning Module(s)

Date & Location	Peer Coaching Training (format & target group)	Main results & additional comments
08.04.2015 in Barcelona/ Spain, Enzyme headquarters, Paper-Prototyping session	Paper-prototype workshop for peer coaching for peer coaching interested EmployID consortium members	Main results from this session are a mobile mock-up and the internal peer coaching group (Barcelona group) and an understanding on insecurities within the peer coaching process
24.04.2015 in Budapest/ Hungary, Károli-Gáspár University, ANSE Research Conference on Coaching and Supervision	Talk on “Pattern states in coaching and changing them in self-e-coaching” to supervision and coaching experts	Main result here is the different understandings of coaching, self-coaching and peer coaching and how to approach these different ideas and expectations.
29.05.2015 in Ljubljana, Slovenia, Ljubljana PES	Multipliers workshop with professional coaches from the training centre Ljubljana PES	Main result is that there is need to closely work with the training centres and that there is need in translation of the content for training within the PES. The group work for the process instructions was gone down well with the participants. But there was not enough time for exercises. Plans are going into the direction of a 2-days mass peer coaching workshop in the upcoming project year. More detailed results from the evaluation can be found in result section.
08.07.2015 on Ischia, Italy, Joint European Summer School (JTEL)	Introductory workshop with summer school students	Main results were a newly designed and revised cheat-sheet and feedback of

		<p>coaching lay people.</p> <p>Focus was on collecting ideas in a paper-prototype session.</p> <p>More detailed results from the evaluation can be found in the result section.</p>
18.08.2015 in Zadar , Croatia, ANSE Summer University	Introductory workshop with supervision and coaching experts	<p>Main results are the discussions on advantages and disadvantages on e-coaching and the experience of onsite vs. online teaching.</p> <p>There was much interest in the concept.</p> <p>Further results from the evaluation can be found in the result section.</p>
14.09.- 25.10.2015 EmployID Academy	Online Course for interested consortium members, PES and PhD-students	<p>Main results are the experiences with a very mixed target group and the mix between live events and asynchronous material. Feedback was very rich in this online course, which will influence further online trainings not only for peer coaching.</p> <p>Croatian PES took part, as well as a project officer for a project with Hungarian PES</p> <p>Further results from the evaluation can be found in the result section.</p>
September 2015 EmployID Website	all 4 Peer coaching core skill videos on EmployID website for public view	no evaluation as loose material, but from the Online Course

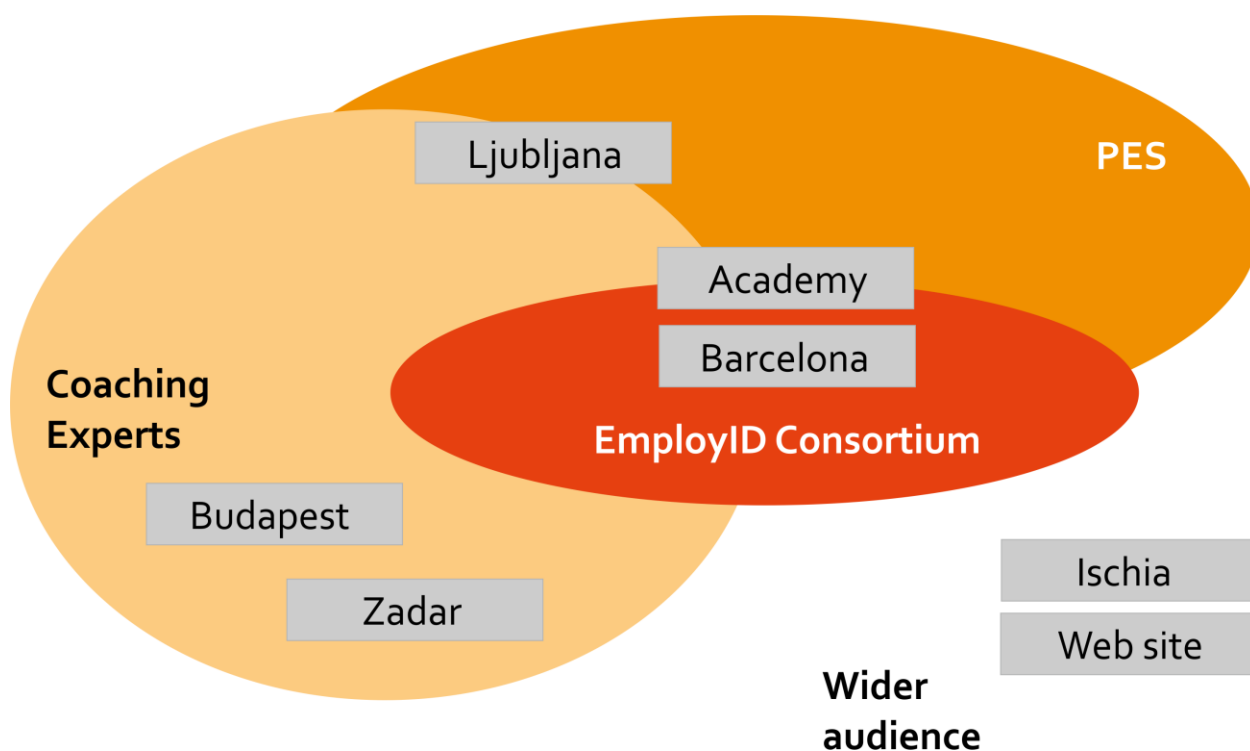


Figure 74: Training development approach with different target groups and online and onsite formats

In the figure above (Figure 74) the approach on developing training for peer coaching can be seen that was passed through in this project year. There are different target groups and different formats used to present the idea of peer coaching and make people capable of doing peer coaching themselves.

The videos on the website were created with the goal of reaching a larger audience, add it where needed into training and to inform in a quick and understandable way.

The feedback of each training influences the following training and insights from each training were used to improve the following training. Main focus of attention were the clear and concise description of peer coaching for a common understanding, a way to learn the process in an interactive way (for example in Ljubljana with a small group try-outs after each process step, in Ischia with a role play of the trainers or in the online-course with exercises on core skills of peer coaching and exchange within the forum), improvement of supportive material (e.g., within the tool by letting Ischia participants brainstorm on it or the spreadsheet what was changed to a one-paper “cheat-sheet” on the peer coaching process).

The different state of knowledge on coaching of the participating persons was a big issue, also to change their beliefs when they occurred to be not fitting with the common understanding of coaching which is anticipated by the coaching associations.

It is still an issue in how to bring PES from training into actual practice of peer coaching which will be focussed on in the upcoming project year and which is also tackling other training offers of EmployID.

6.4.3 EmployID peer coaching tool

The peer coaching tool assists a group throughout the peer coaching process in form of a web application.

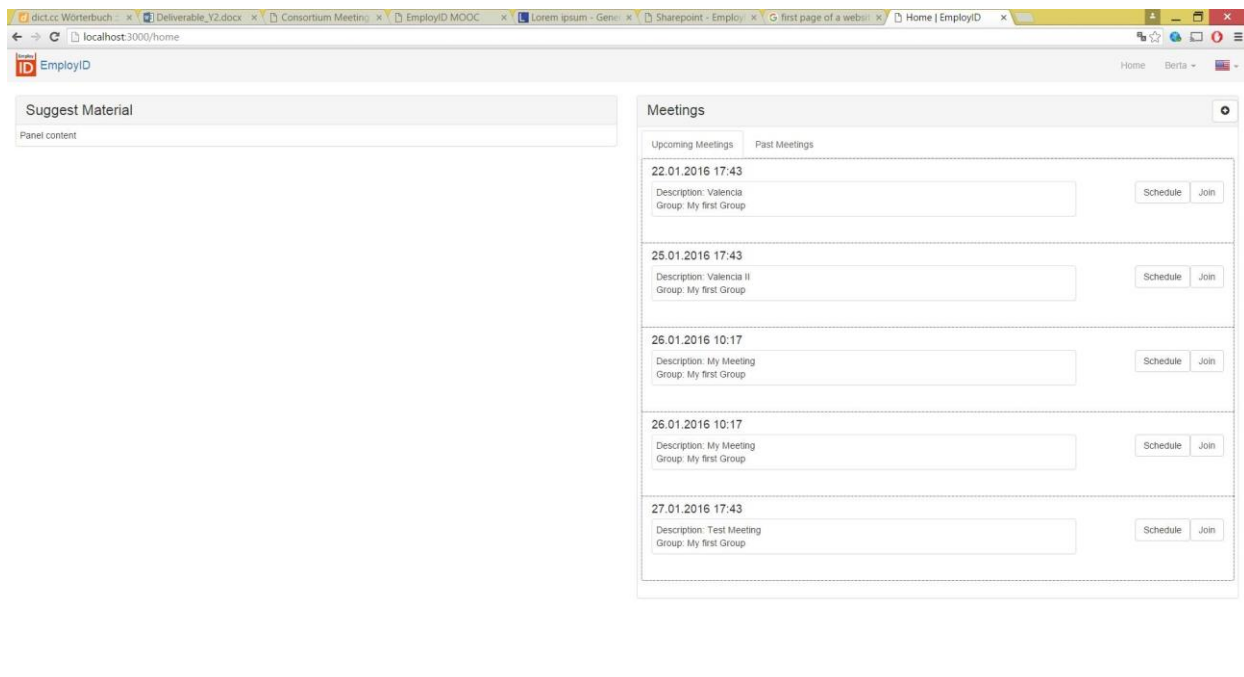


Figure 75: Home page of a logged in user

The above figure shows the home page of the tool. It is accessible for logged in users and serves as a summary of the meetings a user is part of. Firstly, the upcoming meetings are shown. Secondly a list of the meetings the user has participated at is visualized and individual meetings can be reviewed. Furthermore, new meetings can be created via this page. To ensure privacy great care has been taken to avoid the user seeing meetings of groups he is not part of.

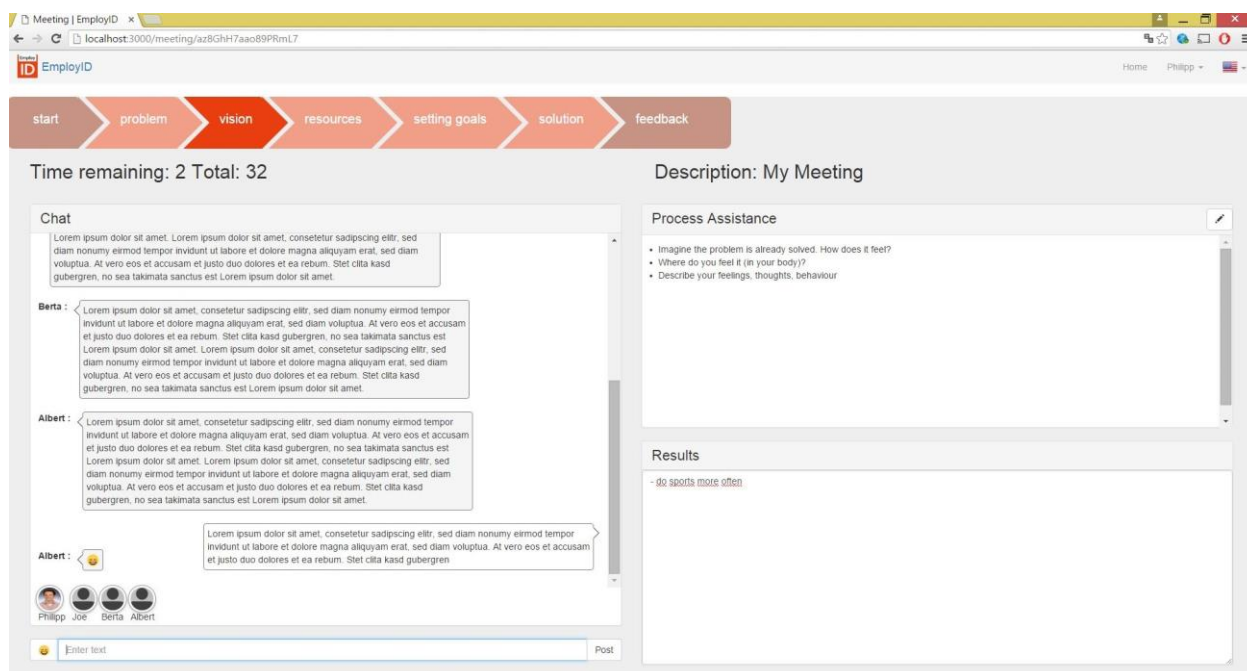


Figure 76: Meeting page

With a page for a specific meeting the tool assists the group throughout the peer coaching process. The participants can switch between the different phases and get correspondent assistance in the upper right part of the page. In addition, the given assistance differs depending on the role (client, facilitator or advisor) the user engages. The tool provides an overview of the time remaining per phase and in total. This allows the participants to keep track of the time they spent and deviates if they proceed as planned.

Main component for communication between the participants is a chat component. It clarifies who wrote a message and to express emotions the tool provides the possibility to add emoticons to a chat message. At the bottom of the chat component is an overview of all connected users. On the one hand it visualizes if someone is currently typing and on the other hand it visualizes who is typing.

Furthermore, the tool provides an area where results of the discussion can be noted. The result is automatically saved and changes are shown to all connected users.

6.4.3.1 Architecture of the solution

The peer coaching tool is based on Meteor, which is an open-source JavaScript web application framework, which allows building prototypes quickly. Meteor integrates with MongoDB as a database and puts a publish subscribe pattern into practice. Data changes are automatically synchronized and published to the client. This approach makes pivoting in the early stage of development and implementing new ideas a lot easier.

On the front end side React is used in combination with Bootstrap. The JavaScript library React allows to structure the user interface into components that can be reused elsewhere. Additionally, Bootstrap provides functionality to make the user interface responsive. The described approach is state of the art and allows to build a modern web application with a user friendly interface.

6.5 Results

Peer coaching is clearly a process amenable to supporting identity transformation as it is a method for facilitating the learning and development of others and for coping with change and challenges occurring on the way. Peer coaching has the scope to support reflexivity as well as facilitating

learning in practical, cognitive, relational and emotional development domains which can be associated with identity transformation, as new identities are formed. The findings of the Barcelona group were fed into how support for peer coaching was implemented in the second MOOC for work coaches in DWP.

The concept was evaluated together with first try outs within the Barcelona group while testing also the tool, whereas the training was evaluated with a special created questionnaire which is built upon the questionnaires used in the training measurements before. The focus was mainly on the open questions which give a good impression on what is already working and what needs to be improved. Additionally, there was a descriptive analysis which will be only mentioned and without going into depth analysis. A short summary on the evaluations from this years' peer coaching training and the main outcomes will be presented now after presenting the shared conceptual model progress through the Design-Based-Research Approach.

6.5.1 Evaluation (Design-Based-Research Approach by Ravencroft et al.)

Additional to the progress described in the updated evaluation Deliverable 7.1, a fourth cycle started and a fifth, sixth and seventh could be identified as in the figure below.

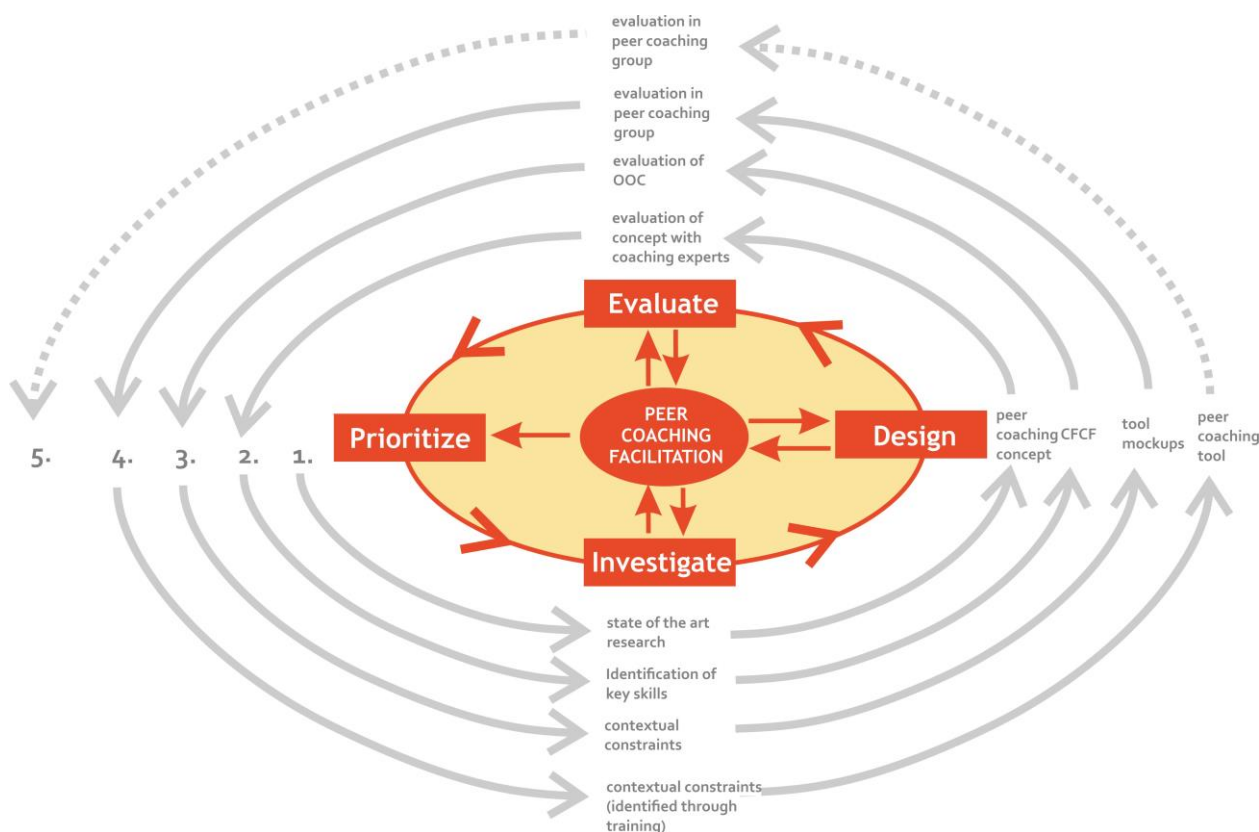


Figure 77: Peer Coaching Facilitation Concept & Tool Design-Based Research Cycles

The evaluation in the peer coaching group in the peer coaching in cycle three was accomplished. In cycle 4 (peer coaching tool development) the focus lies on using the feedback on the mock-ups to develop a first functioning prototype. After testing also with a “work-around” contextual constraints (also technical) were investigated again through what was discussed during the peer coaching trainings and a peer coaching tool is under development. After finishing the prototype there will be another evaluation in the peer coaching group (Barcelona) and maybe in parallel a second peer coaching group (Warwick group). Further cycles could be the fifth with tool-testing preparation for PES, where the work can profit from the current progress and approach in the Reflective

Community, and afterwards developing peer coaching tool training as part of training and learning module(s) in technology-use and the implementation in PES organizations.

The following parts are about the peer coaching training in more detail and include some results from a training evaluation (only the open questions):

Paper-prototype workshop for peer coaching for peer coaching interested EmployID consortium members (“Barcelona”)

In the paper-prototyping session ten consortium members participated (two from PES) others mainly from the peer coaching scrum team. This session was used to mutually learn from existing understandings on peer coaching and the peer coaching in EmployID. The results are a mobile mock-up (mock-up 4) for peer coaching and an internal peer coaching group for testing of concept and future mock-ups and tools.

Talk on “Pattern states in coaching and changing them in self-e-coaching” to supervision and coaching experts (“Budapest”)

In this talk the idea of the change of pattern state (the vision part in peer coaching) was introduced to experts from supervision and coaching and discussed how it can be realized technically.

Agenda:

- Coaching
- Coaching process in concept of „Karlsruher Schule”
- 4 components of emotions
- Problem state vs. solution state
- How is it done in coaching?
- Self-E-Coaching
- The challenge for Self-E-Coaching
- Self-Coaching App (from PhD thesis)
- Use of interventions in a self-e-coaching tool
- Peer coaching instructions for an app
- Conclusion
- Discussion

For more information on the event view on EmployID website [here](#).

Multipliers workshop with professional coaches from the training centre Ljubljana PES (“Ljubljana”)

In this training an old evaluation sheet was used, created by the trainers themselves. There were 15 participants from the training centre of Slovenian PES in Ljubljana, who were mainly experienced with coaching or coaching techniques.

Rough agenda:

- EmployID

- Trainers
- What's your expectations?
- What is peer coaching?
- EmployID peer coaching model
- E-Coaching/ Online-Coaching A short introduction
- E-Coaching in EmployID
- Was it useful?

What did you like the best?

- atmosphere
- exercises ("Pablo's exercises") (4x)
- all workshop (2x)
- "possibility to be 'in touch' with more colleagues"
- more experiences
- group work
- "All of the examples and the opportunity to solve my problem during practicing peer coaching."
- "new upgrade of my knowledge about coaching"
- part about emotions (change of pattern state) (2x)
- (energetic) moderators ("the cooperation of both trainers energy of Pablo and Carmen") (3x)
- the structure of the peer coaching model (2x)
- "izvedbo, dinamičnost" (Implementation, dynamics)
- the presentation of the core skills

What needs to be improved?

- "the whole model with different tools"
- "it would be helpful, if we have more time to practice"
- "it would be nice to go through the EmployID model in practice" (2x)
- more (time for) exercises (2x)

Other comments?

- "Pablo and Carmen you are great, thank you for to be with us and share your knowledge skills."
- "Pablo and Carmen you were super excellent. I would like to have more training on this topic."
- "Thank you for your ideas esprit and funny side of the story."
- "I see the workshop as a beginning of a learning process."
- "N.C. – Odlično" (engl. translation: No Comments – Perfect!)

More on this and a photo of the participant's group can be found on the EmployID website [here](#).

Introductory workshop with summer school PhD-students (Joint European Summer School (JTEL)) (“Ischia”)

In this training the new designed workshop evaluation sheet was used for the first time (see Appendix K). In this workshop 7 PhD-students participated.

The workshop was a short introduction into EmployID, the peer coaching concept (which was presented as a role play) and an interactive session with paper-prototyping before showing current mock-ups from EmployID and discussing them.

Agenda:

- Overview EmployID
- Peer Coaching Concept
- Prompting
- Exercise: „Paper-Prototyping a Peer Coaching Tool“
- Discussion
- EmployID Peer Coaching Wireframe

What did you like the best?

- the roleplay
- “I felt I can apply this technique to help myself and other people.”
- “entrance positive visualization, posture etc. influence on well-being”
- the trainers
- “take structure of the ideas”

What needs to be improved?

- “the whole model with different tools.”
- “communication channels. [...] approach to chats.”
- more detail but it needs more time (2x)

Any other comments?

- “To honest - this was the first workshop I was able to listen from the beginning to the end.”
- “I need more info to be confident in sharing - cheat sheet maybe could have a few more concrete parts - what are some powerful questions.”

For more in this check out the report on the EmployID website [here](#).

Introductory workshop with supervision and coaching experts (“Zadar”)

This was an introductory workshop with 10 participants with the specialty on having one trainer onsite and one trainer online (via Skype). The group of participants were supervisor (3x), one student & volunteer, one researcher and coach, one therapist and supervisor, three coaches and a coach and senior supervisor.

The workshop was to introduce the idea of peer coaching and the online peer coaching to experts in coaching and supervision to receive professional feedback.

Rough agenda:

- Labour market in modern society
- Challenges for PES

- Supervision and coaching in German jobcenters
- Peer coaching approach
- General ideas of implementation in PES
- Peer Coaching Tool
- Group Discussion

What did you like the best?

- “the cooperation between everyone who attended”
- “got a lot of information and understand more about the project”
- raising the question
- flexibility
- “the conceptual ideas about peer coaching”
- “the personal performance of Barbara and Carmen”
- “Discussion round about the personal explanations, examples and discussion of pro and cons.”
- exercises in small groups

What needs to be improved?

- “show the actual use of tool or try in the workshop to have the experience”
- technology
- practical examples
- “How is it possible to integrate the Skype better into the group?” (2x)
- “Trainings to read between the lines; training on awareness - what is not written and presented in the chat "hidden information"?”

Any other comments?

- “Very interesting idea.”
- “Good initiative for innovation of the coaching profession.”
- “I am very content, technical performance partly bad.”
- “Combination of face[-]to[-]face meetings and technology is important.”

Further description on the workshop can be read on the EmployID website [here](#).

Online Course for interested consortium members, PES and PhD-students (“Academy”)

25 participants (6 Public Employment Service Practitioners, 9 Consortium Member EmployID, 5 Consortium Member EmployID and Public Employment Service Practitioner, 1 Project External Advisor, 1 Consortium Member Learning Layers, 1 Bachelor student, 1 PhD-student (JTEL 2015) and 1 Project Officer reforming PES of Bosnia and Herzegovina)

The course can be viewed <http://mooc.employid.eu/>

Main topics:

- Week 1) Introduction
- Week 2) Peer Coaching
- Week 3) Abilities, skills, competences
- Week 4) Self-Coaching

- Week 5) Preparation & Peer Coaching Group Kick-off
- Week 6) Reflection on learning

The complete evaluation is not yet done due to another planned activity as a part of it (having a new internal peer coaching group to prepare for fully introduction to PES) which needed to be postponed into the next project year.

The evaluation material consist of comments in the forum, evaluation sheets for each week and an evaluation session online and at the Warwick consortium meeting which needs to be analyzed yet

6.5.2 Main outcome so far

Main outcome so far is that there is much interest in peer coaching and the method seems to be attractive to PES practitioners. Useful approaches include role plays or interactive parts to understand the full concept. Time is essential for training and more exercises in that time but also as a barrier in practice. Improvements need to be done in how to use different tools to do peer coaching online and our current approach with chat-function only. More communication channels seem of importance also for further dissemination to PES external-target groups. The online peer coaching course was mentioned in feedback (which was not published yet here) very positive as a possibility to learn when possible and schedule it individually. Though what should be improved is a group forming process at the beginning of the course to make people feel comfortable to contribute, since not much contributions were made in the forum or to specific tasks. A barrier is also language. The courses should be in the language of the country they are provided. That's why engagement with the training centres are essential and multipliers workshops will become of great importance within the project. Approaches include role plays or interactive parts to understand the full concept. Time is essential for training and more exercises in that time but also as a barrier in practice. Improvements need to be done in how to use different tools to do peer coaching online and our current approach with chat-function only. More communication channels seem of importance also for further dissemination to PES external-target groups. The online peer coaching course was mentioned in feedback (which was not published yet here) very positive as a possibility to learn when possible and schedule it individually. Though what should be improved is a group forming process at the beginning of the course to make people feel comfortable to contribute, since not much contributions were made in the forum or to specific tasks. A barrier is also language. The courses should be in the language of the country they are provided. That's why engagement with the training centres are essential and multipliers workshops will become of great importance within the project.

6.6 Outlook

The further work will include the first useable EmployID peer coaching tool and its testing internally and externally.

There will also be need of support to find useful work-arounds for PES organizations who are not able to integrate the peer coaching online tool into their IT-infrastructure. Or other possible solutions need to be discussed. And of course there will be also the need to connect the EmployID peer coaching tool into or close to the currently developed Community of Practices in order to promote collection processes.

Another current development for peer coaching which is a design experiment is the creation of an app that can be connected to a smartwatch to be reminded of the tasks that the client decided on to during the last peer coaching session. This is to enable and secure the transfer from the peer coaching session into the day-to-day work and to have the tasks always viewable, if needed. It can

also be used to remind the other participants of the peer coaching session on own learning outcome and plans for each session.

The app is called “CoachReminder” at the current state and is used by booking events in the Google Calendar of the Smartphone or Tablet PC. In future there will be a direct interface between peer coaching tool and the app. After the peer coaching session a notification will be sent as an individual planned appointment with questions on the current status and about feelings around the implementation of the solution. This could be another additional tool to the peer coaching tool which would need connection between each other too.

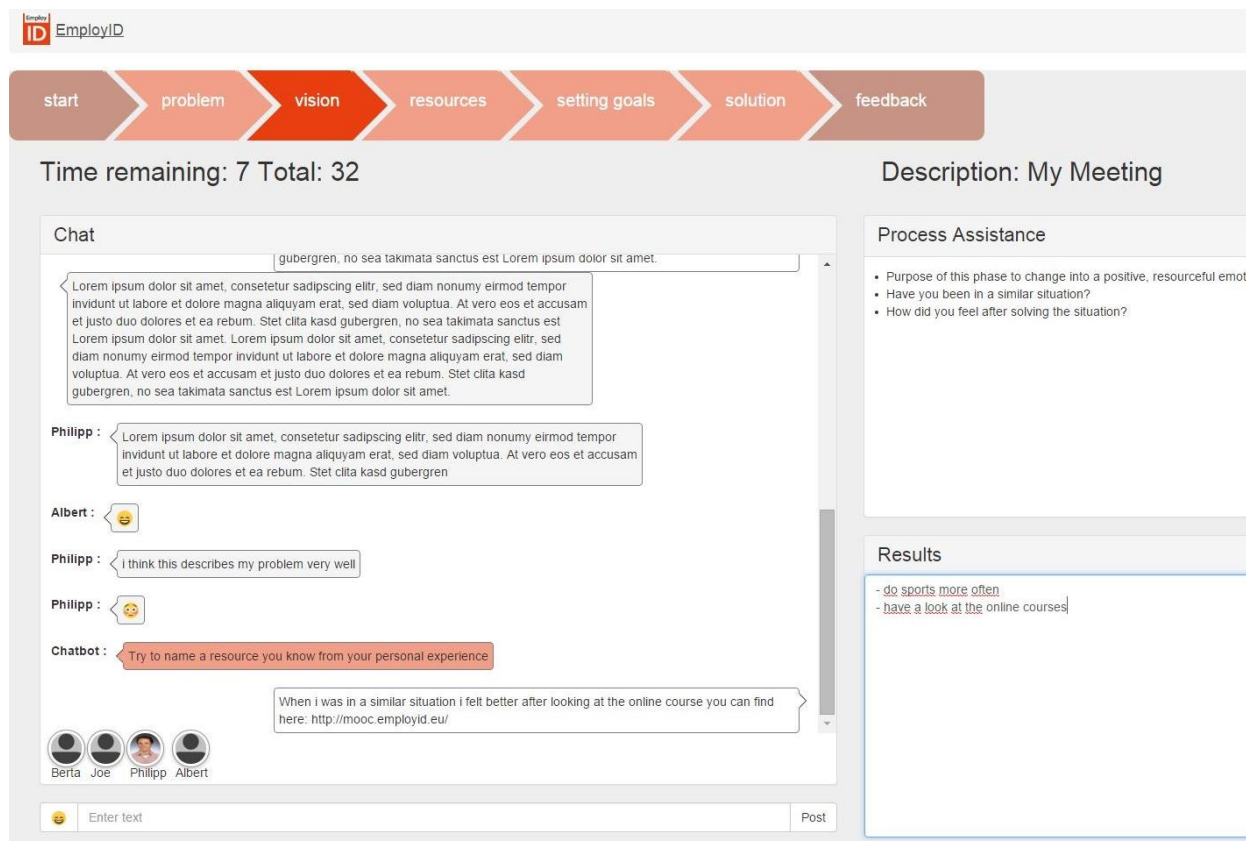


Figure 78: Prompting on individual resources in peer coaching

Figure 78 shows how the peer coaching tool can be enhanced in the future by a prompting mechanism (see 2.2.7.2 for more details). Prompting can achieve various means in peer coaching ranging from process guidance, over stimulating participation to facilitation creativity for certain phases in coaching. In this figure a prompt is delivered by a system mechanism called “Chatbot” and it addresses advisors in this group to think of resources out of their personal experiences, thus stimulating personal self-reflection while helping them engage in the peer coaching process. This is an early design mock-up of how the system with prompting for peer coaching could look like. The decision on implementation depends highly on how far the prompting enhances and stimulates or rather interrupts the process and in how far it is to be combined with the Process assistance that is already within the peer coaching tool.

6.7 Patterns

There are several possible patterns that are on different exploration states, these are yet only proto-pattern for further discussion and exploitation.

I.4	Enabling people in order to communicate in a secure place about personal work-related challenges	Phase II
Problem	Working on personal work-related challenges is often combined with the fear of being seen as weak in front of managers and colleagues.	
Analysis	There is a fear of creating barriers with peer coaching because of openness during the sessions.	
Context	There is need of a clear set of rules that are accepted by the whole peer coaching group before starting the first session. Penalties should be included too. Plus the groups should consist neither from direct partners nor mixed between hierarchies to avoid role issues.	
Solution	EmployID Online peer coaching provides a secure space and guidelines and gives the opportunity to communicate in groups that are created from people from different offices to not mingle with direct colleagues.	
Evidence	Peer coaching concept and trainings (online and face to face) were trialed with various groups Partly evidence on a theoretical side with what was mentioned in the online training course on the importance of a code of ethics.	

II.4	Enabling people to form peer coaching groups to facilitate each other	Phase II
Problem	Peer Coaching is a good way of facilitating each other, but it has to be applied under time constraints and by non-coaching experts.	
Solution	The peer coaching concept has been adapted to a time slot of an hour or less. As a preparatory step, participants can take part in a short training, either face-to-face or online.	
Evidence	Pilot peer coaching inside the project has shown feasibility of the concept and the training, and outlined the need for support.	
Evaluation	Focus of evaluation will be on the assumption that training helps to learn the peer coaching method and the peer coaching concept helps to overcome barriers of time constraints. Methods <ul style="list-style-type: none"> • Questionnaire • Interview • content analysis • logging analysis 	

II.5	Enabling people to practice the solution-focused approach and the new role as a coach together with colleagues.	Phase Ib
Problem	Lack of acceptance from management to learn and practice with peers	
Solution	In EmployID peer coaching there is the possibility to practice coaching in a secure space and to find solutions for the handling of conflicting interests.	
Evidence	None yet.	

II.6	Enabling people to share solutions with others	Phase Ib
Problem	PES practitioners and managers may face similar challenges which they successfully solved, but there is no possibility to share the solutions for support or others.	
Analysis	From a knowledge maturity perspective, this allows to move from phases Ib to II and III.	
Context	Peer coaching sessions are in place and regularly practiced.	
Solution	<ul style="list-style-type: none"> • Solution 1: The knowledge can be made explicit as solution options for peer coaching group members within the phase on solution and next steps in the EmployID peer coaching. • Solution 2: The collected knowledge on solutions that are created in an EmployID peer coaching session can be extracted in an anonymous and abstract way from the inner group into an outer group, maybe the CoP or other platforms. 	
Evidence	None yet.	

III.2	Facilitating peer coaching sessions through a combination of instruction, conversation, and summarization	Phase II
Problem	Peer coaching sessions are integrated into tight working schedules and have to be efficient while participants are non-coaching experts.	
Context	Peer coaching sessions are in place and regularly practiced.	
Solution	The communication tool provides a scaffold that consists of three elements: (i) a dynamic chat, (ii) a stable summarization, and (iii) an instructional area on process and process elements.	
Evidence	<p>Pilot group in the project reflected on the efficiency of the process and the tool support, which has led to the design idea.</p> <p>The design idea has been tried out first with a mashup of existing tools (Skype, Google Docs, EmployID Academy)</p>	
Evaluation	As part of the deployment, it will be evaluated how useful the elements are for the process and in which phase as well as interactions between the areas.	

7 Learning analytics

7.1 Learning Analytics and workplace learning

Learning Analytics (LA) has been defined as “the measurement, collection, analysis and reporting of data about learners and their contexts, for purposes of understanding and optimizing learning and the environments in which it occurs.” (SoLAR, 2011). It can assist in informing decisions in education systems, promote personalized learning and enable adaptive pedagogies and practices (Johnson et al, 2014).

However, whilst there has been considerable research and development in LA in the formal school and higher education sectors, much less attention has been paid to the potential of LA for understanding and improving learning in the workplace. There are a number of possible reasons for this.

Universities and schools have tended to harvest existing data drawn from Virtual Learning Environments (VLEs) and to analyse that data to both predict individual performance and undertake interventions which can for instance reduce drop-out rates. The use of VLEs in the workplace is limited and “collecting traces that learners leave behind” (Duval, 2012) may fail to take cognizance of the multiple modes of formal and informal learning in the workplace and the importance of key indicators such as collaboration. Once more key areas such as collaboration tend to be omitted and in focusing on VLEs, a failure to include all the different modes of learning. Ferguson (2012) says that in LA implementation in formal education: “LA is aligned with clear aims and there are agreed proxies for learning.” Critically, much workplace learning is informal with little agreement of proxies for learning. While Learning Analytics in educational settings very often follow a particular pedagogical design, workplace learning is much more driven by demands of work tasks or intrinsic interests of the learner, by self-directed exploration and social exchange that is tightly connected to processes and the places of work (Ley et al, 2015). Learning interactions at the workplace are to a large extent informal and practice based and not embedded into a specific and measurable pedagogical scenario.

Pardo and Siemens (2014) point out “LA is a moral practice and needs to focus on understanding instead of measuring.” In this understanding “learners are central agents and collaborators, learner identity and performance are dynamic variables, learning success and performance is complex and multidimensional, data collection and processing needs to be done with total transparency.” This poses particular issues within the workplace with complex social and work structures, hierarchies and power relations.

Despite these difficulties workplace learners can potentially benefit from being exposed to their own and other’s learning processes and outcomes as this potentially allows for better awareness and tracing of learning, sharing experiences, and scaling informal learning practices (Ley et al, 2015). LA can, for instance, allow trainers and L & D professionals to assess the usefulness of learning materials, increase their understanding of the workplace learning environment in order to improve the learning environment and to intervene to advise and assist learners. Perhaps more importantly, it can assist learners in monitoring and understanding their own activities and interactions and participation in individual and collaborative learning processes and help them in reflecting on their learning.

There have been a number of early attempts to utilise LA in the workplace. Maarten de Laat (2013) has developed a system based on Social Network Analysis to show patterns of learning and the impact of informal learning in Communities of Practice for Continuing Professional Development for teachers.

There is a growing interest in the use of MOOCs for professional development and workplace learning. Most (if not all) of the major MOOC platforms have some form of Learning Analytics built in providing both feedback to MOOC designers and to learners about their progress. Given that MOOCs are relatively new and are still rapidly evolving, MOOC developers are keen to use LA as a means of improving MOOC programmes. Research and development approaches into linking Learning Design with Learning Analytics for developing MOOCs undertaken by Conole (2014) and Ferguson (2015) amongst others have drawn attention to the importance of pedagogy for LA.

Similarly, there are a number of research and development projects around recommender systems and adaptive learning environments. LA is seen as having strong relations to recommender systems [10], adaptive learning environments and intelligent tutoring systems (Adomavicius, G. and Tuzhilin, A., 2005) and the goals of these research areas. Apart from the idea of using LA for automated customisation and adaptation, feeding back LA results to learners and teachers to foster reflection on learning can support self-regulated learning (Brusilovsky, P. and Peylo, C., 2003). In the workplace sphere LA could be used to support the reflective practice of both trainers and learners “taking into account aspects like sentiment, affect, or motivation in LA, for example by exploiting novel multimodal approaches may provide a deeper understanding of learning experiences and the possibility to provide educational interventions in emotionally supportive ways.” (Bahreini K, Nadolski & Westera W., 2014).

One potential barrier to the use of LA in the workplace is limited data. However, although obviously smaller data sets place limitations on statistical processes, MacNeill (2016) stresses the importance of fast data, actionable data, relevant data and smart data, rather than big data. LA, she says, should start from research questions that arise from teaching practice, as opposed to the traditional approach of starting analytics based on already collected and available data. Gasevic, Dawson and Siemens (2015) also draw attention to the importance of information seeking being framed within “robust theoretical models of human behavior” (Wilson, 1999). In the context of workplace learning this implies a focus on individual and collective social practices and to informal learning and facilitation processes rather than formal education. The next section of this paper looks at social learning in Public Employment Services and how this can be linked to an approach to workplace LA.

7.2 EmployID: assisting identity transformation through social learning in European Public Employment Services

The EmployID project aims to promote, develop and support the efficient use of technologies to provide advanced coaching, reflection and networking services through social learning. The idea of social learning is that people learn through observing others behaviour, attitudes and outcomes of these behaviours, “Most human behaviour is learned observationally through modelling from observing others, one forms an idea of how new behaviours are performed, and on later occasions this coded information serves as a guide for action” (Bandura, 1977). Facilitation is seen as playing a key role in structuring learning and identity transformation activities and to support networking in personal networks, teams and organisational networks, as well as cross-organisational dialogue.

Social Learning initiatives developed jointly between the EmployID project and PES organisations include the use of MOOCs, access to Labour Market information, the development of a platform to support the emergence of communities of practice and tools to support reflection in practice.

Alongside such a pedagogic approach to social learning based on practice the project is developing a strategy and tools based on Social Learning Analytics. Ferguson and Buckingham Shun (2012) say that *Social Learning Analytics* (SLA) can be usefully thought of as a subset of learning analytics approaches. SLA focuses on how learners build knowledge together in their cultural and social settings. In the context of online social learning, it takes into account both formal and informal educational environments, including networks and communities. “As groups engage in joint

activities, their success is related to a combination of individual knowledge and skills, environment, use of tools, and ability to work together. Understanding learning in these settings requires us to pay attention to group processes of knowledge construction – how sets of people learn together using tools in different settings. The focus must be not only on learners, but also on their tools and contexts.”

Viewing learning analytics from a social perspective highlights types of analytic that can be employed to make sense of learner activity in a social setting. They go on to introduce five categories of analytic whose foci are driven by the implications of the changes in which we are using social technology for learning (Buckingham Shum, S., & Ferguson, R., 2012). These include *social network analysis* focusing on interpersonal relations in social platforms, *discourse analytics* predicated on the use of language as a tool for knowledge negotiation and construction, *content analytics* particularly looking at user-generated content and *disposition analytics* saying intrinsic motivation to learn is a defining feature of online social media, and lies at the heart of engaged learning, and innovation.

The approach to Social Learning Analytics links to the core aims of the EmployID project to support and facilitate the learning process of PES practitioners in their professional identity development by the efficient use of technologies to provide social learning including advanced coaching, reflection, networking and learning support services. The project focuses on technological developments that make facilitation services for professional identity transformation cost-effective and sustainable by empowering individuals and organisations to engage in transformative practices, using a variety of learning and facilitation processes.

7.3 Learning Analytics and EmployID – what are we trying to find out

Clearly there are close links between the development of Learning Analytics and our approach to evaluation within EmployID. In order to design evaluation activities the project has developed a number of overarching research questions around professional development and identity transformations with Public Employment Services. One of these research questions is focused on LA: Which forms of workplace learning analytics can we apply in PES and how do they impact the learner? How can learning analytics contribute to evaluate learning interventions? Other focus on the learning environment and the use of tools for reflection, coaching and creativity as well as the role of the wider environment in facilitating professional identity transformation. A third focus is how practitioners manage better their own learning and gain the necessary skills (e.g. self-directed learning skills, career adaptability skills, transversal skills etc.) to support identity transformation processes as well as facilitating the learning of others linking individual, community and organizational learning.

These research questions also provide a high level framework for the development of Learning Analytics, embedded within the project activities and tools. And indeed much of the data collected for evaluation purposes also can inform Learning Analytics and vice versa. However, whilst the main aim of the evaluation work is measure the impact of the EmployID project and for providing useful formative feedback for development of the project’s tools and overarching blended learning approach, the Learning Analytics focus is understanding and optimizing learning and the environments in which it occurs.

7.4 From a theoretical approach to developing tools for LA in PES

Whilst the more practical work is in an initial phase, linked to the roll out of tools and platforms to support learning, a number of tools are under development and will be tested in 2016. Since this work is placed in the particular working environment of public administration, the initial contextual exploration led to a series of design considerations for the suggested LA approaches presented below. The access to fast, actionable, relevant and smart data is most importantly

regulated by strict data protection and privacy aspects that are crucial and clearly play a critical role in any workplace LA. As mentioned above power relations and hierarchies come into play and the full transparency to be aspired with LA might either be hindered by existing structures or raise expectations that are not covered by existing organisations structures and process. If efficient learning at the workplace becomes transparent and visible through intelligent LA, what does this mean with regard to career development and promotion? Who has access to the data, how are they linked to existing appraisal systems or is it perceived as sufficient to use the analytics for individual reflection only? For the following LA tools a trade-off needs to be negotiated and their practicality in workplace setting can only be assessed when fully implemented. Clear rules about who has access to the insight gained from LA have to be defined. The current approach in EmployID is thus to focus on the individual learner as the main recipient of LA.

7.4.1 Self-assessment questionnaire

The project has developed a self-assessment questionnaire as an instrument to collect data from EmployID interventions in different PES organisations to support reflection on personal development. It contains a core set of questions for cross-case evaluation and LA on a project level as well as intervention-specific questions that can be selected to fit the context. The self-assessment approach should provide evidence for the impact of EmployID interventions whilst addressing the EmployID research questions, e.g. the effectiveness of a learning environment in the specific workplace context. Questions are related to professional identity transformation, including individual, emotional, relational and practical development. For the individual learner the questionnaire aims to foster their self-reflection process. It supports them in observing their 'distance travelled' in key aspects of their professional identity development. Whilst using EmployID platforms and tools, participants will be invited to fill in the questionnaire upon registration and then at periodic intervals.

The individual results and distance travelled over the different time points will be visualised and presented to individual participants in the form of development curves based on summary categories to stimulate self-reflection on learning. These development curves show the individual learners' changes in their attitudes and behaviour related to learning and adaptation in the job, the facilitation of colleagues and clients, as well as the personal development related to reflexivity, stress management and emotional awareness.

7.4.2 Learning Analytics and Communities of Practice

The EmployID project is launching a platform to support the development of a Community of Practice in the Slovenian PES in February, 2016. The platform is based on the WordPress Content Management system and the project has developed a number of plug ins to support social learning analytics and reflection analytics. The data from these plug ins can serve as the basis for a dashboard for learners providing visualisations of different metrics

7.4.2.1 Network Maps

This plugin (see also 5.1.2.1) visualizes user interactions in social networks including individual contacts, activities, and topics. The data is visualised through a series of maps and is localised through different offices within the PES. The interface shows how interaction with other users has changed during the last 30 days. This way users can visually "see" how often they interact with others and possibly find other users with whom they wish to interact.

The view can be filtered by different job roles and is designed to help users find topics they may be interested in.

7.4.2.2 b) Karma Points

The Karma Points plugin (see also 5.1.2.2) allows users to give each other 'Karma points' and 'reputation points'. It is based both on rankings of posts and of authors. Karma points are temporary and expire after a week but are also refreshed each week. This way users can only donate karma points to a few selected posts in each week. The user who receives a karma point gets the point added to her permanent reputation points.

7.4.2.3 Reflection Analytics

The Reflection Analytics plugin (see also 5.1.2.3) collects platform usage data and shows it in an actionable way to users. The purpose of this is to show people information in order to let them reflect about their behaviour in the platform and then possibly to give them enough information to show them how they could learn more effectively. The plugin will use a number of different charts, each wrapped in a widget in order to retain customizability.

One chart being considered would visualise the role of the user's interaction in the current month in terms of how many posts she wrote, how many topics she commented on and how many topics she read compared to the average of the group. This way, users can easily identify whether they are writing a similar number of topics as their colleagues. It shows change over time and provides suggestions for new activities. However, we also recognise that comparisons with group averages can be demotivating for some people.

7.4.3 Content Coding and Analysis

The analysis of comments and content shared within the EmployID tools can provide data addressing a number of the research questions outlined above.

A first trial of content coding used to analyse inputs into a pilot MOOC held in early 2015 using the FutureLearn platform resulted in rich insights about aspects of identity transformation and learning from and with others. The codes for this analysis were created inductively based on Mayring (2000) and then analysed according to success factors for identity transformation. Given that identity transformation in PES organisations is a new field of research we expect new categories to evolve over time.

In addition to the inductive coding the EmployID project will apply deductive analysis to investigate the reflection in content of the Reflective Community Platform following a fixed coding scheme for reflection (Prilla et al. 2015).

Similar to the coding approach applied for reflective actions we are currently working on a new coding scheme for learning facilitation in EmployID. Based on existing models of facilitation (e.g. Hyland et al 2012) and facilitation requirements identified within the PES organisations, a fixed scheme for coding will be developed and applied the first time for the analysis of content shared in the Reflective Community platform.

An important future aspect of content coding is going one step further and exploring innovative methodological approaches, trialing with a machine learning approach based on (semi-) automatic detection of reflection and facilitation in text. This semi-automatic content analysis is a prerequisite for reflecting analysis back to learners as part of learning analytics, as it allows the analysis of large amounts of shared content, in different languages and not only ex-post, but continually in real time.

7.4.4 Dynamic Social Network Analysis

Conceptual work being currently undertaken aims to bring together Social Network Analysis and Content Analysis in an evolving environment in order to analyze the changing nature and

discontinuities in a knowledge development and usage over time. Such a perspective would not only enable a greater understanding of knowledge development and maturing within communities of practice and other collaborative learning teams, but would allow further development and improvements to the (online) working and learning environment.

The methodology is based on various Machine Learning approaches including content analysis, classification and clustering, and statistical modelling of graphs and networks with a main focus on sequential and temporal non-stationary environments.

To illustrate changes of nature and discontinuities at the level of social network connectivity and content of communications in a knowledge maturing process “based on the assumption that learning is an inherently social and collaborative activity in which individual learning processes are interdependent and dynamically interlinked with each other: the output of one learning process is input to the next. If we have a look at this phenomenon from a distance, we can observe a knowledge flow across different interlinked individual learning processes. Knowledge becomes less contextualized, more explicitly linked, easier to communicate, in short: it matures.”(Maier and Schmidt, 2007).

7.5 Next stages

In this section we have examined current approaches to Learning Analytics and have considered some of the issues in developing approaches to LA for workplace learning, notably that learning interactions at the workplace are to a large extent informal and practice based and not embedded into a specific and measurable pedagogical scenario. Despite that, we foresee considerable benefits through developing Workplace Learning Analytics in terms of better awareness and tracing of learning, sharing experiences, and scaling informal learning practices.

We have outlined a pedagogic approach to learning in European Public Employment Services based on social learning and have outlined a parallel approach to LA based on Social Learning Analytics. We have described a number of different tools for workplace Learning Analytics aiming at providing data to assist answering a series of research questions developed through the EmployID project. At the same time as providing research data, these tools have been developed to provide feedback to participants on their workplace learning.

The tools are at various stages of development. In the next phase of development, during 2016, we will implement and evaluate the use of these tools, whilst continuing to develop our conceptual approach to Workplace Learning Analytics.

One essential part of this conceptual approach is that supporting learning of individuals with learning analytics is not just as designers of learning solutions how to present dashboards, visualizations and other forms of data representation. The biggest challenge of workplace learning analytics (but also learning analytics in general) is to support learners in making sense of the data analysis:

- What does an indicator or a visualization tell about how to improve learning?
- What are the limitations of such indicators?
- How can we move more towards evidence-based interventions?

And this is not just an individual task; it requires collaborative reflection and learning processes. The knowledge of how to use learning analytics results for improving learning also needs to evolve through a knowledge maturing process. This corresponds to Argyris & Schön’s double loop learning. Otherwise, if learning analytics is perceived as a top-down approach pushed towards the learner, it will suffer from the same problems as performance management. These pre-defined indicators (through their selection, computation, and visualization) implement a certain preconception which is not evaluated on a continuous basis by those involved in the process.

Misinterpretations and a misled confidence in numbers can disempower learners and lead to an overall rejection of analytics-driven approaches.

8 Architecture and deployment

This chapter presents a brief overview of the technical integration work. Most of the work on technical integration, architectural aspects and deployment have been embedded into the chapters 4-7. Supplementary

Figure 15 depicts the basic principles of the architecture and deployment approach of EmployID for managing the architecture in EmployID. It summarises the focus of the work package activities:

- **Architecture as a Service.** Provide the necessary advice by defining a set of procedures, methods, technologies and tools in order to use and integrate together EmployID Tools.
- **Full-Life-Cycle Management.** Manage the portfolio of technologies, tools, versions, environments, infrastructure, etc. This will be necessary to assure quality and stable environments where EmployID Tools will be tested and used.

Also, Training & Advisory services will be offered to facilitate the integration of “own PES” tools into the platform.

- **Roles & Responsibilities / Communication.** The EmployID Project will select a series of tools that consume and / or publish information as an integrated toolset. It will be necessary to define what role or stake different stakeholders have in the process and the responsibilities of each party (PESs, Researchers) to facilitate the integration work.

Also, it will be necessary to establish a communication plan and employ communication tools to send updates of new deliverables, meetings, progress tasks, etc. to the interested stakeholders.

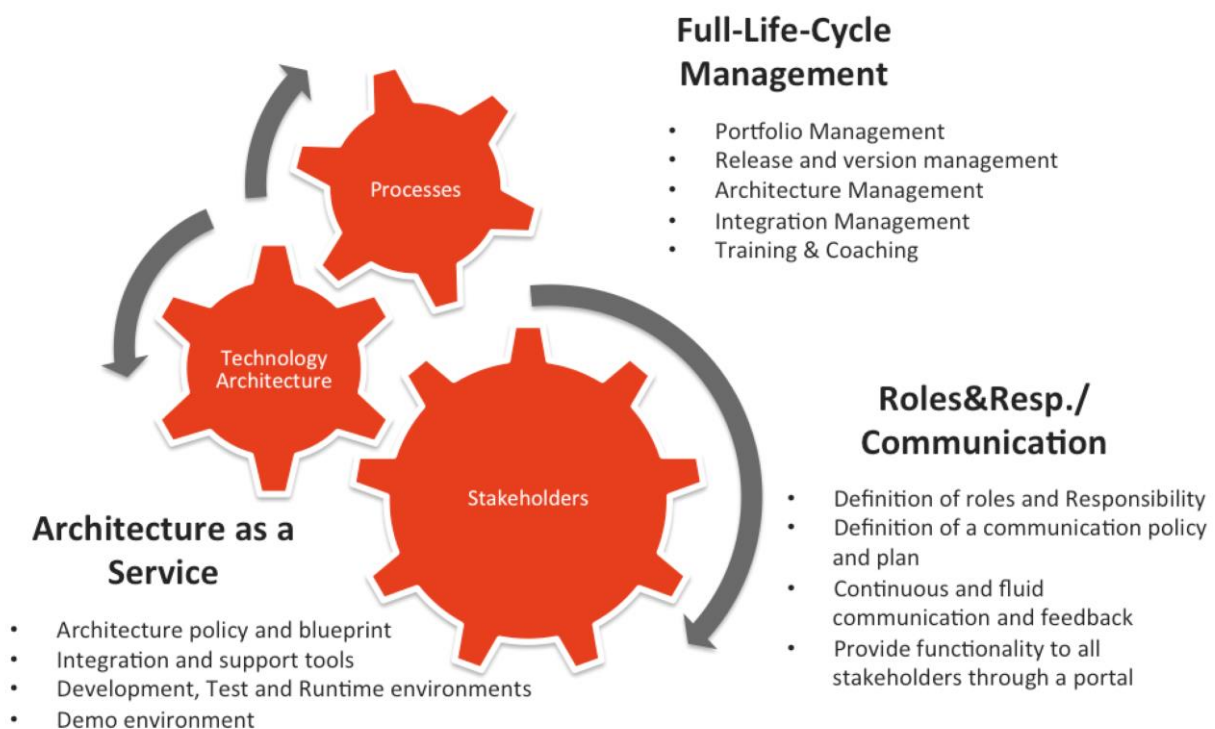


Figure 79: WP6 Basic principles diagram

Activities in this WP have been organized in artefacts that will be delivered in WP6 during the project. These artefacts are project internal deliverables or sub-deliverables and will be combined with the official project deliverables to be submitted at the end of each project year.

Figure below is an overview of all the artefacts that we are working on and which will be our contribution to EmployID project:

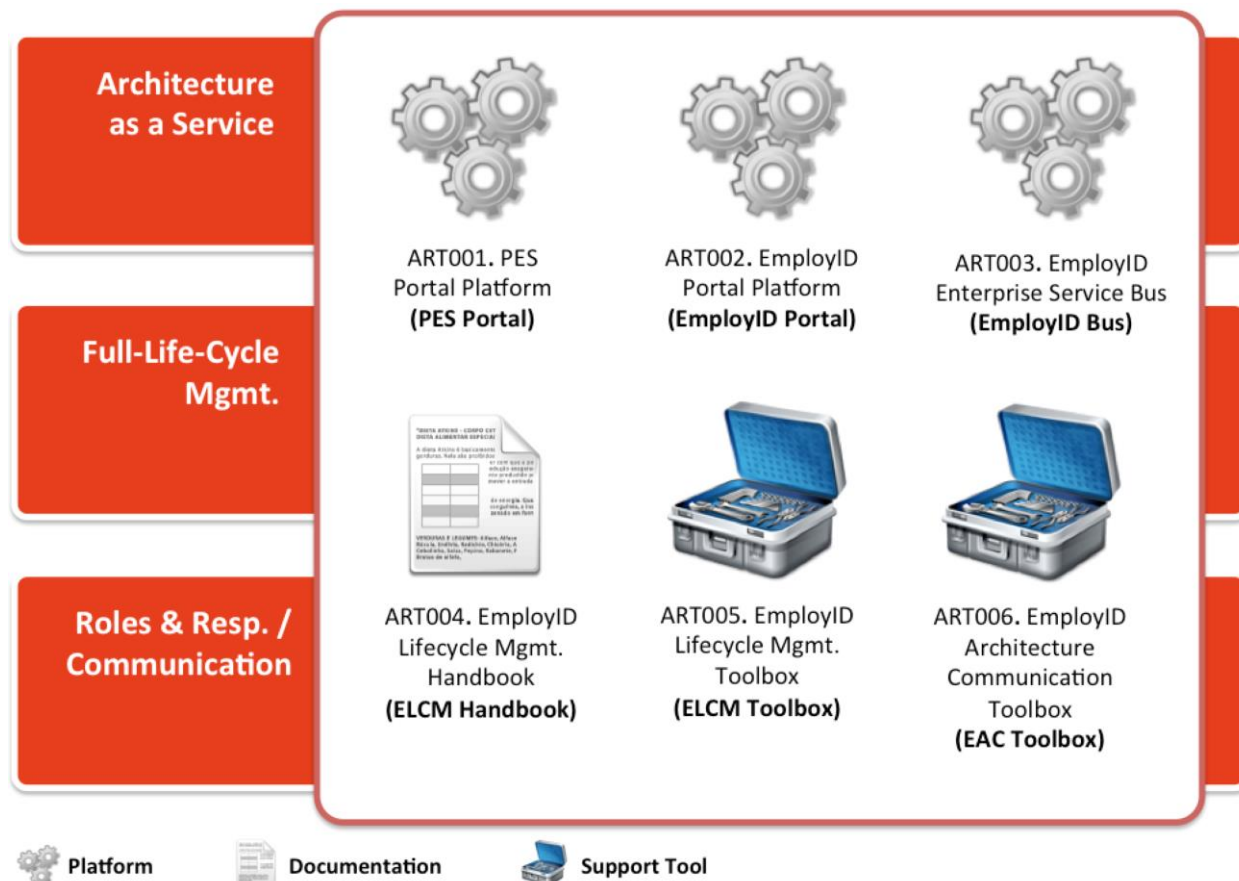


Figure 8o: WP6 Architecture & Integration artefact deliverables

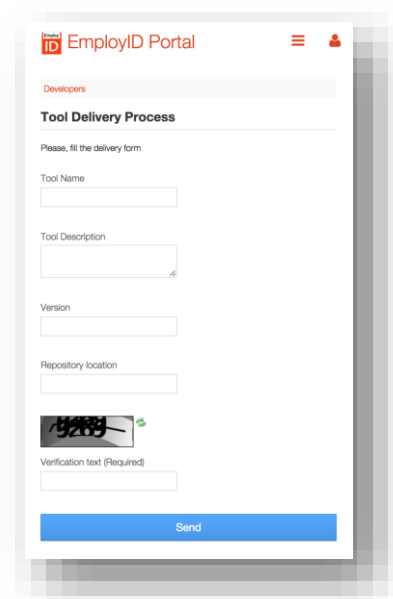
Following sections depict activities which activities have been done this year for each artefact.

8.1 PES Portal

As defined in the EmployID Lifecycle Management (ELCM) Handbook (please refer to *Appendix F ELCM Handbook*), in the process of tool delivery will be used the EmployID Portal to send new versions of tools. It has been created a new form page:

- **Tool name, description and version:**
Information to facilitate the delivery process.

- **Repository location:**
URL of the drive location within EmployID Tool Repository. It will contain the sources, binaries and documentation of the new tool version.



- **Verification text:**

Field used only to prevent robot attacks.

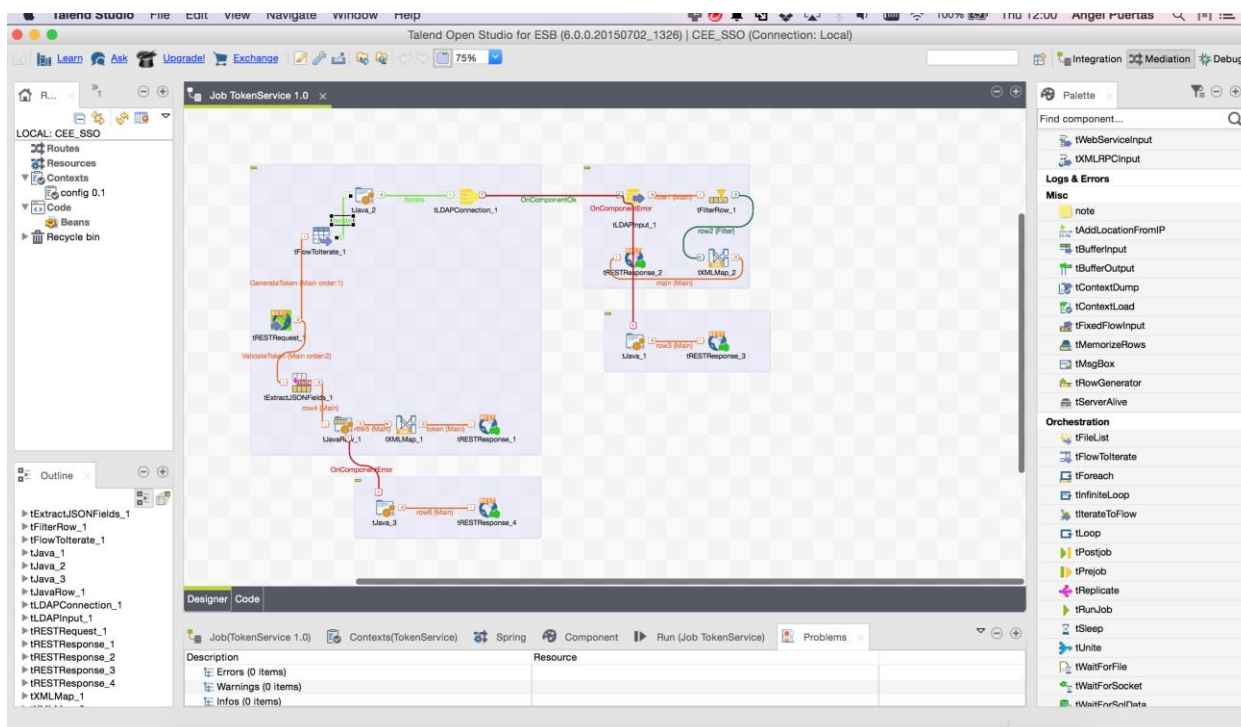
Date	Action	Description
14/01/2015	Implement	1st real prototype, demo in Consortium Meeting Karlsruhe 2015. <i>A real demo portal was created and shown in Consortium Meeting Karlsruhe 2015. It is required create a portal focused on real problems and solutions for PESs and not only demo content.</i>
15/10/2015	Specify	Review of the specification in Consortium Meeting Warwick 2015. <i>It is proposed plan live prototyping sessions and focusing the portal content in real Learning Scenarios. Peer Coaching will be the candidate as the most advanced in Business Model Canvas specification and supporting tools.</i>
02/12/2015	Specify	1st live prototyping session – Wireframe portal. <i>This session let define the right portal structure and pages structure. Also in this session has been shown other portals from the Internet showing Success Stories in order to have input to be more productive:</i> https://www.facebook.com/business/success http://www.infusionsoft.com/success-stories https://business.linkedin.com/marketing-solutions/case-studies-products https://www.desk.com/customers
17/12/2015	Specify	PES Portal design proposals <i>2 home proposals and 2 page proposals have been designed. The best alternative will be selected through a poll.</i>
22/12/2016	Implement	2nd real prototype implemented. <i>This version will be presented on Valencia Consortium Meeting 2016 and it is based on previous alternative selected.</i>

8.2 EmployID Bus

It has been installed and configured *Talend Enterprise Service Bus 5.6.2* in order to provide the necessary infrastructure for EmployID Service Bus.

On the top of EmployID Service Bus, it will be implemented the necessary integration services between tools.

The first integration provided through EmployID Service Bus has been Single Sign-On integration. This integration will enable Authentication and Single Sign-On mechanism for the EmployID Tools. Also it has been provided a few examples in order to facilitate the implementation of this mechanism by the tools.



Please refer to section *Appendix: Single Sign-On Integration*.

Date	Action	Description
01/06/2015	Specify	First integrated scenario between two tools. Single Sign-On scenario. <i>The Single Sign-On scenario will let EmployID Tool end users switch between tools without reintroducing credentials.</i>
31/09/2015	Implement	Single Sign-On integration implementation.

8.3 EmployID Lifecycle Management (ELCM) Handbook - ART004

The ELCM Handbook will be one of the necessary helpers for the technical team in order to deliver the tools assuring the quality and format. Please refer to section *Appendix F: ELCM Handbook*.

Date	Action	Description
01/06/2015	Implement	First ELCM Handbook version has been created

8.4 EmployID Lifecycle Management (ELCM) Toolbox – Versioning Tool - ART005

Within the ELCM Handbook, it has been defined the EmployID Tool Delivery process. This process includes steps in which the responsible of the tool stores the binaries and sources on EmployID Binaries Repository and EmployID Sources Repository.

Please refer to section *Appendix F: ELCM Handbook* in order to get detailed information about the implemented solution.

Date	Action	Description
01/06/2015	Implement	Provide a Source Repository and a Binaries Repository for EmployID Tools.

8.5 PES Deployment Scenarios

8.5.1 Introduction

The current *Concept for Contextualisation & Architecture* has evolved into a definition that enables how to use integrated EmployID Tools. The EmployID Platform has been defined as most generic as possible in order to be deployed on any possible scenario.

In the third year of the project, the *Concept for Contextualisation & Architecture* will be adjusted to specific PES needs. This will require gathering the necessary information on each PES. This information is being collected in a series of continuous face-to-face meetings (PES IT Assessments).

Each PES IT Assessment generates new information. The information gathered at this moment corresponds to following PESs:

- **1st PES IT Assessment - ZRSZ / PES Slovenia** (1st year)
- **2nd PES IT Assessment - CES / PES Croatia** (the assessment corresponds to 2nd year, please refer to *Appendix H: CES Deployment Scenario*)

In advance more IT assessments will be made in pending and/or future PESs for the same purpose as describes the defined PES IT Assessment Model in section 5.2.

Also it is required to analyse which is the best Deployment Option for a specific tool in a specific PES. These supporting tasks have been performed this 2nd year for:

- **Learning Platform Tool on ZRSZ / PES Slovenia** (please refer to *Appendix I: Learning Platform ZRSZ Deployment Options*)

8.5.2 PES IT Assessment Model

The assessment model has been evolved on each PES IT Assessment until the point that it is possible to prepare next year a PES IT Self-Assessment Template:



The self-assessment template will let to future PESs facilitate to WP6 all the necessary information to prepare the deployment of the EmployID Platform.

This new template is included on the tasks for the *EAC Toolbox - ART006* as a supporting task for the PES and others WPs.

8.5.3 Tool Deployment Options

The process used to analyse how to deploy an EmployID Tool on a specific PES is as follows:



The tool deployment options analysis is included on the tasks for the *EAC Toolbox - ART006* as a supporting task for the PES and others WPs.

9 Reaching Out

One of the main activities of EmployID is to ensure the intended users of the outcomes of this European project fully understand how the outcomes of the project can add-value to their ongoing service design and delivery. In this context, effective dissemination activities are crucial to the sustainability, growth and exploitation of professional identity transformation activities including coaching, ICT and labour market intelligence (LMI) developments. Promotion of the efforts invested by PES and Associate Partners have assisted in significantly profiling advancements achieved in the second year of the project for a wider impact outside of the project. For this reason at EmployID we have deployed a wide range of key actions intended to forge trusting relationships and to identify and address pressing problems with a growing number of PES and PES-related organisations.

In EmployID there are two distinct streams for the dissemination, growth, sustainability and exploitation actions. Firstly, the research-stream and secondly, the applications stream – both oriented towards offering EmployID processes and products to the target audience(s) that can be applied in daily work. These streams connect transversally with four main actions as briefly outlined in Figure 1 below:

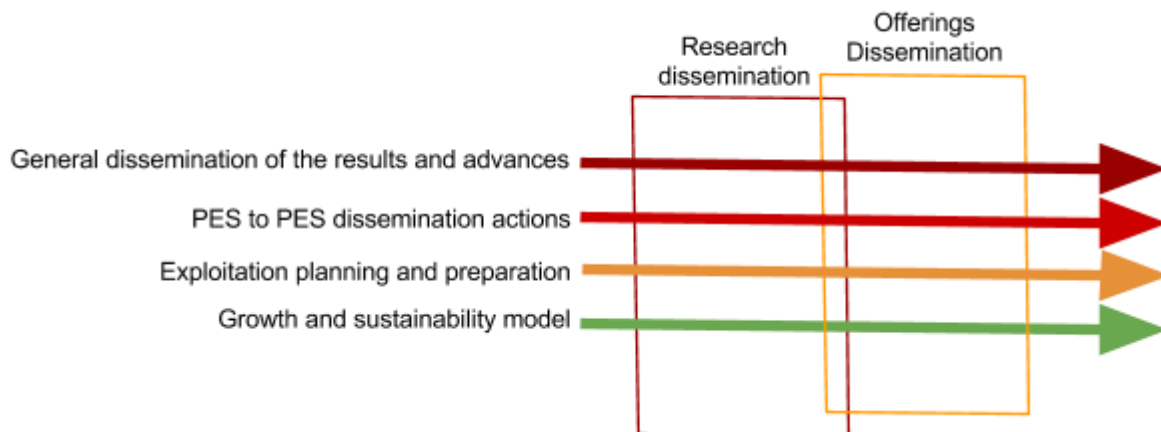


Figure 1 - Dissemination, growth, sustainability and exploitation streams

During the second year, we have consolidated the relationships with existing and new collaborators, including many European PES organisations, who actively participated in a major ‘Special Invitational European Symposium’ held in London (October 2015). This has further strengthened our working relationships with PES and allied organisations across Europe, and the project has moved forward in nurturing new collaborations that will be mutually beneficial in facilitating the co-creation of sustainability and growth activities for the next two years.

In this section, an overview of the dissemination and stakeholder engagement actions of the second year of the EmployID project are fully outlined as well as the clear focus on developing the sustainability, growth and exploitation model. This is presented briefly in Figure 2 below and presents the major achievements for the second year of the project, as well as the expected future actions and developments.

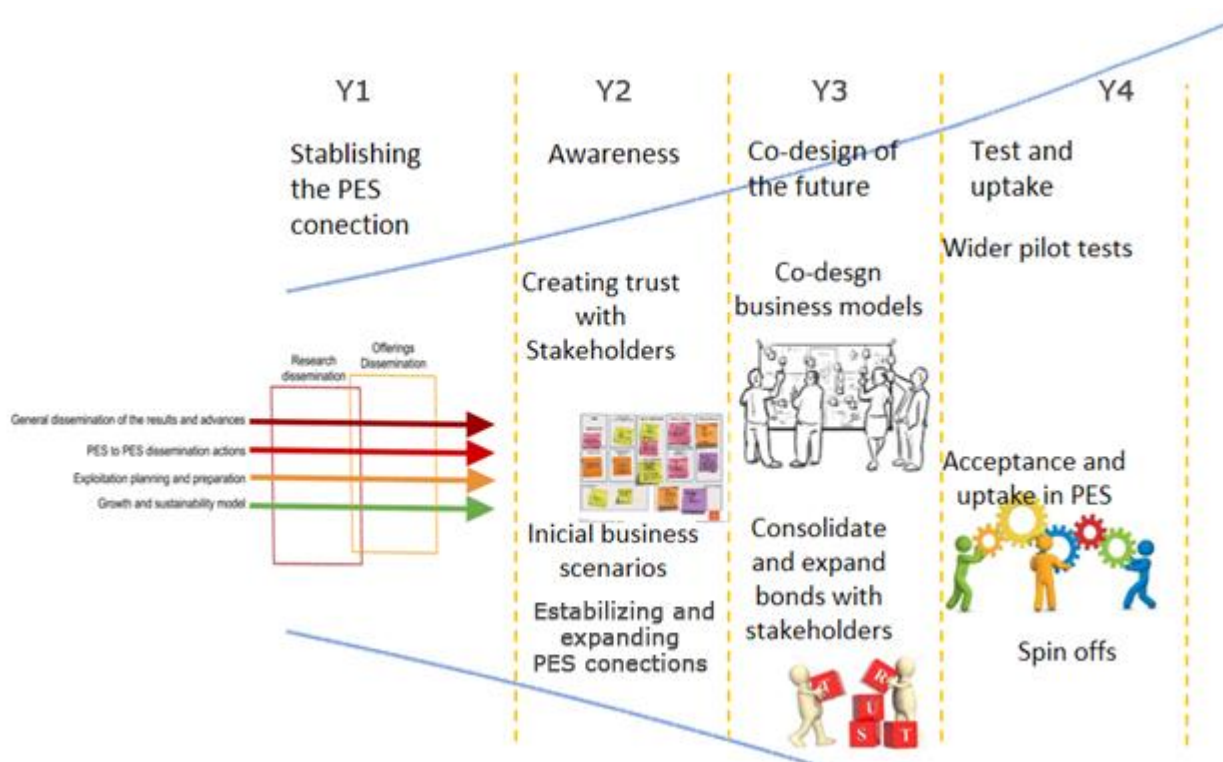


Figure 2 - Dissemination, growth, sustainability and exploitation strategy

In the second year of EmployID, the following was achieved specifically in relation to the dissemination, growth, sustainability and exploitation strategy:

- A major EU Special EU Invitational Symposium held in London on 16th October 2015 with 62 EU active participants ranging from senior leaders to practitioners both within and outside of PES organisations [[Read more about this on the EmployID web](#)].
- Leadership and managerial input from two Croatian representatives at The European Network of PES meeting (May 2015) and The Centre of Public Employment Services of Southeast European Countries (September, 2015)⁴
- Participation in Mutual Learning Events based on specific thematic areas and identification of emerging PES themes and evidence-based literature such as: NEETS, Youth Guarantee, Methods to Profile Job Seekers, Intervision and Peer Coaching uploaded onto the EmployID website.
- 5 new Associate Partners joined the project as a result of the Special EU Invitational Symposium including representation from Bosnia Herzegovina, Cyprus, England Ireland, and the United Kingdom.,
- 32 Associate Partners now registered on the EmployID website (PES and non-PES organisations)
- 3 PES organisations in Latvia, Ireland and Slovakia have indicated a strong interest to foster closer working links on the third year beyond Associate Partner status. A fieldwork visit is

⁴ <http://www.cpessec.org>

planned to Slovakia in Spring 2016. This is mainly as a result of work jointly developed by the Dissemination and User Engagement Teams.

- A fieldwork visit to PES Sweden took place in Stockholm to review the Swedish Public Employment Services' priorities and delivery plans (2nd June 2015) focusing on technology-use, e-coaching and use of labour market intelligence/information. From this lessons learned from innovative ICT developments were fully assessed.
- The first multipliers workshop on peer coaching and e-coaching (online-coaching) was held in May 2015 by (ENZYME) and (KIT) to the participants of the Training Center at the ZRSZ (PES Slovenia) in Ljubljana [[more about it here](#)]
- A media information package distributed via USB to all key Stakeholders to supplement the previously circulated 'communication principles and protocols' (2014).
- An interactive poster on 'Augmenting Learning Tools with Reflection Support' won the 2015 ECTEL's Best Poster Award. [[see the poster here](#)]
- A total of 100 EmployID promotional USB memory sticks were produced and distributed in 2015 to interested organizations.
 - 9 Scientific Publications produced in 2014, followed by 9 Scientific Publications produced in 2015. Further scientific articles in progress e.g. quality assurance and evidence-based frameworks.
- 3 Newsletters produced and widely disseminated across Europe and further afield [read them here: [1st](#), [2nd](#), [3rd](#)]
- 30+ News Articles produced and published on the EmployID website (also distributed in social networks) showcasing the activities of the project including attendance at key conferences, events and workshops for dissemination purposes e.g. Social Knowledge Management at I-KNOW; ANSE Summer University, Croatia (17 – 21 August, 2015); EC-TEL Conference in Toledo, Spain (September 2015); International Association of Educational & Vocational Guidance, (18-21 September, 2015), Tsukuba, Japan; and the sixth edition of the MATEL Workshop series, Toledo, Spain (September 2015).
- A set of training and dissemination videos about core skills for peer coaching were produced:
 - [Peer coaching procedure](#)
 - [Active listening](#)
 - [Emotional awareness](#)
 - [Powerful questioning](#)
- Excel database of PES and Non-PES organisations regularly updated with EmployID contacts and newly identified working links.
- Two Stakeholder MindMaps reviewed to support reach and impact.
- Use of main key words for dissemination actions and search engine optimization positioning
- Continued analysis of our main audiences and the best channels to reach and engage with them.
- A review of the Stakeholders' Dissemination Plan (2014 - 2018)
- A monthly review system in place for monitoring key policy issues and priorities

- An established positive working relationship with the Head of the European Network for PES evidenced by policy input at the above-mentioned London event and ongoing email correspondence
- Establishing, maintaining and extending excellent, robust working relationships with PES management at different levels and in relevant functional areas has been an essential and characteristic feature of the success achieved by EmployID to date across the three application partners. This has secured agreement for the piloting and evaluation arrangements with PES practitioners for the different technical solutions offered by EmployID, with the potential for significant impact across thousands of PES practitioners in the different organisations.
- Newly established working links with the World-Wide Association of Public Employment Services (WAPES), Brussels with evidence of EmployID showcased and promoted within the WAPES website.
- Ongoing professional dialogue with dissemination input to the project from a leading PES and Lifelong Guidance policy ‘expert’ based at the European Parliament, Brussels.
- An established working relationship and promotion and dissemination activities with Euroguidance and the European Lifelong Guidance Policy Network (ELGPN). Evidenced by attendance at EU meetings and conferences.

9.1 EmployID PES agenda

Across Europe (and further afield) PES organisations are facing increasing pressure to reach out to more individuals and organisations in order to reduce skill gaps and skills mismatches, to encourage labour market participation by capable inactive people and to improve the employability and skills of individuals (WAPES, 2015). Special attention is being given to the “customer journey” (ENPES, 2015) including individuals and employers’ needs in fast changing labour markets across Europe. The challenge is how PES can or should best respond to policy and practice demands from many differing perspectives. New partnerships and new commissioning arrangements for Public Employment Services (PES) delivery feature high on the political agenda, to supplement or replace diminishing budgets within government-funded services. The anticipated changes in PES future delivery arrangements, together with the ‘knock on effect’ for workforce development, necessitate new forms of identity transformation in the workplace (Brown & Bimrose, 2015). This has significant implications for current and future Active Labour Market policies (ALMP) within and across PES, including workforce capacity building, with new players and system developments operating within a European climate of spending cuts, innovation, or a combination of both.

There has been little research on the relative merits of dissemination and implementation strategies used to encourage the adoption of identity transformation within and across PES. This chapter focuses on the dynamic interplay of EmployID participants’ connecting with innovative developments in technology-use, labour market intelligence/information (LMI) and career coaching. It draws upon insights from two theoretical models used to encourage the diffusion of innovation (Rogers, 2003) and social influence (Latane, 1996) with a closer examination of how EmployID dissemination strategies have been applied over the last year. The emphasis is primarily on how dissemination activities were framed and delivered with lessons learned in achieving greater impact across European PES organisations in the second year of EmployID. The work of EmployID Lead and Associate PES partners has been discussed within Chapter 4-8, with some further elaboration provided below. The core challenges, or the persistent issues faced in disseminating good and/or interesting policies and practices, lie at the heart of this discussion. We also briefly highlight the current policy landscape for PES in Europe, the implications for workforce

capacity building and identity transformation. This is followed by a review of dissemination and achievements made possible through EmployID's close and extending partnership arrangements building upon last year's deliverables. The chapter concludes by setting out an agenda for moving forward, building momentum and extending the reach to achieve high-impact PES identity transformation.

9.1.1 Policy landscape

Whilst the economic recovery continues at a moderate pace in the euro area⁵, major government policies continue to focus on structural reform with a balanced adjustment in the private and public sectors, improved capacity building and a strong emphasis on economic competitiveness and potential to raise productivity and boost growth (European Council, 2015). The European Network of Public Employment Services supports the operationalizing of European Employment Policy, steer reforms that assist progress towards achievement of the 2020 European Employment Strategy targets⁶, and further encourage PES towards realisation of the Europe 2020 service delivery vision⁷. The European Council argues "those Member States that pursued comprehensive labour market and social protection reforms prior to the crisis have been able to better support employment and preserve fairness during the economic downturn. Such reforms encompass flexible and reliable contractual arrangements, comprehensive lifelong learning strategies, effective active labour market policies, and modern social protection systems" (op cit). The European Network for Public Employment Services (2015)⁸ has highlighted "Only by supporting both supply and demand requirements can PES achieve their ambition to deliver a conductor role on local, regional, national, and European labour markets." (p.5)

Strategies aimed at reducing unemployment by shaping the demand, supply and mobility of labour include those government measures directed to training and rehabilitation; information, counselling, and financial support to find a job; and government job creation (Janoski (1994), Jackman, Pissarides and Savouri (1990) and Wilensky and Turner (1987)). More recently technology-use, labour market intelligence/information and career coaching have emerged as powerful means to facilitate, capture and disseminate the reality of the PES customer journey (EmployID, 2015).

In this context, many PES have recognised that within a changing economic and political context, they cannot function alone, with the exploitation of knowledge and building sustainable networks driving new approaches (Brinkley, 2008). PES and other public sector leaders face significant challenges as they respond to the twin pressures of reducing spending and providing more customer-focused services. Those operating within PES organisations consequently are experiencing considerable systems change and governments responsible for determining levels of investment in the design of publicly funded PES activities are facing tough decisions. Each must develop creative solutions for relevant and cost-effective online and face-to-face information and support services.

⁵ Commission 2015 Autumn Economic Forecast - http://ec.europa.eu/economy_finance/eu/forecasts/2015_autumn_forecast_en.htm

⁶ <http://ec.europa.eu/social/main.jsp?catId=101&langId=en>

⁷ <https://portal.cor.europa.eu/europe2020/SiteCollectionDocuments/Europe%202020%20Handbook%20for%20Local%20and%20Regional%20Authorities.pdf>

⁸ The European network of Public Employment Services (2015) Annual Report of the Network of Public Employment Services, June 2014 – June 2015, Brussels, p.5 Accessed on 14th August 2015 - <http://ec.europa.eu/social/main.jsp?catId=1100&langId=en>

The dominant ‘collective responsibility’ philosophy requires a reorientation in mindsets for organisations and individuals to democratic decision-making and public service design and delivery. This is leading to shifting paradigms for delivery and increasing pressures for the greater use of information, communications technologies (ICT) to help ‘achieve more for less’ and to reach out to differing priority target groups. Nudges and incentives from European governments indicate a strong drive towards:

- *culture change*: investment in skills;
- *behaviour change*: increased use of online services;
- *collective responsibility*: doing more locally in communities; and
- *economic growth*: skills feeding growth (Bimrose, Hughes & Barnes, 2011).

9.1.2 Workforce development: identity transformation

The intense environmental demands on PES place great responsibility and strain on all staff to make wise decisions in a timely and cost-effective manner. The skills of leaders, managers and practitioners in building and maintaining new working relationships, products and services are viewed by many as crucial to the success of achieving set policy goals (BIS, 2012)⁹. Each have different ICT workforce development needs, depending on a number of factors, including: emerging and currently diffusing models of PES practice; the shifting nature of the core expertise offered by practitioners; current skill levels and the ‘technological frames’ of different practitioners; the next generation technology; and the strategic positioning of services within parts of the public-private-third sectors new and evolving structural arrangements. A major challenge for those operating in Public Employment Service is a perceived lack of stability in existing structures (EmployID, 2015).¹⁰ Also, there are big differences in the performance of PES between Member States – PES face many challenges due to “changes in the way the labour market functions, budgetary constraints, and increased expectations from citizens.” (PES Network, 2015).¹¹

In response to this changing and challenging environment, there is considerable variety in PES policies and practices across Europe¹². This is unsurprising, given the differing types of labour market and social protection reform underway. Within PES organisational and financial constraints there is cause to celebrate existing diversity because clearly each country has been innovative in accordance with their specific requirements. The multi-layered landscape provides opportunities to learn from, and take strategic advantage of, the opportunities offered by information, communications technology (ICT), labour market intelligence/information (LMI) as well as career coaching, currently being developed by EmployID, on behalf of the European Commission. PES clearly face differing challenges in dealing with their various labour market situations and workforce development needs, however evidence from the second year of EmployID is that the enhanced co-operation between the projects and other networks and organisations is having a

⁹ BIS (2012) *Leadership and Management in the UK – The Key To Sustainable Growth: A summary of the evidence for the value of investing in leadership and management development*, London: Department for Business, Innovation & Skills, July, 2012. Available online – accessed on 10th October 2015: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/32327/12-023-leadership-management-key-to-sustainable-growth-evidence.pdf

¹⁰ EmployID: EU Special Invitational Symposium, London, 16th October 2015 – Available at: <http://employid.eu>

¹¹ PES Network (2015) *Annual Report of the European Network of Public Employment Services*, Brussels p. 8 – Available at: <http://ec.europa.eu/social/main.jsp?catId=1100&langId=en>

¹² European Employment Policy Observatory (EEPO) Regular Reports, Catalogue of Measures, January 2015. Accessed on 15th May 2015 – Available at: <http://ec.europa.eu/social/main.jsp?langId=en&catId=1086&newsId=2194&furtherNews=yes>

positive impact. There is strong desire to learn lessons from the evolving integration of technology, labour market intelligence/information (LMI) and careers coaching, operating in different markets, across all European countries. Efficient and cost-effective practice need both to be shared and further developed for the common good.

9.1.3 Objective in the EmployID PES agenda

The second year key objectives were identified under the auspices of ‘The Year of Awareness’. Dissemination is defined as “the transfer of knowledge within and across settings, with the expectation that the knowledge will be ‘used’ conceptually or instrumentally” (Hutchinson & Huberman, 1994). Our intention is to actively spread a message(s) to defined target groups (Greenhalgh et al., 2004) or as Wilson et al (2010) suggests we have embarked on “a planned process that involves consideration of target audiences and the settings in which research findings are to be received, and where appropriate, communicating ... in ways that will facilitate research uptake in decision-making processes and practice”.

EmployID aimed to achieve a higher level of recognition from main stakeholders in the PES and PES-related communities at all levels. This was to support the development activities in the remaining years of the project (2016 -2018) and to prepare for a wide implementation of EmployID solutions within and across European PES organisations. We have adopted the diffusion of innovation theory, in order to create “a very social process that involves interpersonal communication relationships” (Rogers, 2003, p. 19). The innovation-decision process involves five steps: (1) knowledge, (2) persuasion, (3) decision, (4) implementation, and (5) confirmation. These stages typically follow each other in a time-ordered manner.

Diffusion is contrasted with dissemination to mean a passive process by which an innovation may spread organically among the members of a social system (Dearing & Kreuter, 2010). Usually thought of as a social process, and may or may not follow after dissemination tactics take place. The two main communication channels adopted in EmployID’s ‘Year of Awareness’ are categorized as *localite channels* and *cosmopolite channels* that communicate between an individual of the social system and outside sources. While interpersonal channels can be local or cosmopolite, almost all mass media channels are cosmopolite. The latter are more significant at the knowledge stage and localite channels and interpersonal channels are more important at the persuasion stage of the innovation-decision process (op.cit).

Achieving social influence outside of the initiative is a significant challenge. Drawing upon dynamic social impact theory (Latane 1996) we have used ideas based on evidence and impact to capture the diffusion of beliefs through social systems. In this view, social structure is the result of individuals influencing each other in a dynamic and iterative way. As Rashotte (2011) suggests “the likelihood of being influenced by someone nearby, rather than far away, (the immediacy factor) produces localised cultures of beliefs within communication networks. This process can lead initially randomly distributed attitudes and beliefs to become clustered or correlated.” For dissemination purposes, we have recognised the value of ‘clusters’ in Lead and Associate Partner arrangements operating in a self-organising complex system in which individuals interact and impact each others’ experiences, value and beliefs.

Building upon this, key objectives for 2014-2015 were:

- Making a strong connection to the new European Commission (EC) PES Work Programme. We previously noted at least 11 PES’s recommended a sharp focus on improving capability and active labour market policies (ALMP). This helped to inform the strategic decision to host two major invitational events in Germany and London.
- Working links with the Administration for European Public Employment Service Affairs (AFEPA), the European Center for the Development of Vocational Training (CEDEFOP),

the European Lifelong Guidance Policy Network (ELGPN), Euroguidance, EURES and the World-wide Association of Public Employment Services (WAPES)

- Further analysis of Country Specific Recommendations within the EU 2020 strategy, including identification of emerging themes
- Map high profile meetings relevant to the EmployID
- Attendance at EU Summits, PES conferences and seminars
- Galvanise interest to ensure a high number of positive responses to the EmployID facilitation and support framework
- Roundtable and other meetings with policy officials, seeking to link to, and where appropriate, co-ordinate activities especially at an EU and national level
- Ensuring quality input and support to existing and other PES/non PES organisations.

9.1.4 2014-2015 achievements with PES

Over the last year, there has been a strong desire to learn lessons from the evolving integration of ICT and labour market intelligence/information (LMI) and careers coaching, operating in different markets, across European countries. Efficient and cost-effective practice need both to be shared and further developed for the common good. A key starting position was to review the Stakeholders' Dissemination Plan (2014 - 2018) and to ensure the programme monthly review system for monitoring key policy issues and priorities was working well.

9.2 European Network of Public Employment Services

The formal legislative mechanism¹³ that focuses specifically on cross-fertilisation of PES policy and practice is the European Network of Public Employment Services practice and the implications for PES European Commission. Delivery of a Work Programme is central to Network's support for PES. This is intended to assist them in implementing policies which contribute to achievement of the objectives of the Europe 2020 Strategy for jobs, and smart sustainable and inclusive growth. It aims to:

- compare PES performance through *benchmarking* and *benchlearning*¹⁴;
- identify evidence-based *good practices* and foster *mutual learning*;
- promote the *modernisation* and *strengthening of PES service delivery*, including of the Youth Guarantee¹⁵;
- prepare inputs to the *European Employment Strategy*¹⁶ and the corresponding national labour market policies.

¹³ Decision No 573/2014/EU of the European Parliament and of the Council of 15 May 2014 on Enhanced Cooperation between Public Employment Services (PES): <http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32014D0573&from=EN>

¹⁴ Benchlearning is defined in the Decision as "the process of creating a systematic and integrated link between benchmarking and mutual learning activities that consists of identifying good performances through indicator based benchmarking systems. It consists of identifying good performance through indicator-based benchmarking systems, using findings for tangible and evidence -informed mutual learning activities and provides an empirical basis upon which to prioritise subjects for these."

¹⁵ <http://ec.europa.eu/social/main.jsp?catId=1079>

The Network meets twice a year to conduct strategic discussions and take decisions on the activities of the Network. In its first year the Network “developed and successfully piloted a methodology which will enable initial assessment of all PES by June 2016” (op cit). In this context, EmployID has established good working links with this major EU Network through:

- Senior leadership representation at a major Network stakeholder event held in May 2015. The Croatian Lead Partner PES (Mirjana Zečirević) outlined EmployID and distributed 150 leaflets to conference attendees. The conference brought together representatives, from PES, Council and European Parliament, social partners, private employment services and other stakeholders to consider how partnerships can support development of a stronger European Labour Market.
- A workshop in Ljubljana in 14th Expert Conference of the Centre of Public Employment Service for Southeast European Countries (CPESSEC) on 25 September, 2015.
- A review of the *Catalogue of PES measures for the implementation of the Youth Guarantee (2014)* to identify relevant ICT, LMI and careers coaching development themes (August, 2015). From this, the team identified systems for: chat for online counselling and online information career guidance from December 2015 (DE); a virtual labour market (Hun); an obligatory guidance delivered by a dedicated team of e-coaches (Belgium –VDAB), and chat, video, interviews through webcam, web call-back and email with a job counsellor (France). Each demonstrates contrasting ways in which e-services are evolving at a rapid pace and this has implications for training and support services as discussed in WP 4.
- A review of latest trends and current developments in methods to profile jobseekers, undertaken by the European Network of PES. The final report *Identification of latest trends and current developments in methods to profile jobseekers in European PES*¹⁷ offers practical advice for PES implementing profiling systems to support their delivery strategies. This key scientific report was prepared by the Institute for Employment Research (IER) at the University of Warwick and ICF International (May 2015).
- Website updates and blogs are key features within the dissemination approach linking EmployID to key emergent themes from the European Network for PES. For example, a *Catalogue of PES Practices for the outreach to NEETS*¹⁸, produced by the European Network of PES, was promoted and discussed in January 2016. The catalogue highlights examples from 17 PES on the different ways that services are delivered across Europe. These examples involved partnerships with a variety of other service providers, establishment of specialist centres, mobile community services (including street work), and innovative use of social media. EmployID reviewed this in more depth to assess the relevance to development work now and in the future.

9.3 PES to PES Dialogue and partner organisations

A major EU Special Invitational Symposium (October 2015) attracted 62 representatives from EU countries including Austria, Belgium, Bosnia and Herzegovina, Croatia, Cyprus, England, Germany, Greece, Ireland, Poland, Slovakia, Slovenia, Spain and Sweden. PES representatives, researchers and other interested audience attended a highly successful EU invitational Symposium held at the

¹⁶ <http://ec.europa.eu/social/main.jsp?catId=101&langId=en>

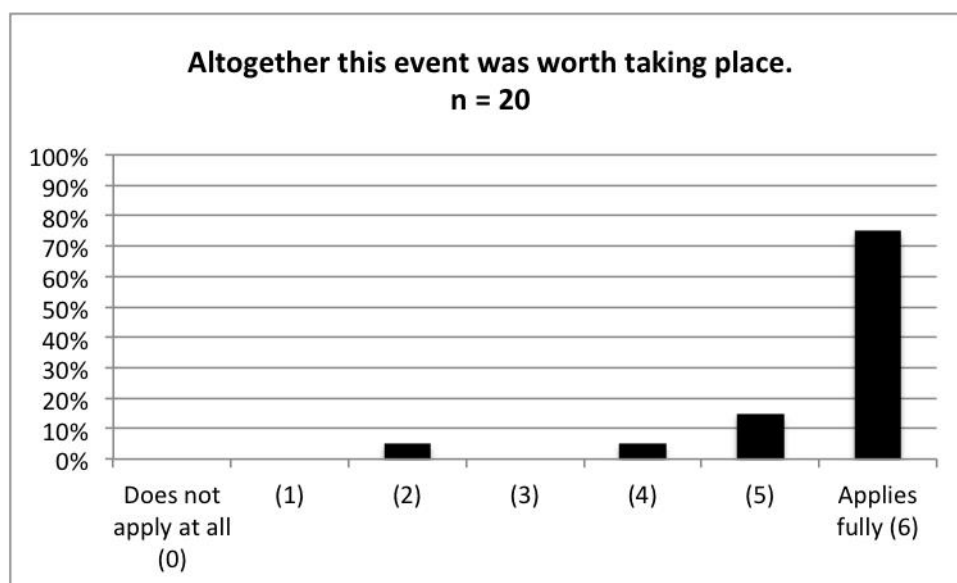
¹⁷ http://wrap.warwick.ac.uk/70332/1/WRAP_PES_profiling_final_report_290515%20%2823%29.pdf

¹⁸ <http://ec.europa.eu/social/BlobServlet?docId=13728&langId=en> Note: Results can be found as annex to this document

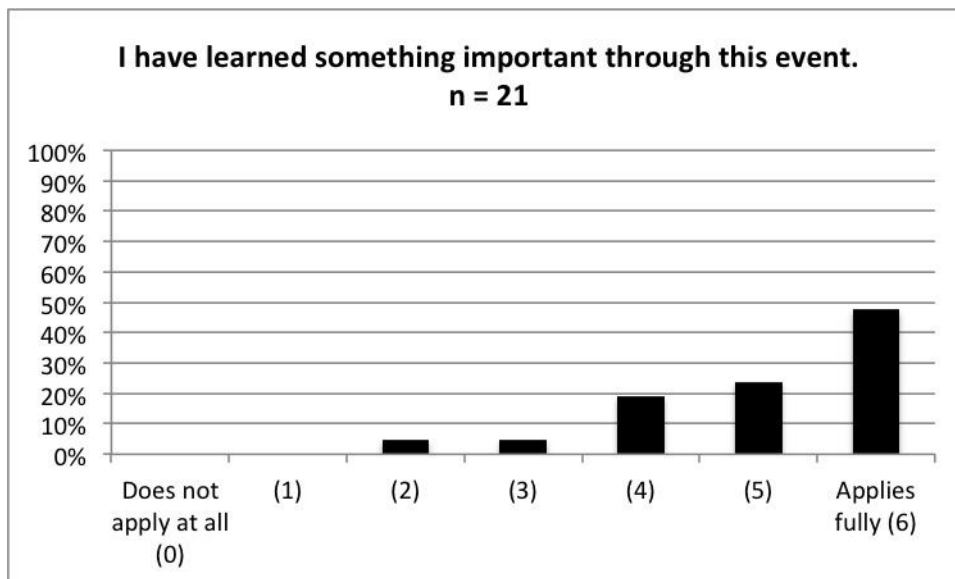
Royal Society for the encouragement of Arts, Manufactures and Commerce in London on 16th October 2015. For example, Susan Park, Work Services Director & Head of Operational Delivery Profession, Department for Work and Pensions (DWP), UK delivered an opening address outlining progress made in developing an in-house MOOC for PES work coaches to inform and support their practice. Wolfgang Müller, Bundesagentur für Arbeit, PES Network, gave a European PES perspective on emerging themes within PES organisations such as ‘bench-learning’, meeting the needs of changing customer groups, use of labour market intelligence/information and EU employer engagement strategies - Visit: <http://ec.europa.eu/social/main.jsp?catId=1100&langId=en>.

The presentation was followed by a global perspective from Margareta Olsson Dahlgren, Consultant, from the Worldwide Association of Public Employment Services (WAPES) - visit: <http://wapes.org>. Margherita highlighted one of the challenges facing the PES is to provide effective long-term employment for people aged over 50, including transitions from one employment to another. She also gave examples of how representatives from PES in differing international settings are meeting for peer reviews, for example, Canada, Korea, Japan and Germany recently met in Bonn 13-14 October for the kick-off of a global peer review in the frame of WAPES. In a volatile labour market, Public Employment Services (PES) across Europe constantly need to adapt, become more resilient and innovative in their work. Dr Suzanne Kraatz who has longstanding experience of working within both the PES Network and European Lifelong Guidance Policy Network (ELGPN) shared some insights on practitioner competences and the support needed by PES managers and practitioners to develop skill sets, knowledge and competences that address the need for integration and activation of job seekers in fast changing labour market. Visit: <https://employid.eu/node/173> All participants received copies of the PowerPoint presentations, EMPLOYID promotional materials, including the media pack saved and stored on a memory stick. A total of 100 EmployID promotional memory sticks were distributed in 2015.

Feedback collected at the event was overall very positive, with 95% of respondents being satisfied with the event:



and participants (90% of those who gave feedback) confirmed that the event contributed to their own learning:



Participants especially appreciated the practical sessions in the afternoon discussing the different strands of the project and how those are currently piloted in PES organisations. An interest to learn even more about the experiences from a PES perspective was expressed. The panel discussions and policy related presentations in the morning equally scored high amongst the audience.

9.3.1 PES organisations in Latvia, Ireland and Slovakia

Latvia, Ireland and Slovakia PES have each indicated a strong interest to foster closer working links in Year 3 beyond their current Associate Partner status. This is mainly as a result of work jointly developed by the User Engagement and Dissemination Teams. A fieldwork study to Slovakia's PES is planned in Spring 2016. For Latvia and Ireland we are in the initial talks that we expect will lead us to concrete engagement in 2016. e

9.3.2 Fieldwork visit to Sweden (2nd June 2015)

EmployID was invited to a mutual exchange to the Swedish PES (Arbetsförmedlingen) where EmployID presented its approach and topics, and the Swedish PES representatives presented their innovative projects and initiatives, including competency matching, virtual consultancy for clients, among others.

After presenting EmployID's main objectives, the challenge of re-learning (or: "un-learning") was discussed concerning forgetting about old identity elements and be supported by digital tools "to look at the world in a new way". This is closely related to EmployID focal topic on supporting professional identity transformation as leaving behind old behaviours often requires a transformation process. As for many PES, the Swedish PES is currently undergoing a major strategic realignment, so that this aspect has been highlighted to be of particular importance.

It was also interesting to learn was that at Sweden PES there is also special focus on Customer Driven Development. Experiences are similar to EmployID's agile and user-driven approach.

It was agreed that both parties will keep each other updated, and the Swedish PES already contributed to the Social Learning Programme at DWP with a video on their innovative practices. A project about to start in the coming months was identified as an ideal context for more intense cooperation.

9.3.3 PES to PES Dialogue

PES to PES Dialogue is the European Commission's mutual learning support programme for public employment services (PESs) in the European Union. It aims to contribute to the implementation of the priorities of the Europe 2020 strategy and the Employment Guidelines by helping to increase the capacity and effectiveness of PESs. EmployID has continued to connect with the programme through:

- Participation in Mutual Learning Events designed to address PES relevant themes emerging from Country Specific Recommendations (CSRs) and specific major European Policy initiatives, especially the Youth Guarantee (YG), NEETS and specific capacity building themes, for example, the ANSE Summer University, Croatia 17 – 21 August, 2015 explored the challenges the PES face and how EmployID is tackling these with Technology-Enhanced Peer Coaching/ Online Peer Coaching. Current works on concept, training and tools were presented including the advantages and disadvantages of doing peer coaching online. Visit: <http://employid.eu/node/166>

9.3.4 World-wide Association of Public Employment Services (WAPES)

WAPES participated in the EU Special Symposium Invitational Event for PES associated partners and other key stakeholders, organised by EmployID, and shared a global view on WAPES / PES activities in different regions. Visit: <http://wapes.org/en/news/how-deal-change> WAPES has also used twitter to further promote EmployID's development work. The Slovenian PES was formally invited to produce an article for the WAPES website for wider dissemination in early 2016.

9.3.5 Euroguidance

Euroguidance has promoted EmployID through its website and networks. This has made a positive impact e.g. Bosnia and Herzegovina learned about EmployID through this means.

9.3.6 European Employment Service (EURES)

CISOK, Croatia has played an active role in EURES developments 2016 e.g. hosting an event on 'Possibilities in the European Labour Market an EURES Services.' -17 February 2016. The EmployID dissemination team has used this opportunity as a mechanism to monitor European participation and to reflect on the lessons learned from a coaching, ICT and LMI perspective.

9.3.7 European Lifelong Guidance Policy Network (ELGPN)

The ELGPN recently produced three new publications that have been used a stimuli material for discussion with PES and allied organisations – Visit: <http://www.elgpn.eu/newsletters/new-publications-available>

PES and lifelong guidance featured within these papers and we intend to use these as part of the identity transformation dialogue.

9.4 PES Lead Partners

Besides the development activities within each of the Lead Partner organisations, specific dissemination, growth and sustainability actions were implemented. For example, a 'first multipliers workshop' on peer coaching and e-coaching (online-coaching) was presented by Pablo Franzolini (ENZYME) and Carmen Wolf (KIT) to the participants of the Training Center at the ZRSZ (PES Slovenia) in Ljubljana (29 May 2015). This was organised by EmployID members Urša Dolinar (ZRSZ), Barbara Gogala (ZSRZ), Sebastijan Primc (ZRSZ), and Gordana Kamnik (ZRSZ),

Head of the Training Center. The workshop provided an opportunity for the EmployID project to gather feedback on the peer-coaching concept and to start the process of the peer-coaching concept integration into a PES organisation.

9.5 PES Associates

We now have 32 Associate Partners (PES and non-PES organisations) – Visit: <https://employid.eu/associate-partner-members>

Three new Associate Partners joined the project as a result of the Special Invitational Symposium including: Assessment Services Ltd (Merlin Quality Standard Guardian on behalf of DWP); Central London Careers Hub (Training Advisers and Teachers across London) and the Youth Employment Project, Bosnia and Herzegovina.

EmployID was invited to visit the German PES site at Karlsruhe on 1st April 2015. Wolfgang Hafner and Gabriele Bauer guided the EmployID team through different organisational units and explained work practices of different job roles. The EmployID team was also given the opportunity to have a look at the extensive technology infrastructure, both for employees and the clients of the German PES.

9.6 Scientific Community

9.6.1 Collaboration with other projects

Partners have connected and continue to connect to other projects advancing in areas relevant to EmployID. So far we have connected and discuss actively with:

- Learning-Layers - Scaling up technologies for informal learning in SME Clusters
- Mirror: Reflective Learning at work
- EAGLE – Enhanced Government Learning
- London Ambitions - <https://lep.london/publication/london-ambitions-careers-offer> London Enterprise Panel – London Ambitions: Reshaping a Careers Offer for Every Young Londoner
- UKCES – LMI for All - <http://www.lmiforall.org.uk>
- ERASMUS – Guiding Cities - <http://www.guidingcities.eu/en/>

9.6.2 Scientific Publications (2015)

A total of 9 scientific publications were produced in year 2 compared to 5 in the first year. Further scientific articles are progress e.g. quality assurance and evidence-based frameworks.

- Brown, A., & Bimrose, J. (2015) Identity Development In: *APA handbook of career intervention, Volume 2: Applications*, vol. 2, 2015, pp. 241-254
- Holocher-Ertl, T., Kunzmann, C., Müller, L., Pelayo, V.R., Schmidt, A.P., and Wolf, C. (2015) *Motivational and Affective Aspects in Technology Enhanced Learning (MATEL). Workshop-Proceedings of MATEL Workshop 2013-2014*. KIT Scientific Working Paper vol. 26, KIT, 2015
- Prilla, M. & Blunk, O. (2015) Reflective TEL: Augmenting Learning Tools with Reflection Support In: *Proceedings of the Tenth European Conference on Technology Enhanced Learning*, Lecture Notes in Computer Science vol. 9307, Springer, 2015

- Prilla, M. (2015) Supporting Collaborative Reflection at Work: A socio-technical Analysis In *AIS Transactions of Human-Computer Interaction*, vol. 7, 2015
- Blunk, O. and Prilla, M. (2015) Prompting users to facilitate support needs in collaborative reflection In: Kravcik, Milos and Mikroyannidis, Alexander and Pammer, Viktoria and Prilla, Michael and Ullmann, Thomas Daniel (eds.): *Proceedings of the 5th Workshop on Awareness and Reflection in Technology Enhanced Learning. In conjunction with the 10th European Conference on Technology Enhanced Learning: Design for Teaching and Learning in a Networked World (EC-TEL 2015)*, CEUR-WS, 2015, pp. 43--57
- Prilla, M., Nolte, A., Blunk, O., Liedtke, D., and Renner, B. (2015) Analyzing Collaborative Reflection Support: A Content Analysis Approach In: *Proceedings of the European Conference on Computer Supported Cooperative Work (ECSCW 2015)*, 2015
- Kunzmann, C., Schmidt, A.P., and Wolf, C. (2015) Facilitating maturing of socio-technical patterns through social learning approaches In: *Proceedings of I-KNOW 2015*, ACM, 2015
- Prilla, M. and Wolf, C. (2015) Coflection - Combining Mutual Support and Facilitation in Technology Enhanced Learning In: Conole, Gráinne and Klobucar, Tomaz and Rensing, Christoph and Konert, Johannes and Lavoué, Élise (eds.): *EC-TEL, Lecture Notes in Computer Science* vol. 9307, Springer, 2015, pp. 282-296
- Wolf, C. (2015) The Trouble with Systemic Solution-oriented Self-E-Coaching. Emotions as Key Factors in Changing Patterns. In: Holocher-Ertl, Teresa and Kunzmann, Christine and Müller, Lars and Rivera Pelayo, Verónica and Schmidt, Andreas P. and Wolf, Carmen (eds.): *Motivational and Affective Aspects in Technology Enhanced Learning (MATEL). Workshop-Proceedings of MATEL Workshop 2013-2014*. 26. nbn-resolving.org/urn:nbn:de:swb:90-480494, KIT Scientific Working Paper vol. 26, KIT, 2015, pp. 37-47

Also, publications can be reached at: <https://employid.eu/scientific%20publications>

9.6.3 *EmployID attendance at key conferences, events and workshops for dissemination purposes*

Some selected examples include: Social Knowledge Management at I-KNOW 2015; ANSE Summer University, Croatia 17 – 21 August, 2015; EC-TEL Conference in Toledo, Spain (15.-18.Sept 2015); International Association of Educational & Vocational Guidance, 18-21 September, 2015, Tsukuba, Japan; and the sixth edition of the MATEL Workshop series, Toledo, Spain (15. September 2015). Visit: <https://employid.eu>

9.7 **A dissemination agenda: moving forward**

Finally, we set out an agenda for moving forward, building momentum and extending the reach to achieve high-impact PES identity transformation. We intend to adopt an informed, strategic process focusing on the needs of the target audiences and evaluating the receipt and use of the information being shared. This will be supported by the EmployID evaluation framework, discussed earlier in Chapter 3. Barriers to dissemination will continue to exist as they are related to organisational and individual ways of thinking and interacting that are unlikely to change quickly. Anyhow the trust bonds we have been creating in the intense interaction on these past 2 years with the PES organizations and other stakeholders will continue to be nurtured and exploited via the multiple dissemination activities to maximize the reach and potentiate the impact of the project.

9.7.1 Future planned activities

For the next two years of the project we need to move towards expanding the bonds with the stakeholders in order to implement, evaluate and expand the use of the project results, for that multiple actions will be deployed:

- EmployID outcomes will be feeded into European PARES¹⁹ (Partnerships between Employment Services) initiative, though this is at an early stage. We intend to find synergy and promote dialogue between a range of public and private agents in order to explore actions which can support PES.
- We'll be working more closely with EURES, the European Job Mobility Portal²⁰
- Quantitative data on the status of implementation of the European Youth Guarantee²¹ by PES is currently being collected through benchmarking indicators. We intend to focus on this and other relevant thematic findings and to explore ways of integrating lessons learned from EmployID.
- We have a strong desire to connect with the European Confederation of Private PES²². As yet, we have no immediate working links; however, this remains a priority for 2016/2017.
- We intend to identify emerging evidence-base literature and potential new Associate Partners' working links through Horizon 2020 contacts.
- Continue to produce publication that will help us engage with policymakers, managers and practitioners (eg. case studies drawn from the experiences with our EmployID PES partners)
- We'll produce a series of webinars drawing on best practice examples, also to showcase and support EmployID tools and offering
- We plan to organize another European PES event as well as engage in various relevant events where key stakeholders will be present.

9.8 PES Portal supporting interaction with PES

The PES Portal emerged to satisfy the need of a central and simple hub where PES organizations could find their way to make use of the various offerings that are now emerging from the EmployID project. Also, as even though in this first 2 years of the project, the web (EmployID.eu) worked as a great channel for disseminating the activities of the project, a simpler and more transparent access to results was needed. The PES Portal provided such access, enabling the direct interaction with the existing PES and providing the clarity for new potential PES to link to the value offered by the

¹⁹ <http://ec.europa.eu/social/main.jsp?catId=991>

²⁰ <https://ec.europa.eu/eures/>

²¹ <http://ec.europa.eu/social/main.jsp?catId=1079>

²² <http://www.euociett.eu/>

project. The PES portal will be the place to find straight and clear answers about the technology, results and how they can make use and exploit EmployID offerings.

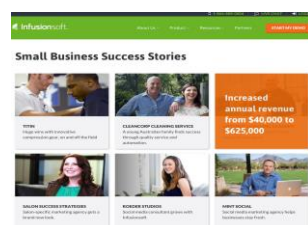
We launched it a few weeks previous the publication of this deliverable, thus its on it early stage and we expect it to evolve and grow. Now the more value can be found on the “Stories” section, where we’ll support PES on relating with the real context where they can use the results of the project.

The 1st live prototyping session (2nd Dec) helped to identify the right structure of the portal and its content pages. In order to be more productive, it was take into account different websites on the Internet showing stories (success cases, business cases, etc.):



<https://www.facebook.com/business/success>

1. Filters are not required. The stories list will not have too much items.
2. The story banner helps to engage the user with the image and the text



<http://www.infusionsoft.com/success-stories>

3. The minimalistic design helps the user to concentrate on the stories.
4. When the mouse is over a banner it appears a description really helpful to engage the user.



<https://business.linkedin.com/marketing-solutions/case-studies-products>

5. Filters are not required. The stories list will not have too much items.

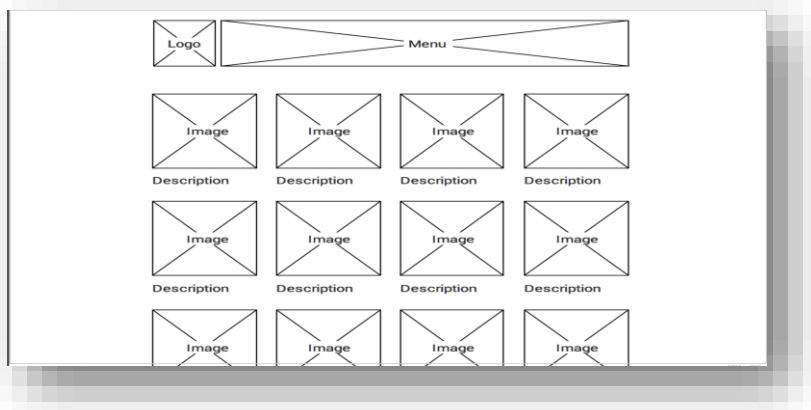


<https://www.desk.com/customers>

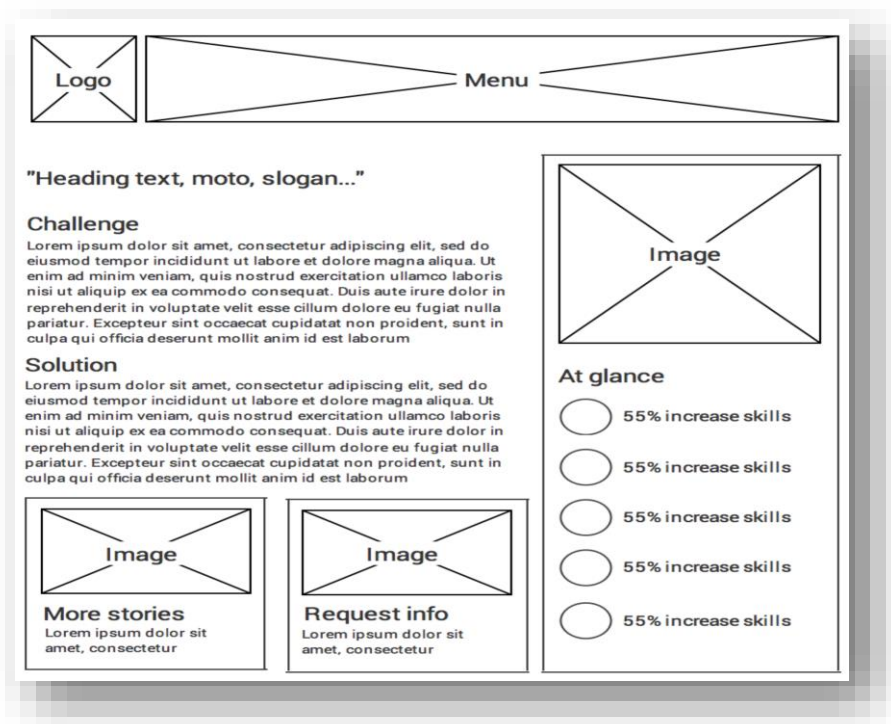
6. The structure of the story is the best one. The sections used to explain the story are really intuitive and helps to engage the user

After analysing the previous sites, the prototype was defined mixing the best features of each one:

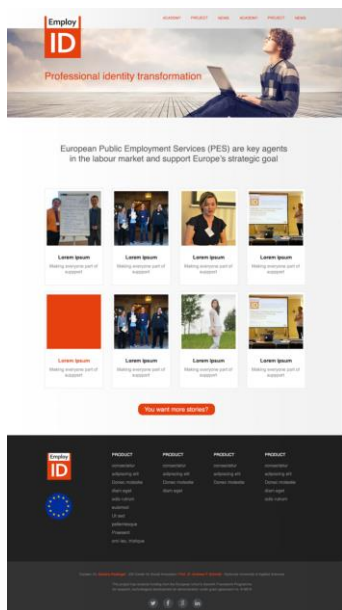
- Home page.



Story page.



Based on the above home and story wireframe pages, these proposals have been designed:

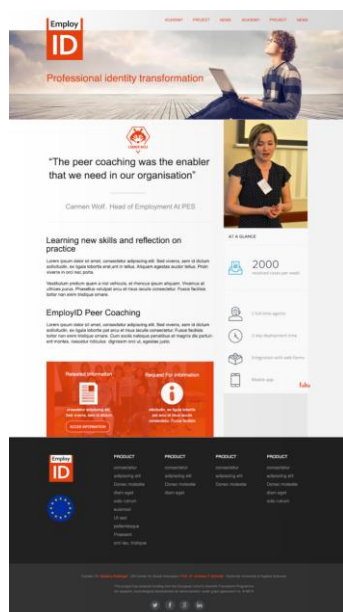


Home option 1



Home option 2

^01



Story option 1



Story option 2



Story option 3

The PES Portal Scrum team and Peer Coaching team, vote and selected Home option 1 and Story option 2. The new PES Portal implementation will be presented in CET Valencia 2016.

9.9 Growth, exploitation and sustainability

Following the first year exploration of the routes, all partners have discussed the possible sustainability routes for the various technologies expected from the project. For that, we started defining the initial sustainability aspects using the Business Model Canvas (BMC) approach²³ to understand the various aspect to take into account when defining the business models to use for growth, exploitation and sustainability for the various results of the project.

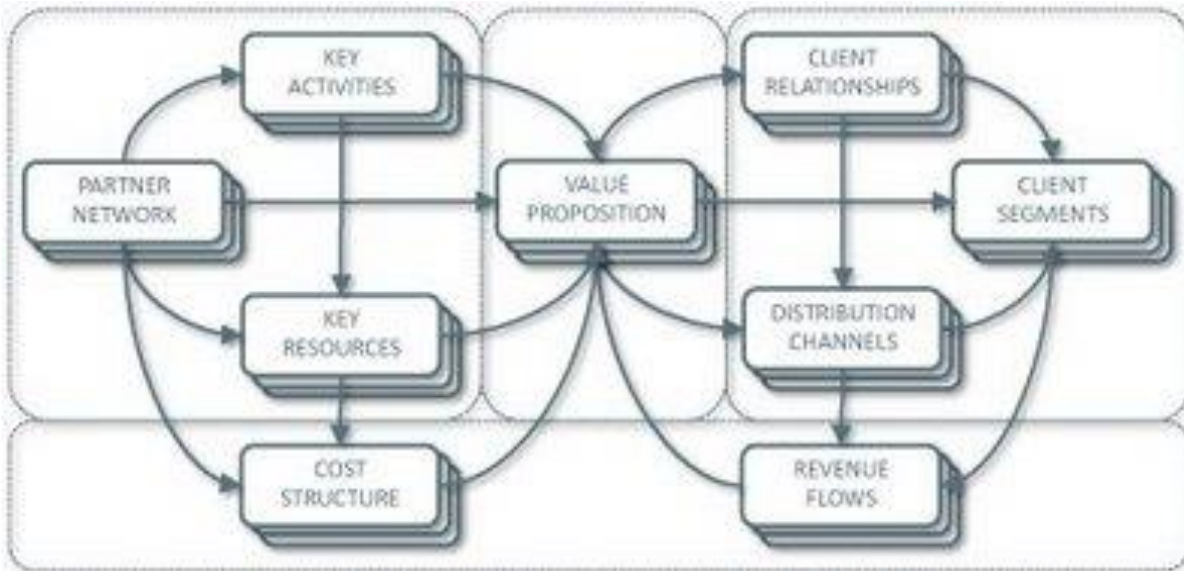


Figure X: the 1st business model canvas structure by Alexander Osterwalder. Source: http://nonlinearthinking.typepad.com/nonlinear_thinking/2008/07/the-business-model-canvas.html

In several conversation with our PES partners and PES stakeholders, became clear that a fix business model would not be possible for each of the specific offerings of EmployID, but a adapted business model, driven by the PES leading the implementation of the EmployID result, would provide a higher probability for a successful implementation on the PES organizations, as they have different requirements and limitations that directly impact the update of practices and technologies. In such scenario, we wanted to produce an overview for each of the results, so PES could have a clear view of the activities, resources, value expected/benefits, relationships needed, etc that would be necessary for a successful implementation. In that scenario, the Business Model Canvas provides such an overview without imposing specific routes, but allows for various business models to be constructed using the same BMC.

We have started with two Business Model Canvas (still in work):

- Generic EmployID BMC: We believe it can be useful for:
 - As a presentation card for the benefits (and required aspects to achieve them) of the EmployID project. It should enable the interactions with new PES, as it illustrates in simple terms what is the value we propose and the resources and aspects necessary to achieve such value.

²³ Alexander Osterwalder; The Business Model Canvas. <Http://nonlinearthinking.typepad.com>, July 05, 2008.

- Used as a filtering tool for defining the specific business models to implement on the exploitation of the results.

EmployID Generic Business Model Canvas				
Objective for this BMC: To communicate the value and different aspects of the EmployID project to PES				
Key Partners	Key Activities	Value Propositions	Customer Relationships	Customer Segments
PES	Research (in various areas)	- Better understanding of and support for professional identity transformation	PES decision makers	PES change agents
Associate Partners Network	Tech (app) Development (in various areas)	- Make it easier for change agents to promote the cause of supporting pr.id.t.	PES change agents	PES employer engagement staff
Research Organisations	Co-design with PES (of tools and methods)	- both research advances & practical relevance		PES coaching staff
EC				PES learning and development staff
Human Resource specialist?				PES IT staff
Implementation and support companies				PES management
	Key Resources	- (technology) support for prr.id.t	Channels	
	Technical Capabilities (partners here...)	- generalizable/transferable & open	Employid Portal	
	PES involvement (PES partners here)	- multiplying the existing capabilities (empowering), not building own reputation	using PES decision-making channels	
	EC fund support for the EmployID	- implementation of reflection, coaching, facilitation	Dissemination (leaflet, ...)	
	Cross-disciplinary understanding of Prof. ID	- gather evidence (with key focus on relevance)	Events like London	
	Professional Identity Transformation Expert		Stakeholder engagement actions	
Efforts		Impact		

Figure 81: Generic Business Model Canvas

- The Peer Coaching Tool BMC is the second business model canvas we started to co-create as is the Peer Coaching Tool is expected to soon be ready for wider exploitation actions.

EmployID Generic Business Model Canvas				
Objective for this BMC: 100 PES practitioners from different PES organizations using the Peer Coaching Package including methodology, training and tool in order to achieve our projects goals and do research on effectiveness of peer coaching in public organizations and improve their practices				
Key Partners	Key Activities	Value Propositions	Customer Relationships	Customer Segments
trainers of training center	Develop Social Online Learning Platform/Courses	developing coping strategies	coaching networks (e.g. ANSE, ICF)	PES practitioners/ manager
IT department	Concept for Tool Facilitation for Peer Coaching	cost-effective alternative to business coaching offers	PES-2-PES-dialogue	knowledge workers
Developer	Piloting (wireframes & prototypes)	time-efficient alternative to usual coaching (doing it online)	Associated Partner network	"champions"
training center	Technology Facilitation	creating opportunities for reflection	Contact to training-center	
VIP: Christine, Pablo and Carmen!!!! :-)	Scientific Evaluation of training, implementation and effects	provides a secure space for exchange		
		provides a route towards "coflection" to share sessions in anonymous and abstract way to learn from other parts of the orga		
	Key Resources		Channels	
	development resources		dissemination	
	trainers		HR/IT fairs (e.g. LEARNTEC)	
	TIME, love & happiness		EmployID Academy	
	positive mood		EmployID Portal	
	Facilitation Skill Catalogue (FSC)		freelancer Coaches & Trainer	
			Training-Center (in PES)	
Efforts		Impact		
Peer Coaching Training Cost (Online Course, Blended, Workshop, 2 days training)		Multiplier Offering (methodology, tool and training in one package)		
Tool (Costs for Software & Costs for Development & Implementation & Maintenance & Hosting)		package 1: one-time		
Tool-usage Training (Online Course, Blended, Workshop, 2 days training)		package 2: one-time & subscription for facilitation & maintenance on premise, inhouse		
Method (if printed material offered)		cloud (hosting & subscription)		
Key resources most expensive: trainers, IT-consultants (implementation) & employees				
Key activities most expensive: training & sessions				

Both BMCs above are in the early stage, but have proved already to be a useful tool for showing the value of the project and tools to the PES.

Meanwhile we're going to prioritize the hypotheses about the most important pains or unsatisfied needs of the PES in order to design and develop the different prototypes and solutions. Then we will move forward and evolve the Business Model Canvas and the products related with the insights obtained from the interaction from the final users.

The interaction created with the use of the BMCs and PES will also enable us to understand better the pain points, as PES will be confronted with all aspects related to the realization of the value propositions from each of the results. This will feed into the co-design process of prototypes and tools, which we believe will help us to produce better solutions.

We have started also to co-design various others BMC of expected results and offering from the project (PES portal, MOOC, LMI, etc.). We expect to advance in all of them towards the creation of specific sustainability and exploitation models that could be tested towards the fourth year of the project. We expect to present the consolidated version of all BMC on the third year of the project.

10 Conclusions and Outlook

10.1 Key Achievements

While EmployID's first year has been characterized by building a shared understanding and exploring the situation, the challenges and opportunities in order to spot the promising approaches, year 2 has concentrated on adapting, refining, and contextualizing the approaches, developing tools and methods to implement interventions into practice and learn from them. Again, the agile project setup has allowed the project to respond to encountered barriers and emerging opportunities.

Some of the key achievements are:

- Evaluation of the first social learning programme at DWP with insights into the impact of the intervention
- Design and launch of a second social learning programme at DWP
- Development of tool support for the peer coaching process with a roadmap towards deployment
- Getting ready for deployment in practice of the Reflective Community platform at ZRSZ, which is about to be launched at the time of writing
- Bringing onboard the Croatian PES partner, analyzing the local needs, and preparing for deployment of Reflective Community and the peer coaching solution
- Evolution of the Coaching & Facilitation Competence Framework into the Facilitation Skills Catalogue
- Development of innovative mixed-method concepts for linking evaluation-in-action, learning analytics and impact assessment that have been prepared to be applied, e.g., through content coding
- Major dissemination event at London in October 2019 with over 60 key participants from European PES and related organization with high level of interest in the various solution approaches of the project
- Installment of a sustainability-oriented project roadmap with the help of the instrument of a business model canvas and the design and development of an exploitation-oriented web presentation (PES Portal).

Also on the project management level, the project has taken major and innovative steps:

- Presenting project progress not in terms of work packages, but as a coherent whole as an attempt to foster the integrated way of working by removing structural barriers
- Developing the pattern-oriented approach further by analyzing it with the help of the knowledge maturing model, and by spreading the idea further and joining forces with other European projects (e.g., LAYERS).

In the following section, we want to give an overview of the current development snapshot of these pattern candidates.

10.2 Pattern candidates as an outline of the route forward

It is important to note that the novel approach of EmployID is not to consider patterns as the outcome of the research process, merely as a result of reflecting on and generalizing already acquired outcomes, but as **an emerging artefact inside the design process**. In contrast to pattern collections, they are emergent and have the characteristics of the early phases of the knowledge maturing model. This means especially in early phases (I+II) that the artefacts primarily serve the participants of the knowledge maturing process as a way of developing and negotiating their shared understanding. Only when it moves to phase III of the model, knowledge has been development to a degree where it becomes more easily accessible to a wider audience. Following the knowledge maturing model, it is to be expected that pattern development paths will split up, merge, get abandoned, and new ones will emerge. Pattern orientation must not imply restraint, but must form part of the overall agile approach that is responsive to change.

However, the work in year 2 has already yielded quite a number of patterns, partly well elaborated already, which indicate where contributions to the state of the art are expected (as of now) and which priorities it implies (particularly for evaluation activities) when we want to refine our understanding of problems encountered, solutions envisioned, and contextual conditional, and accumulate supportive evidence for problem-solution pairs within the given constraints.

Currently, EmployID views its contributions on three levels:

- **Approach.** EmployID gathers evidence, ideally in multiple contexts, that problems encountered in PES are structurally similar and can be tackled with similar solutions. Such approaches include social learning programmes, communities of practice, or peer coaching.
- **Method.** EmployID develops existing methods (partly well-established, partly recently developed in previous research activities) further to respond to specific contextual conditions. Patterns will accumulate evidence that these modifications or extensions are solutions to the context (and presumably to similar contexts). This includes pedagogy for online social learning programmes, peer coaching under time pressure, and collection, among others.
- **Tool.** EmployID designs supportive tools, partly as extensions to existing tools (“plugins”), partly as new tools that implements specific design ideas. Patterns on this level capture the design knowledge and gather evidence about the adequacy of the design and how the resulting designs get appropriated by the users in a specific context.

It is obvious that these levels are not strictly separate, but interrelate. Therefore already at this stage, pattern candidates are already explicitly linked to others. Other interdependencies will emerge along the refinement and further development of the knowledge that is captured in the pattern candidates.



Figure 82: Overview of pattern candidates

The complete list of patterns is included in the appendix together with a brief characterization of (i) evidence already gathered, and (ii) evaluation goals and envisioned methods. The following paragraphs give a brief overview.

10.2.1 Approach-level pattern candidates

On this level, there are two overarching them: (i) how to facilitate collaborative continued professional development from an individual perspective, and (ii) how to facilitate organizational knowledge development. This encompasses the applicability of existing approaches, such as communities of practice for improving horizontal and vertical communication, peer coaching for addressing problems in secure spaces, and social learning programmes for scaling up social learning. On this level, evaluation will gather rich case studies with respective impact assessment.

10.2.2 Method-level pattern candidates

On the method level, it is the facilitation of usage of communities of practice, the reflection inside of communities of practice, the use of prompting, and the facilitation of networking. For peer coaching, it covers how to facilitate practicing a solution-focused approach, peer coaching under time pressure, sharing solutions of individual, and the combination of peer coaching with reflection. But it also refers to how to facilitate PES practitioners in the usage of Labour Market Information. On this level, evaluation will concentrate on showing the feasibility of the method under the contextual constraints and the effectiveness to the problem addressed.

10.2.3 Tool-level pattern candidates

On the tool level, key design ideas include the reflection as a plugin approach (instead of dedicated reflection apps), and the design of the peer coaching tool with dynamic, static and instructive parts. Here, evaluation will concentrate on the effectiveness of the design concepts on the impact of using the tool in the wider context.

10.3 Year 3

As outlined in the previous section, year 3 will concentrate on gaining sound evidence for pattern candidates. This implies continued effort in deploying solutions into practice, which only works through a complex process of understanding motivational and organizational aspects, winning management commitment, and facilitating users in the process.

In parallel to deepening our understanding what the unique contributions of EmployID are and what benefit they deliver to practice, we will move further along the route of developing sustainability perspectives for the developed solutions. How can we best prepare for a significant and sustainable impact on (i) PES practice, (ii) on technology enhanced learning research, and (iii) on product and service offerings in the field of learning technologies.

Bibliography

- Adomavicius, G. and Tuzhilin, A. (2005) Toward the Next Generation of Recommender Systems: A Survey of the State-of-the-Art and Possible Extensions. *IEEE Transactions on Knowledge and Data Engineering*, 17, 734-749. <http://dx.doi.org/10.1109/TKDE.2005.99>
- Ajdukovic, M., Cajvert, L., Judy, M., Knopf, W., Kuhn, H., Madai, K. & Voogd, M. (2014). *ECVision. A European Glossary of Supervision and Coaching*. URL: <http://www.anse.eu/ecvision.html> (14.08.2014)
- Akkermans, H. A.; Oorschot, K. E. (2002): Developing a Balanced Scorecard with System Dynamics. <http://www.systemdynamics.org/conferences/2002/proceed/papers/Akkerma1.pdf>.
- Alexander, C., Ishikawa, S., & Silverstein, M. (1977). *A pattern language: towns, buildings, construction*. New York, NY, USA: Oxford University Press.
- Argyris, C./ Schön, D. (1978): *Organizational Learning: A theory of action perspective*. Reading.
- Bahreini K, Nadolski & Westera W. (2014) Towards multimodal emotion recognition in e-learning environments, *Interactive Learning environments*, Routledge, <http://www.tandfonline.com/doi/abs/10.1080/10494820.2014.908927>
- Bandura, A. (1977). *Social Learning Theory*. Englewood Cliffs, NJ: Prentice Hall.
- Bannert, M. (2009). Promoting Self-Regulated Learning Through Prompts. *Zeitschrift Für Pädagogische Psychologie*, 23(2), 139-145. <http://doi.org/10.1024/1010-0652.23.2.139>
- Behrend, T. S., Sharek, D. J., Meade, A. W., & Wiebe, E. N. (2011). The viability of crowdsourcing for survey research. *Behavior Research Methods*, 43(3), 800-813. <http://doi.org/10.3758/s13428-011-0081-0>
- Bimrose, J., Brown, A., Holocher-Ertl, T., Kieslinger, B., Kunzmann, C., Prilla, M., & Schmidt, A. P. (2014). Introducing learning innovation in public employment services. What role can facilitation play? Proceedings of the Seventh International Conference on E-Learnin in the Workplace (ICELW), June 11-13, 2014. New York City, USA.
- Bimrose, J., Brown, A., Holocher-Ertl, T., Kieslinger, B., Kunzmann, C., Prilla, M., & Schmidt, A. P. (2014). The Role of Facilitation in Technology-Enhanced Learning for Public Employment Services. *International Journal of Advanced Corporate Learning (ijAC)*, 7(3), 56-65.
- Bimrose, J., Hughes, D., & Barnes, S-A (2011) *Integrating new technologies into careers practice: Extending the knowledge base, A report prepared for the UK Commission for Employment and Skills*.
- Blunk, O., & Prilla, M. (2015). Prompting users to facilitate support needs in collaborative reflection. In M. Kravcik, A. Mikroyannidis, V. Pammer, M. Prilla, & T. D. Ullmann (Eds.), *Proceedings of the 5th International Workshop on Awareness and Reflection in Technology Enhanced Learning (ARTeL 2015) in conjunction with the ECTEL 2015 conference (Vol. 1465, pp. 43-57)*. CEUR-WS. Retrieved from <http://ceur-ws.org/Vol-1465/>
- Boud, D. (1985). *Reflection: Turning experience into learning*. London: Kogan Page.
- Boyatzis, R. E. (2006). An overview of intentional change from a complexity perspective. *Journal of Management Development*, 25(7), 607-623.

- Brignall, Stan (2002): The unbalanced scorecard: a social and environmental critique. In: Performance measurement and management: research and action, A. Neely, A. Walters & R. Austin (eds.). Cranfield: Cranfield School of Management.
- Brinkley, I. (2008). *The Knowledge Economy: How Knowledge is Reshaping the Economic Life of Nations*. London: The Work Foundation.
- Brown, A. (1997). A dynamic model of occupational identity formation. In A. Brown (Ed.), *Promoting Vocational Education and Training: European Perspectives* (pp. 59–67.). Tampere: University of Tampere.
- Brown, A. (2015). Mid-career reframing: the learning and development processes through which individuals seek to effect major career changes. *British Journal of Guidance & Counselling*, 43, 3, pp. 278–291.
- Brown, A. & Bimrose, J. (2014). Model of Learning for Career and Labour Market Transitions, *Research in Comparative and International Education*, Vol. 9, No. 3, pp. 270–286.
- Brown, A. & Bimrose, J. (2015). Identity Development. In Hartung, P. J.; Savickas, M. L.; and Walsh, W. B. (Eds), (2015). *APA handbook of career intervention, Volume 2: Applications*. APA handbooks in psychology. (pp. 241–254). Washington, DC, US: American Psychological Association.
- Brusilovsky, P. and Peylo, C. (2003) Adaptive and intelligent Web-based educational systems. In P. Brusilovsky and C. Peylo (eds.), *International Journal of Artificial Intelligence in Education* 13 (2-4), Special Issue on Adaptive and Intelligent Web-based Educational Systems, 159–172.
- Buckingham Shum, S., & Ferguson, R. (2012). Social Learning Analytics. *Educational Technology & Society*, 15 (3), 3–26
- Bukh, Per Nikolaj; Malmi, Teemu (2005): Re-examining the cause-and-effect principle of the Balanced Scorecard, S. 87–113. Online verfügbar unter http://www.costingforum.com/files/pdf_artikler/BukhMalmi.pdf, zuletzt geprüft am 04.03.2015.
- Conole G. (2014) The implications of open practice, presentation, Slideshare, <http://www.slideshare.net/GrainneConole/conole-hea-seminar>
- Cressey, P., Boud, D., & Docherty, P. (2006a). Productive Reflection at Work. In D. Boud, P. Cressey, & P. Docherty (Eds.), *Productive reflection at work: Learning for changing organizations* (pp. 11–26). New York: Routledge.
- Cressey, P., Boud, D., & Docherty, P. (2006b). The emergence of productive reflection. In D. Boud, P. Cressey, & P. Docherty (Eds.), *Productive reflection at work: Learning for changing organizations* (pp. 11–26). New York: Routledge.
- Davidson, D. (1963). Actions, Reasons, and Causes. *The Journal of Philosophy*, 60(23), 685–700. <http://doi.org/10.2307/2023177>
- Davis, E. A. (2003). Prompting Middle School Science Students for Productive Reflection: Generic and Directed Prompts. *Journal of the Learning Sciences*, 12(1), 91–142. http://doi.org/10.1207/S15327809JLS1201_4

- Davis, E. A., & Linn, M. C. (2000). Scaffolding students' knowledge integration: prompts for reflection in KIE. *International Journal of Science Education*, 22(8), 819–837. <http://doi.org/10.1080/095006900412293>
- Dearing, J. W. & Kreuter, M. W. (2010). Designing for diffusion: How can we increase uptake of cancer communication innovations? *Patient Education and Counseling*, 81(S1), S100–S110.
- de Laat M. & Schreurs (2013) Visualizing Informal Professional Development Networks: Building a Case for Learning Analytics in the Workplace, In *American Behavioral Scientist* <http://abs.sagepub.com/content/early/2013/03/11/0002764213479364>
- Deutscher Bundesverband Coaching e.V. (German Federal Association for Executive Coaching) (Publisher). Guidelines and Recommendations on the Development of Coaching as a Profession. A Compendium Including the Professional Standards of the DBVC. Osnabrück: Steinbacher Druck. URL: http://www.dbvc.de/fileadmin/user_upload/dokumente/Coaching-Kompndium/DBVC-Kompndium_englisch.pdf (17.04.2014)
- Dewey, J. (1933). *How we think: a restatement of the relation of reflective thinking in the educative process*. Chicago: Henry Regnery.
- Dillenbourg, P. (2002). Over-scripting CSCL: The risks of blending collaborative learning with instructional design. In P. Kirschner (Ed.), *Three worlds of CSCL: Can we support CSCL* (pp. 61–91).
- Dillenbourg, P., Järvelä, S., & Fischer, F. (2009). The evolution of research on computer-supported collaborative learning. In *Technology-enhanced learning* (pp. 3–19). Springer.
- Duval E. (2012) Learning Analytics and Educational Data Mining, Erik Duval's Weblog, 30 January 2012, <https://erikduval.wordpress.com/2012/01/30/learning-analytics-and-educational-data-mining/>
- Eraut, M. (2000). Non-formal learning and tacit knowledge in professional work. *British Journal of Educational Psychology*, 70(1), 113–136.
- Eraut, M. (2004). Informal learning in the workplace. *Studies in Continuing Education*, 26(2), 247–273.
- Ferguson (2015) Learning Design and Learning Analytics, Presentation, Slideshare <http://www.slideshare.net/R3beccaF/learning-design-and-learning-analytics-50180031>
- Ferguson, R. (2012) Learning analytics: drivers, developments and challenges. In: *International Journal of Technology Enhanced Learning*, 4(5/6), 2012, pp. 304–317.
- Fischer, G., McCall, R., Ostwald, J., Reeves, B., & Shipman, F. (1994). Seeding, evolutionary growth and reseeding: supporting the incremental development of design environments. In *Proceedings of the SIGCHI conference on Human factors in computing systems: celebrating interdependence* (pp. 292–298).
- Fivush, R., Gray, J. T., & Fromhoff, F. A. (1987). Two-year-old talk about the past. *Cognitive Development*, 2(4), 393–409. [http://doi.org/10.1016/S0885-2014\(87\)80015-1](http://doi.org/10.1016/S0885-2014(87)80015-1)
- Føllesdal, D., Walløe, L. and Elster, J., 1997. *Argumentasjonsteori, Språk Og Vitenskapsfilosofi*, Forrester, Jay W. (1961): *Industrial Dynamics*. Cambridge: The MIT Press.

- Freed, S. A. (2003). Metaphors and Reflective Dialogue Online. *New Horizons in Adult Education and Human Resource Development*, 17(3), 4-19. <http://doi.org/10.1002/nha3.10169>
- Gadiraju, U., Kawase, R., Dietze, S., & Demartini, G. (2015). Understanding Malicious Behavior in Crowdsourcing Platforms: The Case of Online Surveys. In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems* (pp. 1631-1640). New York, NY, USA: ACM. <http://doi.org/10.1145/2702123.2702443>
- Gašević, D., Dawson, S., Siemens, G. (2015) Let's not forget: Learning Analytics are about learning. *TechTrends* <http://bio.cs.washington.edu/supplements/kayee/pca.pdf>
- Goleman, (1995); *Emotional intelligence*. Bantam Books, New York
- Granger, C. W. J. (1969). "Investigating Causal Relations by Econometric Models and Cross-spectral Methods". *Econometrica* 37 (3): 424-438.
- Greenhalgh, T., Robert, G., Bate, P., Kyriakidou, O., Macfarlane, F., & Peacock, R. (2004). *How to spread good ideas: A systematic review of the literature on diffusion, dissemination and sustainability of innovations in health service delivery and organization*. South Hampton, England: National Coordinating Centre for NHS Service Delivery and Organization, 1-425.
- Holocher-Ertl, T., Kunzmann, C., Müller, L., Pelayo, V. R., & Schmidt, A. (2013). Motivational & Affective Aspects in Technology Enhanced Learning: Topics, Results, and Research Route. In *Scaling up Learning for Sustained Impact - 8th European Conference, on Technology Enhanced Learning, EC-TEL 2013, Paphos, Cyprus, September 17-21, 2013* (pp. 460-465). Berlin: Springer. http://doi.org/10.1007/978-3-642-40814-4_39
- Holocher-Ertl, T., Kunzmann, C., Müller, L., Rivera Pelayo, V., Schmidt, A. P., & Wolf, C. (2015). Motivational and Affective Aspects in Technology Enhanced Learning (MATEL). *Workshop-Proceedings of MATEL Workshop 2013-2014* (Bd. 26). Karlsruhe: KIT.
- Hoque, Zahirul; Barnabè, Federico; Busco, Cristiano (2012): The causal relationships between performance drivers and outcomes. Reinforcing balanced scorecards' implementation through system dynamics models. In: *J Acc & Organizational Change* 8 (4), S. 528-538. DOI: 10.1108/18325911211273518.
- Horton, J. J., Rand, D. G., & Zeckhauser, R. J. (2011). The online laboratory: conducting experiments in a real labor market. *Experimental Economics*, 14(3), 399-425. <http://doi.org/10.1007/s10683-011-9273-9>
- Hoyrup, S. (2004). Reflection as a core process in organisational learning. *Journal of Workplace Learning*, 16(8), 442-454.
- Hügen, Torben (2008): *Balanced Scorecard, Ursache- und Wirkungsbeziehungen*.
- Hutchinson J. & Huberman, M. (1994). Knowledge dissemination and use in science and mathematics education: A literature review. *Journal of Science Education and Technology* 3(1), 27-47.
- Hyland, N., Grant, J. M., Craig, A. C., Hudon, M., & Nethery, C. (2012). Exploring Facilitation Stages and Facilitator Actions in an Online/Blended Community of Practice of Elementary Teachers: Reflections on Practice (ROP) Anne Rodrigue Elementary Teachers Federation of Ontario

- Hyland, N., Grant, J. M., Craig, A. C., Hudon, M., & Nethery, C. (2012). Exploring Facilitation Stages and Facilitator Actions in an Online/Blended Community of Practice of Elementary Teachers: Reflections on Practice (ROP) Anne Rodrigue Elementary Teachers Federation of Ontario. Copyright© 2012 Shirley Van Nuland and Jim Greenlaw, 71.
- Isaacs, E., Konrad, A., Walendowski, A., Lennig, T., Hollis, V., & Whittaker, S. (2013). Echoes from the Past: How Technology Mediated Reflection Improves Well-being. In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (pp. 1071–1080). New York, NY, USA: ACM. <http://doi.org/10.1145/2470654.2466137>
- Jackman, Richard, Christopher Pissarides and Savvas Savouri. 1990. *Unemployment Policies*. Economic Policy, October 1990: 449-490.
- Janeš, Aleksander (2014): Empirical verification of the balanced scorecard. In: Industr Mngmnt & Data Systems 114 (2), S. 203–219. DOI: 10.1108/IMDS-04-2013-0195.
- Janoski, Thomas. 1994. "Direct State Intervention in the Labor Market: The Explanation of Active Labor Market Policy from 1950 to 1988 in Social Democratic, Conservative and Liberal Regimes." In Thomas Janoski and Alexander M. Hicks, *The Comparative Political Economy of the Welfare State*. New York: Cambridge University Press.
- Johnson, L. Adams Becker, S., Estrada, V., Freeman, A. (2014). NMC Horizon Report: 2014 Higher Education Edition. Austin, Texas: The New Media Consortium
- Kant, Immanuel (1855): Critique of Pure Reason.
- Kaschig, A., Maier, R., & Sandow, A. (2011). Effects of Interventions into Improving Knowledge Maturing. In I-KNOW '11. Proceedings of the 11th International Conference on Knowledge Management and Knowledge Technologies. New York: ACM Digital Library.
- Kaschig, A., Maier, R., Sandow, A., Lazoi, M., Schmidt, A., Barnes, S.-A., ... Mazarakis, A. (2013). Organizational Learning from the Perspective of Knowledge Maturing Activities. IEEE Transactions on Learning Technologies, 6(2), 158–176. <http://doi.org/10.1109/TLT.2013.14>
- Kittur, A., Chi, E. H., & Suh, B. (2008). Crowdsourcing User Studies with Mechanical Turk. In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (pp. 453–456). New York, NY, USA: ACM. <http://doi.org/10.1145/1357054.1357127>
- Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Prentice-Hall Englewood Cliffs, New Jersey.
- Krogstie, B. R., Prilla, M., & Pammer, V. (2013). Understanding and Supporting Reflective Learning Processes in the Workplace: The CSRL Model. In D. Hernández-Leo, T. Ley, R. Klamka, & A. Harrer (Eds.), *Scaling up Learning for Sustained Impact* (pp. 151–164). Springer Berlin Heidelberg. Retrieved from http://link.springer.com/chapter/10.1007/978-3-642-40814-4_13
- Kunzmann, C., Schmidt, A., Braun, V., Czech, D., Fletschinger, B., Kohler, S., & Lüber, V. (2009). Integrating Motivational Aspects into the Design of Informal Learning Support in Organizations. In 9th International Conference on Knowledge Management and Knowledge Technologies, September 2-4, 2009, Graz, Austria (pp. 259–267). Berlin Heidelberg, Germany: Springer.
- Kunzmann, C., Schmidt, A., Wolf, C. (2015). Facilitating maturing of socio-technical patterns through social learning approaches. Proceedings of I-KNOW 2015, ACM

- Kutilek, L. & Earnest, G. (2001). Supporting Professional Growth Through Mentoring and Coaching. *Journal of Extension*. 39, 4.
- Lai, G., & Calandra, B. (2007). Using Online Scaffolds to Enhance Preservice Teachers' Reflective Journal Writing: A Qualitative Analysis. *International Journal of Technology in Teaching and Learning*, 3(3), 66–81.
- Latane, B. (1996) Dynamic Social Impact: The Creation of Culture by Communication. *Journal of Communication* 4: 13–25.
- Leon Urrutia, Manuel, White, Stephen, Dickens, Kate and White, Susan (2015) Mentoring at scale: MOOC mentor interventions towards a connected learning community. In, *EMOOCs 2015 European MOOC Stakeholders Summit, Mons, BE, 18 - 20 May 2015*. 4pp. Download here: <http://eprints.soton.ac.uk/373982/>
- Ley T. Lindstaedt S., Klamma R. and Wild S. (2015) Learning Analytics for Workplace and Professional Learning, <http://learning-layers.eu/laforwork/>
- Ley, T., Cook, J., Dennerlein, S., Kravcik, M., Kunzmann, C., Laanpere, M., ... Schmidt, A. (2013). Scaling Informal Learning: An Integrative Systems View on Scaffolding at the Workplace. In *Scaling up Learning for Sustained Impact - 8th European Conference, on Technology Enhanced Learning, EC-TEL 2013, Paphos, Cyprus, September 17-21, 2013*. (pp. 484–489). Berlin: Springer. http://doi.org/10.1007/978-3-642-40814-4_43
- Li, L. C., Grimshaw, J. M., Nielsen, C., Judd, M., Coyte, P. C., & Graham, I. D. (2009). Evolution of Wenger's concept of community of practice. *Implementation Science*, 4(1), 11. <http://doi.org/10.1186/1748-5908-4-11>
- MacCrimmon, K. R., & Wagner, C. (1994). Stimulating Ideas through Creative Software. *Management Science*, 40(11), 1514–1532.
- MacNeill, S. (2015) The sound of learning analytics, presentation, Slideshare, <http://www.slideshare.net/sheilamac/the-sound-of-learning-analytics>
- Maiden, N., Gizikis, A., & Robertson, S. (2004). Provoking creativity: imagine what your requirements could be like. *IEEE Software*, 21(5), 68–75. <http://doi.org/10.1109/MS.2004.1331305>
- Maier, R. Schmidt, A. Characterizing Knowledge Maturing: A Conceptual Process Model for Integrating E-Learning and Knowledge Management In: Gronau, Norbert (eds.): 4th Conference Professional Knowledge Management - Experiences and Visions (WM '07), Potsdam, GITO, 2007, pp. 325-334. <http://knowledge-maturing.com/concept/knowledge-maturing-phase-model>
- Maier, R., Schmidt, A. (2014). Explaining Organizational Knowledge Creation with a Knowledge Maturing Model. *Knowledge Management Research & Practice* 2014(1), pp. 1-20
- Malina, M.; Nørreklit, H.; Selto, F. (2007): Measures, climate of control and performance measurement models. In: *Contemporary Accounting Research* 24 (3), S. 935–982.
- Mason, W., & Suri, S. (2011). Conducting behavioral research on Amazon's Mechanical Turk. *Behavior Research Methods*, 44(1), 1–23. <http://doi.org/10.3758/s13428-011-0124-6>

- Mattessich, R. (1995): Conditional-normative accounting methodology: Incorporating value judgments and means-end relations of an applied science, *Accounting, Organizations and Society*, 20 (4): 259-284, ISSN 0361-3682, [http://dx.doi.org/10.1016/0361-3682\(94\)00023-0](http://dx.doi.org/10.1016/0361-3682(94)00023-0).
- Mayring, P. (2000). Qualitative Content Analysis. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, 1(2). Retrieved from <http://nbn-resolving.de/urn:nbn:de:0114-fqs0002204>
- Mayring, P. (2000). Qualitative Content Analysis. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, 1(2). Retrieved from <http://nbn-resolving.de/urn:nbn:de:0114-fqs0002204>
- Mc Culloh, I. and Carley, K. M. (2008). Social Network Change Detection. Institute for Software Research. School of Computer Science. Carnegie Mellon University. Pittsburgh, PA 15213. CMU-CS-08116. <http://www.casos.cs.cmu.edu/publications/papers/CMU-CS-08-116.pdf>
- McKenzie-Mohr, D. (2000). Fostering sustainable behavior through community-based social marketing. *American Psychologist*, 55(5), 531-537. <http://doi.org/10.1037/0003-066X.55.5.531>
- McPhedran, A. (2012). Six minutes and forty seconds on coaching skills. URL: <http://de.slideshare.net/amcphedran/coaching-skills-11216592> (21.04.2014)
- Mead, G. H. (1934). *Mind, Self and Society*. London: University of Chicago Press 3 Aufl 1967.
- Mor, Y., Mellar, H., Warburton, S., & Winters, N. (2014). *Practical Design Patterns for Teaching and Learning with Technology*. Rotterdam, NL: Sense Publishers.
- Nierhoff, J. (Forthcoming). Cognitive Context Awareness - A Concept for Self-Determined Repetitive Data Collection within Surveys. Ruhr-University Bochum.
- Nørreklit, Hanne (2000): The balance on the balanced scorecard a critical analysis of some of its assumptions. In: *Management Accounting Research* 11 (1), S. 65-88. DOI: 10.1006/mare.1999.0121.
- Nørreklit, Hanne (2003): The Balanced Scorecard: what is the score? A rhetorical analysis of the Balanced Scorecard. In: *Accounting, Organizations and Society* 28 (6), S. 591-619. DOI: 10.1016/S0361-3682(02)00097-1.
- Nørreklit, Hanne; Nørreklit, Lennart; Mitchell, Falconer; Bjørnenak, Trond (2012): The rise of the balanced scorecard! Relevance regained? In: *J Acc & Organizational Change* 8 (4), S. 490-510. DOI: 10.1108/18325911211273491. Oslo, Universitetsforlaget.
- Pardo A. and Siemens G. (2014) Ethical and privacy principles for learning analytics in *British Journal of Educational Technology* Volume 45, Issue 3, pages 438-450, May 2014
- Peesapati, S. T., Schwanda, V., Schultz, J., Lepage, M., Jeong, S., & Cosley, D. (2010). Pensieve: Supporting Everyday Reminiscence. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 2027-2036). New York, NY, USA: ACM. <http://doi.org/10.1145/1753326.1753635>
- PES (2012). Public Employment Service's Contribution to EU 2020. PES 2020 Strategy Output Paper. <http://ec.europa.eu/social/BlobServlet?docId=9690&langId=en/>

- Prilla M, Nolte A, Blunk O, et al (2015) Analyzing Collaborative Reflection Support: A Content Analysis Approach. In: Proceedings of the European Conference on Computer Supported Cooperative Work (ECSCW 2015).
- Prilla, M. (2014). Collaborative Reflection Support at Work: A Socio-Technical Design Task. ECIS 2014 Proceedings. Retrieved from <http://aisel.aisnet.org/ecis2014/proceedings/track12/2>
- Prilla, M. (2015). Supporting Collaborative Reflection at Work: A socio-technical Analysis. AIS Transactions of Human-Computer Interaction.
- Prilla, M. & Wolf, C. (2015). Coflection – Combining Mutual Support and Facilitation in Technology Enhanced Learning. In: Conole, Gránne; Klobučar, Tomaž; Rensing, Christoph, Konert, Johannes & Lavoué, Élise (2015) (Hrsg.). Design for Teaching and Learning in a Networked World. 10th European Conference on Technology Enhanced Learning, EC-TEL 2015, Toledo, Spain, September 15–18, 2015, Proceedings. Springer International Publishing. S. 282-296
- Prilla, M., & Blunk, O. (2015). Reflective TEL: Augmenting Learning Tools with Reflection Support. In Proceedings of the Tenth European Conference on Technology Enhanced Learning. Springer.
- Prilla, M., & Renner, B. (2014). Supporting Collaborative Reflection at Work: A Comparative Case Analysis. In Proceedings of ACM Conference on Group Work (GROUP 2014). ACM.
- Prilla, M., & Wolf, C. (2015). Coflection – Combining Mutual Support and Facilitation in Technology Enhanced Learning. In Proceedings of the Tenth European Conference on Technology Enhanced Learning. Springer.
- Prilla, M., Blunk, O., Bimrose, J., & Brown, A. (2014). Reflection as Support for Career Adaptability: A Concept for Reflective Learning in Public Administration. In Proceedings of the 4th International Workshop on Awareness and Reflection in Technology Enhanced Learning (AR14) held in conjunctin with EC 2014.
- Prilla, M., Degeling, M., & Herrmann, T. (2012). Collaborative Reflection at Work: Supporting Informal Learning at a Healthcare Workplace. In Proceedings of the ACM International Conference on Supporting Group Work (GROUP 2012) (pp. 55–64).
- Prilla, M., Nolte, A., Blunk, O., et al. (2015). Analyzing Collaborative Reflection Support: A Content Analysis Approach. In: Proceedings of the European Conference on Computer Supported Cooperative Work (ECSCW 2015).
- Prilla, M., Nolte, A., Blunk, O., Liedtke, D., & Renner, B. (2015). Analyzing Collaborative Reflection Support: A Content Analysis Approach. In Proceedings of the European Conference on Computer Supported Cooperative Work (ECSCW 2015).
- Prilla, M., Pammer, V., & Krogstie, B. (2013). Fostering Collaborative Redesign of Work Practice: Challenges for Tools Supporting Reflection at Work. In Proceedings of the European Conference on Computer Supported Cooperative Work (ECSCW 2013).
- Prüfer, P., & Rexroth, M. (2000). Zwei-Phasen-Pretesting. ZUMA.
- Ravenscroft, A., Schmidt, A. P., Cook, J., & Bradley, C. (2012). Designing social media for informal learning and knowledge maturing in the digital workplace. Journal of Computer Assisted Learning, S. 235-249.

- Rogers, E. M. (2003). *Diffusion of innovations*. (5th ed.). New York, NY: Free Press Publishing.
- Rosenshine, B., Meister, C., & Chapman, S. (1996). Teaching Students to Generate Questions: A Review of the Intervention Studies. *Review of Educational Research*, 66(2), 181–221. <http://doi.org/10.3102/00346543066002181>
- Santanen, E. L., Briggs, R. O., & de Vreede, G. (2000). The cognitive network model of creativity: a new causal model of creativity and a new brainstorming technique. In *Proceedings of the 33rd Annual Hawaii International Conference on System Sciences*, 2000 (p. 10 pp. vol.1–). <http://doi.org/10.1109/HICSS.2000.926895>
- Savickas, M. L., & Porfeli, E. J. (2012). Career Adapt-Abilities Scale: Construction, reliability, and measurement equivalence across 13 countries. *Journal of Vocational Behavior*, 80, 661–673. doi:10.1016/j.jvb.2012.01.01
- Schmidt, K. (1997). Of maps and scripts - the status of formal constructs in cooperative work. *Proceedings of the International ACM SIGGROUP Conference on Supporting Group Work: The Integration Challenge: The Integration Challenge*, 138–147.
- Schön, D. A. (1983). *The reflective practitioner*. Basic books New York.
- Schreyögg, A. (2012). 1.5.1 The Core Competencies of a Coach. In: Deutscher Bundesverband Coaching e.V. (German Federal Association for Executive Coaching) (Publisher). *Guidelines and Recommendations on the Development of Coaching as a Profession. A Compendium Including the Professional Standards of the DBVC*. Osnabrück: Steinbacher Druck. URL: http://www.dbvc.de/fileadmin/user_upload/dokumente/Coaching-Kompodium/DBVC-Kompodium_englisch.pdf (17.04.2014) pp. 34–36
- Schulze, Peter M. (2004): *Granger-Kausalitätsprüfung : Eine anwendungsorientierte Darstellung*.
- Soderberg, Marvin; Kalagnanam, Suresh; Sheehan, Norman T.; Vaidyanathan, Ganesh (2011): When is a balanced scorecard a balanced scorecard? In: *Int J Productivity & Perf Mgmt* 60 (7), S. 688–708. DOI: 10.1108/1741040111167780.
- SoLAR(2011). *Open Learning Analytics: An Integrated & Modularized Platform*. White Paper. Society for Learning Analytics Research. Retrieved from <http://solaresearch.org/OpenLearningAnalytics.pdf>
- Stegmüller, W. (1983). *Probleme und Resultate der Wissenschaftstheorie und analytischen Philosophie* (2., verb. und erw. Aufl.). Berlin: Springer.
- Sterman, John D. (2000): *Business dynamics. Systems thinking and modeling for a complex world*. [Nachdr.]. Boston: Irwin/McGraw-Hill.
- Tausczik, Y. R., & Pennebaker, J. W. (2010). The Psychological Meaning of Words: LIWC and Computerized Text Analysis Methods. *Journal of Language and Social Psychology*, 29(1), 24–54. <http://doi.org/10.1177/0261927X09351676>
- Taylor, William (2010): The Balanced Scorecard as a Strategy-Evaluation Tool: The Effect of Implementation Involvement and a Causal-Chain Focus. In: *The Accounting Review* 85 (3), S. 1095–1117.
- Thillmann, H., Künsting, J., Wirth, J., & Leutner, D. (2009). Is it Merely a Question of “What” to Prompt or Also “When” to Prompt?: The Role of Point of Presentation Time of Prompts in

- Self-Regulated Learning. *Zeitschrift Für Pädagogische Psychologie*, 23(2), 105–115.
<http://doi.org/10.1024/1010-0652.23.2.105>
- Thornburg, T. H. (1991). Group Size and Member Diversity Influence on Creative Performance. *Journal of Creative Behavior*, 25(4), 324–33.
- Toepfer, G. (2004). Zweckbegriff und Organismus: Über die teleologische Beurteilung biologischer Systeme. Univ., FB Philosophie und Geschichtswiss., Diss.--Hamburg, 2002. Würzburg: Königshausen u. Neumann.
- Ullmann, T. D. (2015). Keywords of written reflection - a comparison between reflective and descriptive datasets. In M. Kravcik, A. Mikroyannidis, V. Pammer, M. Prilla, & T. D. Ullmann (Eds.), *CEUR Workshop Proceedings (Vol. 1465, pp. 83–96)*. Toledo, Spain. Retrieved from <http://ceur-ws.org/Vol-1465/paper8.pdf>
- van Mierlo, T. (2014). The 1 % Rule in Four Digital Health Social Networks: An Observational Study. *Journal of Medical Internet Research*, 16(2), 33. <http://doi.org/10.2196/jmir.2966>
- Vogelauer, W. (2013). Coach the Coach: Weiter- und Fortbildung von Profis. In: Lippmann, Eric (Ed.) (2013). *Coaching. Angewandte Psychologie für die Beratungspraxis*. Berlin, Heidelberg: Springer Verlag. pp. 304-315
- Wen, M., Yang, D., & Rose, C. P. (2014). Linguistic Reflections of Student Engagement in Massive Open Online Courses. In *Eighth International AAAI Conference on Weblogs and Social Media*. Retrieved from <http://www.aaai.org/ocs/index.php/ICWSM/ICWSM14/paper/view/8057>
- Wenger, E. (1999). *Communities of practice: Learning, meaning, and identity*. Cambridge University Press.
- Wenger, E. (2011, October). *Communities of practice: A brief introduction*. Retrieved from <http://hdl.handle.net/1794/11736>
- Wilensky, Harold L. and Lowell Turner. 1987. *Democratic Corporatism and Policy Linkages: The Interdependence of Industrial. Labor Market Incomes and Social Policies in Eight Countries*. Research Monograph Series #69. Berkeley: Institute of International Relations, University of California, Berkeley.
- Wilson, T. D. (1999). Models in information behaviour research. *Journal of Documentation*, 55 (3), pp 249-70
- Wilson, P. M., Petticrew, M., Calnan, M. W., & Nazareth, I. (2010). Disseminating research findings: What should researchers do? A systematic scoping review of conceptual frameworks. *Implementation Science*, 5, 91.
- Wolf, C. (2014). *Musterzustände im Coaching erkennen und verändern*. In *Organisationsberatung, Supervision, Coaching*. Wiesbaden: Springer Fachmedien.
- Wolf, Carmen (2014a, Ed.). *Training and Learning Modules on Peer Coaching (Intervision)*. URL: https://drive.google.com/file/d/oB_sO4KxB4QkMVzBDMoNBV2l4ZWs/view?pli=1
- Wolf, Carmen (2015). The Trouble with Systemic Solution-oriented Self-E-Coaching. Emotions as Key Factors in Changing Patterns. In: Holocher-Ertl, Teresa; Kunzmann, Christine; Müller, Lars; Rivera-Pelayo, Verónica; Schmidt, Andreas P. & Wolf, Carmen (Ed., 2015).

- Motivational and Affective Aspects in Technology Enhanced Learning (MATEL). Workshop-Proceedings of MATEL Workshop 2013-2014. KIT Scientific Working Paper 26. Karlsruhe: KIT. pp. 37-47
- Wolff, U. (2012). 1.5 The Competence profile of a Coach. Preliminary Remarks. In: Deutscher Bundesverband Coaching e.V. (German Federal Association for Executive Coaching) (Publisher). Guidelines and Recommendations on the Development of Coaching as a Profession. A Compendium Including the Professional Standards of the DBVC. Osnabrück: Steinbacher Druck. URL: http://www.dbvc.de/fileadmin/user_upload/dokumente/Coaching-Kompodium/DBVC-Kompodium_englisch.pdf (17.04.2014) pp. 33- 34
- Wood Daudelin, M. (1996). Learning from experience through reflection. *Organizational Dynamics*, 24(3), 36-48. [http://doi.org/10.1016/S0090-2616\(96\)90004-2](http://doi.org/10.1016/S0090-2616(96)90004-2)
- Yeung, K. Y. and Ruzzo W.L. (2000). An empirical study on principal component analysis for clustering gene expression data. Technical report, Department of Computer Science and Engineering, University of Washington.
- Yu, Lichen; Perera, Sujatha; Crowe, Susan: Effectiveness of the Balanced Scorecard: The Impact of Strategy and Causal Links. Online verfügbar unter <http://www.cmaweblines.org/joomla4/images/stories/JAMAR%202008%20Summer/JAMARv6.2-BSC%20and%20Strategy.pdf>, zuletzt geprüft am 04.03.2015.
- Zhu, E. (1996). Meaning Negotiation, Knowledge Construction, and Mentoring in a Distance Learning Course. In Proceedings of Selected Research and Development Presentations at the 1996 National Conventions of the Association for Education Communications and Technology.
- Zimmerman B. J, (2002) Becoming a self-regulated learner: An overview, in *Theory into Practice*, Volume: 41 Issue: 2 Pages: 64-70

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List of Abbreviations

AFEPA	Administration for European Public Employment Service Affairs
ALMP	Active Labour Market Policies
API	Application Programming Interface
BSC	Balance Scorecard
CEDEFOP	European Center for the Development of Vocational Training
CES	Croatian Employment Service
CFCF	Coaching to Facilitation Competence Framework
CISOK	Croatian Center for Information and Career Guidance
CMS	Content Management System
COP	Community of Practice
CSRs	Country Specific Recommendations
DG EC	Directorate General of Education and Culture
DG EMPL	Directorate General of Employment Social Affairs & Inclusion
DWP	Department of Work and Pensions (the UK PES)
EAGLE	Enhanced Government Learning
ELCM	EmployID Lifecycle Management
ELGPN	European Lifelong Guidance Policy Network
EMCO	European Employment Committee
ENPES	European Network of PES
ESB	Enterprise Service Bus
ESCO	European Skills Competences and Occupational Taxonomy
EURES	European Employment Service
FAQ	Frequently Asked Questions
FSC	Facilitation Skill Catalogue
HOPES	Heads of Public Employment Services
ICT	Information and Communications Technology
IdP	Identity Provider
IT	Information Technology
JTEL	Joint European Summer School
LA	Learning Analytics
LACE	Learning Analytics Community Exchange
LDAP	Lightweight Directory Access Protocol
LEP	Learning Partnership

LMI	Labour Market Information
LTU	Long-term Unemployment
MOOC	Massive Open Online Course
MS	Member States
NEET	Not in Education, Employment, and/or Training
NEST	National Employer Service Team
OLT	Operational Learning Team
PARES	Partnerships between Employment Services
PARES SD	Partnerships between Employment Services – Strategic Dialogues
PES	Public Employment Service
ROI	Return on investment
SAML	Security Assertion Markup Language
SaaS	Software as a service
SLA	Social Learning Analytics
SME	Small and medium-sized enterprise
SOLAR	Society for Learning Analytics Research
SSO	Single sign-on
TEBO	Technology-Enhanced Boundary Object
TM	Token Manager
VLE	Virtual Learning Environment
VPN	Virtual Private Network
WAPES	World Association of Public Employment Services
WP	Work package
YG	Youth Guarantee
ZRSZ	Zavod Republike Slovenije za zaposlovanje (Slovenian PES)